DRIVERS AND CONSEQUENCES OF RESIDENTS' SATISFACTION WITH OFF-CAMPUS STUDENT HOUSING IN SOUTH-SOUTH, NIGERIA

By

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ABSTRACT

The student housing system worldwide and South-South Nigeria in particular has witnessed an unprecedented transformation, such that private off-campus student housing facilities (SHFs) are now the primary source of accommodation for students in tertiary institutions. A considerable gap exists between the supply and demand for on-campus student housing and the quest to fill this gap has stimulated the creation of a significant student housing market in the areas where these tertiary institutions are located. The prospect for economic investments in the student housing sector is high and private investors are involved in the provision and management of off-campus student housing. The main consequence of this practice in South-South, Nigeria is the delivery of low-quality buildings that are not able to meet the needs and expectations of residents. SHFs that are constructed without due regard to residents needs are characterised by dissatisfaction with attributes of housing and low investment performance. The implication is that residence users are often not satisfied with the attributes of the residential environment that are provided; thus their behaviours often impose some consequences on investors gains and objectives.Therefore, understanding the dynamics among attributes that are important to students, that give the required satisfaction, and the impact of the availability or lack-of on behaviour such as loyalty, willingness to pay for attributes and word of mouth behaviour are critical to profitability. Most often, the relationship among these attributes are treated as linear and symmetrical with the assumed implication that better attributes produce improved behaviours. However, this may not always be the case. This approach is rarely addressed and is little understood in student housing studies. Therefore, the aim of this study was to identify student housing attributes that act as drivers of resident satisfaction and the consequences/effects of these drivers on student behaviour in order to determine appropriate measures that could be used to develop, maintain and upgrade student accommodation. The methodology of the study included an extensive literature review and a field study conducted to obtain the perceptions of students in seven tertiary institutions located in South-South, Nigeria. The main task was to define attributes of student housing facilities based on the symmetric and asymmetric impact of the performance of attributes on satisfaction with residence. The Kano model and importance-performance analysis (IPA) were used to establish sets of criteria that could be used to prioritise attributes that are required in student housing for optimal investor gains. Analysis of the findings lead to the conclusions that different degrees of behaviour were associated to the perception of importance that is attached to attributes by residents and the satisfaction that is derived from the use of such attributes. The implication of the conclusions is that to meet users satisfaction needs, varied improvement strategies are required for different attributes in order to maximise the use of resources for maximum gains. The recommendations for investors in SHFs include among others to segment the SHFs market based on demographic characteristics, prioritise and provide only attributes that add-value to identified groups. Emphasis should also be placed on providing attributes that are not only satisfactory, but with capacity to improve loyalty/retention, willingness to pay and positive word of mouth behaviour. It is also recommended that the local authority should improve critical attributes that are deemed to be outside the scope of the investors.

DECLARATION

I, Ojo Cyprain Bella-Omunagbe, s213393352, hereby declare that the thesis for the award of Doctor of Philosophy, Construction Management is my own work and that it has not previously been submitted for assessment or completion of any postgraduate qualification to another University or for another qualification.

Ojo Cyprain Bella-Omunagbe

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LIST OF ACRONYMS

A-Kano Model: Analytical Kano Model

ACC: American Campus Communities

ACSI: American Customer Satisfaction Index

ANOVA: Analysis of Variance

BS: British Standards

CBOs: Community Based Organisations

CS: Customer Satisfaction

EDSM: Expectancy-Disconfirmation Satisfaction Model

EFA: Exploratory Factor Analysis

EU: European Union

FCT: Federal Capital Territory

FGN: Federal Government of Nigeria

FHA: Federal Housing Authority

FMBN: Federal Mortgage Bank of Nigeria

FME: Federal Ministry of Education

FRs: Functional Requirements

GDP: Gross Domestic Product

HEIs: Higher Education Institutions

IPA: Importance-Performance Analysis

JAMB: Joint Admission and Matriculation Board

LGs: Local Governments

NBTE: National Board for Technical Education

NCCE: National Council of Colleges of Education

NDDC: Niger Delta Development Commission

NESG: Nigerian Education Summit Group

NGO: Non-Government Organizations

NHF: National Housing Fund

OPEC: Organisation of Petroleum Exporting Countries

OXBRIGDE: Oxford and Cambridge Universities

PAF: Principal Axis Factor

PFA: Principal Factor Analysis

PMIs: Primary Mortgage Institutions

POE: Performance Occupancy Evaluation

PTDF: Petroleum Technology Development Fund

QRS: Questionnaire on Resident Satisfaction

SCSB: Swedish Customer Satisfaction Barometer

SHFs: Student Housing facilities

TETFund: Tertiary Education Trust Fund

TVET: Technical - Vocational Education and Training

UK: United Kingdom

UNESCO: United Nations Educational Scientific Cultural Organisation

UN: United Nations

DEFINITION OF KEY WORDS AND TERMS USED WITHIN THE STUDY

Attractive attributes: attributes that are not expected by residents but yield satisfaction when provided and when performance is high; however, no dissatisfaction is caused when these attributes are not delivered because the attributes are not expected by consumers.

Housing: heterogeneous product and a bundle of attributes that are are distinct, and each serves to achieve a function(s) individually or in combination with other attributes.

Indifferent attributes: attributes that do not cause any satisfaction or dissatisfaction to residents when available or not available.

Loyalty to housing: the intention or actual re-patronage of a particular housing services in subsequent periods.

Must-be attributes: attributes that are expected by residents and considered as entry-level requirements and dissatisfaction is caused if not fulfilled or delivered at a satisfactory level, but do not lead to satisfaction if fulfilled or exceeded (Llinares & Page 2011:234).

Neighbourhood: the zone between the macro-neighbourhood and micro-neighbourhood, which is inferred from resident definition of boundaries or census delineation (Amerigo & Aragones, 1997: 53).

Off-campus student housing: accommodation built by private investors for the occupation of students that are located outside the campus of tertiary institutions

“One-dimensional” attributes: these are attributes whereby an increase in performance produces a commensurate increase in satisfaction, therefore, the relationship is linear and symmetric.

Resident satisfaction with housing attributes: an experience of pleasure or disappointment after comparing perceived performance with expectations (Mohit, Ibrahim, & Rashid, 2010: 19).

Satisfaction: consumer response to the evaluation of the perceived discrepancy between prior expectations and actual performance of the product as perceived after it is consumed (Oliver, 1977, 1981; Day, 1984)

Student housing: a particular type of accommodation constructed for the specific use of students while pursuing their education with the objective of creating an environment that supports living and learning (Fields, 2011).

Willingness to pay: a monetary measure of the value that a person assigns to a consumption or usage experience and is governed by the maximum amount of money a customer is willing to pay for a product or services (Homburg *et al*., 2005:85).

Word of mouth: the passing of information from person to person by oral communication and is classified either as customer-customer behaviour or customer-organization relationship (Eisingerich *et al*., 2013: 9).

CHAPTER ONE

THE PROBLEM AND ITS SETTING

1.1 INTRODUCTION AND BACKGROUND

Student housing is a particular type of accommodation constructed for the specific use of students while pursuing their education with the objective of creating an environment that supports living and learning (Fields, 2011). Student housing facilities (SHFs) are usually classified as on-campus and off-campus residences (Akingbohungbe, Akinluyi & Muyiwa, 2012:69) and exist in diverse forms, namely; dormitories, apartments, flats and studios (Fields, 2011:1). The configuration of rooms in SHFs is either a unit of an *en suite* single room or units of multiple rooms in shared apartments either *en suite* or shared amenities. In recent times, the student housing system worldwide and South-South Nigeria in particular has witnessed an unprecedented transformation. The most remarkable is the dominance of private off-campus student housing facilities (SHFs) as the primary source of accommodation for students in tertiary institutions (Fields, 2011: 2; Rawlinson, 2007: 68; Thomsen & Eikemo, 2010:210; Akingbohungbe *et al.,* 2011: 69). This change is attributed to the deficit between supply and demand for on-campus SHFs. As a consequence, the demand for off-campus SHFs as a ready alternative has increased for students who are unable to secure living spaces in on-campus SHFs ((Muslim, Karim, & Abdullah, 2012:602). For example, the dominance of off-campus SHFs is a global phenomenon and the trend in selected countries is shown as follows:

- Nigeria: range from 50-93% in various institutions (Ojogwu & Alutu, 2009: 72);
- Norway: 92% (Thomsen & Eikemo, 2010:210);
- United States of America: 56% (Fields, 2011 :2); and
- United Kingdom: 45% (Rawlinson, 2007:68).

The foregoing clearly reveals the importance and dominance of privately developed off-campus housing over on-campus student housing facilities (SHFs).

In essence, a considerable gap exists between the supply and demand for on-campus student housing (Zaransky, 2006:6; Amole, 2009:76). The quest to fill this gap has

stimulated the creation of a significant student housing market in the areas where these tertiary institutions are located (Rugg *et al*., 2001: 291; Zaransky, 2006:6).

Globally, the investment prospect of off-campus SHFs is high, and a sustainable window of opportunity exists for developers and investors in this residential sub-sector. There is evidence that the need for student accommodation will continue to increase over the years (Zaransky, 2006). For example, there is an increase in the demand for quality higher education by secondary school graduates and workers who intend to improve their education. Furthermore, admissions and programme constraints have forced some students to secure admissions in locations that are far from their homes and for this category of students, alternative accommodation when on-campus housing is not available, is their solution.

Despite the high economic prospects of off-campus SHFs investments (Property Wire, May: 2012), this sector has not attracted much research. Previous studies on student accommodation have focused more on aspects of on-campus accommodation than off-campus accommodation (Fourbert, Tepper, & Morrison, 1997; Thomsen, 2007; Amole, 2009; Khozaei, Hassan, & Khozaei, 2010; Thomsen & Eikemo, 2010). However, a bit of research that is devoted in part or wholly to off-campus student housing has been conducted (Thomsen, 2007; Yusuff, 2011; Fields, 2011; Muslim *et al*., 2012,; Muslim *et al.,* 2012; Akingbohungbe *et al.,* 2012).

A ramp up in the research on off-campus student housing is necessary considering the benefits of SHFs to the education system. Banning and Kuk (2011:11) summarise these benefits as follows:

- contribution to the overall culture of the institution;
- promotion of diversity;
- creation of a sense of community; and,
- provision of extensive college life engagement.

Thomsen's (2007:582) research underscores that the SHFs are critical to the attainment of the overall student and institutional objectives. The core goal of SHFs design and development is to ensure that occupants derive optimal satisfaction from their dwelling spaces. Concisely, Penven, *et al.* (2013:115) argue that for optimal

performance, SHFs should not only be safe, affordable and comfortable but should also serve as an instrument that promotes learning as well as living.

The requirements of general residential housing are often applied to student housing development. However, SHFs differ from other residential accommodation in many respects. For example, SHFs are often regarded as temporary homes as the occupancy period of residents in this type of accommodation is short and transient (Thomsen, 2007:580). In addition, student-residents differ in demographic characteristics such as the life stages and development, lifestyle and economic power of occupants. These are also critical factors that drive the demand for housing and its attributes. Regrettably, these differences are often neglected in the procurement of SHFs.

For example, designers and developers often neglect to incorporate construction details that support users' satisfaction on the assumption that the occupancy of SHFs is transitory (Thomsen 2007: 584). Other essential aspects of SHFs that are often overlooked by developers, and designers include (Clapham, 2005:112; Thomsen 2007: 582):

- residential identity, residential self-esteem and security;
- opportunity for personal space and decoration; and,
- neglect of architectural and structural aspects of building.

To resolve this problem, there is the need to develop strategies that ensure competitive advantage in SHFs development. It is important to incorporate the attributes that meet the needs, desires and preferences of users (Thomsen, 2007:578; Llinares & Page, 2011:233). In the case of SHFs, Banning and Kuk (2011: 93) observed that the connection and bond between student life and academic learning are stronger when housing amenities are satisfactory.

Numerous studies have dealt with the satisfaction of residents in general residential settings (Ukoha & Beamish, 1997; Fourbert *et al*., 1997; Amole, 2009; Khozaei *et al.*, 2010; Jiboye, 2012; Ibem, Opoko, & Adeboye, 2013). However, the application of the findings of the general residential studies to SHFs development requires adaptation to

incorporate the peculiar characteristics and needs of student-occupants. In addition, most of the existing studies on SHFs focused on the needs and perception of satisfaction of occupants of on-campus SHFs. Only a few of these studies were devoted entirely to off-campus SHFs (Thomsen, 2007; Yusuff, 2011; Fields, 2011; Muslim *et al*., 2012,; Muslim *et al.,* 2012; Akingbohungbe *et al.,* 2012). Further and more research is required in order to understand the needs and requirements of students who are residents of off-campus SHFs. The results of this study provide investors with data that are reliable and relevant to the development and management of profitable off-campus SHFs.

1.1.1 Student housing Crisis in South-South Nigeria

The student residence goal of most of the tertiary institutions in South-South, Nigeria has been to provide accommodation for at least 75% of their students in on-campus SHFs. (An overview of South-South, Nigeria is presented in Section 2.3). Regretfully, all institutions have failed to meet this commitment (Yusuff, 2011: 107; Akingbohungbe *et al.,* 2012:69). This failure is ascribed to the dwindling financial resources of tertiary institutions and the continuous increase in the student population (Amole, 1997). In order to overcome the pressure that these problems exert on budgets, tertiary institutions resorted to investing only in core facilities that are directly relevant to academic learning (Okolie, 2009). Evidently, SHFs are considered as support services and are by this classification deprived of development attention (Okolie, 2009:1598). As a result, the capacity to develop and renew SHFs to accommodate a sizeable percentage of the population of students as well as meet current student needs has been compromised in most institutions (DTZ, 2010:1; Okolie, 2011:1601).

1.1.2 Drivers of demand for SHFs

A lot of tertiary institutions now engage property investors to develop and manage investor-funded student housing either independently or in partnership with institutions (Ronan, 2006:1; DTZ, 2010:1). The private SHFs market is healthy and stable, and it exists to cater for two categories of students. These groups include students who are unable to secure a bed space in on-campus SHFs; and those who desire better quality amenities that are not available in on-campus SHFs (Yusuff, 2011:107). Numerous studies have observed that the demand for private SHFs is high and increasing and

hence, the SHFs market is sustainable, robust and stable (Zaransky, 2006: 14; DTZ, 2011:1). The development and relevance of SHFs market is driven by the following factors:

- the demand and enrolment for higher education is on the increase, and unlike the traditional housing market, patronage is not tied to the job market and employment rates (Rugg *et al.,* 2001, 295). People tend to upgrade their educational level when the economy is less favourable, in order to improve their job marketability (Levy, 2006: 1; Property Magazine, 2013);
- public higher education institutions are under serious financial pressure; consequently, their ability to add, upgrade or maintain SHFs to meet the current student preference is limited (Okolie, 2009:1598);
- the student housing market is not affected by an increase in tuition fees as was evident in the UK student accommodation market (Property Wire, 2012). Despite the increase in tuition fees, enrolment is on the increase and new SHFs construction is lagging behind the increase in the population of students (Property Wire, 2012);
- the improvement in the income of students has impacted positively on their ability to pay for better quality residences (Thomsen & Eikemo, 2010:273); and
- student housing provides a higher rate of return with lower risk than other rental properties (Zaransky, 2006: 14; Ronan, 2006:1).

With this opportunity in mind, property developers invest in off-campus private housing with an expectation of good returns (Zaransky, 2006: 2). Globally, the demand for SHFs and the stable returns on investment has made the student housing sub-market an invetment niche (Property Wire, May: 2012). Private sector participation in student housing in countries in Europe and America is highly developed, institutionalised and formalised. For example, private agencies are actively involved in SHFs development and management in America and Europe. These organizations include the American Campus Communities (ACC), Educational Reality Trust and GMH Communities Trust (Levy, 2006:2). In Europe, the Bouwfonds REIM is investing in private SHFs in major European university towns and cities, especially in France, Germany and the United

Kingdom (Property Magazine International, 2012). Early in 2012, £800m (R12.7 billion) was invested in student housing in the United Kingdom alone (Property Wire, 2012).

Despite the investment opportunity in student housing, contrastingly, off-campus SHFs development in Nigeria is dominated by informal investors that include the civil servants and small business owners (Keivani & Werna, 2001:85; Ndubueze, 2009:34; Yusuff, 2011:107). The funds available to these investors is limited, thus constraining their ability to provide good quality standard residences. In addition, the activities of these investors are mostly unregulated; hence, SHFs are built without due regard for user requirement needs and expectations.

A study by Greene and Ortuzar (2010:56) on social housing in Chile focused on the need to understand and identify attributes that drive residents' satisfaction and the response of individuals to a particular attribute levels. The research established that investors need to determine the level of attributes that is required in housing by residents. Furthermore, investors need to determine the combinations of attributes that are most appealing to individuals and, segment of existing and potential residents which is paramount to the success of housing delivery. This knowledge engenders the prudent management of resources for optimal returns and the incorporation of attributes in housing based on the real needs and priority of residents.

It is imperative from the foregoing that attaining meaningful success in housing development requires an understanding of the types of attributes that are required and expected by residents, the quality-level of these attributes and the combination of these attributes. To the knowledge of the researcher, too little attention has been given to this approach of research on off-campus SHFs.

1.1.3 Investor challenges in student housing development

The primary goals of investment in SHFs as well as in other residential assets are principally to make a profit and grow property (Oreily, 2012). These benefits, which come in the form of rents, appreciation of the property and a psychological satisfaction position the investors to offset the cost of capital, rate of inflation and uncertainty about future payment. However, challenges such as increasing cost of

building, high cost of maintenance and rising vacancy rates are common factors militating against cost-effective investment in housing (Property Magazine, 2012:1).

The strength of SHFs lies in the consistent high occupancy rate, and a structural undersupply of accommodation, particularly for the higher quality housing (Property Magazine, 2012:1). In the UK, the occupancy rate of student accommodation stands at 99% with an average yield of 11% and expected annual growth rate of 5% in the next decade (Pullan, 2012: 2). No concrete evidence exists on the yield of SHFs in Nigeria. However, the growth in population and the increasing demand for tertiary education is an indication that the demand for off-campus SHFs will continue to rise (Joint Admission and Matriculation Board (JAMB), 2014).

The importance of patronage and good returns cannot be overemphasised. A high return on investment facilitates and enables the improvement of essential amenities that are critical to user satisfaction with a dwelling. Obviously, a lack of funding to maintain accommodation has significant implications for investment (Ojogwu & Alutu, 2009:63). Some of the implications are:

- deterioration of dwelling facilities;
- shortage of accommodation;
- reduction in the quality of accommodation; and,
- increase in cost of accommodation.

Therefore, a mutual benefit exists for both the investors and students when investors deliver accommodation with satisfactory attributes.

The success of any housing project is influenced by the level of user satisfaction with the attributes of the accommodation and amenities (Ukoha & Beamish, 1997). Other challenges facing investors in student housing development include the following (Sickler & Roskos, 2013:10; Zaransky, 2006:13):

- the lack of proper understanding of the level of housing quality that are required to meet the needs and expectations of occupants;

- student-occupants are more likely to emphasise and choose particular sets of housing attributes subject to individual differences, needs and expectations;
- attributes that were once considered luxurious and special are fast becoming reduced to essential or “must-have” items in residences; and
- the change in technology, user taste and improved access to funds that makes housing that was once deemed satisfactory to be currently out of date.

In order to overcome these challenges, Ukoha and Beamish (1997:446) and Al-Noori (1997:5) emphasise the importance of detailed knowledge of residents' needs in housing design and development. Most often, critical aspects of housing that satisfy the requirements of residents that are essential to success of housing investment are neglected in residential design. Jiboye (2012:236) maintains that most housing projects are conceived after the desire of their developers and designers. As such, economic issues and benefits to the investors are overemphasised over the need to provide buildings with satisfactory attributes. To eliminate this failing, Stevenson and Leaman (2010:439) suggest the adoption of a knowledge-management system where the experiences of residential users are explored and factored into housing development. The current and future prospects of housing, therefore, depend largely on the level of satisfaction residents enjoy with their living facilities (Jiboye, 2012:237). An adequate understanding of the response of the student-occupants to specific quality-level of housing and environmental attributes and the consequential influence on their behaviour, is critical to the attainment of success in SHFs development.

1.1.4 Housing as a multi-attribute product

Housing is a heterogeneous product and is comprised of various attributes. These attributes are distinct, and each serves to achieve a function(s) individually or in combination with other attributes (Coulombel, 2011:8). Critical in the design and construction of housing are the need to incorporate attributes that provide occupants with a safe, comfortable, healthy and secure environment (Ibem *et al*., 2013: 178). Therefore, housing developers bear the performance of attributes in mind when selecting the components of buildings.

It is expected that the design and construction of buildings are executed to conform to established building standards and codes with the expectations of meeting user's

requirements (Jiboye, 2012:236; Ibem *et al*., 2013: 179). However, Ukoha and Beamish (1999:445), in an earlier study reasoned that simply designing and constructing buildings in accordance with standards and professional regulations is not a sufficient guarantee of the success of housing projects. What *does* guarantee success is the delivery of quality housing that the resident needs. This view is in agreement with Al-Noori (1987:1) who holds that satisfaction with housing attributes is the ultimate test of the success of a housing development project.

In other words, how residents evaluate and respond to housing attributes in satisfying their needs and expectations have important consequences on housing investment. Despite the significance of housing environment attributes as drivers of resident satisfaction, the consideration and application of findings of residential satisfaction studies are often neglected in design and construction. Okolie (2009:1603) observes in a study of educational facilities that inputs from users are rarely sought in the development of properties. Therefore, residents are often forced to live with the shortcomings of their housing environment.

This experience may not be totally true especially in rented properties where satisfaction with, or lack of satisfaction with the housing environment, may lead to inevitable consequences. Wong (2002:220) observes that as changes occur in the needs and expectation of residents, adjustments are expected to be made to accommodate these changes. Residential users may either improve existing dwellings and stay, switch residences or stay as dissatisfied users. According to Al-Noori (1997:1), a variety of design and construction concerns are responsible for users' dissatisfaction with their residential environment and these include:

- Lack of detailed knowledge of user needs;
- Failure to predict the reasons why users are dissatisfied with a housing environment; and
- emphasis on professional design priority over user needs and requirements.

The attributes of the residential environment that attract users to housing are categorised in literature as follows (Wong, 2002:219; Amole, 2009:77);

- physical/structural aspects;

- location/neighbourhood aspects;
- environment aspects;
- management aspects; and
- social aspects.

In essence, the primary objective of building design and construction is to create a housing environment with the right combination of attributes that are relevant to user satisfaction.

A well designed and constructed building increases the satisfaction of occupants with residence. The satisfaction of users/customers/tenants is unquestionably an important organisational goal as it leads to a more profitable relationship between the client and the firm over time (Eisingerich *et al.,* 2013:1). Deng, Kuo and Chen (2008:37) recognise that customer satisfaction is one of the principal drivers of profitability for a business. Therefore, when customers are satisfied with a product, there are consequences and these include:

- higher levels of loyalty and retention (Anderson & Sullivan, 1993; Strauss & Neuhaus, 1997);
- the willingness to pay a premium price (Greene & Ortuzar, 2002:84; Homburg, Koschate & Hoyer, 2005:85);
- positive word of mouth (Eisingerich *et al.,* 2013:1).

Therefore, for a business to grow, the focus must be to fulfil user's needs and expectations (Yang & Zhu, 2006: 667). Firms or organizations that do well in maintaining customer satisfaction with products are more likely to realize the business economic goals of real returns and profit (Strauss & Neuhaus, 1997: 236). It follows therefore, that investors who keep their customers satisfied with their products or services at all times would be more likely to succeed in business (Tontini, 2007: 600).

Keeping residents satisfied with housing products is not simple, as each building is composed of multiple attributes, with each yielding a different level of satisfaction to the residents. Consequently, the increasing understanding that a house is a bundle of attributes with each of these attributes responding to the particular needs of users is leading users and investors to rethink on the content of housing (Wong, 2002: 218;

Greene & Ortuzar, 2010: 56). This is in agreement with Lancaster's (1991:13) proposition that "good *per se* does not give satisfaction to the consumer, but the characteristics that it possesses that give rise to satisfaction".

The contribution of the different attributes to the overall users' satisfaction is, therefore, very relevant to the success of housing development. Thus, a building that is composed of attributes that are highly valued by residents is more likely to have a superior competitive advantage over those that are not. Accordingly, Green and Ortuzar (2010:56) maintain that patronage and positive returns on housing investment are linked to the individual and combined contribution of attributes of housing to satisfaction. The study further reveals that the knowledge of the impact of attributes on resident satisfaction is useful in defining the following:

- good value for money;
- the most appropriate combination of attributes for different classifications of tenants; and
- how to consolidate minimum housing requirements into housing packages without losing sight of budget constraints.

To the knowledge of the researcher, the optimal combination of housing attributes that are critical to resident satisfaction and the effects on behaviour are not adequately researched.

1.2 THE CONCEPT OF SATISFACTION WITH SHFs

Satisfaction measures are used as criteria for the evaluation of residential quality and the prediction of the behaviour of residents (Amerigo & Aragones, 1997:47). Series of indices are available and are used to gauge the perception of satisfaction with the housing environment by residents (Adriaanse, 2007). The primary focus of these satisfaction indices according to Martensen, Kristensen, & Gronholdt (2000: 544) include:

- getting data on the degree of satisfaction;
- understanding customer satisfaction and the reasons behind satisfaction; and
- estimating the results of satisfaction on behaviour.

The impact of the drivers of satisfaction and their corresponding consequences is vital for current and future business performance (Martensen *et al.,* 2000: 544) and these vary in intensity and offer good opportunity for improving future competiveness of individual housing stocks.

Furthermore, satisfaction measurement is applied as the predominant element in the evaluation of the performance of attributes in post occupancy evaluation (Amole, 2009; Khozaei, 2010). Post occupancy evaluation studies often anticipate that satisfaction can be improved by increasing the quality of attributes (Tan & Shen, 2000: 1143). This is grounded on the assumption in most residential studies where satisfaction is treated as a linear and symmetric construct. Martzler, Bailom, Hinterhuber, Renzl, and Pichler (2004:276) however, observe that the relationship between a marginal increase in satisfaction and an increase in product quality differ among products and individuals. An improvement in the quality of an attribute sometimes produces a commensurate increase in satisfaction level, whereas, in some cases, the effect may be mild, negligible or inverse. A situation where the impact of an improvement in the quality of attributes does not produce a commensurate increase in satisfaction is treated as a non-linear and asymmetric relationship (Kano, Takahashi, & Tsuji, 1984). Hence, by extension to housing, more of an attribute may not always be better for an investment.

In explaining the asymmetric perception of satisfaction with an attribute, Kumar (2012) observes that thresholds exist for different individuals or segments within a group of consumers. Therefore, once this threshold is exceeded, an improvement in the quality of products may not produce similar marginal increments in satisfaction. McCrea, Shyy and Stimson (2013: 578) further contend that satisfaction alone is not sufficient to generate specification or prioritisation of the drivers of customer patronage. This is founded on the understanding that a product is composed of diverse attributes which are not of equal importance to residents (Greene & Ortuzar, 2010:56; McCrea *et al*., 2013:578).

1.3 IMPORTANCE OF ATTRIBUTES TO RESIDENTS

In explaining the relevance of the importance of attributes, Lin , Yang, Chan and Sheu, (2010:255) stress that some attributes only serve to fulfil minimal demands of users while others provide additional value to consumers. In other words, some attributes

serve to satisfy either the consumer core values, secondary values or, possibly both. Residents are faced with constraints and as such, the demand for attributes of the housing environment are ranked based on their importance and not on satisfaction alone.

From the foregoing, both satisfaction and importance criteria are critical to the success of housing development (McCrea *et al*., 2013). Though residential users may derive satisfaction from high-quality attributes, the degree of importance of such features may limit preference. Thus, the success of housing development and improvement requires a clear understanding of the balance between quality and satisfaction, and quality and importance of attributes to residents. To the understanding of the researcher, there is a deficiency on this line of approach in housing studies.

1.4 STATE OF OFF-CAMPUS STUDENT HOUSING IN NIGERIA

The quest to provide adequate shelter for mankind is a challenge and focus of governments, NGOS and individuals globally. Sexwale (2013:4) observes that the battle to deliver shelter to mankind has remained elusive even though it is recognised as a fundamental human need.

Surprisingly, tertiary institutions are not also spared from shortages of infrastructure for classrooms, laboratories, workshops and student accommodation (Okolie 2011:1602). The management of tertiary institutions are concerned about where their students are accommodated because the quality of student residence has a positive impact on the academic performance and total well-being of the students (Wallace, 2012: 95). Over the years, most tertiary institutions in Nigeria include the development and maintenance of SHFs as an important aspect of infrastructural policy. This is based on the evidence that a relationship exists between where students reside and their academic performance (Wallace 2012:96). With this in mind, SHFs were designed and constructed to incorporate attributes that are aimed at creating an environment that is suitable for student living and learning (Gordon, 1974:235-245; Thomsen, 2007:578). A living-and-learning setting provides a safe, comfortable and affordable accommodation where the academic and social lives of students are enhanced (Penven *et al*., 2013:116). As a result, the performance of SHFs is

measured by how well the requirements of living and learning environment are fulfilled (Acuho-I, 2014).

The performance of SHFs in Nigeria has deteriorated in recent times. The worsened condition is attributed to the excessive increase in the population of students and reduction in funding for the development of SHFs, which are two items identified as the critical drivers of housing problems in tetiary institutions in Nigeria (Ojogwu & Alutu, 2009:69). The SHFs goal of most tertiary institutions in Nigeria has been to provide accommodation for at least 75% of their students, and most residential policies are developed to meet this goal (NUC, 1977). Different approaches are adopted to fulfil this mandate (Yusuff, 2011:107).

The conventional approach to SHFs development has been the Oxford-Cambridge (Oxbridge) residential model. This model supports the development of on-campus residential facilities by institutions to house all students (Penven *et al*. 2013:116). Nigerian institutions are familiar with this model and it was successfully adopted to meet the accommodation needs of students up to the early 1980s (Amole, 1998: 36). It however became unsustainable as a result of the rapid increase in the student population as well as a reduction in funding for the development and maintenance of SHFs (Ojogwu & Alutu, 2009:69). Therefore, as the demand for bed spaces increases, the capacity to construct new on-campus SHFs and maintain existing units to meet these needs diminish. This constraint forced most institutions to explore either the non-residential model or dual residential model as alternatives to the all-inclusive student housing policy (Yusuff, 2011:107).

The non-residential model promotes the participation of private investors who develop and manage residences to accommodate students. A variety of choices of accommodation that are distinguished by types, attributes and qualities are available in the off-campus residential environment (Akingbohungbe *et al.,* 2012:69). One of the main criticism of this development is that the objective of providing a living and learning environment which on-campus student housing is known for is often neglected (Thomsen, 2007).

In summary, even though existing policy encourages the development of SHFs to accommodate a sizeable number of students, factors such as funding and increase in

students' population has continued to negate the attainment of an all-inclusive SHFs goal. Hence, off-campus SHFs remains a viable alternative.

1.5 PROBLEM FORMULATION

A lot of residential studies viewed the relationship between satisfaction and quality-attributes as linear and symmetric; that is, an increase in the quality of an attribute results in more satisfaction and vice versa (Mohit, Ibrahim, & Rashid, 2010; Muslim, Karim, & Abdullah, 2012; Jiboye, 2012). However, with certain attributes and individual residents, increasing the quality of attributes may not necessarily lead to a proportionate increase in satisfaction. This misconception poses a challenge to developers of SHFs who invest in high quality-attributes with the anticipation that by increasing the quality of attributes, satisfaction and positive behaviour will also increase; and hence a growth in profit. The implications are that investors may deliver attributes that are not important to residents, or beyond their satisfaction threshold. Once this threshold is exceeded, an improvement in the quality of products may not produce similar marginal improvement in satisfaction. It is therefore important that investors should consider the dynamics concerning satisfaction, importance and effects of attributes on choice of housing behaviour.

1.6 THE STATEMENT OF PROBLEM

In South-South Nigeria, the development of off-campus SHFs does not take cognisance of housing attributes that act as drivers of residents' satisfaction and the resulting consequences. Therefore, the qualities related to attributes that promote positive users' behaviour are not adequately incorporated in off-campus SHFs.

1.6.1 The statement of sub-problems

The sub-problems that were investigated in this study are as follow:

Sub-problem 1: Attributes that act as drivers of resident satisfaction are not sufficiently prioritised in the development of off-campus SHFs (Ukoha & Beamish, 1997: 445; Al-Noori, 1997:2; Stevenson & Leaman, 2010:439; McCrea *et al*., 2013: 538).

Sub-problem 2: There is a lack of understanding of the relationship between expectations of performance of SHFs attributes and the level of importance that is

attached to individual residential attributes by users (Greene & Ortuzar, 2002; McCrea *et al.,* 2013)

Sub-problem 3: There is a lack of understanding of the relationship between expectations of performance of SHFs attributes, and the word of mouth behaviour of residents of SHFs (Eisingerich *et al.,* 2013:9)

Sub-problem 4: There is a lack of understanding of the relationship between expectations of performance and the willingness to pay behaviour of residents of SHFs (Kano *et al.,* 1984, Greene & Ortuzar, 2002; Martzler *et al.,* 2004).

Sub-problem 5: There is a lack of understanding of the relationship between expectations of performance of SHFs attributes, and the loyalty behaviour of residents to SHFs (Tam, 2010: 897).

Sub-problem 6: There is a lack of understanding of the relationship between the importance that is attached to individual residential attributes by residents and the loyalty behaviour.

Sub-problem 7: There is a lack of understanding of the relationship between the importance that is attached to individual residential attributes by residents and the willingness to pay behaviour.

Sub-problem 8: There is a lack of understanding of the relationship between the importance that is attached to individual residential attributes by residents and word of mouth behaviour of residents.

Sub-problem 9: There is a lack of understanding of the relationship between satisfaction with individual residential attributes by residents and the loyalty behaviour of residents to SHFs attributes;

Sub-problem 10: There is a lack of understanding of the relationship between satisfaction with SHFs attributes and the willingness to pay behaviour of resident.

Sub-problem 11: There is a lack of understanding of the relationship between satisfaction with attributes of SHFs and the word of mouth behaviour of residents; and,

Sub-problem 12: There is a lack of understanding of the relationship between the importance of attributes and satisfaction with attributes of SHFs.

1.7 THE PRINCIPAL RESEARCH QUESTION

Which residential environment attributes act as the drivers of resident satisfaction with student housing in South-South, Nigeria, and what are the consequences of these drivers on student behaviour, namely: loyalty, word of mouth and willingness to pay for housing?

1.8 HYPOTHESES

The following hypotheses and sub-hypotheses were proposed and tested in the study:

Hypothesis 1: There is no statistically significant relationship between the expectations of performance of SHFs attributes and resident satisfaction with attributes of SHFs;

Hypothesis 2: There is no statistically significant relationship between the expectations of performance and the importance attached to attributes by residents of SHFs;

Hypothesis 3: There is no statistically significant relationship between the expectations of performance and the word of mouth behaviour of residents of SHFs;

Hypothesis 4: There is no statistically significant relationship between expectations of performance and the willingness to pay behaviour of residents of SHFs;

Hypothesis 5: There is no statistically significant relationship between expectations of performance of attributes and the loyalty behaviour of residents of SHFs;

Hypothesis 6: There is no statistically significant relationship between the importance attached to attributes of SHFs by residents and the loyalty of residents to SHFs;

Hypothesis 7: There is no statistically significant relationship between the importance attached to attributes of SHFs by residents and the willingness to pay behaviour of residents of SHFs;

Hypothesis 8: There is no statistically significant relationship between the importance attached to attributes by residents of SHFs and the word of mouth behaviour of residents of SHFs;

Hypothesis 9: There is no statistically significant relationship between resident satisfaction with attributes and the loyalty behaviour of residents SHFs;

Hypothesis 10: There is no statistically significant relationship between resident satisfaction with attributes and the willingness to pay behaviour of residents of SHFs;

Hypothesis 11: There is no statistically significant relationship between resident satisfaction with attributes and the word of mouth behaviour of residents of SHFs; and,

Hypothesis 12: There is no statistical significant relationship between the importance attached to attributes and satisfaction with attributes of SHFs.

1.9 AIM AND OBJECTIVES

The study aimed to proffer a strategy for the development of off-campus student housing based on the perception of attributes that drive satisfaction and the consequences on residents' behaviour. This aim was achieved by:

i. identifying attributes of SHFs that might serve as drivers of residents' satisfaction;
ii. Identifying attributes of SHFs that are important to residents of off-campus SHFs;
iii. examining the impact of the demographic characteristics of students on the perception of quality and choice of SHFs types;
iv. determining the relationship between residents' satisfaction and loyalty behaviour;
v. determining the relationship between residents' satisfaction and word of mouth behaviour;
vi. determining the relationship between residents' satisfaction and willingness to pay for housing attributes; and finally,
vii. submitting appropriate recommendations to prospective investors regarding the development and upgrading of student accommodation.

1.10 RESEARCH METHODOLOGY OUTLINE

The research methodology for this study was designed to determine the drivers and consequences of residents' satisfaction in off-campus student housing. The quantitative approach adopted for the study was based on a structured questionnaire

administered to students residing in off-campus accommodation in selected universities towns and cities. Seven tertiary institutions in South-South, Nigeria were selected for the study. The data collected from the field survey were analysed quantatively to provide answers to the research questions and hypotheses.

1.11 DELIMITATION OF THE SCOPE OF THE STUDY

The study was limited to the evaluation of the attributes that drive users' satisfaction and the consequences on the behaviour of students in off-campus SHFs in South-South Nigeria. The South-South, Nigeria was selected as the area of study as the few researches on student housing in Nigeria were restricted to South-West, Nigeria (Amole, 2009; Akingbohungbe & Akinluyi, 2012: 70). In addition, the researcher is domiciled in South-South Nigeria thus enabling easy access to the selected institutions.

Owing to the paucity of research on off-campus SHFs, existing findings on the relationships between quality-attributes of on-campus SHFs and satisfaction was used as a benchmark for the study. The development and maintenance of on-campus SHFs which is responsible for the growth of off-campus SHFs in South-South Nigeria share common funding problems with institutions in other parts of the Federation, thus the experiences of shortages, inadequate maintenance among others are also prevalent in other parts of Nigeria. Therefore, a generalisation of findings to the entire nation was considered appropriate. The study sample is made up of federal (F), state (S) and private (P) institutions and of the eighteen tertiary institutions in the geopolitical zone, seven were selected for the study (National Universities Commission (NUC), 2013; National Board for Technical Education (NBTE), 2013). The sampled institutions include the Ambrose Alli University (S), Delta State University (S), Auchi Polytechnic (F), University of Uyo (F), University of Port Harcourt (F), University of Benin (F) and Igbinedion University (P).

Conceptually, this study focused primarily on the following:

- residents' perceptions of satisfaction with attributes of the off-campus housing environment;
- residents perceptions of the importance of SHFs attributes; and

- consequences/effects of satisfaction with attributes on the behaviour of residents such as loyalty, willingness to pay and word of mouth.

In order to achieve these objectives, the following aspects of the residential environment were covered in the study with a view to identify how the attributes in these domains affect residents' satisfaction.

- services, neighbourhood and management dimension;
- social dimension;
- security and pollution dimension; and,
- physical dwelling dimension

The re-categorisation of the residential environmental attributes to reflect the linear, and non-linear perception of residents was evaluated with the analytical Kano/three-factor model and the importance-performance (satisfaction) analysis (IPA). In addition, the effects of resident satisfaction or dissatisfaction with attributes on the behaviour of residents was limited to loyalty, word of mouth and willingness to pay. A quantitative survey procedure was utilised to obtain the perceptions of respondents to the study problem. Only the occupants' perception of satisfaction, importance associated and consequences on students living in off-campus SHFs were elicited in the survey.

1.12 ASSUMPTION OF THE STUDY

Assumptions are conditions that are taken for granted and accepted as true without validation or proof (Leedy & Ormrod, 2013:5). The following assumptions were made in the study:

- satisfaction has an influence on the selection of off-campus SHFs attributes;
- occupants of off-campus SHFs are not rational in their preferences for housing and environmental attributes;
- developers of off-campus housing facilities (SHFs) invest with the aim of making profit and growing property;
- the utilisation of attributes is influenced by needs that are subject to individual constraints; and

- the respondents, namely students, investors and professionals are well informed and are sufficiently experienced to evaluate the level of satisfaction that is derived from individual housing and environmental attributes.

1. 13 IMPORTANCE OF THE STUDY

Residential consumers in general as well as occupants of SHFs are getting more informed about the significance and contribution of individual attributes of housing to overall residents' satisfaction (Wong, 2002:218; Greene & Ortuzar, 2010:56). For investors to maximize returns on investment in the booming Nigerian off-campus SHFs market, a clear understanding of the needs and expectations of existing and potential student-occupants is required. In an attempt to meet customer needs and expectations, investors at times include attributes that are either below or above what the occupants need. However, these attributes may provide a higher level of satisfaction to the resident, but the demand for it may be low on their priority scale. The findings of this study provide the balance on the choice of SHFs subject to satisfaction with attributes, importance of attributes and the demographic characteristics of students. This knowledge enables investors in off-campus SHFs to identify and prioritise attributes that are vital to satisfaction with attributes and the importance attached to attributes by student-residents.

In addition, a considerable amount of research have been undertaken in the manufacturing and marketing sectors to evaluate the influence of customer satisfaction on behaviours such as loyalty, retention, word of mouth and willingness to pay (Hasan, 1996; Gerpott, Rams, & Schindler, 2001; Homburg, *et al*., 2005; Harkiranpal, 2006; Martensen *et al.,* 2010; Eisingerich *et al*., 2013). It was found that where positive user behaviour exists, it impacts positively on the profit of the business. This study therefore explored the relationship between satisfaction with attributes and importance attached to these attributes; and the consequences on the behaviour of residents. The behaviour investigated in the study are loyalty, word-of-mouth and willingness to pay for attributes which are critical to the success of housing investment.

1.14 STRUCTURE OF THE THESIS

The thesis is divided into seven chapters. Chapter One introduces the topic and provides the background to the statement of the problem. It also highlights the sub-

problems, hypotheses, importance and delimitation of the study. The chapter further addresses the contextual issue of the housing crisis in tertiary institutions globally and Nigeria in particular. It presents the state of off-campus accommodation in Nigeria and the effects this has on the demand for private SHFs. The challenges posed to investors by the multi-attribute nature of the residential environment and satisfaction was also discussed.

Chapter Two describes the political, economic and educational environment in Nigeria. It further presents the review of the literature on policies and the development of general residential and student housing. The existing practices and aspects of off-campus facilities such as objectives, design considerations, ownership structures and management were also examined.

Chapter Three deals with the concept of resident satisfaction with off-campus SHFs, aspects of housing (dwelling, location, environment, social and residents attributes) that drive satisfaction and effects of satisfaction with SHFs on residents' behaviour (loyalty/retention, word of mouth and willingness-to-pay). Models that are relevant to the development of a conceptual framework, for example, the three-factor model and importance-performance (satisfaction) analysis (IPA) were discussed.

Chapter Four introduces the theoretical and conceptual framework of the research that is anchored in the concept of satisfaction with off-campus SHFs.

Chapter Five describes the methodology adopted to conduct the research. The procedures that were discussed in this chapter include the research design/strategy, data collection instruments and consequent validity/reliability.

Chapter Six presents the analysis and interpretation of the results of the study. The problems and hypotheses were treated to illuminate the objectives of the study.

Chapter Seven presents the summary of findings, conclusions, contribution to knowledge and recommendations as well as the identification of areas that require further research attention.

CHAPTER TWO

THE EDUCATIONAL SYSTEM AND STUDENT HOUSING FACILITIES IN NIGERIA

2.1 INTRODUCTION

In chapter One, the background to the study problems, aim and objectives of the research were laid out along with an overview of the relevance of residents' satisfaction to off-campus SHFs developments and the consequences thereof. This chapter reviews the educational system in Nigeria vis-a-vis the student housing facilities in tertiary institutions. In developing the theoretical framework of this study, a review of related literature was conducted to establish a guide and reasonable boundaries for the research (Bak, 2004:17).

This chapter unfolds with a discourse of the structure of the geographical, political and education system in Nigeria which are relevant to understanding the prevailing SHFs environment. A theoretical analysis of the general housing and SHFs situation in Nigeria was undertaken. The emphasis was on the evolution and development of SHFs, housing types and the conditions of existing off-campus accommodation. The chapter further expounds the perceptions of satisfaction of students with attributes of SHFs and the consequences on their behaviour.

2.2 AN OVERVIEW OF NIGERIA

The Federal Republic of Nigeria occupies a land area of about 924,000 square kilometres and lies within latitudes 4° and 14ℕ of the equator and longitudes 2° and 15℈ of the Greenwich meridian. Nigeria shares land borders with four countries, namely, Benin in the west, Chad and Cameroon in the east, Niger in the north and the Atlantic Ocean in the south. Two major rivers, namely, Niger and Benue run from the north to the south. In 2014, the population of Nigeria was estimated at 174,508,000 (UN, 2013: 51-55). The implication of the explosion in population almost invariably translates to higher demand for education and thus a greater need for student housing, especially off-campus student housing facilities (SHFs).

Nigeria gained independence from the British Empire in 1960 to become a constitutional Federal Republic. Since then, Nigeria has operated different forms of

government, notably, British-styled parliamentary system (1960-1966), the military system (1966-1979; 1983-1999) and American-styled presidential system (1979-1983; 1999-date). The American-styled presidential system of government which is in operation presently is comprised of three divisions; namely, the executive, legislature and judiciary and each is replicated at the federal, state and local government levels. The scope of responsibilities of these arms of government is distinct but are sometimes overlapping. For example, any of the three arms of government is legally permitted to own and operate a tertiary institution subject to fulfillment of operational requirements.

The executive arm of government is composed of the President, Governor and Chairman as head of the federal, state and local government levels respectively. Presently, there are 36 states, the Federal Capital Territory (FCT) and 774 local government areas in Nigeria. For political convenience, these states are further categorised into six geopolitical non-administrative regions, namely: South-South, South-East, South-West, North-West, North-Central and North-East (see Figure 2.1).

Figure 2.0.1 Geopolitical regions in Nigeria

Source: Brown (2009:84)

To cater for the local population and ensure the national spread, the tertiary institutions that are owned by the federal government are evenly distributed among states and geopolitical zones. The coverage of this study is limited to selected tertiary

institutions in the South-South geopolitical region of Nigeria. The reason for selecting the South-South Nigeria is justified in section 5.4.2 of this thesis.

2.2.1 Languages and religions

Linguistically, there are over 371 ethnic groups in Nigeria and the dominant groups are the Hausa, Ibo, Yoruba, Ijaw, Kanuri, Edo, Ibibio, Nupe, Tiv, Urhobo and Igala (Nigeria Population Commission, 2006; William, 2008:33). English is the official language. Nevertheless, Pidgin English is widely employed as a medium of communication within and among ethnic groups. Nigeria is a multi-religious country and is made up of Christians, Muslims and adherents of traditional beliefs (Brown 2009: 83).

2.2.2 Economy and finance

The economy of Nigeria is the largest in Africa (The Economist, 2014) and has recorded an impressive average growth rate of 7% over the past decade (FGN, 2013). Nigeria has an abundant reserve of natural resources which include crude oil, natural gas, bitumen, coal, tin, limestone, marble and bauxite, iron ore, niobium, lead and zinc among others (Shu'ara, 2010:3). Recently, revenues from crude oil accounted for over 80% of government income, 95% of total export receipts and 90% of foreign exchange earnings (Watt, 2010:34).

The government of the Federal Republic of Nigeria operates a consolidated account to hold earnings at the national level and funds are subsequently disbursed to the federal, state and LGAs governments based on the following statutory sharing formula (Lukpata, 2014: 36).

- Federal government and the Federal Capital Authority, Abuja (52.68%);
- 36 state governments (26.72%); and
- 744 local government councils (20.60%).

The statutory sharing formula is reflected in the level of subvention made to education institutions owned by the federal, state and local governments for the development and maintenance of infrastructures such as housing. The implication of the increase in Nigerian oil exports means that more money will be available for the government to develop the local economy, including the educational sector. Currently, agitation is

ongoing for a new revenue allocation formula that proposes a reduction for the federal government and an increase in the share of states and local government. Should this happen, the allocation to the education sector would probably reduce with a negative consequence on allocation to federal institutions. The fortunes of the education system and by extension, the SHFs, are directly tied to the state of the economy. As the economy expands, more job opportunities are created with the attendant need to train and re-train to get better job placement. In addition, an increase in the personal income of parents translates into an increased ability to send their children for higher education. This development, invariably leads to an increase in students' enrolment and increase in the demand for student housing. A further improvement in the growth of the economy is limited by the under-exploitation of other natural resources and over dependence on crude oil as the main source of revenue and consequently the expansion of SHFs facilities in tertiary institutions.

2.3 OVERVIEW OF SOUTH-SOUTH NIGERIA

This study focuses on tertiary institutions in the South-South geopolitical region of Nigeria; therefore, a brief overview is presented. South-South, Nigeria, is situated in and around the Niger Delta and occupies an area of about 85,000Km^2 (9.2% of Nigeria land mass). It is considered to be one of the largest wetlands in the world. This geopolitical region consists of six out of the 36 states in the federation, namely, Akwa-Ibom, Bayelsa, Cross-Rivers, Delta, Edo and Rivers states. The states in the region have a combined population of 26.3 million, which is about 15% of the population of the entire nation.

Economically, revenue from resources from the South-South region accounts for over 95% of export earnings from Nigeria and 80% of total national annual income (O'Neill, 2007:1). Though, the contribution of the revenue from the sale of crude oil from this region to the national economy is enormous, the state of existing infrastructure including housing stock in this region is suboptimal. The crude oil reserves in the South-South region are projected to be around 31.5 billion barrels, representing about one percent of the total world crude oil deposit (OPEC, 2013). The existence of this wealth does not, however, translate to adequacy in residential or infrastructural developments when compared to what is obtainable in other oil-producing nations in the OPEC group (Watt, 2010:34). Furthermore, infrastructure development in the area

is adversely affected by conflicts arising from agitation over resource control (Ikelegbe, 2001:437). A study by Ojogwu and Alutu (2009:71) reveal that SHFs in the region are grossly inadequate in terms of quality and quantity despite the high financial potential that exists in the area.

2.4 AN OVERVIEW OF THE EDUCATION SYSTEM IN NIGERIA

The sections that follow explore the past and current education policies, categories of education systems and the funding of education, higher education institutions (HEIs) and the challenges of tertiary education in Nigeria. Education is viewed by government as an instrument for national growth (National Council of Colleges of Education (NCCE, 2013) and is therefore used as a tool to foster the development of all citizens in a bid to promote a prosperous society (FME, 2013). Therefore, the responsibility to develop, formulate and coordinate education policies is shared by governments at the federal, state and local levels together with active participation of the private sectors.

2.4.1 Higher Education Institutions (HEIs) and regulatory bodies

Several reports show that a positive correlation exists between existing education policies and the level of development in a society (Imam, 2012: 183). Education policies are set to define principles and associated guidelines, plans or courses of action that are required by government to make decisions on the development and administration of education. To date, Nigeria has adopted several policies on education with a goal of stimulating education as a driver of growth. The Ashby Commission in the late 1950s recommended the creation of three additional universities as a tool to achieve national economic expansion and the social emancipation of citizens in Nigeria (Imam, 2012: 186). Since then, a series of policies on education have been put in place to stimulate education growth.

Since the Ashby Commission, major education policy frameworks have been formulated to direct actions on the much needed scientific and technological growth in Nigeria. Presently, the education sector in Nigeria is comprised of three major divisions, namely: the basic and primary schools, secondary and technical-vocational education and training (TVET), and the tertiary institutions (Shu'ara, 2010:19).

The number of tertiary institutions has increased over the years. Currently, there are 121 universities, 74 polytechnics and 60 colleges of education in Nigeria (NUC, 2014;

NBTE, 2014; NCCE, 2014). In addition, tertiary institutions and academic programmes in Nigeria are regulated by dedicated statutory bodies to ensure compliance with the National policies on tertiary education. These regulatory agencies include the Nigeria Universities Commission (NUC), National Board for Technical Education (NBTE) and the National Colleges of Education Commission (NCCE) and are put in place to ensure the smooth implementation of the National policies on tertiary education. The increase in the number of tertiary institutions, thus translates into an increase in the cost of financing education and an increase in the student population and demand for SHFs.

Nigerian laws allow for both public and private ownership of all types of educational institutions (Obasi, 2008:167). Public tertiary education institutions in Nigeria are categorized as public institutions (federal, state and local) and private institutions. The types and ownership structures of tertiary institutions in Nigeria and South-South region (number in bracket) are shown in Table 2.1.

Table 2.1: Ownership profile of tertiary institutions in Nigeria and South-South Nigeria

Institutions	Federal	State	Private
Universities	25 (6)	35 (6)	41 (6)
Polytechnics	21(2)	38 (8)	15 (1)
Colleges of Education	21	38	1

Source: UNESCO Institute of Statistics (2008); NUC (2014), NBTE (2014), NCCE (2014)

This is an indication that the distribution of institutions in the South-South geopolitical zone is high compared to the other regions.

2.4.2 Challenges of tertiary education in Nigeria

Over the past decades, the education sector in Nigeria has encountered several challenges. Core among these challenges is the reduction in funding for the implementation of policies and programs (FME, 2013). The latter can be linked to the

fall of the price of oil in the early 1980s, and to date, tertiary institutions are yet to regain the lost momentum in infrastructural growth (Nwagwu, 2011; Odukoya, 1999). Secondly, tertiary education in Nigeria is highly subsidised; as such, administrative charges contributes marginally to the finance of the institutions (Bamiro, 2012:10).

Currently, public tertiary institutions are primarily financed with subventions from the federation account while private institutions are funded by their proprietors (NESG, 2011:7). Specifically, tertiary education in Nigeria is supported through three primary sources; statutory budgetary allocation and special trust fund, internally generated revenue such as tuition fees and, donation and endowment (Shu'ara, 2010:19; NESG, 2011:8; Samuel, 2013: 54). In recent times, funding from special agencies such as the Tertiary Education Trust Fund (TETFund), Niger Delta Development Commission (NDDC) and the Petroleum Technology Development Fund (PTDF) have been used to improve capacity building and the quality of infrastructure in tertiary institutions.

Collectively, the above challenges did not only impact negatively on the quality of education, but also on the ability of tertiary institutions to develop and maintain student housing facilities in the country.

2.5 GENERAL HOUSING SITUATION IN NIGERIA

The following section is used to describe the general housing situation in Nigeria. The shortage of adequate and affordable housing is a critical problem in developing countries (Ogu & Ogbuozobe, 2001:473) and the severity in terms of quality and quantity differs among these nations. As a result, strategies are developed to address this issue by government and non-governmental organizations (NGOs) at both international and national levels (Payne & Majale, 2004:13). Despite these efforts, over 1.2 billion people are said to live in slum worldwide (UN-Habitat, 2010). In Nigeria, the situation is not different as lack of accommodation is reported in different sub-sectors, namely: social, workers, family, and student housing (Amole, 2009; Ibem *et al.,* 2013).

2.5.1 Housing

Housing is seen to be much more than the design and construction of buildings. It encompasses an interplay of interrelated elements, such as the design, economic, social, cultural and policy factors, and how all these affect human behaviour and culture (Roskey & Green, 2006:II). Housing can be viewed as location specific and

durable, and the utility it provides comes from the structure itself as well as the neighbourhood (Clapham, 2005; Clapham, 2006; Roskey & Green 2006:139). Housing could, therefore, be described as a package of services that embraces both the physical structures, the environment as well as the services that are derived from it.

Other dimensions from which housing could be defined are the economic and social perspectives. Households spend a considerable percentage of their budget on housing for economic, social and psychological reasons. Critical functions of housing besides provision of shelter are the fulfilment of psychological identity, economic value, security or as a status symbol (Merril *et al*., 2006: IX). In addition, housing is a major contributor to the gross domestic product (GDP) of a nation that serves as an indicator of the quality of life of nationals (Roskey & Green 2006:139). With this in mind, the government uses housing as a stimulant of GDP growth through the formulation of relevant housing policies. These policies are directed at providing accommodation that is decent and affordable (Roskey & Green, 2006:140).

2.5.2 Housing policies

Housing policy highlights strategies and frameworks that are used by government, NGOs and individuals to correct problems that exist in the housing sector. Government uses these policies to influence the quantity, quality, price and ownership of residential buildings (Malpas, 2005:117). At the forefront of the development of housing policy are the United Nations (UN), national governments and the Non-governmental organisations (NGOs); and their efforts have yielded significant insights into housing issues which are discussed in sections 2.5.4 and 2.5.5 (Clapham, 2005: 8).

2.5.3 Efforts at the international level

The UN in conjunction with governments and NGOs have convened two international conferences, namely, Habitat I and Habitat II to proffer solutions to tackle human settlement problems in the world. The core objectives of these meetings were to provide adequate shelter for all and make human settlements safer, healthier and more liveable, equitable, sustainable and productive (United Nations (UN), 1996). The United Nations Conference on Human Settlements commonly referred to as Habitat I was held in Vancouver, Canada in 1976 (UN, 1976). It focused mainly on strategies that are needed to redress the deplorable conditions of human settlements that were

prevalent in developing countries. The principal contributions of this document are the recognition of housing as a basic human right and, as an instrument and object of transformation. It recommended close collaboration between government and local authorities for the deployment of effective human settlement policies and spatial planning strategies.

The failure of these measures to achieve the desired objectives prompted a Second United Nations Conference on Human Settlements popularly called the City Summit or Habitat II in Istanbul, Turkey. Habitat II underscores the need to forge a collaborative partnership between government and the private sectors at the international, national and local levels in order to improve the living environment (United Nations, 1996:1). This is based on the recognition that government alone cannot meet all the housing needs of the world and, therefore, a close collaboration with the private sector, local communities, academic institutions and NGOs is required. Thus, the role of government was, therefore, limited to the provision of an enabling environment and regulating the housing market. This is done with a view of allowing and enabling the private sectors and other stakeholders to take the lead in housing delivery (Payne & Majale, 2004:13).

Apparently, the crisis in human settlements and housing provision is still very much alive as national government grapple with the implementation of these policies. These policies are also applicable to and impact on the provision of SHFs, primarily privately owned off-campus SHFs that are regarded as a sub - sector of the residential housing sector. It can be inferred that, attaining greater effectiveness in housing delivery will translate into more and better quality residential accommodation including off-campus SHFs.

2.5.4 Perspectives on housing delivery in Nigeria

Despite successive efforts by the government of Nigeria to formulate policies and programs to encourage housing development, critical challenges still exist in housing delivery in all residential sub-sectors. These challenges include housing shortages, low-quality housing delivery and procurement of accommodation that the middle and low-income earners could not afford (Ademiluyi 2010:154; Daniel & Hunt, 2014:203).

Historically, different instruments were used by government over the years to stimulate housing delivery, and are presented in Table 2.2.

Table 2.2: Summary of government initiatives in housing delivery in Nigeria

Programme	Year	Objectives	Shortcomings
African Development Bank	1926	Provides loan for residential development.	Short-lived due to poor funding.
Nigeria Building Society	1956	Initiated by government to provide housing loans to both civil servants and the general public.	Short-lived due to poor funding (Kabir & Bustani, 2008:4).
Federal Housing Authority (FHA)	1973	Acts as an advisory body to government on housing matters, and also develops and manage housing schemes approved by government across Lagos and other state capitals.	Attained relative success, but the achievement was not sustainable (Kabir & Bustani, 2008:4).
National Housing Policy	1991	Established financial mechanisms and incentives for capital market to invest in housing development. Recommended the establishment of the Federal Mortgage Bank of Nigeria (FMBN).	Was poorly implemented.
National Housing Fund (NHF)	1991	Funded through the contributions of 2.5% of workers' salary. Loans are granted to workers through primary mortgage institutions (PMIs) to develop new and upgrade. existing houses (Kabir & Bustani, 2008:4)	Phased out in 1997 due to inability to meet the request for loans and rising cost of building construction.
Federal Mortgage Bank of Nigeria (FMBN)	1997	Acts as apex mortgage lending agency. It disburses loan to housing developers PMIs.	Hindered by insufficient funds to loan request.
New National Housing Policy	2002	Provides funds through mortgage finance and proposes frameworks and strategies for housing procurement	Hindered by bureaucratic bottlenecks

Source: Kabir & Bustani (2008:4); Jiboye, 2011:176);

In 2002, the housing and urban development policy was proposed and put into effect in 2004 with the mandate to meet the provide fund through mortgage finance to meet the housing needs of Nigerians (Jiboye, 2011:180). Despite the active collaboration of the public sector and the private sectors, these policies and programmes failed to provide the much needed relief in housing delivery of which the private off-campus accommodation is a sub-sector (Ogu &Ogbuozobe, 2001:474; Keivani & Werna, 2001:72).

2.5.5 The roles of the public sector in housing delivery in Nigeria

The role of the public sector in housing delivery in Nigeria has largely remained that of a provider and enabler of residential housing delivery (Ogu & Ogbuozobe, 2001:72). As housing provider, government engages the services of commissioned agencies and consultants to design and construct residential houses either for lease or sale to public workers and the general public (Ndubueze 2009:29). As outlined in Table 2.2, successive direct involvement by government in housing delivery has often failed to deliver the needed results. Key reasons attributed to these failures include the following (Ademiluyi, 2010:158; Bustani, 2009):

- inconsistencies in housing policies;
- inefficient credit system;
- inability of public workers to finance the housing cost or mortgage from salary; and,
- lack of political will in decision making and politicisation of housing issues.

In addition, houses constructed through direct government interventions were found to be relatively expensive and therefore not affordable by the middle and low-income earners. Critical also to the failure of government efforts is that policy makers do not take the needs of housing users into consideration in the design and construction of mass housing. The attitude, perception and behaviour of residents to the quality of housing attributes are also vital to the success in housing delivery (Clapham, 2005:8). This affirms the conception of City Summit (UN, 1996) that the inputs of recipients of housing dwellers are necessary for the determination of the required housing quantity and quality.

As enabler, the role of government is restricted to the creation of an enabling environment suitable for private sector driven processes (Payne & Majale, 2004:16). These roles according to Ogu and Ogbuozobe (2001:479) include the following:

- development of policies and building regulations;
- provision of access to land;
- development of infrastructure;
- access to quality and affordable building materials, and,
- provision of finance.

With the government as an enabler of housing development, there is a shift in thinking that housing programmes should be private-sector driven instead of government-led (Ndubueze 2009:33).

2.5.6 Private sector participation in housing delivery

In Nigeria, residential housing delivery is dominated by the non-public operators such as the private households and individuals, community-based organisations (CBOs), NGOs and commercial realtors (Ndubueze, 2009:34). Critical constraints faced by these categories of housing developers include lack of government support, unfavourable environment and inadequate institutional framework (Ademiluyi, 2010), and all these have impacted negatively on their effectiveness and efficiency. As a consequence, these limitations impose additional cost on housing delivery (Ndubueze, 2009:35) which include a higher price for housing, mortgage and rent. As a result, recouping the cost of housing finance to offset the loans and savings used for the development of the house takes longer.

2.5.7 Regulation of building construction in Nigeria

In order to ensure that buildings perform credibly and satisfy the needs of users, residential buildings are designed and built to fulfil minimum requirements as specified by applicable building regulations and codes. These standards and codes serve as processes and procedures for controlling the development of land and buildings (Aluko, 2011:144). Existing development control instruments used to regulate land and building development in Nigeria are enacted by the government in collaboration with relevant professional bodies in the building industry. Prominent building regulations, laws, professional codes and standards that are used to govern the design and

construction of residential buildings in Nigeria include (Dahiru, Abdulazeez & Abubakar 2012: 857):

- The Nigeria Urban and Regional Planning (Decree No. 88, 1992) laws guide the physical development of the environment;
- The National Building Code sets the minimum standards for building pre-design, design, construction and post construction stages with a view to safeguarding quality, safety and proficiency in the building industry;
- British standards (BS) ensure that the standards of quality for goods and services are assured and prominent BS used in the building and construction category is the BS 8110 which sets the standards for the design of reinforced concrete structures.
- state laws and local government edicts set out regulations for the determination of setbacks, approval process and necessary inspections required during construction stages.

2.6 THE CONCEPT AND PHILOSOPHY OF STUDENT HOUSING DEVELOPMENT

Student housing facilities (SHFs), especially the privately developed off-campus facilities are an essential component of the housing industry and are also affected by the general housing policy framework and regulations discussed in section 2.5. Tertiary institutions are concerned about the conditions of buildings that serve as residences for their students. Consequently, the philosophy behind SHFs development is primarily to create an environment that ensures that a close and complementary relationship exists between students and their faculty (Akingbohungbe & Akinluyi, 2012: 69). Thus, SHFs are perceived as integral parts of the educational system. The Oxford and Cambridge Universities championed the earliest initiative to develop comprehensive residential campuses that aimed to promote the academic, intellectual and social development of their students (Fourbert *et al.*, 1997: 41; Macintyre, 2010:110; Parameswaran & Bowers, 2012:1). Tertiary institutions are propelled by these advantages associated with SHFs to consider and adopt an appropriate model that guarantees an environment where these gains could be maximized.

Three basic SHFs philosophies/models are common with tertiary institutions; namely, the all-inclusive residential, dual-residential and non-residential campuses (Yusuff, 2011:107). In the all-inclusive residential model, the majority of students are accommodated in SHFs that are owned and operated by institutions either within or outside the campus. This model originated from the philosophy pioneered by the Oxford and Cambridge (Oxbridge) universities in the 1700s. The advantages of this approach are numerous. For example, SHFs that are built and maintained by institutions are popular with both students and parents as they enable easy transition to college life and promotes social relationships (Christie *et al*., 2002: 216). Despite these gains, certain shortcomings are associated with SHFs in an all-inclusive residential model. A study by Amole (2009:76) on resident satisfaction with on-campus student residences in Nigeria found that problems such as congestion, noise and lack of privacy are common with institutional SHFs. Currently; tertiary institutions in Nigeria are finding it difficult to build and manage on-campus housing at a level that corresponds to the contemporary needs of more affluent students. As a result, students are increasingly demanding for high-quality accommodation with better amenities (Macintyre, 2010:110) that exists in housing that are built and managed by private investors outside the campus environment. Therefore, other residential approaches such as the dual-residential system and the non-residential system are considered and adopted to meet the accommodation needs of students (Amole, 2005:211).

The dual-residential model is structured to incorporate both the on-campus and off-campus SHFs features. In this model, students are accommodated in on-campus SHFs for a period and are thereafter left to source for their accommodation in off-campus SHFs. Institutions that adopt the non-residential approach do not build or maintain any on-campus SHFs but rely wholly on privately developed off-campus SHFs as the only source of students' accommodation. These off-campus SHFs are of different types and quality, and are presumed to be better than on-campus accommodation.

Current research has also shown that the changing needs and aspirations of students are met better in off-campus SHFs (Christie *et al*., 2002:218; Muslim *et al*., 2012: 603). These requirements include:

- opportunity for independence;
- privacy;
- freedom from noise and satisfaction of studying in a personal room;
- choice of whom to live with;
- choice of housing attributes;
- choice of accommodation they can pay for;
- possibility of nearness to friends, shopping mall, worship centre and social centres;
- private meal plan; and,
- private amenities.

One drawback of off-campus accommodation includes the limited social interaction and the poor physical conditions of these buildings. In addition, tenancy in off-campus SHFs is affected during non-teaching periods of the academic year, and Thomsen (2007:35) maintained that the level of vacancy depends highly on the qualities of the SHFs.

2.6.1 Characteristics of SHFs

A variety of opportunities is available to students on where to reside during their period of study in tertiary institutions. These options include a choice of living in on-campus or off-campus SHFs. Off-campus SHFs options that are available to the student include living with parents or relatives, owned accommodation or rented off-campus accommodation (Fields, 2011:7) which are purpose-built or converted for use as SHFs. The type of ownership of SHFs goes a long way in influencing the characteristics of the building.

The characteristics of any residence is a function of the decisions that are made at the pre-design, design, construction and post-construction stages (Federal Government of Nigeria (FGN), 2006; Akingbohungbe & Akinluyi, 2012:69). SHFs conception begins with the constitution of the building team by the prospective investor. In the design of SHFs, Thomsen (2010:273) observed that student-occupants are flexible and easily adapt to different residential types and attributes, unlike other household groups that

are more exact in specifications. This flexibility in taste and demand by students is exploited by designers and developers alike.

2.6.2 Procurement of off-campus SHFs

Investment in off-campus SHFs and their operations is dominated by traditional landlords and entrepreneurial landlords (Rugg *et al*., 2001: 295). The former are small scale investors; the latter are landlords with wide interests in property in different locations. In Nigeria, off-campus SHFs ownership is dominated by traditional landlords who invest their savings to construct a building or convert a part of their residence to student accommodation (Akingbohungbe *et al.,* 2012). Two processes are adopted to develop off-campus SHFs; design and construction of purpose-built SHFs or conversion of existing buildings to SHF (Rugg *et al*., 2001:294). Purpose-built SHFs, like other residential housing, are procured with the developer/investor playing the role of initiator and financier of the project (Yusuff, 2011). The developer appoints the building team to produce the project brief, building documents, obtain necessary approvals and manage the building production processes. The needs of users and the level of attributes are determined at the planning and design stage, which is difficult at times. Professionals involved in the development of SHFs most often work independently of each other. Thus, each of these professionals deals directly with the building owners and independently of each other (Okolie, 2009: 1600). When this occur, errors in design are often overlooked or are passed on undetected.

Other problems associated with housing development which by extension affect SHFs also include the following (Okolie, 2011):

- inadequate incorporation of users' input in the development of building structures;
- lack of collaboration among the professionals involved in housing development; and,
- developers often assumed the role of the project supervisor even when they have little or no knowledge of building production processes.

The professionals involved in building procurement in Nigeria include the architect, structural engineer, quantity surveyor, estate surveyor, builder and land surveyor.

While it is true that purpose-built buildings are always best, existing buildings are also often converted to serve as student residences (Bromley, 2006:6; Akingbohungbe & Akinluyi, 2012:69). This is done by adjusting the components of the house and introducing attributes that are preferred by students. The conversion of residential buildings to SHFs often leads to 'studentification', a phenomenon in which a growing student population moves in large numbers into a traditionally non-student neighbourhood. Studentification has social, physical and economic consequences on the environment (Bromley, 2006:6). Socially, existing tenants are displaced and replaced with the student group. Associated physical challenges include the decline in owner-occupier residences, increase in noise level and indiscriminate disposal of refuse. Economically, other groups of residential users are less attracted to secure accommodation in an environment that is dominated by students. This, incidentally forces affected property owners to relocate and convert their residences to student housing so as to acquire tenants and thereby derive income from such properties. In addition to the conversion of houses to student accommodation facilities, landlords lease part of their house that is not needed to students. In both cases, the buildings are either upgraded to meet users' requirements or leased out in their present states to students.

2.6.3 Classification of off-campus SHFs

Different criteria are used to classify SHFs. Firstly, SHFs are classified based on their physical and architectural configurations (Thomsen, 2007). For example, the physical configuration of the house could be designed in a way where room are fitted with amenities for the exclusive use of the occupants or rooms are grouped together to share the amenities.

Secondly, off-campus SHFs are also classified based on their mode of furnishing, either owner-furnished or occupant-furnished. Owner-furnished and self-furnished apartments have their strengths and drawbacks. The owner-furnished apartments are fitted with basic items that the students may or may not need. The level of furnishing differs among residences and is influenced by taste, social values, technology and level of income among others (Thomsen, 2007). One of the drawbacks of owner-furnished SHFs is that occupants may pay for certain amenities that are not required by them. As a result, students who prefer to furnish their accommodation to their taste

go for self-furnished accommodation. The rent is relatively cheaper in self-furnished SHFs compared to owner-furnished accommodation. However, there are other costs, such as cost of occupation, relocation, maintenance and replacement of broken items associated with the self-furnished apartment.

Thirdly, some SHFs are developed to target a particular segment of the student population using variables like gender, marital status and disability factors. Fourthly, SHFs could also be classified based on the rent, the tenure system and payment system. The rent for SHFs could be paid either on an annual, semester, quarterly or monthly basis with or without an option to retain the accommodation in subsequent sessions.

Finally, the age of the building is also an important factor in the classification of SHFs. SHFs buildings could also be classified either as new or old buildings. New buildings are mostly purpose-built structures that are planned and designed for use as SHFs residences. A large number of SHFs in Nigeria are traditional buildings that are no longer used for family habitation (Akingbohungbe *et al.,* 2012:69). These buildings are often refurbished to update amenities like water, toilet and bath systems. The extent of structural and architectural alteration determines the degree of renewal required which is one of the factors that are used to determine rent.

2.6.4 Leasing of off-campus accommodation

The leasing of SHFs is the process of securing a contractual agreement between a student-occupant and property owner (Bromley, 2006:6). The lease agreement specifies the responsibilities of both parties and ensures that the interests of both parties are protected. Salient features of a lease agreement include the framework on how to manage the dwelling, the frequency and types of maintenance, rent and tenancy among others. Most often, misunderstanding arises between the student-occupant and the owner of a residence as a result of a defect in the lease agreement. A defective lease agreement imposes consequences such as loss of funds for the house owner, wilful damage to property without remedy and default in the payment of rent by occupants. On the user side, a good lease agreement insulates the student-tenants from an arbitrary increase in rent and also forced eviction from residence (Yusuff, 2011:120).

2.6.5 Process for selecting an accommodation

The student housing market is characterized by building differentiation. Consequently, selecting a residence of choice is often a complex process. Residential choice focuses on the selection of a new residence and/or the decision to move to a new dwelling when the resident is dissatisfied with the current housing conditions (Coulombel, 2011:5). In making a decision on the residence, most tenants first define and identify their needs, and then proceed to select attributes or set of attributes that would satisfy these desires (Wong, 2002:217). This complexity is explained by Coulombel (2011:5) who observed that though the need to acquire accommodation may exist, but the actual decision may be influenced directly by the existing competing attributes of accommodation environment.

The dilemma in picking an accommodation to optimize satisfaction is, therefore, a complex issue. This is made more critical by the nature of SHFs which, unlike most durable brands/products, are not homogenous (quantity and quality) but heterogeneous. Clearly, no two buildings are the same, even when considered under same or similar categories. Consequently, residents are faced with the predicament of how to identify and define the set of attributes of the residential environment that best optimise satisfaction (Coulombel, 2011: 3).

In summary, the concept and development of student housing focuses on procuring different SHFs models with wide-ranging characteristics for prospective residents. Recent studies have revealed that the choice of SHFs by type and quality is influenced by the demographic characteristics of students. The influence of the demographic characteristics of students on SHFs performance is discussed in the next session.

2.7 The influence of the demographic background of students on SHFs development

Having discussed the concept and development of student housing in section 2.6, this section focuses on the influence of the demographic background of students on SHFs development. The impact of the social-physical background (demographic, socioeconomic and educational characteristics) of students in SHFs development and utilization has received considerable attention from researchers (Najib, Yusof, & Sani, 2012:64; Kaya & Ertrip, 2001:35). These studies have established that a relationship

exists between user demographic characteristics, the perception of performance of residential attributes, perception of satisfaction, and the consequences of the behaviour of residents (Macintyre, 2010:114; Najib, *et al*., 2012: 66). Important demographic characteristics of students that are essential in SHFs development include age, marital status, income level and years of study (Oppewal, Poria, Ravenscroft, & Spencer, 2005). These demographic characteristics of students act as intervening or moderating variables in the perception of satisfaction with attributes of housing. As results, investors are keen and inspired to satisfy the needs and desires of different categories of students by including relevant attributes in the buildings that are offered as off-campus accommodation (Pullan, 2012:2). The studies reported that the perceptions of quality or performance or SHFs attributes are influenced by the demographic characteristics of students (Najib, *et al*.,2012:64; Oppewal *et al.*, 2005; Kaya & Ertrip, 2001:35). The results of studies in literature on the relationships between the various demographic characteristics of students and resident satisfaction are discussed in the following sections.

2.7.1 Gender

The relationship between gender and residential satisfaction is well reported in the literature on on-campus SHFs (Oppewal *et al*., 2005). Li *et al.* (2005) reported that female students were more satisfied with the attributes of SHFs than their male counterparts. In a study by Kaya and Etrip (2001:35) in Turkey, it was reported that between gender and privacy, female students preferred accommodation with shared facilities while male students preferred exclusive access to residential amenities. Similar studies in Malaysia by Khozaei *et al*. (2010:516) also supported this view. However, in a study in Nigeria, Amole (2005:201) reported contrary results that male students prefer shared accommodation while female students prefer a room with personal amenities. A variety of reasons was attributed to this inconsistency. Meir (2007) suggested that the inconsistency is attributed to the use of the space. When the space is used mostly for study, sleep or relaxation, residents would prefer a high degree of privacy. Whereas, when it is used as a place of social interaction, occupants would prefer shared rooms and facilities. In a related study, Kaya and Etrip (2001:516) reported that female students experience a higher level of discomfort in a smaller space than their male counterpart.

2.7.2 Economic status

The economic capabilities of student play an important role in residential choice. Thomsen and Eikemo (2010:273) reported that access to better quality SHFs is a function of the amount of money at the disposal of the student. Mostly, students in tertiary institutions are funded with money received from relatives, earned savings, loans and grants and salary from a part-time job. Petruzzellis *et al*. (2006:349) reported that wealthy students or those who work part-time jobs prefer to live in high-quality off-campus residences. These students who have access to money could easily pay higher rent for highly valued SHFs as well as alter unsatisfactory elements of their residential units to suit their taste. This could be done through the introduction of furniture and decoration in order to increase their level of satisfaction with the residential environment (Frank & Enkawa, 2009). Therefore, an increase in finance empowers students to demand better-quality attributes and vice versa.

2.7.3 Study year and previous home experiences

Experience with housing attributes is an important factor in SHFs development and perception formation (Thomsen, 2007:577). Thus, as the student progresses academically, more interaction with SHFs is gained with previous homes and are important in perception formation. Previous home experience refers to the nature and type of homes students had lived in prior to the period of interest. For new students, previous experience is an gained from parental home experience, whereas for returning students, it includes the experiences from both parental home and past campus SHFs (Fourbert *et al.*, 1998:41; Thomsen, 2007:577). The studies by Fourbert *et al.* (1998:41) and Thomsen (2007:577) observed that privacy, relationships and conditions that exist in homes are critical in the determination of satisfaction with SHFs by students.

2.7.4 The influence of change in socio-demographic characteristics of residents

The utilization of housing goods is not a one-off process, but one that spans over the entire period that the building is in service. Therefore, a likelihood exists that as the period of stay in residence by occupants draws out, changes are experienced in the quality of the atttributes of the building as well as in the characteristics of residents. A

change in the characteristics of residents has an impact on their current needs and preferences which also affect the demand for housing attributes. A change in the quality of attributes of building is also experienced during its service life. The service life of a building structure is affected by factors such as design, quality of material, standard of workmanship, use of buildings and changes in use, the frequency of maintenance and repair work ((Blok *et al*., 2007:2). Apparently, what is viewed as satisfactory for one generation of residents may be understood differently by another group. Macintyre (2010:114) suggested a short-term or long-term renovation plan to prevent buildings from degenerating into obsolesce as well as bringing them to a state where the need of current users will be adequately met.

2.8 CONCLUSIVE REMARKS

In summary, an overview of the political, economic and educational environment of Nigeria was conducted. It further reviewed the literature on policies affecting general residential and student housing development. The existing practices and aspects of off-campus facilities such as objectives, design considerations, ownership structures and management were also highlighted. The main findings were that off-campus accommodation varies in types, ownership, quality and quantity of attributes which in turn have considerable influence on preference for accommodation by students. Equally significant in the choice of residence are the demographic characteristics of residents such as age, year of study, income level, gender and the previous home experience which are critical to perception of satisfaction with residential housing.

CHAPTER THREE

SATISFACTION AND STUDENTS HOUSING FACILITIES: A CONCEPTUALIZATION

3.1 INTRODUCTION

This chapter presents a review of general consumer satisfaction theories, residential satisfaction and relevant models. Satisfaction can be viewed as a reliable indicator of performance, quality of life, well-being and happiness of consumers. The concept of satisfaction or dissatisfaction with housing attributes or service in this study refers to the residents' experience of pleasure or disappointment after comparing perceived performance with expectations (Mohit, Ibrahim, & Rashid, 2010: 19).). Satisfaction is defined as a consumer response to the evaluation of the perceived discrepancy between prior expectations and actual performance of the product as perceived after it is consumed (Oliver, 1977, 1981; Day, 1984). Therefore, businesses that aspire to grow, adopt the idea of satisfaction to adequately assess consumer preferences and, create products to meet these expectations (Grigoroudis & Siskos, 2010: 4). Judgement of satisfaction is made based on the fact that the features of a product or service has provided or is providing a pleasurable level of consumption-related fulfilment.

Satisfaction is a multi-disciplinary and relative concept. Therefore, a number of theories that reflect contextual issues and areas of applications are proposed to explain and evaluate the processes through which consumers form their judgement on the performance of a service or products. (Parker & Mathews, 2001:38). The theories of satisfaction that are influential in resident satisfaction are discussed in the following sections.

3.2 CONSUMER SATISFACTION THEORIES

Key consumer satisfaction theories that are influential in the development of residential satisfaction theories and models are discussed in this section. The two perspectives that guide the development of satisfaction theories are the *process* or *outcome* approaches (Yang & Zhu, 2006: 668; Parker & Mathews, 2001: 38). The *process* approach originated from the propositions by Cardozo (1965) and Oliver (1977, 1981). The *process* approach stresses more on the antecedents of satisfaction rather than

satisfaction itself (Parker & Mathews, 2001:38). The *process* approach focuses on identifying existing gaps between expectations and the perceived performance of service or product to explain consumer satisfaction (Grigoroudis & Siskos, 2010: 4). Dominant consumer satisfaction models are the dissonance theory (Festinger, 1957), assimilation theory (Sheriff & Hovland, 1961), contrast theory, adaptation theory (Helson, 1947, 1964), the expectancy-disconfirmation theory (Oliver, 1980), value-perceptual theory and the equity theory.

However, satisfaction as an outcome focuses on the nature of satisfaction which includes state, emotion and fulfilment and the state (Parker & Mathews, 2001:38).The concept of satisfaction as a process and as an outcome are discussed in the following sections.

3.2.1 Process approach

The consumer satisfaction theories that are classified among the process approach are discussed in the following sections.

3.2.1.1 Dissonance theory

Festinger (1957) introduced the concept of 'dissonance'. A dissonance is formed when a consumer who expects a superior product instead receives an inferior product. The gap between what is expected and what is received causes the consumer to experience cognitive dissonance (Oliver, 1977: 480). The dissonance theory proposed that consumers reduce the displeasure caused by the gap between expectation and performance by discounting the disparity between the performance of the expected superior product, and inferior product received (Cardozo, 1965:244). Disconfirmation is made to cause the perceived performance to conform to initial expectation levels.

This theory is criticised for its failure to explain the problem of inappropriate re-evaluation in cases of large negative disconfirmation as Woodruff *et al.* (1983) explained that tolerable and non-tolerable zones exist for every consumer. Therefore, consumers find it easy to re-evaluate highly negative disconfirmation between expectation and performance that falls within the acceptable zone.

3.2.1.2 Assimilation-contrast theory

The assimilation-contrast theory proposed by Sheriff and Hovland (1961) is based on Festinger's (1957) dissonance theory. The assimilation-contrast theory suggests that individuals are reluctant to acknowledge the discrepancies from previously held positions and therefore adjust the perception of performance into the prior expectancy level. In other words, consumers distort their initial expectations to coincide with product performance or raise the satisfaction level by minimizing the importance of the disconfirmation experienced (Yüksel and Yüksel, 2004:8).

3.2.1.3 Contrast theory

The contrast theory postulates that consumers exaggerate the discrepancy between initial expectation of performance and actual performance of the product in the direction of the gap (Yi, 1990; Oliver, 2010:86). As a consequence, products that performed below expectations are measured poorer than they are while those that performed beyond expectations are rated more than justified (Oliver, 1977: 81).

3.2.1.4 Adaptation level theory

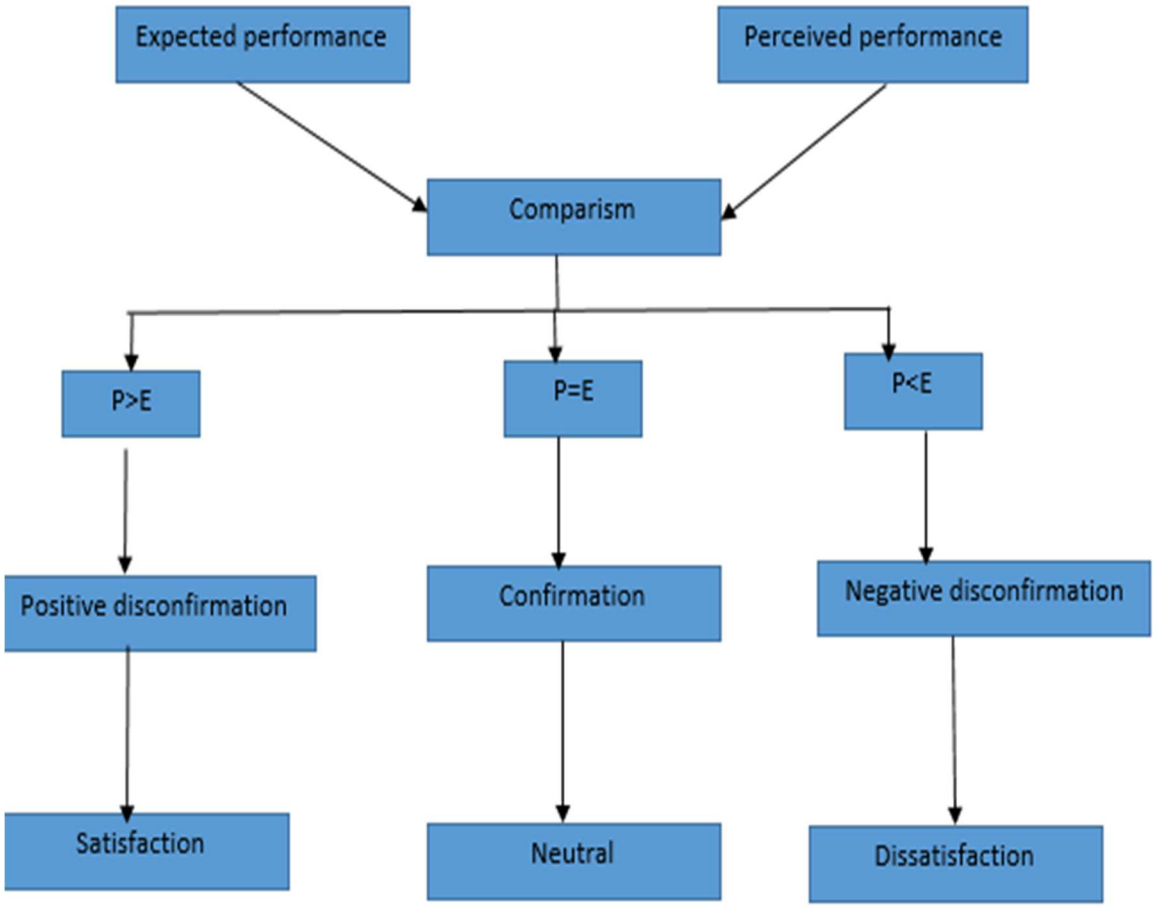
The adaptation level theory of satisfaction is based on Helson's (1947, 1964) proposition. The theory postulates that consumers often use the adaption level of performance that was formed from prior consumption experience as a baseline in making subsequent subjective performance judgement (Oliver, 2010:85).

3.2.1.5 The expectancy-disconfirmation theory

The expectancy-disconfirmation satisfaction model (EDSM) proposed by Oliver (1980) is based on the Howard and Sheth (1969) proposition that views satisfaction as the degree of congruence between aspirations and the perceived realities of experience. The expectancy-disconfirmation model compares the discrepancy between the consumer initial standard of expectations and the perceived deviation of performance from the initial reference point (Oliver, 1980:460).

Figure 3.1 shows how satisfaction or dissatisfaction disconfirmation is formed from the difference between performance and expectation.

Figure 3.1 Expectancy-disconfirmation theory model



From Figure 3.1, it follows that consumer compares what is expected and what is received to arrive at a judgement on their level of satisfaction that either confirms or disconfirms initial expectations. Expectation represents a baseline comparison standard against which performance is measured and compared and is formed from needs and desires which are closely influenced by the experience of consumers. The outcomes of disconfirmation of performance and expectations are either negative, balanced or positive. Positive and balanced disconfirmation may lead to satisfaction while negative disconfirmation result to dissatisfaction (Parker & Mathews 2001: 39; Grigoroudis & Siskos 2010, 12; Burns & Bowling, 2010 : 99).

Applying the concept of EDSM to student housing, residents acquire a residence with pre-letting expectations about anticipated performance. The expectation levels, then becomes the standard against which the performance of the attributes is measured or judged. In line with the proposition of the expectancy disconfirmation model, if the

performance outcome matches the initial residents' expectation, confirmation occurs. However, this may not be so. Disconfirmation occurs where there is a difference between expectations and outcomes. Thus, when the performance of building attributes *exceeds* what the resident had initially expected, there is *positive* disconfirmation that may result in satisfaction. On the contrary, when the performance of housing attributes *falls* below initial expectations, there is *negative* disconfirmation which occurs and consequently leads to dissatisfaction.

Though better choices are made when the consumer relies on experiences to make a decision, the use of expectation as a construct to disconfirmed satisfaction is often criticised. This is based on the perception that expectation is dynamic, and it is affected by the time when it was measured (Yüksel and Yüksel, 2004:8). Furthermore, the model assumed that expectation is uniform among respondents and that everyone has precise expectations of all attributes prior to service experience.

Applied to SHFs, Thomsen (2007) in a study of SHFs, evaluated the impact of students home experiences on SHFs preferences. The study revealed that a relationship exists between previous home experiences and, expectation of performance of SHFs by students in tertiary institutions.

3.2.1.6 The Value-Percept Theory

The value-percept theory is based on the assumption that significant differences exist between what is valued in a product, and what is expected by customers (Westbrook & Reilly,1983). In contrast to expectation-disconfirmation theory, the value-perceptual theory relies on the *values* consumers hold about a product or service as a baseline standard for the determination of disconfirmation and levels of satisfaction (Yüksel & Yüksel, 2004:16).

3.2.1.7 The Equity Theory

The level of fairness attached to the input-output ratio by consumers plays a notable role in equity satisfaction models derived from the Adam (1963) equity theory proposition. Consumers who are involved in an exchange compare what is received with what other individuals have received and are deemed to be satisfied if it is believed that the ratio of the input to output is fair and equitable. The determination of what is equitable and fair is based on factors such as the price, the benefits received,

the time and effort expended during the transaction and the experience of previous transactions (Woodruff *et al*.,1983; Yüksel & Yüksel, 2004). Equity models of consumer satisfaction appear to be different from the other models, in that satisfaction is evaluated relative to other parties (people) in an exchange and the outcomes of all parties sharing the same experience are taken into consideration.

3.2.2 Satisfaction as an outcome

The following sections discuss the understanding of satisfaction as an outcome.

3.2.2.1 Emotion

This perspective recognises the cognitive process, but goes further by stating that these may be just one of the causes of the emotional state of satisfaction. Thus, according to Oliver (1981), satisfaction is seen as a surprise element of product acquisition and/or consumption experiences. Westbrook and Reilly (1983) see it as a particular response to a specific consumption experience.

3.2.2.2 Fulfilment

Satisfaction as a fulfilment outcome draws its support from the motivation theory that states that people are either driven to satisfy their needs or behaviour is directed to satisfy a particular goal. Thus satisfaction is seen as consumption satisfaction response (Rust & Oliver, 1994:4; Parker & Mathews, 2001:39).

3.2.2.3 Satisfaction as a state

Satisfaction as state includes the four frameworks; namely, satisfaction as it relates to reinforcement and arousal. Arousal state satisfaction includes low arousal, which refers to satisfaction-as-contentment while the high arousal state describes satisfaction either as a surprise positive delight or a negative shock (Rust & Oliver, 1994:5; Parker & Mathews, 2001:39).

3.3 SATISFACTION WITH STUDENT HOUSING FACILITIES (SHFs)

Resident satisfaction is a multi-dimensional and multi-disciplinary concept that measures the perceptions of fulfilment of personal needs and expectations of housing by the attributes of the residential environment (Choudhury, 2005 :1; Hui & Yu, 2009: 10). Hui and Yu (2009: 10) described resident satisfaction as the degree of perceptions of performance by residents in terms of how the prevailing conditions of the

environment are meeting their expectations. Specifically to SHFs, Amole (2005:201) presented satisfaction as the pleasant feelings students have towards their housing environment when their needs and expectations are exceeded. Students evaluate the performance of their residential environment and form a judgement of satisfaction based on how their needs and expectations are met. Furthermore, the feeling of satisfaction with the residential environment produces a positive response to the learning environment. It describes the quality of life of inhabitants in a defined residential environment and also acts as a driving factor affecting residential mobility (Amerigo & Aragones, 1997: 107). In addition, residential satisfaction evaluations are used to predict user response to the various dimensions of the residential environment such as dwelling, neighbourhood, environment and social factors (Amole, 2009: 76). The results are used as feedback in the development of strategy for the improvement of the performance of services or product (Huang & Sarigollu, 2008: 942).

In housing studies, resident satisfaction is used as an indicator by housing developers, analysts and policy-makers to examine the levels of satisfaction and identify the drivers of users' satisfaction with their residential environment (Mohit *et al.*, 2010: 19). Resident satisfaction with housing is an important determinant of success in housing investment (Ukoha & Beamish, 1997; Jiboye, 2012; Ibem & Aduwo, 2013). Specifically, Galster (1985:415) outlines the importance of residential satisfaction measurement as follows:

- prediction of individual perception of the general quality of life;
- evaluation tools for judging the success of housing development;
- indication of housing mobility; and,
- evaluation of perceptions of inadequacies in housing environment with the aim of improving housing standards.

Furthermore, Amerigo and Aragones (1997:47) summarise the importance of residential satisfaction as follows:

- important criterion used in the description of quality of life of an inhabitant in a determinate environment; and
- trigger factor affecting residential mobility.

3.3.1 Conceptualization of Residential Satisfaction

Residential satisfaction is operationalised either as a predictor or criterion variable (Tu & Lin, 2008:157). In conceptualising residential satisfaction, Amerigo and Aragones (1997:52) identified and addressed three key theoretical and conceptual issues namely:

- the *constituents* of the residential environment;
- the two-way constantly changing *process* in interaction between residents and the residential environment; and,
- finding a reliable measurement of resident satisfaction.

In the evaluation of resident satisfaction with the housing environment, the dimensions of affect, cognition and behaviour were used to operationalise residential satisfaction (Weideman & Anderson, 1985:159). Firstly, the dimension of affect deals with the emotions and feelings of residents towards the attributes of their residential environment. The affective dimension treats satisfaction as the dependent variable, while the objective and subjective qualities of the housing environment are treated as predictors of satisfaction (Weidemann & Anderson, 1985, 155).

Secondly, the cognition of residents is also an important factor in the evaluation of residential satisfaction. Cognition in this context refers to the set of resident abilities, traits and mental processes that are involved in the processing of knowledge and perception of performance and fulfilment of expectations. The demographic characteristics of residents are critical cognition factors that are relevant in the evaluation of residential satisfaction.

Thirdly, satisfaction could be operationalised based on the influence it has on the behaviour of residents (Amerigo & Aragones, 1997: 49; Tu & Lin, 2008:158). The outcomes of satisfaction with a product on resident's behaviour include loyalty, word of mouth and a willingness to pay for housing attributes. When residents are subjected to levels of quality-attributes, they adjust behaviour to retain or increase congruence between the expected and actual residential environment.

3.4 DRIVERS OF RESIDENTS' SATISFACTION WITH THE RESIDENTIAL/SHFs ENVIRONMENT

The residential environment includes all attributes that are within the dwelling units and in the immediate environment of the residence. The attributes of the residential environment and how it drives residents' satisfaction are dominant in SHFs research (Fourbert *et al*., 1998; Thomsen, 2007; Tang-Teng, 2008; Thomsen & Eikemo, 2010). One of the goals of these studies was to understand the levels and types of attributes of the residential environment that are considered by students as suitable and satisfactory (Thomsen, 2007:8). These studies found that attributes of the residential environment impact differently on the perception of users' satisfaction.

The dimensions of attributes of SHFs refer to a grouping or classification of related attributes of the residential environment. For example, Amerigo and Aragones (1997:53) classified the attributes of the residential environment in three dimensions; namely: the house, its surrounding area and neighbourhood.

Amerigo & Aragones (1997:53) refers to the residential environment as the house, its surrounding area and neighbourhood (Amerigo & Aragones, 1997:53). Amerigo and Aragones (1997:51) group the dimensions of housing environment as the:

- physical-subjective: degree of maintenance of neighborhood, appearance of the place, apartment evaluation, administration of neighborhood);
- physical-objective: single-family vs. multi-family, electricity, noise level;
- social-subjective: safety, friendship, relationship with neighbours, attachment to the residential area, perception of overcrowding, homogeneity; and
- social-objectives: owner rented, time living in house and neighborhood, age, life cycle, presence of relative in the neighbourhood.

Muslim *et al.* (2012: 60) on the other hand provides a more useful summary of the dimensions of the residential environment which are relevant to this study and these include:

- physical dwelling attributes;
- neighbourhood and its physical surrounding (Communities facilities and services);

- social factors; and,
- management factors.

Currently, no consensus exists on what constitutes the residential environment; therefore, researchers often define the dimensions of the attributes of the residential environment based on contextual issues, areas of application and the research objectives (see Table 3.1). In most SHFs research, the dimensions of the attributes of the residential environment are adapted from the classifications advanced in studies by Canter and Rees (1982), Galster (1985) and Francescato (2002) as shown in Table 3.1.

Table 3.1 Aspects/dimensions of attributes of the residential environment

Classification of housing dimensions	Reference
Structure types, space (building features), quality (housing condition), neighbourhood facilities, expenditure and tenure	Morris and Winter (1978)
Dwelling quality, neighbourhood and public services	Galster (1985)
Social/psychological, management/organisational and physical attributes	Francescato (2002)
Structure types, building features, housing condition, neighbourhood amenities and facilities management	Ukoha and Beamish (1997)
Resident living conditions, social activities, student preferences and neighbourhood facilities	Muslim, Karim and Abdullah (2012)
Dwelling unit features, dwelling unit support services, social environment and neighbourhood facilities/environment	Ibem and Aduwo (2013)

The influence of attributes of the residential environment and how they drive or affect residents' satisfaction with their housing are discussed in the following sections.

3.4.1 Physical dwelling aspects

The physical dwelling aspects of housing refers to the attributes of the residential environment that are within the dwelling unit (Amerigo & Aragones, 1997: 53). These attributes include:

- equipment, amenities and facilities;
- size of internal space;
- condition of internal components;
- housing configuration; and
- internal house services.

In the UK, Christie *et al.* (2002: 221) conducted a survey on the impact of the conditions and types of attributes of the physical and dwelling aspects on students' quality of life. The study revealed that physical and dwelling attributes are strong indicators of the students' quality of life and also serve as a reference for future decisions on residential choice. The study further revealed that students are less satisfied with housing conditions that are damp, cold and noisy; hence, residential mobility is highly prevalent where these exist. In addition, higher satisfaction and academic achievement are reported by students who reside in newly built and renovated structures.

In a study by Thomsen and Eikemo (2010) in Norway, the influence of the architectural aspects of residences on satisfaction with on-campus and off-campus accommodation was investigated. The study revealed that off-campus housing with shared toilets; kitchens and bathrooms are difficult to rent out as students prefer privacy. Akingbohungbe and Akinluyi's (2012:69) study in Nigeria claimed that purpose-built houses are better planned and offered better comfort than those that are converted or adapted for student use.

The study by Sickler and Roskos (2013:10) analysed the relationship between the importance users attach to housing attributes and the importance of housing in deciding which university to attend. The attributes of housing investigated in the study include sizes and types of rooms, rent, available amenities, age of buildings and the availability of preferred accommodation. The study reported that the physical aspects of dwelling exerted a more significant influence on the preference for housing than social and environmental factors such as learning communities, proximity and location, the presence of friends, types of roommates and recreational facilities.

However, comparing the different research findings on satisfaction with SHFs is difficult. Possible reasons for the variations in research findings, according to Sickler and Roskos (2013: 13) include:

- changing user needs;
- variable geographical boundaries;
- time-bound issues and different research methodology;
- investigation of narrow housing variables; and,
- limited scope of research that renders generalisation inappropriate.

3.4.2 Neighbourhood and physical surrounding aspects (Communities facilities and services)

The neighbourhood and physical surrounding aspects are the immediate environment of the unit. A neighbourhood is often referred to as the zone between the macro-neighbourhood and micro-neighbourhood, which is inferred from resident definition of boundaries or census delineation (Amerigo & Aragones, 1997: 53). This understanding further suggests that the neighbourhood should not be seen only from a geographical point of view, but also based on what the resident perceives it to be. The perception of a neighbourhood is further influenced by the social relationships that are formed in the neighbourhood and the transaction visit to shopping centres, banks and recreation centres (Mohit *et al.,* 2010:22).

Location variables are critical predictors of satisfaction with residence, therefore, students prefer to live in places that are close to campuses and other areas that are of interest to them (Rugg *et al.,* 2001:293). The motives include the desire to eliminate or minimize commute costs to and from places of interest such as campus facilities, amenities (banks, recreational facilities, shopping centres) and places of worship (Thomsen & Eikemo, 2010:273; Sickler & Roskos, 2013: 10). In addition, the relationship is more significant when residents depend on local and neighbourhood amenities. However, the strength of the relationship between satisfaction and accessibility to these facilities varied among groups and geographical locations. Other neighbourhood attributes that influence satisfaction includes security, rental charges, room safety, light, noise, temperature and air quality (Fourbert *et al*., 1997:42).

Khozaei *et al*. (2010:153) in Malaysia investigated satisfaction with attributes of official SHFs that are located outside the campus. The study found that the student in these residences considered security, accessibility, room safety, size of a room and façade of residences as determinants of satisfaction. A later study by Muslim *et al*. (2012:603) in Malaysia conclude that a sense of security, attachment, involvement and experience with neighbourhood have a significant impact on satisfaction with SHFs. The study revealed that on-campus and off-campus accommodation that has comparable characteristics, quality and management structures produces similar perceptions of satisfaction. Furthermore, academic performance measured by progression and retention is higher with students in on-campus SHFs than those in off-campus SHFs. Factors that promote satisfaction in off-campus residences include private meal plan, flexible lease arrangement, proximity to the city centre, nearness to friends, privacy, control over personal space and peer relationship.

3.4.3 Social dimensions/aspects

Students are concerned about the physical attributes of housing as well as social attributes when making residential choice. Amerigo and Aragones (1997: 53) refer to the social aspect of the residential environment as "the social networks that are established both in the shared areas of the building and neighbourhood". In another study by Foubert *et al.* (1997:44,45), a positive correlation between satisfaction and the following social housing factors was established:

- relationship with roommates and neighbour;
- sense of belonging or concern; and,
- conducive environments.

In an earlier study, Fourbert *et al*. (1997:41) found that a positive relationship exists between a friendly community and satisfaction with the attributes of the residential environment. A comparative study by Christie *et al.* (2002: 222) of on-campus and off-campus SHFs revealed that the existence of places of socialisation such as a TV room and lounges promotes social interaction and relaxation. This finding is supported by Chow and Haeley (2008) who found that the sense of community improves residents' satisfaction with their dwellings. In addition, students prefer residences where it is possible to personalise or organise their living spaces (Thomsen & Eikemo, 2010:290).

On the question of privacy, Amole (2009:76), in a study in Nigeria revealed that male students prefer privacy while female students favour co-habitation. In direct contrast to this findings, Khozaei *et al.* (2012) in a similar study in Malaysia found that female students prefer to live in rooms with a high degree of privacy while the male students prefer a less private environment. The reasons put forward for the discrepancy include geographical variations and the methodologies adopted in research (Amole, 2009:76).

The impact of previous home experience on the involvement of students with SHFs formed the focus of the study by Thomsen (2006:577). The study revealed that a positive correlation exists between prior home experiences and satisfaction with attributes of on-campus or off-campus SHFs. Critical attributes of previous homes that are predictors of satisfaction with SHFs include the level of privacy in previous homes, relationships with households, space per person ratio and good relation with neighbours.

3.4.4 Management factors

According to Ibem *et al.,* (2013:171), management factors are also important to satisfaction with residential housing. In a study undertaken in Nigeria, it was found that attributes such as rules and guidelines house, maintenance, cleanliness and security among others are important determinants of satisfaction with residence.

3.4.5 Public services

These are dwelling unit support services (Mohit *et al.,* 2010;22) and include attributes such as the external spaces, telecommunication, fire-fighting equipment, electricity supply, water supply and drainage. Other components include open space, multi-purpose hall, public phone, local shops and food stall.

The above discussed attributes are most often the important basis for measuring and determining satisfaction with residential housing. The criteria and models that are used in measuring satisfaction with residential housing are discussed in the following sections.

3.6 MEASUREMENT OF RESIDENTIAL SATISFACTION

As earlier mentioned, one of the key conceptual issues in residential satisfaction evaluation is finding a reliable measurement. In measuring resident satisfaction with attributes, Weiderman and Anderson (1985) proposed the following theoretical and methodological approaches:

- identify objective attributes of the residential environment;
- obtain subjective perception of these attributes as predictors of satisfaction;
- use of a factor analysis and component analysis to reduce the variables to a smaller number set of highly related variables; and,
- the components/variables identified during the factor analysis are then used in the measurement of satisfaction.

Amerigo and Aragones (1997) proposed a four-stage approach to determine the perceived satisfaction, and the quality of the residential environment as follows:

- evaluation of a set of attributes to obtain perceived environmental quality indices using an ordinal scale based on how it is perceived;
- use direct or indirect questions to determine resident satisfaction with the environment;
- evaluate respondents socio-demographic and personal characteristics; and
- evaluate the response or behaviour of residents to the residential environment.

The four-stage approach could be applied to analysis of individual housing attributes or dimensions of attributes (Weidemann & Anderson, 1985:153). The multi-faceted measurement approach enables the comparison between the qualities of different attributes.

Other perspectives that are followed to measure residential satisfaction are the technical-based approach and user-based approach (Choudhury, 2005:1). The technical-based approach relies on experts' views and opinions to determine the performance of attributes. Whereas, with the user-based approach, satisfaction is evaluated based on the subjective opinion of the residents. Results from the users-based approach are considered to be more reliable than those obtained through the technical-based approach. The user-based approach recognises the dynamic interaction between the residents and the environment, while the technical-based

approach relies solely on the perception of performance of attributes as provided by experts. The processes used in measuring satisfaction are specified in residential satisfaction model.

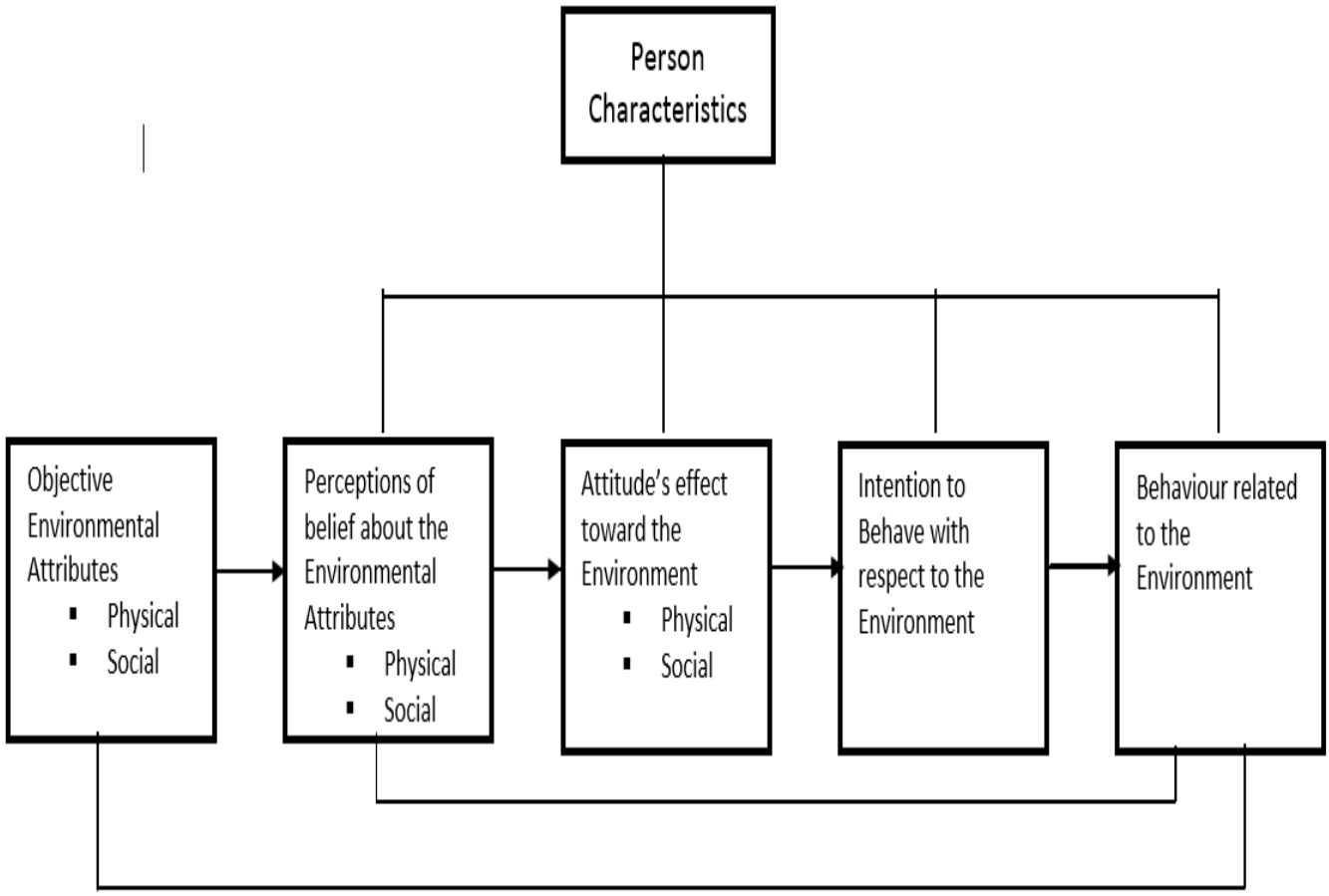
3.6.1 RESIDENTIAL SATISFACTION MODELS

Residential satisfaction models are used to conceptualise the dynamic interaction between residents and the residential environments, and these links are complex, reciprocal and multi-directional. Basically, these models outline the interrelationship between the objective attributes of the residential environment, the subjective experience of residents with these attributes and the effects on resident behaviour (Amerigo & Aragones, 1997:48; Tu & Lin, 2008:157). In most of these models, the demographic characteristics of residents are treated as intervening or moderating variables.

Prominent models that are used in residential satisfaction include the Francescato model (1977), Weidemann and Anderson model (1985) and Amerigo and Aragones model (1997). The conceptual frameworks of most resident satisfaction studies are derived from these models (Amole, 2009; Khozaei, 2010).

The Fransescato model divides the aspects of the residential environments into two components; the physical and social dimensions. As shown in Figure 3.3, residents form subjective perceptions of the environment from the quality of the objective environmental attributes which in turn influence behaviour with respect to the environment.

Figure 3.3 Integrated residential satisfaction conceptual model



Source: The Fransescato model (1977)

The perception, attitude and behavior of the residents, are directly and indirectly influenced by the personal characteristics of the residents.

In Figure 3.4, the Weidemann and Anderson (1985:163) model extends the Fransescato (1977) model to profer multi-directional interelationships between the objective attributes, belief and perception, satisfaction, behavioural intentions and actual behaviour of residents.

The highlight of the model is that the belief/perception is formed from the evaluation of the objective attributes to arrive at the level of satisfaction with the objective attributes of the residential environment. Similar to the Frascecato model, the demographic characteristics of residents are perceived to influence the perception of quality and behaviour.

Amerigo and Aragones(1997:47) developed a comprehensive model that extends the works of Weiderman and Anderson (1985), Fransescato (1989) and Amerigo (1995).

The model evaluates the dynamic interaction between individuals and the environment, based on the cognition, affect and behaviour of residents. The model outlines the interrelationship between the quality of the objective attributes, subjective perception of the environment and satisfaction. In addition, the model shows that the socio-demographic characteristics of residents influence the perception of satisfaction that causes the residents to behave in a particular way.

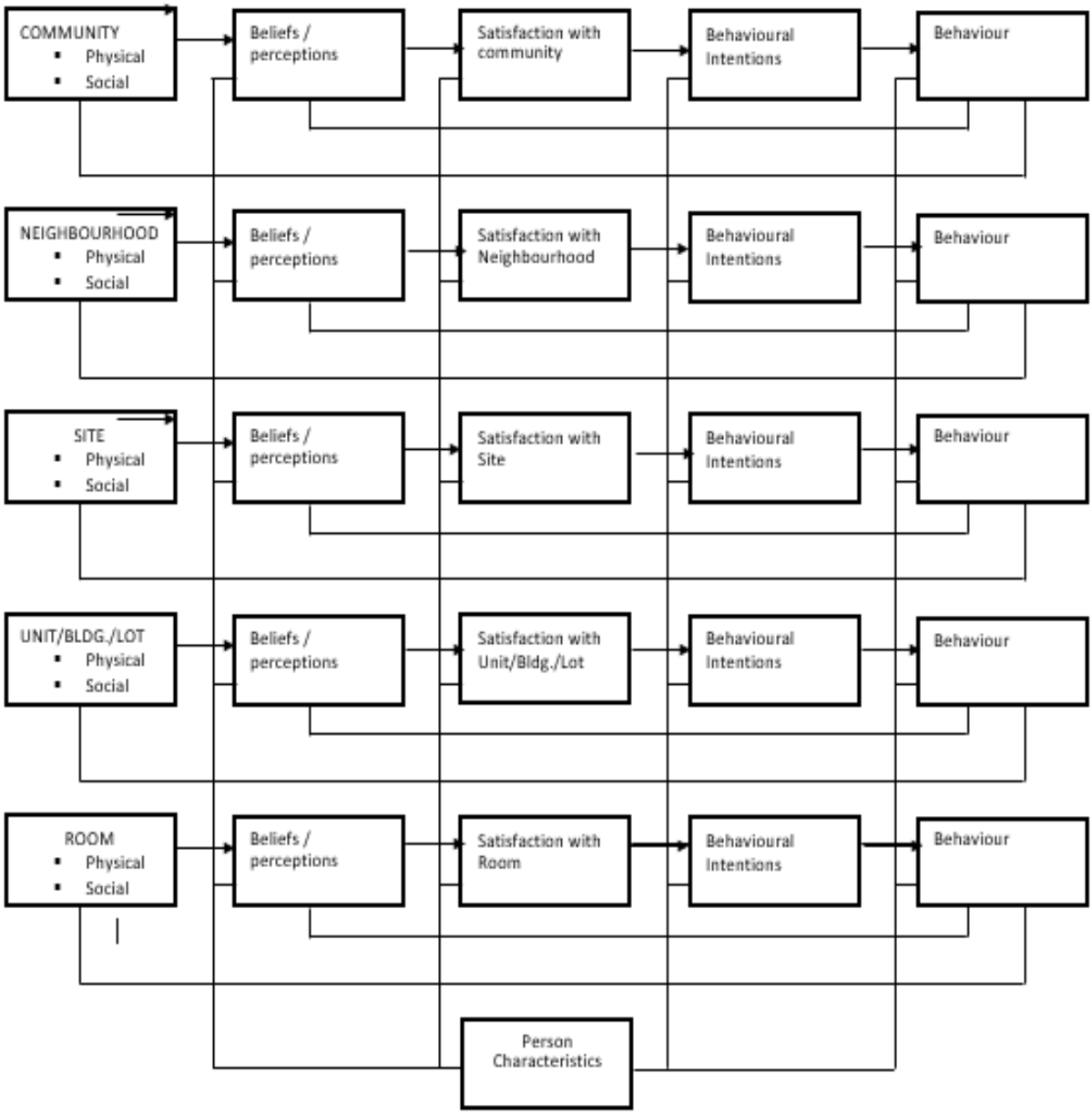
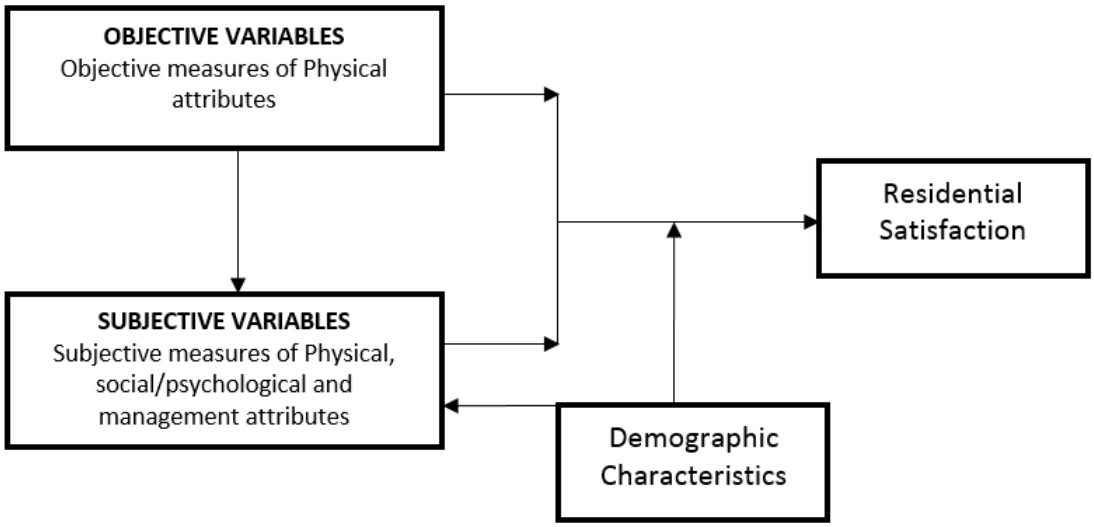


Figure 3.4 Weidemann and Anderson residential satisfaction conceptual model

Source: Weidemann and Anderson (1985:165)

The models by Francescato (1977), Weidemann and Anderson (1985) and Amerigo and Aragones (1997) are adapted to develop the theoretical and conceptual framework that are currently used in residential satisfaction studies (Amole, 2009; Mohit *et al*., 2010). Figure 3.5 shows the conceptual framework of Amole (2009) that outlined the relationship between the objective variables, subjective perception of quality of physical attributes and satisfaction. In this model, the formation of satisfaction is influenced by the demographic characteristics of residents

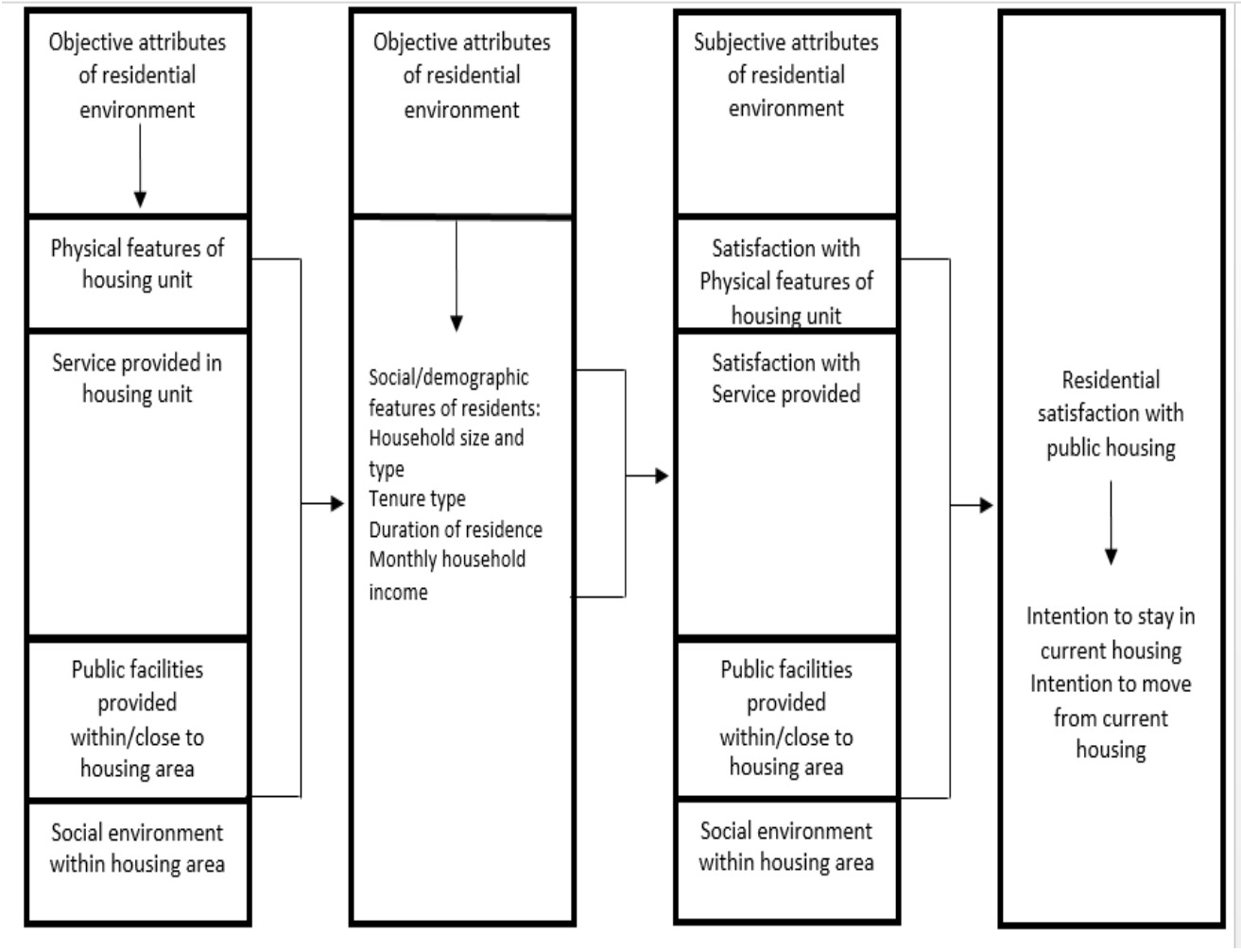
Figure 3.5: Student residential satisfaction conceptual model



Source: Amole (2009)

Figure 3.6 shows the conceptual framework by Mohit *et al.* (2010) and Mohit & Nazyddah (2011) and it suggests an interrelationship between the different levels and dimensions of the residential environment. This model proposes that satisfaction is formed from the interrelationship between subjective perception of the quality of the objective characteristics of the residential environment, namely, the physical dwelling unit, services provided within the housing unit areas, public facilities in the neighbourhood, and the social environment within the housing area (Mohit & Azim, 2012:758).

Figure 3.6: Residential satisfaction conceptual model



Source: Mohit *et al*. (2012**)**

These and other variants of residential satisfaction models are relied on by investors in housing to develop strategies for housing development. However, one of the deficiencies of these measurements is that the relationship between the quality and performance of attributes is viewed as linearly related. As it is often assumed that higher quality attributes result in higher performance and hence more satisfaction. Research in the fields of marketing, manufacturing and hospitality has revealed that the relationship between quality and performance on the one hand and satisfaction with a product is not only linear but non-linear and asymmetrical as well. As a way out, the Kano model/three-factor model is often relied upon to capture the symmetrical and asymmetrical relationship between the quality/performance of attributes and satisfaction.

The Kano model (Kano *et al.*,1984) proposes that for different attributes, a linear and non-linear relationship exists between satisfaction and the quality of attributes, hence more of the quality of an attribute does not necessarily lead to higher satisfaction (Matzler *et al.,* 1998). For some attributes, more quality/performance leads to higher satisfaction and vice-versa. Whereas, for other attributes, more of a quality/performance leads to higher satisfaction when certain conditions exist. For example, a threshold exists beyond which an improvement in quality/performance will not lead to further satisfaction while in other cases, some attributes are overlooked when not available. The theory classified the attributes of a product into five categories based on how the perception of quality/performance affects satisfaction and these are:

- the “one-dimensional” (performance) attributes,
- the “must-be” (basic) attributes;
- the “attractive” (excitement) attributes;
- the reverse attributes; and
- the indifference attributes.

Thus, it can be inferred that investment is not optimised when money is spent to improve an attribute beyond the threshold when an increase in satisfaction by residents is not commensurate with an improvement in quality/performance. The concepts of the traditional Kano model and other extensions that are vital to this study are discussed in sections 4.5, 4.6 and 4.8 of Chapter Four.

3.6.2 Measurement of satisfaction with attributes of the residential environment

The measurement and operationalization of residential satisfaction is one of the goals of this study. Measurement is the comparison of information on a phenomenon against a standard (Leedy & Ormrod, 2013; 81). Measurement scale enables the data to be examined, analysed, and interpreted in order to probe the underlying meaning of a concept (Leedy & Ormrod, 2013:82). The standard measurement scale includes the nominal, ordinal, interval and ratio scales (Leedy & Ormrod, 2013: 87).

The nominal scale of measurement is used to identify names or design discrete units or categories, while the ordinal scale allows for the ranking or ordering of data and

could be used to specify values such as more or less but without the size of the interval. The interval scale of measurement has two features, order and magnitude, and it enables measurement in terms of equal intervals and an absolute zero point.

Satisfaction is a latent or unobserved variable and in order to measure this concept, suitable proxies which are considered to best describe the needs and requirements of residents are essential (Salini & Kenett, 2012:1). Residential satisfaction could be measured as the gap between performance and expectations in line with the expectation-disconfirmation satisfaction model or by directly evaluating the perception of performance of attributes by residents. A general framework for assessing satisfaction with housing includes the objective or subjective evaluation, and dimensions and attributes measurement. Objective attributes of housing include the physical characteristics while the subjective measurement refers to the feelings and perception of residents on the performance of attribute.

In designing a procedure for a reliable and valid assessment of housing quality, Francescato *et al.* (1979) suggested the following steps:

- identify attributes of housing that influence residents satisfaction;
- assess the subjective measurement of satisfaction with these attributes; and,
- create an evaluation procedure.

Amerigo and Aragones (1997:48) suggested the design of a questionnaire on residential satisfaction (QRS) to evaluate the perceived residential quality and residents' satisfaction with their environment using the following procedures:

- determine the perceived environmental quality indices through the evaluation of a set of attributes related to the neighbourhood, the house and the neighbour.The items are formulated in an ordinal scale with the subject being required to quantify how residents perceive the feature in the residential environment;
- determine whether resident's satisfaction with their residential environment using direct and indirect questions to elicit the degree of satisfaction with attributes;

- Assess the socio-demographic and personal characteristics that act as moderating variables on perception of quality of attributes and satisfaction; and,
- evaluate the effects on the behaviour of residents.

Based on these procedures, either a quantitative, qualitative or combined approach based on a structured or unstructured questioning format could be applied to measure resident satisfaction with their housing environment. Common evaluation procedures adopted to measure resident satisfaction include:

- Questionnaire survey;
- Semi-structured in-depth interview;
- Structured face-to-face interview; and
- Questionnaire survey and in-depth interview.

The structured approach presents residents with sets of questions and response options to choose from and does not, therefore, include uninhibited discussion of attributes. The unstructured format affords a high degree of flexibility on the questions that are asked by the researcher. However, a multistage approach could be adopted to combine the qualitative and quantitative approaches in the evaluation of satisfaction in order to increase the reliability of the measurement.

In most housing studies, resident satisfaction with their environment is evaluated based on a single-item or multiple-items (Mohit & Azim, 2013: 757).

3.6.3 Single-item and multi-item measurement of residents satisfaction

A single-item and multiple-item approaches employ a question or multiple questions respectively to elicit the perception of residents on the degree to which their expectations are met by the attributes of the environment (Weiderman & Anderson, 1985:178). Satisfaction results from highly correlated multiple items are more consistent and reliable than those obtained with the use of a single item scale (Weidemann & Anderson,1985:178).

A common example of the multi-item format for measuring resident satisfaction includes the following (Yang & Zhu 2006, 669; Adriaanse, 2007; Amole, 2009):

- How are you satisfied with living here (affective); and,

- Would you recommend this place to a friend (behavioural)?

The choice of a reliable scale is important in the mesurement of residential satisfaction.

3.6.4 Rating scale for measuring residential satisfaction

A rating scale that accommodates different levels of responses is designed and used in the quantitative evaluation of satisfaction with attributes of the residential environment. Common scales that are used for this purpose are the Likert-scale and semantic scale (Mohit & Azim, 2012:760).

The satisfaction of residents is important in SHFs development and improvement as it has consequences on the behaviour of occupants. The effects of satisfaction with student housing facilities on the behaviour of residents are discussed in the following sections.

3.7 CONSEQUENCES/EFFECTS OF SATISFACTION WITH STUDENT HOUSING FACILITIES (SHFs) ON THE BEHAVIOUR OF RESIDENTS

Positive and improved return on capital investment in SHFs is linked to satisfaction with attributes of the residential environment by tenants. Therefore, investors strive to ensure that customers are satisfied with their products or services at all times (Gerson, 2007: 600). Tontini (2007:600) claimed that the fulfilment of customer needs and expectations are critical to satisfaction and customers are dissatisfied when expectations are not fulfilled. Satisfaction or dissatisfaction affects the behaviour of residents positively or negatively respectively. There is a growing acceptance that high customer satisfaction is an antecedent of the following positive consequences:

- high levels of customer loyalty and retention of good quality customers (Gronholdt *et al.,* 2000:512);
- Willingness to pay high prices for high-quality products and services (Homburg *et al.,* 2005:85; Greene & Ortuzar, 2010:78); and
- readiness to engage in positive word of mouth by justifying the transactions, informing and providing new referrals through positive word of mouth (Eisingerich *et al.,* 2013: 9).

Organizations that make sure that their customers are satisfied with their products are more likely to realise the business and economic goals of high returns and profit (Strauss & Neuhaus, 1997; Anderson & Mittal, 2000; Gronholdt *et al.,* 2000: 509). Profitable survival of student housing developments, as with any business venture, depends also on patronage which is further enhanced when residents are loyal, willing to pay for the value of preferred attributes and positively engage others on matters of housing suitability. The concepts of loyalty, willingness to pay and word of mouth behaviour as it relates to satisfaction are critical to other behaviour. For example, loyal residents would tend to retain the residence for a longer period. These concepts are discussed in the following sections.

3.7.1 Loyalty and retention

A crucial success factor in business performance is “ownership” of customers (Hasan, 1996:1), and as such, customer loyalty is critical to survival and prosperity of business firms. The benefit of developing customer loyalty reflects on business long-term financial payoff (Chao, 2008:95). Invariably, it enables the investors to justify the relevance of improvement of quality *vis-a-vis* loyalty. Customer loyalty is evaluated from two perspectives, namely, the impact of perceived quality on psychological loyalty and behavioural loyalty (Chao, 2008:96). Psychological loyalty refers to re-purchase intention while behavioural loyalty denotes actual purchase. The intrinsic (internal) and extrinsic (external) qualities of attributes are an important determinant of customer loyalty (Hasan, 1996:2). Internal attributes are those needs that are peculiar to individual customers such as location, economic status, values/tradition and lifestyles whereas external attributes are those factors that are outside the control of the consumer such as item pricing, incentive, and advertising/marketing and customer services.

In measuring and managing satisfaction, it is assumed that improving product and service attributes will lead to an improvement in satisfaction (Kumar & Reinartz, 2006, 157). However, Hasan’s (1996:7) study of the telecommunication sector revealed that a satisfaction is necessary for the determination of loyalty, but it is not a sufficient condition. Equally critical to loyalty is the satisfaction threshold that exists for every customer. There is a satisfaction threshold for every customer and increasing the quality of attributes beyond that point does not make them less likely to change. At this

level, product improvement may not necessarily generate an equivalent payoff in terms of customer behavioural loyalty (Chao, 2008:97). However, a decline in satisfaction from that threshold level provokes customers to switch to other products or services providers. The identification of differential loyalty behaviour vis-à-vis satisfaction threshold is necessary for an effective and efficient allocation of resources. According to this proposition, the deployment of resources to develop an attribute beyond a defined satisfaction threshold level will not yield commensurate return (Kumar, 2006).

In addition, it is traditionally assumed that the relationship between loyalty and customer satisfaction is simple and linear, thus, to a greater extent, completely satisfied customers are more loyal than the merely satisfied customers (Jones & Sasser, 1995).

Chao (2008:96) used two approaches, namely, global approach and individual attribute-level approach are used in the study of customer loyalty. The comprehensive approach proposed that customer loyalty be based on the satisfaction derived from the entire product or service whereas, the individual attribute-level approach observed the influence of different attributes on overall satisfaction. Chao (2008: 97) specified the process for the evaluation of the relationship between the quality of an attribute and loyalty as follows:

- determine attributes that produce beneficial effects on loyalty;
- emphasise the consequential attributes instead of the trivial; and,
- understand the curvilinear nature of the relationship in place of the linear and independence assumption between focal attributes and loyalty.

In housing development, loyalty of residents is vital to the sustenance of investment. Adjustment and improvement decisions are frequently made by residential users concerning their housing and residential environment. Residents based their housing decisions on whether to continue to stay in a house, move or adjust/improve living environments on their level of satisfaction with their housing and housing attributes (Wong, 2002: 220; Coulombel, 2011: 10). Apparently, when residents are satisfied

with their housing situation, they remain; but when dissatisfied, they adjust their consumption by either improving the housing condition or stay as dissatisfied tenants or move to other residences (Coulombel, 2011:9). Staying customers are more beneficial to the profitability of the housing investment.

The Mohit *et al.* (2012:766) study found that there is a relationship between overall satisfaction with attributes of public housing and the intention to move or stay in the current residence.

Fornell *et al*. (1996, 10) used the following multi-item scale to measure the impact of satisfaction on customer loyalty:

- the likelihood of repurchase;
- the percentage of increase in price of the product before the customer withdraws patronage; and
- degree to which a firm could lower its price before the client would patronize that product or service the next time.

Fornell *et al*. (1996:10) observed that the distribution of satisfaction and quality ratings in loyalty measurememnt are always skewed in a competitive market. To overcome this shortcoming, a 10-point scale was chosen to allow for better discrimination of quality. In addition, evaluation based on multiple indicators was adopted to reduce skewness.

3.7.2 Word of mouth

Attributes of the residential environment are meant to meet the needs of occupants and judgement is formed from the disconfirmation of expectations and performance. Based on this judgement, residents talk about their negative or positive experiences with attributes when they are satisfied or dissatisfied respectively. Word of mouth is the passing of information from person to person by oral communication. Eisingerich *et al*. (2013: 9) observed that the word of mouth is important to patronage, and it is encouraged by organisations. Word of mouth falls into two main categories, namely; customer-customer behaviour and customer-organization relationship. A study by Eisingerich *et al*. (2013; 9) revealed that dissatisfied customers are less likely to provide constructive feedback or guidance on how to improve products. The

motivation for positive word-of-mouth, according to Eisingerich *et al*. (2013: 9) includes:

- only wanting to help;
- appearing well informed;
- justifying oneself of the appropriateness of a past transaction by recommending it to others; and
- Ensuring that others make a similar choice.

Word of mouth is relevant in SHFs investment as information on the quality of housing attributes, vacancy and location of accommodation are not readily available to potential tenants. For these reasons, word of mouth serves as an alternative advertisement to prospective residents. In a study by Thomsen (2007:593), experience with the attributes of previous home was found to exert influence on residential choice. The word of mouth that is based on the past or present experiences of tenants could reinforce the behaviour of others either positively or negatively.

3.7.3 Willingness to pay for accommodation

Willingness to pay is a monetary measure of the value that a person assigns to a consumption or usage experience (Homburg *et al*., 2005:85). Willingness to pay is governed by the maximum amount of money a customer is willing to pay for a product or services. When satisfaction is improved, customers are willing to pay more, but when satisfaction is low, they demand to pay less (Green & Ortuzar, 2010:57).

Willingness to pay for a product or service is one of the key elements in a profit equation and is directly related to profitability (Homburg *et al*., 2005:84). Despite the importance of this concept, there are few studies on the relationship between satisfaction and willingness to pay for housing attributes (Greene & Ortuzar, 2010:56). However, much literature and empirical studies have been carried out in marketing and manufacturing sectors. A study by Homburg *et al*. (2005:84) focused on the link and functional structure of the relationship between customer satisfaction and willingness to pay for products at the individual attribute-level. It further examined whether the relationship is linear or nonlinear. The study revealed a strong support for the relationship between customer satisfaction and willingness to pay.

Stevenson and Leaman (2010) reported the importance of willingness to pay in residential development. Residents were found to be conscious of the fact that the overall satisfaction derived from housing is a function of the performance of each individual attribute. In addition, there is a positive correlation between willingness to pay for attributes and the degree of importance that is attached to attributes by residential users (Greene & Ortuzar, 2010:83,84). For example, in the face of limited resources, residents tends to order their preference for attributes based on what is important to them.

3.8 CONCLUSIVE REMARKS

In this chapter, the concept of resident satisfaction with off-campus SHFs and the dimensions of residential housing such as the dwelling, location, environment, social and residents attributes that drive satisfaction was discussed. A review of resident satisfaction models that are relevant to the development of a conceptual framework was also undertaken. The consequences of satisfaction with these SHFs attributes on residents' behaviour were identified as loyalty/retention, word of mouth and willingness-to-pay. It was established in literature, especially in the fields of marketing, manufacturing and hospitality that the profitability or success of a business or product depends to a large extent on these behavioural factors.

CHAPTER FOUR

THEORETICAL AND CONCEPTUAL FRAMEWORK

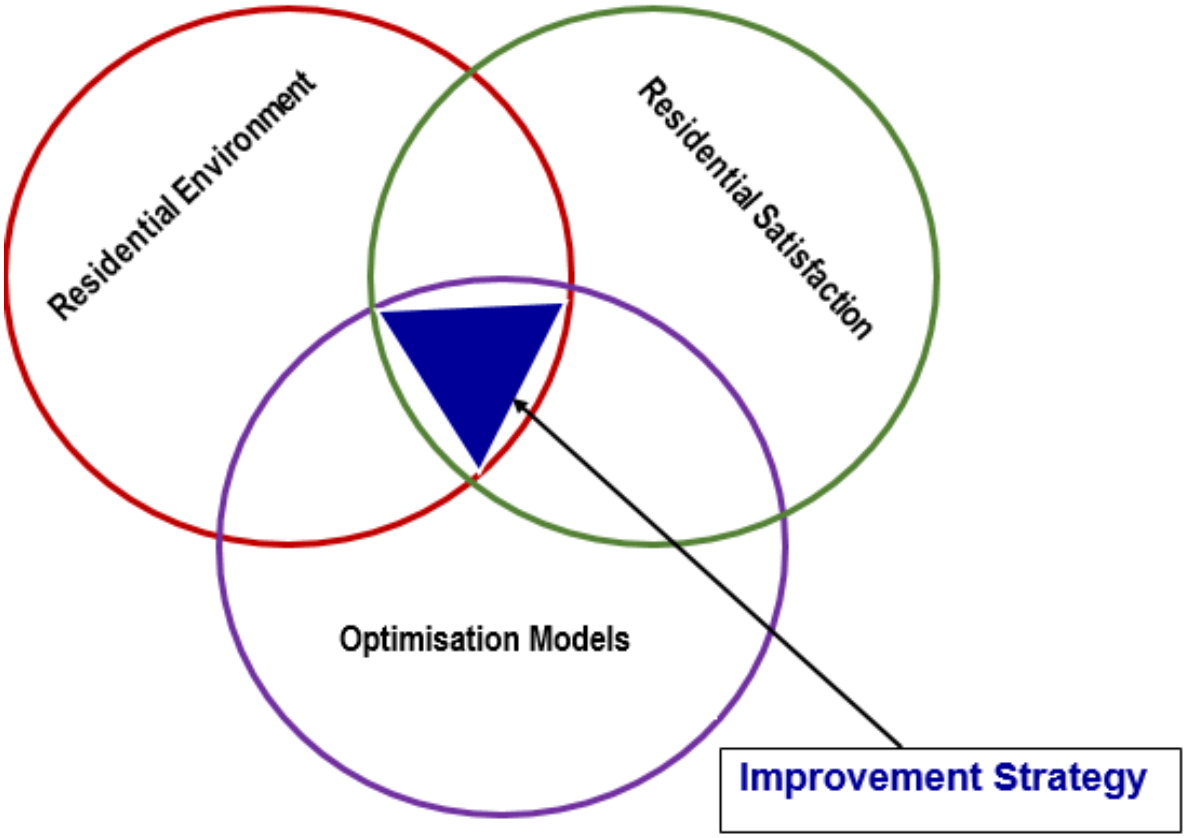
4.1 INTRODUCTION

In Chapter Three, the concepts of satisfaction with the student housing facilities (SHFs) was discussed. This chapter presents the general structure of the procedures that was followed in the methodology and data analysis and the links between the theoretical concepts that are relevant to the study. The concepts discussed in this chapter include residential satisfaction environment, the Kano model and importance-satisfaction analysis (IPA). These constructs, which are relevant to the research problems are further used to formulate a conceptual framework for this study.

4.2 LOCATION OF THE THEORETICAL FRAMEWORK

The theoretical framework of this study is located at the interception of the concepts of the residential environment, resident satisfaction, the Kano/three-factor model and the importance satisfaction analysis. The residential environment includes the attributes within the building/units and those in the immediate neighbourhood of the accommodation (see section 3.4).

Figure 4.1: Location of the theoretical framework



The understanding of satisfaction with components of the residential environment is essential in the development and management of student housing facilities (SHFs) by private investors and is critical for success. Consequently, private investors in SHFs build, maintain and upgrade SHFs to meet the needs and requirements of students with the intent to make profits and growth, which are the fundamental objectives of property investment (Reilly, 2012). The fulfilment of residents' needs and expectations are revealed in the measure or assessment of levels of residents' satisfaction with the existing housing situation either as aggregate-attributes or individual-attributes measures. Basically, the contribution of the study is in the area of residential housing with specific emphasis on SHFs.

Evaluation has led to a better understanding of the attributes of the housing environment that drive satisfaction and the results when they are not available. However, the impact of these attributes on satisfaction with the housing environment is a function of resident's expectations, performance of attributes and the individual characteristics of users. In addition, the response to the quality of the residential

environmental attributes differs among residents and the determination of the level of quality of an attribute that is acceptable differs between individuals.

The response of residents to these attributes is either symmetrical or asymmetrical; which means that user satisfaction increases when performance is high and vice versa, whereas in others, satisfaction increases with increase in performance to the threshold level beyond which further improvement produces no further increase in satisfaction. This implies, therefore that a proper balance among the levels of attributes provided in the housing environment, how the attributes drive residents' satisfaction, and the resulting consequences are vital to building performance.

4.3 THE FUNDAMENTAL CONCEPTS

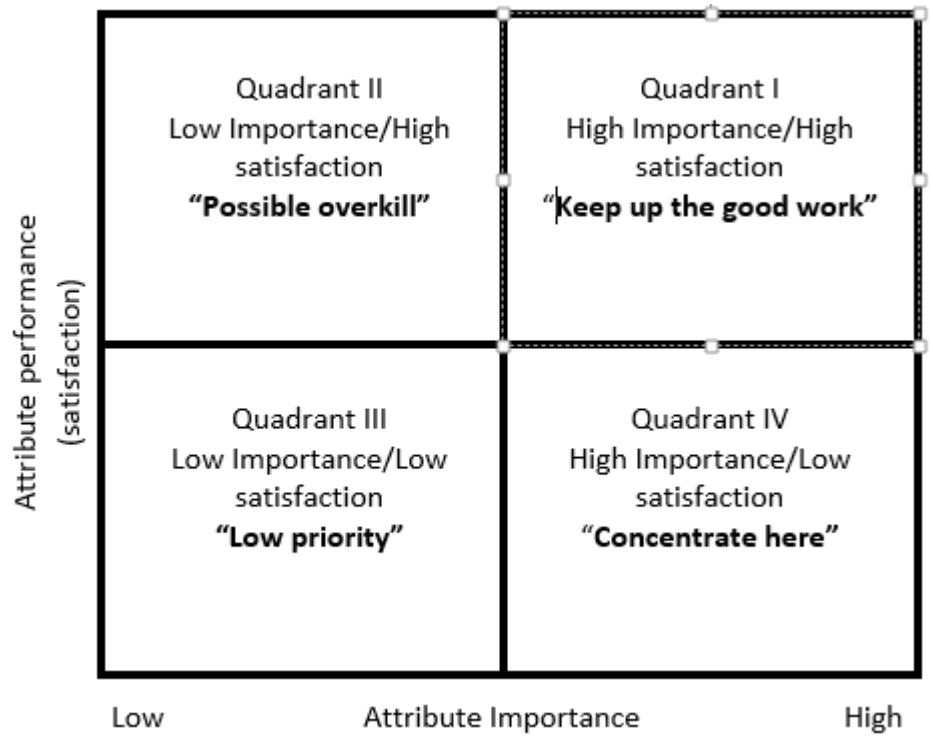
The fundamental concepts of this study are the attributes of the residential environment, resident satisfaction with student housing, the behaviour of residents, the Kano/three-factor model and the importance–performance (satisfaction) analysis (IPA). The following sections discuss the Kano/three-factor model and IPA and the link between the concepts.

4.4 THE IMPORTANCE/ PERFORMANCE ANALYSIS (IPA) MODEL

Priorities are set by investors to maximise resources to provide and improve attributes that are considered to be critical to satisfaction (Martzler *et al*., 2004:271). The importance-performance (satisfaction) analysis (IPA) is a technique developed by Martilla and James (1977) to set priority and adjust quality improvement (Martzler & Heischmidt, 2003; Matzler & Sauerwein, 2002; Matzler *et al.,* 2004; Azzopardi & Nash, 2013:223). The model compares the importance attached to attributes by consumers against the perceived performance of each attribute to develop a two-dimensional (attribute performance and attribute importance), four-quadrant grid to describe the state of the attributes. The traditional IPA is interpreted as shown in Figure 4.3.

The self-stated importance is measured using rating scales, constant sums scale or implicitly derived importance such as multiple regression weights, structural equation modelling or partial correlation weights (Martzler *et al*., 2004).

Figure 4.2: Importance-performance (satisfaction) analysis (IPA)



Source: Martilla and James (1977)

The following steps are followed in the determination of IPA (Chi, 2005:85):

- identification of attributes of products or services that are critical through literature search;
- consumer survey to evaluate the perception of importance and performance of attributes;
- the means of both the perception of the performance of a given attribute and importance of attributes are calculated and a coordinate of the pair of values for each attribute is established. The means of performance and importance are indicated in the Y-axis and X-axis respectively;
- the means of performance and importance of attributes are used as cross-hair to divide the grid into four quadrants;

The following strategies for improvement of attributes are specified based on the quadrants (Martzler *et al*., 2004:271)

- Quadrant I (High importance, high performance): attributes in this quadrant are considered as key drivers of consumer satisfaction, and the recommended action is to “keep up the good work”;
- Quadrant II (low importance, high performance): the attributes are performing well but are however rated from moderate to not important by consumers. These attributes are seen as “possible overkill. The recommended action is to ignore the attributes and no further improvement is necessary and resources could possibly be deployed to improve attributes in other quadrants that are critical to satisfaction.
- Quadrant III (low importance, low performance): attributes in this quadrant are performing poorly but are however perceived to be low in importance by consumers. These attributes are considered as low priority attributes and should therefore be ignored by investors.
- Quadrant IV (high importance, low performance): These attributes deserve immediate attention and firms need to deploy and apply resources to improve these features in order to increase performance.

The IPA has been criticized as it does not account for the symetric and asymmetric response of individual to performance to profer and recommend actions for the improvement of attributes. Thus, necisitating the needs for an integretion with the Kano model model for better results. The Kano model, the extensions and the integration of the IPA and Kano model are discussed in the following sections.

4.5 THE TRADITIONAL KANO MODEL OF CUSTOMER SATISFACTION

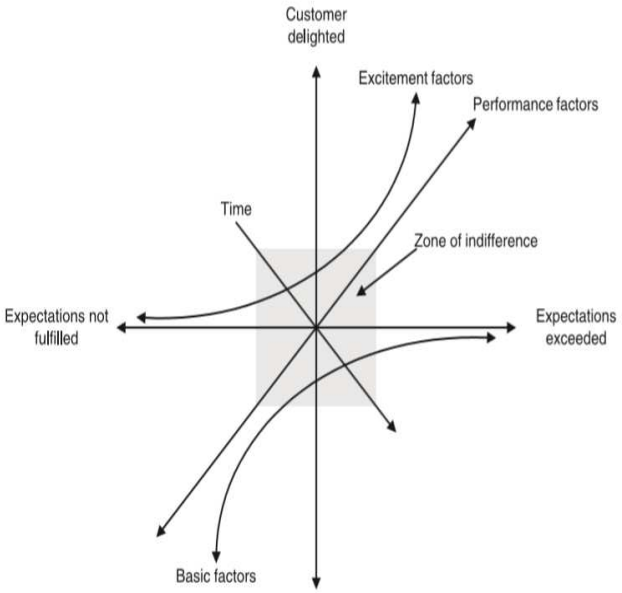
The relationship between the quality of attributes and the corresponding satisfaction with these attributes has often been viewed as linearly related; that is, an increase in quality leads to higher satisfaction (Lin *et al*., 2010:256). Therefore, firms often misrepresent the importance of these attributes to consumers and assign an equal priority to attributes in the quest to provide and improve attributes (Anderson & Mittal, 2000:109). However, the Kano model (Kano *et al.* 1984) proposed that there is an asymmetric and non-linear relationship between satisfaction and the quality of attributes (Kano *et al*., 1984; Matzler *et al.,* 1998). This implies that for non-linear and asymmetrical attributes, there is a threshold for some components where further improvement does not necessarily lead to a higher satisfaction.

The Kano model is a two-dimensional quality model that is based on the theory that a product or service is composed of diverse attributes and each yields different levels of satisfaction to consumers and the relationship may be linear or nonlinear (Kano *et al.,* 1984; Lin *et al.,* 2010:255; Llinares & Page, 2011:234). The Kano model specifies five categories; namely, the "one-dimensional" (performance), "must-be" (basic), "attractive" (excitement), reverse and indifference (Lin *et al.,* 2010:255) (see Figure 4.3).

The "attractive" (excitement) quality attributes are non-linear. The non-availability of these attributes has little influence on customer satisfaction; whereas the presence of these attributes provides satisfaction. Excitement factors, thus, are important determinants of satisfaction when performance is high and are of no consequence whatsoever when performance is low. In other words, an increase in satisfaction is experienced by users when performance is high; however, no dissatisfaction is caused when these attributes are not delivered because the attributes are not expected by consumers. Matzler *et al*. (1998) observed that the positive performance of these attributes has greater consequences on overall satisfaction than negative performance. The relationship between the "one-dimensional" (performance) quality attributes and satisfaction is linear. With "one-dimensional" attributes an increase in quality leads to an increase in satisfaction and *vice-versa*. Thus, when the expectation is fulfilled, residents are satisfied but become dissatisfied if the expectation is not fulfilled.

"Must-be" (basic) quality attributes are non-linear and are classified as entry level attributes. These attributes are expected by customers. The absence of "must-be" factors causes dissatisfaction if not fulfilled or delivered at a satisfactory level, but do not lead to satisfaction if fulfilled or exceeded (Llinares & Page 2011:234). The basic factors, attributes, are viewed as entry level attributes and performance is taken for granted when it exists and is critical when not available. According to Matzler *et al*. (2004:272), basic factors are critical when performance is low and their influence on overall satisfaction decreases when performance increases and a decrease in fulfilment of expected results in an over proportional increase in dissatisfaction. Fuller and Martzler (2008:15) conducted a study measuring satisfaction and in order to enter the market, basic ("must-be") factors must be fulfilled.

Figure 4.3: The Kano theory two-dimensional quality model



Source: Kano *et al.* (1984)

The study further stated that performance ("one-dimensional") factors are essential for being competitive and ncreasing satisfaction while in order to stand out from competitors, excitement ("attractive") attributes need to be fulfilled.

Two other factors specified by the Kano model that are not given equal attention like the first three-factors (Matzler & Sauerwein, 2002) are the "indifferent" and the reverse factors (Anderson & Mittal, 2000; Lin, *et al.*, 2010, 255). The "indifferent" quality attributes do not cause any satisfaction or dissatisfaction to customers when they are available or not available. Whereas, the reverse quality attributes cause customers' dissatisfaction when available but their absence results in customers' satisfaction.

Most non-linear research focuses on the basic, performance and excitement factors which are considered to be more relevant in the determination of quality needs of customers and overall customer satisfaction (Matzler & Hinterhuber, 1988; Matzler *et al.,* 2004:272).

Llinares and Page (2011:234) used the Kano model to determine the impact of subjective attributes on housing purchase decision. The study found that better judgments are made when the linear and non-linear qualities of attributes are factored into decision-making. This is relevant when considering the fact that some attributes

only serve to fulfil minimum customers' requirements while others provide added value (Lin *et al.*,2010:255).

Two aspects are considered in the assessment of any given quality attribute; the objective aspect and the subjective aspect (Kano *et al.,* 1984; Yang & Yang 2011:930). The first approach is the objective aspect which evaluates the degree to which the quality attribute is achieved. The second approach assesses the subjective perception of satisfaction with the level of quality by consumers. This study adopted the second approach which is compatible with the methodology of the Kano model for transforming attributes into various categories.

4.5.1 Methodology for the classification of residential environmental qualities into Kano categories

The attributes of the SHFs environment were transformed to Kano categories with the aid of a Kano questionnaire in accordance to the six steps suggested by Saurwein *et al.* (1996) which is line with Kano methodology (Kano *et al.,*1984).

4.5.1.1 Identification of product requirements

The first step in this procedure was to identify current dwelling attributes and new attributes that could be introduced that are capable of satisfying customers' expectations and requirements (Saurwein *et al.*, 1996: 316). Various studies revealed there is a a positive relationship between the perception of satisfaction and quality of attributes of the residential environment (Ukoha & Beamish, 1997; Amole, 2009; Abdullah *et al*., 2013). The Kano questionnaire used in this study was prepared based on a list of SHFs attributes identified through literature search, focus group discussions and expert panel interviews.

4.5.1.2 Construction of Kano questionaire

The Kano questionnaire is based on a pair of functional and non-functional questions (Mikulic & Prebezac, 2011: 48). The functional questions evaluate the feelings of residents in the event of fulfillment of an attribute while the non-functional questions elicit perceptions in a condition of non-fulfillment. An example of both the functional and non-functional questions and the five response options available to respondents is presented in Table 4.1.

Table 4.1: Functional and non-functional questions

Functional form	**non-functional form**
How will you feel if the size of your bedroom is wide enough: 1. I like it that way 2. I expect it that way 3. I am neutral 4. I can tolerate it that way 5. I dislike it that way	How will you feel if the size of your bedroom is ***not*** wide enough: 1. I like it that way 2. I expect it that way 3. I am neutral 4. I can tolerate it that way 5. I dislike it that way

Source: Adapted from Kano *et al*. (1984)

In order to ensure consistency and reliability, the attributes were properly defined and operationalized in terms of provision of attributes rather than performance (Mikulic & Prebezac, 2011, 50). The details of the functional and non-functional attributes are outlined in section B of the survey instrument (see Appendix A).

4.5.1.3 Administering of survey

Success in questionnaire administration begins with the adoption of the most suitable method (Saurwein *et al.,* 1996:320). Most suitable method for Kano moethodlogy include standardized self-completion questions prepared in a questionnaire format and administered to respondents.

4.5.1.4 Evaluation and interpretation of results

The outcome of the survey was evaluated in three steps (Saurwein et al., 1996:320). The evaluation and interpretation of results are based on Tables 4.1 and 4.2 respectively. The evaluation chart establishes the category of the attributes and is based on individual respondents' answers to both the functional and non-functional questions. The frequency counts are ordered in Table 4.3 and the cell with the highest number is adopted as the category of such an attribute.

Table 4.2: Evaluation chart

Customer requirement	Answer to dysfunctional question					
		Like	Expect	Neutral	Tolerate	Dislike
Answer to functional question	Like	Q	A	A	A	O
	Expect	R	I	I	I	M
	Neutral	R	I	I	I	M
	Accept	R	I	I	I	M
	Dislike	R	R	R	R	R

Source: Kano *et al*. (1984)

Table 4.3: Results table

C.R.	A	M	O	R	Q	I	Total	Category
1								
2								
3								

Source: Kano *et al*. (1984)

Notes: A = “attractive”; M = “must-be” /basic; O = “one-dimensional”/performance; R = reverse; I = “indifferent”.

This method is criticized for ignoring the counts in other cells as the frequency table clearly revealed that customers in other categories have different expectations. This suggests that the expectation by customers in different categories could be used as a basis to offer customer-oriented products and hence market segmentation (Sauerwein *et al.,* 1996:321).

When it is difficult to assign attributes to categories, the evaluation rule M > O > A > is suggested. This framework assumes that attributes with the greatest influence on perceived product quality and satisfaction are critical in product development (Sauerwein *et al.,* 1996:321).

4.5.1.5 Customer satisfaction coefficient (CS coefficient) (source)

Other techniques suggested to fit attributes into categories include the customer satisfaction coefficient (CS coefficient). The customer satisfaction coefficient is based on the estimated extent of satisfaction and extent of dissatisfaction as follows:

Extent of satisfaction = A + O/ A + O + M + I;

Extent of dissatisfaction = O + M/ (A + O + M + I) * (-1).

These values are used to plot a two-dimensional grid, and the coordinate of the two points indicate the category of that attribute. The degree of satisfaction and dissatisfaction is indicated by the values of CS and it ranged from -1 to +1. A value of zero shows that the attribute does not cause dissatisfaction if it is not fulfilled.

4.5.1.6 Direct classification

Another way to classify the attributes of the residential environment into the Kano model group is by direct classification. In this process, the concept of quality is explained to the respondents and then requested to directly pick a class for the attributes (Shen *et al.,* 2000). The attributes are grouped with the category that has the highest frequency. Emery & Tian (2002) suggested the use of a 3-point rating (somewhat, moderately and very) to categorise the basic and the "attractive" attributes. This method is however laborious, time-consuming and requires the understanding of the respondents (Mikulic & Prebezac, 2011:58).

4.6 EXTENSION OF THE TRADITIONAL KANO MODEL

Several modifications and extensions have been made to the traditional Kano model to account for other variables or shortcomings. These extensions has been extensively researched and extended to account for other variables and shortcomings (Miyakawa & Wong, 1989; Schvaneveldt, Enkawa, & Miyakawa, 1991; Brandt, 1998; Matzler & Hinterhuber, 1998; Yang, 2005; Yang & Yang, 2011).

4.6.1 The refined Kano model (A-Kano model)

The refined Kano model by Yang (2005) emphasized on only four Kano categories namely; "one-dimensional", "must-be", "attractive" and "indifferent" attributes. Each of these four categories were-classified into two classes of attributes: high importance

and low importance. Attributes that below the overall mean are classified as low importance while those above are regarded as high importance (Yang & Yang 2011, 930). The refined model classification of the categories of the traditional Kano model is shown in Table 4.4

Table 4.4: Classification of attributes in the refined Kano model

Kano model categories	Refined Kano model	
Attractive (excitement)	High importance	Low importance
One-dimensional (performance)	High attractive quality attributes	Less attractive quality attributes
Must-be (basic)	High-value quality attributes	Low-value quality attributes
Indifferent	Critical quality attributes	Care-free quality attributes

The refined Kano model advocated the provision of attributes in the ‘high importance' categories over those classified as ‘low importance' attributes. The implication of this process includes the attraction of customers and reduction in cost (Yang & Yang, 2011:931). Furthermore, the “indifferent” attributes are classified either as potential quality attributes or care-free attributes.

4.6.2 Analytical Kano model (A-Kano model)

Xu *et al*. (2008:88)’s analytical Kano model (A-Kano model) proposed a quantitative approach to assessing the Kano questionnaire. Based on four operations; Kano indices, Kano qualifiers, configuration index and Kano evaluator, the A-Kano model is capable of distinguishing functional requirements (FRs) within the same category (Xu *et al*., 2008:90). The A-Kano model applies an asymmetric scoring format on the Kano questionnaire which diminishes the effect of negative evaluation for both the functional and non-functional questions. The responses to the Kano questionnaire are allocated weight as shown in Table 4.5.

Table 4.5: Scoring format for functional/non-functional features (Kano evaluator)

Answers to Kano question	Functional form of question	Dysfuntional form of question
I like it that way (like)	1	-0.5
It must be that way(must-be)	0.5	-0.25
I am neutral (neutral)	0	0
I can live with it that way(tolerate)	-0.25	0.5
I dislike it that way (dislike)	-0.5	1

Source: Xu *et al.* (2008:93)

In addition to this, the self-stated importance is normalised to ensure that it falls within the range of 0.0-1.0 as shown in Table 4.6.

Table 4.6 Scores of self-stated importance

Not important ⟷ Extremely important						
1	2	3	4	5	6	7
.14	.29	.43	.57	.70	.86	1

The A-Kano analytical model uses two procedures to assign attributes to Kano categories; the two-dimensional grid method and the Kano classifier. In the two-dimensional grid method, the average level of satisfaction and average level of dissatisfaction are evaluated as follows.

Average level of satisfaction (X_i) = 1/j $\sum_{j=i}^{j} WijXij$;

Average level of dissatisfaction (Y_i)= $1/j \sum_{j=i}^{j} WijYij$; where

x_{ij} = score given to an FR for the non-functional form question;

y_{ij} = score given to an FR for the functional form question; and

w_{ij} = self-stated importance (the perception of respondents perception of the importance of attributes).

The classification of attributes is established by cross-coordinating the values of the functional scores (X_i) and non-functional scores (Y_i) on a two-dimensional grid, four quadrants grid.

In another vein, the A-Kano model weights the importance index (r_i) and satisfaction index (α_i) and set up and evaluates the Kano classifiers r_o, α_i and α_L to assign attributes to Kano factors. The following conditions are applied in the classification of attributes into Kano factors using the Kano classifiers (for detail, see Xu *et al.*, 2008: 93).

"Indifferent" FRs = $r_i \leq r_o$

"Must-be" FRs = α_L, where for f_i, $r_i > r_o$ and $\alpha_i \leq \alpha_L$;

"Attractive" FRs = α_H, where for f_i, $r_i > r_o$ *and* $\alpha_i \geq \alpha_L$; and,

"One-dimensional" FRs = $r_i > r_o$ and $\alpha_L < \alpha_i \leq \alpha_H$.

4.7 PROCEDURES ADOPTED TO CLASSIFY ATTRIBUTES OF SHFs

Based on the discussions of the weaknesses and the strengths of the various methods for classifying attributes into the Kano categories, the analytical Kano model procedure was adopted for this study. As earlier stated, the A-Kano model is a quantitative method that applies the asymmetric scoring format that diminishes the negative evaluation for both the functional and non-functional questions. In addition, the A-Kano model is more sensitive than the traditional method as attributes are highly distributed into the various categories as revealed in a comparative study by Xu et al. (2008:90).

4.8 INTEGRATION OF THE IPA AND KANO MODEL IN THE EVALUATION OF ATTRIBUTES PERFORMANCE

The validity and reliability in the use of IPA to classify and recommend action for improvement have been called into question. Matzler *et al.,* 2004 suggested an integration of IPA and Kano model to improve the validity and reliability of the results:

- That attribute performance and attributes importance are independent variables;
- That the relationship between attributes performance and overall performance is linear and symmetrical.

Matzler *et al*. (2004:274) proposed an integrated model to explain that a nonlinear and asymmetric relationship does exist between the level of performance of some attributes and overall customer satisfaction. The integrated IPA and Kano model was used to identify primary drivers of customer satisfaction and setting of priorities for products and services improvement (Matzler & Heischidmt, 2003; Matzler *et al*., 2004; O'Neil & Palmer, 2004; Zhang & Chow, 2004; Deng *et al.,* 2008). Deng *et al.* (2008:38) noted that the integration of the Kano model and IPA enables investors and business managers to make rational decisions on how best to deploy scarce resources to obtain the highest degree of customer satisfaction. Based on integrated IPA and Kano model, a decision could be made from a combination of two decision platforms; importance/performance platform and Kano factors platform. For example, an attribute may fall into the 'concentrate here' quadrant which suggests that urgent attention is required, however, on further analysis with Kano model, such attribute may turn out to be an "attractive" item. An "attractive" attribute yields satisfaction when it is made available but does not however lead to dissatisfaction when it is not available (Matzler & Sauerwein, 2002).

4.9 MEASUREMENT OF THE IMPORTANCE OF ATTRIBUTES

A variety of methods exists for the measurement of the importance of attributes (Ittersum *et al.,* 2007:1178). Attribute importance is most appropriately defined in relation to its behavioral outcomes (Pennings & Smidts, 2003). Ittersum *et al. (*2007:1179) identify three components that influence the importance consumers attach to attributes, namely, salience, relevance and determinants. Salience refers to the degree of ease to which attributes come to mind, while relevance is largely is the individual values and desires and determinants which are the perception of difference in attributes level. Three common formats that are used to measure the importance of attributes are the free-elicitation method, direct-rating method and point-allocation method. The free-elicitation method uses open-ended questions to let individuals

indicate attributes that are considered to be important (Ittersum *et al.,* 2007:1179).The direct-rating method directly asks people to judge the importance of attributes and by inferring through information search. The process requires respondents to rate the attributes on a rating scale. The point-allocation method requires individuals to distribute 100 points among attributes with the most important attribute receiving the highest point.

The method adopted in this study is the free-elicitation method where individuals were asked to rate their perception of the importance of attributes on a 7-points semantic scale.

4.10 CONCEPTUAL FRAMEWORK

One of the main objectives of this study was to develop a conceptual framework which represented the elements contributing to satisfaction with, importance of these attributes and the behaviour of student-residents. The following section discusses the conceptual framework that guides the study. A conceptual framework explains the matter to be studied in a logical and sequential arrangement and the relationship among them either graphically or in narrative form.

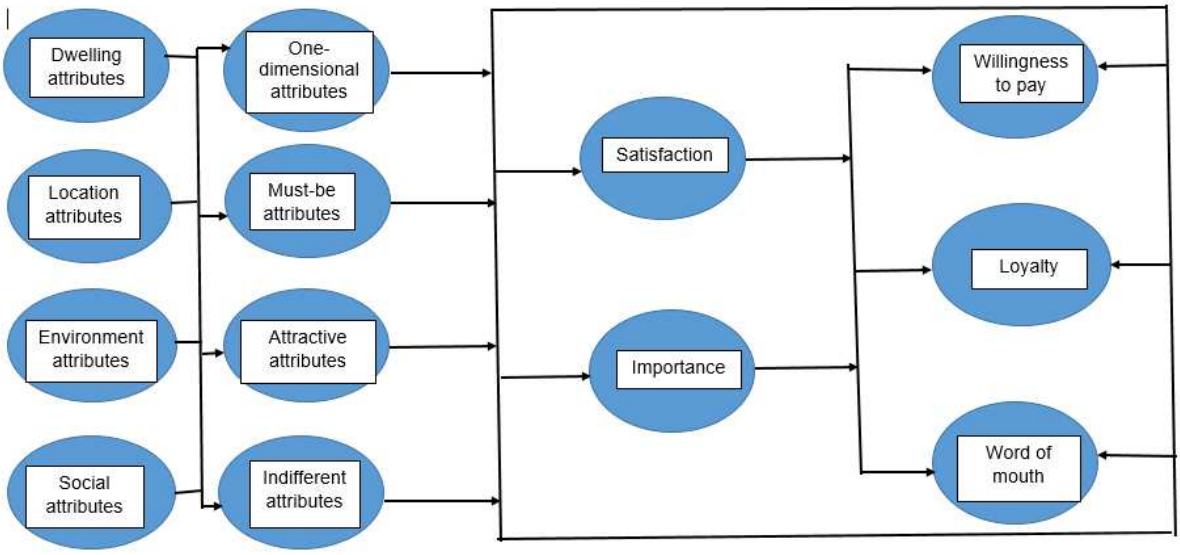
The essential features of most residential satisfaction models and conceptual frameworks are the establishment of the interaction between satisfaction and, the characteristics of users (either cognitive or behavioural) and the components of the residential environment (Amerigo & Aragones, 1997:47). These residential frameworks and models are developed to reflect two distinct assumptions about satisfaction (Weilderman & Anderson, 1985) namely;

- Satisfaction is treated as a criterion variable in the evaluation of residential quality, hence as a dependent variable; and
- satisfaction is treated as a predictor of behaviour of residents and hence as an independent variable.

The conceptual model presented in Figure 4.4 was developed to proffer a link and relationship among the concepts of this study; residential environment, residential satisfaction and the Kano/three-factors model. The main focus of the conceptual framework was to provide an understanding of the relationships between SHFs attributes in the Kano categories and, the importance attached to attributes on the one

hand and satisfaction with attributes on the other. It went further to show the effects of the attributes in the Kano categories, satisfaction of residents with attributes and the importance that residents attached to these attributes on their behaviour such as willingness to pay, loyalty and the word of mouth.

Figure 4.4: Residential satisfaction with off-campus student housing: a conceptual model



Source: Author's construction

In this conceptual framework, the attributes of the residential environment, the dwelling, location, environment and social attributes are re-classified into the Kano/three-factor categories to incorporate the symmetric and asymmetric implications of perception of quality on resident satisfaction. The categorisation of SHFs attributes into Kano categories was done by combining the refined Kano model and the A-Kano model. This is in line with the view that a better understanding of the symmetric and asymmetric impact of attributes of quality on satisfaction is crucial to the development of an improvement strategy. In several studies, the Kano/three-factor model had been used to show that consumers do not react equally to similar quality of attributes. Hence, more of an attribute may not always yield better satisfaction and hence, profit. Furthermore, the importance performance analysis (IPA) was also combined with the refined Kano model/A-Kano model to provide a more robust evaluation of the perception of performance of attributes by residents.

Furthermore, the framework showed that the behaviours such as loyalty, willingness to pay and word of mouth of residents are influenced by the importance attached to these attributes and the satisfaction derived from the utilization of these attributes.

4.10 CONCLUSIVE REMARKS

Chapter Four discusses the theoretical and conceptual framework of the research that is anchored in the concept of resident satisfaction with off-campus SHFs. The conceptual framework dealt with the classification of the SHFs attributes into the Kano model categories. The conceptual framework further highlighted the relationships between different aspects of the constructs; such as the expectations of performance of attributes, satisfaction, importance, loyalty, willingness to pay and word of mouth behaviour. An integration of the analytical Kano model, refined Kano model and importance-performance analysis (IPA) was proposed to reflect the symmetric and asymmetric relationships between the performance of attributes and satisfaction with attributes.

CHAPTER FIVE

RESEARCH METHODOLOGY AND TECHNIQUES

5.1 INTRODUCTION

This chapter documents the research procedures that were followed to achieve the objectives and hypotheses of the study as outlined in sections 1.5, 1.6 and 1.7 of chapter one of this thesis. The objectives and hypotheses dealt with the main research problem which focused on determining how the performance of attributes of the residential environment drive residents' satisfaction with student housing in South-South, Nigeria. An important aspect of this chapter is the development of a procedure for the transformation of the attributes of the residential environment into the Kano model categories. These procedures, techniques and processes are discussed in the sections on research design, research methodology, the research methods, data collection, and data analysis.

5.2 DIMENSIONS OF RESEARCH METHODOLOGY

An understanding of the research philosophy relevant to this study is presented to facilitate the selection of design and methods that were necessary for the research. Research, according to Leedy and Ormrod (2013:2) involves three processes; data collection, analyses and interpretation which are aimed at proffering a better understanding of the phenomenon. Research methodology for the study is selected based on the purpose and nature, as well as the research paradigm and philosophical leaning of the research (Blumberg, Cooper & Schindler, 2005). It was necessary to properly situate the research philosophy and adopt appropriate research methods and procedures to answer the research questions in order to avoid problems and inconsistencies in research findings (du Plooy-Cilliers, 2014:19).

This is more so as differences exist among researchers on how a research study should conducted and are guided by a set of different philosophical thinking and paradigm. Research philosophy and paradigms are useful in the development of the research background, research knowledge and its nature (Saunders & Thornville, 2007). Philosophical thinking and paradigms are vital in research as they provide the foundation for the design of a study; identify assumptions that influence the process and mode of reporting the results by researchers. Easterby-Smith *et al.* (2002)

reasoned that philosophical views in research help to clarify research design, recognise the research method that is appropriate and adapt the design of the research to suit the prevailing circumstances.

5.2.1 The research philosophical orientation

Prominent among the philosophical views/assumptions of research are the ontological and epistemological assumptions.

5.2.1.1 Ontological orientation

Ontology refers to the philosophy of existence, beliefs and assumptions that influence the researcher's understanding of the nature and perception of reality. The ontological view helps the researcher to answer questions on reality such as what exists, true and real (Saunders *et al.,* 2009). Furthermore, this assumption enables a reliable appreciation of the nature of the world and how it influences the selection of the research approach and methods.

Two divergent views of ontology exist: the realist/objectivist and subjectivist (Gill & Johnson, 2010:201). The realists/objectivists hold that the reality of existence is independent of the belief systems of the respondents; whereas, the subjectivists/idealists hold that the reality of existence can be influenced through the researchers' consciousness and cognition (Saunders *et al.,* 2009:112).

5.2.1.2 Epistemological orientation

Epistemology refers to ideological belief that forms the basis for the examination of the relationships between the researcher and what can be known and how we come to know what is known. Two broad categories of epistemology are the subjectivist and the objectivist school of thoughts.

The subjectivist epistemology assumes that we cannot separate ourselves from what we know. The researcher and the object of investigation are linked such that who we are and how we understand the world is a central part of how we understand ourselves, others and the world. Whereas, the objectivist adopts the natural and scientific mode of enquiry to study reality that is devoid of biases to produce an objective body of knowledge. This study adopted the objectivist epistemological approach.

5.2.2 Research paradigms

Research paradigm refers to the philosophical reasoning, belief and traditions that researchers hold which, according to Bryman (2012: 630) influence what and how research should be undertaken, and results interpreted. Research paradigms are a broader framework that is derived from a worldview or belief system about the nature of knowledge and existence. The identification of research paradigm assists the researchers to determine workable research questions and the best methods that are more likely to generate acceptable results (du Plooy-Cilliers, 2014:19). Thus, the researchers' perception, beliefs and understanding of several theories and practices essentially influence the choice of an approach to research. Research paradigm offers a precise procedure, which involves various steps through which a researcher creates a relationship between the research objectives and questions. The positivist and the phenomenological approaches are popular paradigms that are used in housing research (Amole 2009; Akingbohungbe & Akinluyi 2012; Abdullah, Muslim & Karim 2013). The phenomenological and positivist research paradigms are discussed in the following sections.

5.2.2.1 Phenomenological approach

This research philosophy believes in the existence of external and objective reality that influences people's social interpretations and behaviour. The phenomenological paradigm attempts to negotiate truth through dialogue as findings or knowledge claims are created as an investigation proceeds. All interpretations are thus based on a particular moment that is located in a particular context or situation and time. The findings obtained through the phenomenological approach are open to re-interpretation and negotiation through discussion.

Unlike the positivist, the phenomenological paradigm assumes that more than one truth and reality exists, thus different persons have different perceptions, needs and experiences. Hence, the stakeholders are interviewed to obtain rich, high valued and deep individual opinions. Thus, the phenomenological approach adopts the qualitative methods that are descriptive and explanatory. Thus, experts and stakeholders interviews and focus group discussions were conducted during the pilot survey.

5.2.2.2 The positivist approach

The positivist approach is one of the dominant research paradigm in resident satisfaction research (Amole 2009; Akingbohungbe & Akinluyi 2012; Abdullah, Muslim & Karim 2013) and it relies on measurement survey and experiments to collect data (Cooper & Schindler 2006). The positivist view attempts to predict and explain changes in knowledge and their belief is rooted in the assumption that only one truth exists and it must be objective. Positivism philosophy is a critical and objective centred method based on a well-structured methodology that is used to collect and evaluate data to produce results that could be generalised. The main argument of the positivist approach is that only "objective, observable and verifiable facts should be considered in an attempt to understand and explain natural and social phenomenon" (du Plooy-Cillier, 2014:19). The positivist methodology is established on the approach of the natural science (Plooy-Cilliers, 2013:24) which emphasises the principles of objectivity and realism. Thus, the positivist paradigm investigates and explains a phenomenon based on results that are obtained through quantitative data collection and analysis rather than speculation (Blumberg *et al.,* 2005:39).

This research paradigm is selected because the role of the researcher in this study is that of an objective analyst who collects, evaluates and produces appropriate results to achieve the research aims and objectives. In other words, the biases and subjectivity of the researcher are reduced considerably. In addition, the positivist approach is useful for empirical study and possesses vast statistical approaches for the determination of research objectives. This was achieved with the use of a well-structured questionnaire that was developed and administered to elicit data that were evaluated quantitatively. The research questions and hypotheses of this thesis were designed to determine the relationships between the constructs that were identified in student housing literature.

5.3 RESEARCH DESIGN

Research design discusses the strategy that is required to solve the problem and objectives of the study. It highlights the procedures that are followed to collect, analyse and interpret data (Leedy & Ormrod, 2013:74). Therefore, the description of research design is influenced by the problems, objectives and hypotheses of the study (Milly, 2011:96). A set of decisions that are made to achieve the desired goals focuses on

addressing what is to be studied and how it is to be studied (Gravetter & Forzano, 2009:185). The “what” refers to the population and study sample while the “how” addresses the methodology and methods of study (Babbie, 2013:112). De Vaus and de Vaus (2001, 10) noted that the attainment of conclusive answers to research questions and objectives is hinged on the effectiveness of the research design that is used to collect and interpret data.

Typical research designs that are used to define and specify methods in research are the exploratory research design, causal research design and descriptive research design (Struwig & Stead, 2013). Exploratory approach is used in cases where the intention is to develop new ideas and/or formulate research problems. Whereas, the causal research design explores the cause and effect relationships among variables, and the descriptive research design describes the characteristics of the phenomenon. This study was hinged on two research design approaches: the exploratory research design and descriptive research design which are discussed in the following sections.

5.3.1 Exploratory research design

Exploratory research design is undertaken when little is known about the phenomenon, and the discovery of new knowledge and ideas is, therefore, required (Struwig & Stead, 2013: 6; Davis 2014, 75). Specifically, the exploratory research design enables the identification of key concepts, prioritization of needs and consequences of research problems on subjects (Du Plooy, 2006:48). In addition, it lays the foundation for identifying the factors that are relevant to the study (Aneshensel, 2002: 4; Wisker, 2001: 119).

The exploratory design approach is executed in two stages (Leedy and Ormrod, 2013:260). Three possible approaches are used during the first phase to develop a general and accurate knowledge of issues related to the study. These approaches include the probing of secondary sources, focus group discussions and expert panel interview (Struwig & Stead, 2013:7).

In this study, the initial exploratory research included the search of literature, discussions with a focus group of 40 students who reside in off-campus accommodation and an interview of 10 experts in building and housing development.

The aim was to identify attributes of the residential environment that would be relevant to the study. The data obtained from the exploratory study were used to develop a research instrument that was used in the second phase of the study. Specifically, only attributes of the residential environment that are relevant to students who reside in SHFs were included in the survey instrument.

During the second stage, the general and specific knowledge gained in the first phase was used to design the instruments that were used to elicit information from student-residents. Although, the study incorporated some aspects of qualitative research design, it however leaned strongly on the quantitative approach as the general structure that was used to collect data from respondents (Leedy & Ormrod, 2013:260).

5.3.2 Descriptive research

Descriptive research is vital in a study as it provides a complete and accurate description of the situation (Davis, 2014 : 74). It permits the identification of the characteristics of the concept and the relationships between variables and phenomena (Kumar, 2011: 10). Descriptive research is often a precursor to correlational and explanatory research approaches both of which address the reasons why certain relationships and interrelationships exist. Davis (2014: 76) noted that correlational studies show a relationship among variables while explanatory studies typically explore the varying degree to which these relationships exist. A correlational approach was used in this study to measure the association, relationship and interrelationships among and between variables; while explanatory approach underscored the reasons responsible for the occurrence. The hypotheses of the study were tested using the explanatory approach to establishing the direction of the relationships whether negative or positive (Du Plooy, 2006:50).

In summary, this study incorporated aspects of exploratory, descriptive, correlational and explanatory research approach and a mixture of both qualitative and quantitative research.

5.4 DATA COLLECTION METHOD

The following sections describe the study population, sample and sampling techniques, methods and survey instrument adopted in this study to address the

research problems, objectives and hypothesis outlined in sections 1.5, 1.6 and 1.7 of Chapter One of this thesis.

5.4.1 The target population

The population of a study refers to the aggregation of the entire elements or units where the sample for the research is drawn (Babbie, 2007:190). It thus consists of all the units of the phenomenon that are of interest to the researcher (Keyton, 2011:121). The population for this study was identified to consist of all students in selected tertiary institutions in the South-South, Nigeria, who are residents of privately developed off-campus housing. The selected population possessed identical demographic characteristics that are vital for the collection of reliable information that was used to analyse and explain the research problems and hypotheses. It is necessary to differentiate between the users of student housing and other residential housing as previous studies (Amole, 2009; Khozaei *et al.,* 2010) clearly revealed that their demographic characteristics are different. Therefore, there should be a high probability that the data collected from the population represent real housing needs and experiences of first-hand respondents.

5.4.2 Sampling method

Sampling refers to the process used to select a portion of the population that is representative of the larger population for the study (Niewwenhuis, 2012:79). Sampling ensures that the results generated from survey data are valid and could be generalized to explain the larger population (Gravetter & Forzano 2009:133; Fellows & Liu, 2003:139). The fulfillment of the objectives of sampling depends on the sampling methods that is used for the study. Struwig and Stead (2013:116) identify two main sampling methods; the probability sampling methods and non-probability sampling methods.

The probability sampling methods are based on the principles of randomness and probability theory (Babbie, 2007:187). These methods ensure that each element in the population has the likelihood of being included in the sample (Maree & Piertersen, 2012: 172). Examples of probability sampling methods used in research are the simple random sampling, systematic sampling, stratified sampling and cluster

sampling (Leedy and Ormrod, 2013). Simple random sampling is adopted when a complete list of all the elements in the population is available, and a random selection is then made of units to be included in the survey. In contrast, systematic sampling draws its sample from every k^{th} element from a serially ordered list of units in the population. Stratified and clustered samplings both divide the population into strata and clusters respectively and afterwards either a simple sampling or systematic techniques are used to draw the sample until a quota is reached.

In contrast to the probability sampling methods, non-probability method is not governed by probability theory. The non-probability methods consist of the convenience sampling, purposive or judgement sampling, quota sampling and snowball sampling (Babbie, 2007:183; Struwig & Stead, 2013:117). The convenience sampling method is employed in circumstances where elements of a sample are selected based on the ease of accessibility and availability of subjects (Maree & Piertersen, 2012:177; Pascoes, 2014:142). Quota sampling groups the population into sub-populations and a sampling is done on each until the required group quota is attained (Maree & Piertersen, 2012:177). However, in certain cases, where it is difficult to locate the population, the snowball sampling techniques are used. The Snowball sampling technique uses the contact group and referrals. The contact groups are first sampled and are then requested to provide information on the location of other homogenous elements in the population (Pascoe, 2014:143). Purposive sampling is a type of non-random sampling techniques where the researcher decides on subjects to be included in the survey based on the consideration of representativeness of the study population (Babbie, 2007:184). Other considerations that influence the choice of purposive sampling are the desire to select elements whose characteristics and attributes are relevant to the determination of the research questions and hypothesis (Pascoe, 2014:142). The non-probability sampling techniques are essential in research where the focus is to have equal representative of the population in addition to capturing the opinion of respondents that are easily available.

The selection of the student-respondents for this study involved a two-stage sampling procedure. First, a sampling decision was made to select the institutions that are included in the survey and thereafter the sampling of the off-campus students who are

the subjects of the study. The sampling techniques used in this regard are the purposive, convenience sampling and the snowball sampling.

First, the purposive technique was used to select the institutions from three lots: namely, federal institutions, state institutions and private institutions in South-South, Nigeria. The list of institutions in the sample frame was obtained from the websites of the National Universities Commission (NUC) and the National Board for Technical Education (NBTE). Since the year of study of the students was one of the demographic variables that were evaluated, it was considered important that only institutions with students in the first to fourth year should be included in the survey. Based on this criteria, one private university was selected out of a total of six, as only two met the condition. It must be stated however that the majority of the institutions that met this condition were located in Edo State, hence the high number of institutions from this locality. This procedure generated a sample of seven institutions (Auchi Polytechnic, Ambrose Alli University (AAU), University of Benin, Delta State University, University of Uyo, Igbinedion University and River State University of Science and Technology (RUST) where the respondents in the study were drawn from.

The population for this study was comprised of all students residing in off-campus SHFs in tertiary institutions located in the South-South geopolitical region of Nigeria. The reasons for selecting the South-South geopolitical region of Nigeria as an area of interest include the following:

- The researcher's home is located in South-South Nigeria thus enabling easy access to the selected institutions;
- Shortage of on-campus accommodation is a peculiar problem in institutions selected for this study (Akingbohungbe & Akinluyi, 2012: 70); and
- There are existing SHFs problems in this region as well as in other geopolitical regions (Amole, 2009).

Secondly, the convenience sampling and snowball sampling techniques were combined to select the respondents for the study. A convenience sampling method was adopted to select only students who are easily accessible and readily available (Babbie, 2007:188; Leedy & Ormrod, 2013:214). In order to increase the sample of study, the snowball sampling technique was used to complement the convenience

sampling method, hence, respondents were requested to suggest additional persons for interviewing (Babbie, 2007:184). This method was appropriate as the development and ownership of SHFs is fragmented, and addresses of students were undocumented.

5.4.3 Sample size

An important consideration in research is the size of the sample used in the study. The accuracy of the results and the extent to which this could be generalized to the entire population depends on sample size (Knight & Ruddock, 2008: 126). Adequate sample size produces results that are consistent, unbiased, efficient and sufficient (Fellows & Liu, 2003:143). The size of the sample according to Maree and Piertersen (2012:178) is influenced by choice of statistical analyses, accuracy of results that are required and the characteristics of the population. A smaller sample could be used to explain a homogenous population than with a heterogeneous population (Maree & Piertersen, 2012, 179). A previous study on SHFs found that a high level of homogeneity exists with the demographic characteristics of the respondents (Amole, 2009; Khozaei, 2010).

In order to select the smallest sample size that would provide the desired results, factors, such as the minimum acceptable level of precision, confidence interval (5%), confidence level (95%), variability within the population were considered.

$$n = \left[\frac{z_{\alpha/2}\sigma}{E} \right]^2$$

Where n= sample size;

Z = standard error associated with a 95 % level of confidence;

p = estimated variability in the population (50%);

q = (1-*p*);

E = acceptable error (5%).

Based on these parameters, which were substituted into the formula used in determining the sample size of the study, a minimum sample size of 480 respondents was obtained at 95% confidence level for valid results.

5.3 DATA COLLECTION METHODS

Data refers to information about a particular situation and are obtained either from primary or secondary sources. The decision on the data that are required, location of such data, methods for collection of data and how the data are interpreted is vital to the success of the study (Leedy & Ormrod, 2013:80). Secondary data and primary data were collected to resolve the problems, objectives and hypothesis of the study.

5.5.1 Secondary data

The secondary data referred to in this study include related information collected in the past by other parties or researchers (Gravetter & Forzano 2009). These secondary data are used to lay a theoretical foundation for the study and prepare the survey instrument used in data collection. The secondary data were sourced from published materials (books, journals, periodicals, conference proceedings, building codes, policies and guidelines for student housing) and unpublished reports (thesis).

5.5.2 Primary data

Primary data are data collected or observed directly by the researcher on the subject(s) under investigation (Babbie, 2007). Typical data gathering methods used in research that were relevant in this study are the focus group discussions, expert interviews and questionnaire administration. The SHFs attributes sourced from literature were subjected to expert panel scrutiny and focus group discussions. Based on the output of these procedures, a survey instrument was designed to elicit the respondents' perception of satisfaction with attributes of SHFs. The respondents were personally administered with a self-study questionnaire in their off-campus residences, academic departments, or place of work by the researcher or trained field workers. The field survey and data collection was conducted between June 21st 2014 and August 5th, 2014.

5.5.3 Focus group discussions

A focus group discussion was used to direct dialogues on a particular issue (Bell, 2005:162) with the goal of identifying and capturing real-life data based on actual thought process, needs and personalities of individuals (Babbie, 2007:309). A focus study group that was comprised of students who reside in off-campus SHFs in Auchi Polytechnic was used to identify attributes that are important to residents of SHFs that could be included in the survey instrument. A list of design and construction attributes of SHFs generated from literature was prepared as a basis for discussion. Opinions were advanced, discussed and analysed to reach a reasonable degree of majority or consensus on attribute by attribute basis. Precaution was taken to ensure that the outcome of the discussions was not influenced by the researcher and the more vocal participants by allowing everyone to voice an objection to the inclusion of attributes (Bell, 2005:14).

5.5.4 Expert interview

The expert panel consisted of a group of six designers and four construction professionals/developers who had prior experience or were conversant with student housing development. The panel of experts examined the generated list of SHFs attributes to ensure that only items that are critical to SHFs development are included in the survey instrument. The reduction of the number of attributes in the survey instrument to a manageable size was achieved by this process.

5.6 SURVEY METHOD

The research method refers to the techniques used to collect and analyse data (Leedy & Ormrod, 2013; 76). The outcomes of the focus discussions, expert interviews and literature search were incorporated in a structured questionnaire that was used to collect information from a representative sample of the population (Bell, 2005:14). A survey instrument containing specific questions relating to the research question was designed and administered to a representative sample of the population. A pilot study was conducted in one of the institutions to ensure a uniform understanding and interpretation of the wording of questions among respondents. In addition, the pilot survey ensured that only useful data are solicited and gathered in the survey (Bell, 2005:14). The survey questionnaires were circulated to respondents in their various

residences and academic departments, and repeat visits were made to retrieve questionnaires from those respondents who could not complete theirs immediately. To ensure a higher response rate, some of the respondents were assembled in halls, and questionnaires were administered and collected immediately after completion.

5.6.1 Development of the survey instrument

In line with the positivist approach adopted for this study, a structured self-completed questionnaire was designed and used to collect primary data from respondents. The survey instrument was designed to collect data that are needed to address the research questions, objectives and hypotheses as stated in section 1.4, 1.5 and 1.6 of chapter one of this thesis. The data required include residents' perception of satisfaction with the attributes of the residential environment, the importance attached to these attributes and consequences of behaviour with the use of these attributes. The questions in the survey instrument were grouped into five sections to capture the relationships within and among the central constructs as depicted in the research theoretical framework (Figure 4.1).

The research framework outlined the interrelationships among the fundamental constructs; the quality of attributes based on Kano classification, satisfaction with attributes, importance of attributes, loyalty, word of mouth and willingness to pay for attributes. The sections of the survey instrument are shown in Table 5.1, and a complete questionnaire is provided in Appendix 1.

5.6.1.1 Measurement scale

The choice of scale imposes restriction on the method used in data collection, analysis and interpretation of results (Plooy-Cilliers & Cronje, 2014, 157). Three methods commonly adopted to evaluate the behaviour or perception of individuals is the checklist, rating and ranking survey (Leedy & Ormrod, 2013:192). The checklist provides a list of the variables; characteristics or behaviour and the respondents indicate an item or set of items that are perceived to be pertinent to them. In the ranking scale, the respondents are required to assess the behavioural attributes in the order of significance or vice-versa. Whereas, in the rating scale measurement, the feelings and perceptions are associated with the degree of perception that are expressed in

ordinal, interval or ratio measurement scales (Maree & Piertersen, 2012: 167). The standard rating scales used in research are the Likert-scale and the semantic differential scale (Plooy-Cilliers & Cronje, 2014: 159).

This study adopted the ordinal semantic differential scale to rate the responses of respondents to survey questions in section B, C, and D. The ordinal measures are used in research to order or rank variables (less than or greater than), however, it does not show the differences that exist between different measurements (Leedy & Ormrod, 2013 : 85, Plooy-Cilliers & Cronje, 2014:158). The choice of semantic scale is influenced by analytical procedures which are descriptive and inferential in nature (Leedy & Ormrod, 2013: 87).

5.6.1.2 Residential environment dimensions, domain and attribute list

This section outlines the procedures undertaken to develop the scale that was used in this research. The attributes and the dimensions of the residential environment included in the survey instrument were considered to be relevant to resident satisfaction with SHFs. These attributes of the residential environment were identified from literature (Canter & Rees, 1982; Galster, 1985; Ukoha & Beamish, 1997; Fourbert, Tepper & Morrison, 1997; Francescato, 2002; Adriaanse, 2007; Amole, 2005; Amole, 2009; Khozaei, Ayub, *et al*. 2010; Mohit *et al.,* 2010; Ibem & Aduwo, 2013; Abdullah *et al.,* 2013).

Table 5.2 shows the dimensions, domain and the number of attributes that were included in the survey instrument. The dimensions include:

- dwelling and physical;
- social factors;
- neighbourhood attributes;
- public services; and,
- management factors.

Through the processes of the literature search, focus group discussions and expert interviews, a total of 53 attributes of the residential environment were selected and

tested in a pilot study. A summary of the categories of the dimensions and domain of the attributes of the residential environment used in this study is shown in Table 5.1.

Table 5.1: Residential environment dimensions, domains and items in sections B, C and D of the survey instrument.

Dimensions	Domain	Number of items
Dwelling and physical	Size of internal space	3
	Conditions of internal components	10
	Housing configuration	4
	Housing services	5
Social factors	Social	15
Neighbourhood	The health of the environment	3
	Security of the neighbourhood	4
Public services	Public services	4
Management factors	Management	5

These factors and dimensions were common to general reidential satisfaction studies. To develop a scale that is relevant to the SHFs environment, the attributes in the survey instrument were further subjected to a principal axis factor analysis (see sections 5.9.6 and 6.4 for details). The result showed that a total of 51 attributes out of the 53 attributes in the survey instruement were loaded into four dimensions which formed the basis for the analysis of data and interpretations of results. These dimensions that were obtained from the factors analysis are:

- neighbourhood services and management attributes;
- the security and pollution factors;
- the social issues; and,
- physical dwelling aspects.

The resulting residential environment dimensions and attributes were used to prepare the functional and non-functional questions for Kano factors (sections B), perception of satisfaction with attributes and importance of attributes (section C) and the perception of the impact of quality attribute on resident behavior (loyalty, willingness to pay and word of mouth) (section D). The contents of these divisions are discussed in the following sections.

5.7 DIVISIONS OF SURVEY INSTRUMENT

The following sections describe the divisions of the survey instrument. The survey instrument is divided into five sections; namely:

- Housing information (Section A);
- Kano methodology questionnaires consisting of the functional and non-functional questions to examine the perception of availability and non-availability of attributes respectively (Sections B);
- perception of satisfaction with attributes and importance of attributes (Section C);
- perception of the impact of quality of attributes on resident behavior (loyalty, willingness to pay and word of mouth) (Section D); and,
- the demographic characteristics of residents (Section E).

5.7.1 Section A: Housing information

Section A is made up of multiple response questions that were used to obtain housing information. Respondents were asked to identify the types of accommodation they occupied over a period of four academic sessions. The purpose was to find out the housing loyalty or the switching pattern by students over the periods they were enrolled in tertiary institutions. A question was also included to elicit information that enabled the comparison of perception of the quality of off-campus residence and on-campus accommodation.

5.7.2 Section B: Statements relating to the perception of availability and non-availability of residential attributes

Section B proposed the functional questions and non-functional questions in line with Kano methodology. This section was divided into two columns; a column each for questions that were designed to observe the feelings of residents when attributes of the SHFs environment are available (functional) and when not available (non-functional). The objective was to categorise the attributes of the SHFs environment into the Kano/three-factor categories; namely, the basic factor, the excitement factor, performance factor and the indifference factor. The response options for the functional questions and non-functional questions are in line with the specification of the Kano methodology as follows:

1. I like it that way;
2. I expect it that way;
3. I am neutral;
4. I can tolerate it; and
5. I dislike it.

5.7.3 Section C: the perception of the importance of attributes and satisfaction associated with attributes of the residential environment

The questions in this section were designed to measure residents' perception of the importance of attributes and the level of satisfaction derived from each of the attributes of SHFs. These data were required for the determination of the Importance-Performance (satisfaction) Analysis (IPA). Developing a measurement procedure of IPA in the SHFs sector required an adaptation of studies undertaken in other fields as limited studies exist in the housing industry. Firstly, the list of attributes that were considered as salient in determining the IPA were compiled from literature searches, content analysis and focus group discussions, personal interview with experts, and personal judgement.

A number of studies adopted the multiple-item scales or single item scale to determine satisfaction. In this study, a single-item scale was chosen to generate individual satisfaction and importance value associated with each attribute, and related attributes are grouped together to establish satisfaction and importance of dimensions. The respondents were asked to evaluate the importance of each attribute and satisfaction experienced with different attributes on a 7-point semantic-scale with one being *not important*/*no satisfaction* and 7 being *highly important/very high satisfaction* respectively.

5.7.4 Section D: The perception of the impact of attributes on behaviour (loyalty, willingness to pay and word of mouth)

The procedures used in section 5.7.2 above was followed for the determination of loyalty, willingness to pay and word of mouth.

5.7.5 Section E: Demographic characteristics of respondents

The demographic attributes measured in this section include the age, gender, educational level and income of respondents. This section is used to examine possible differences in perception based on demographic backgrounds.

5.8 ANALYSIS AND TREATMENT OF DATA

The data collected from the survey were used to highlight useful information and draw conclusions which address the objectives of the study (Aneshensel, 2002: 4). The process involved the inspection, categorisation, transformation, and modelling of data (Babbie, 2007: 378).

5.8.1 Criteria governing admissibility of data

The data that were obtained from the study were tested to ensure that the criteria of validity, reliability and minimum ethical standards are met. Firstly, participation in group discussions was voluntary and interactive, with the researcher acting as an unbiased co-ordinator. Statements reflecting the residents' needs were used to guide group discussions, and the salient points that emanated from the deliberation were recorded in a specified format. Finally, these and other data collected from the field survey were admitted based on well-structured survey questions that were subjected to a validity and reliability test.

5.8.2 Validity of measurement

Validity is the degree to which an empirical scale sufficiently measures the intended concept (Babbie, 2007:146, Leedy & Ormrod, 2013: 89). Validity measurement is inferred through four validity check; namely, face validity, content validity, criterion validity and construct validity (Babbie, 2007:146, Leedy & Ormrod, 2013: 91). Face validity is the extent to which an instrument of measurement appears on the surface to measure a particular characteristic (Struwig & Stead, 2013:146), and it relies on the subjective judgement. Respondents tend to participate well in research where the instrument satisfies face validity requirements (Babbie, 2007:146, Leedy & Ormrod, 2013: 89).

Content validity refers to the extent to which a measurement instrument incorporates the theoretical domain of the construct (Struwig & Stead, 2013 :146; Babbie, 2007:147, Leedy & Ormrod, 2013: 89). The development of the survey instrument ensured that the concepts and constructs that were relevant to the study were captured (Babbie, 2013:147). An in-depth literature review, focus group discussions and expert interview were conducted to capture the set of items that are relevant to the concepts of satisfaction with SHFs residential environment.

Criterion-related validity is the degree to which the results of an assessment correlate with other related measures (Leedy & Ormrod, 2013:91) and it focuses on the relationship between multiple tests that are comparable (Struwig & Stead, 2013:147). Criterion-related validity consists of predictive validity and concurrent validity (Struwig & Stead, 2013:147). The predictive validity test measures the relationship between a predictor variable and the outcome (criterion) whereas, concurrent validity examines the extent of the relationship between the predictor variable and criterion variable.

It is sometimes difficult to find a criterion that correctly measures a construct (Struwig & Stead, 2013:147). Therefore, a different test such as construct validity could be used to approximate such criteria (Babbie, 2007:147). Gay, Mills and Airasian (2012) identify the correlation approach and group difference approach as the two main techniques of determining criterion-related validity. Correlational approaches measure the degree of relationship between two or more variables and it can be applied to variables that are ranked, dichotomous or continuous (Struwig & Stead, 2013:148). The group difference approach is used to compare the relationship between categories within the same measures (Struwig & Stead, 2013:148). A test such as the t-test, chi-square, ANOVA, multivariate analysis of variance, discriminant analysis are commonly used to determine criterion related validity.

Construct validity deals with the logical relationship among variables within a system of theoretical relationships (Babbie, 2007:147). Constructs are unobservable characteristics that cannot be directly observed or measured, but are assumed to exist based on individual behaviour (Leedy & Ormrod, 2013:90). Therefore construct validity is established by correlating a measure of a construct with a number of other measures that should theoretically be associated with it (convergent validity) or vary independently of it (discriminant validity) (Chi, 2005: 102). The study incorporated face

validity, content validity and construct validity to ensure that the survey instrument measures what it was designed to assess.

5.8.3 Determining the validity of the measuring instrument

A lack of consensus exists on how and who decides on what is valid for any research (Babbie, 2014:148). Therefore, three approaches, namely, table of specifications, multi-trait-multi-method approach and judgement by a panel of experts are used to determine validity (Leedy & Ormrod, 2013:90). The table of specification method specifies a two-dimensional grid to construct the topics and behaviour that relate to a particular content domain. Whereas, in multi-trait approach, different characteristics of attributes are each measured using two or more different methods. Attributes with similar characteristics are highly correlated while those with different characteristics are not. The judgement by a panel of experts approach is comprised of several experts who scrutinize the instrument and gave an informed opinion about the validity for measuring the construct in question.

All the three methods were used at different stages to assess the validity of the instrument.

5.8.4 Reliability of measurement

Reliability of measurement deals with the extent to which a test or procedure when applied repeatedly under constant conditions produces consistent results (Bell, 2005:118; Babbie, 2013:143). Struwig and Stead (2013:139) claimed that the test is reliable if the reliability coefficient reflects the extent to which the true variance rather than the error variance embraces the observed score variance.

A number of techniques such as test-retest, split-half method and established measures are designed to determine the reliability of a measurement instrument and the ensuing results (Sapsford & Jupp, 1996:1; Babbie, 2007: 145). The test-retest method uses a single instrument to measure the subject more than once and the information obtained are compared to establish the level of consistency (Babbie, 2007:145; Leedy & Ormrod, 2013:91). The split-half method randomly split the test items in half, and each set is administered with the expectation that both results will be a good measure of the characteristics (Struwig & Stead, 2013:141). Another way

of ensuring the reliability of the information obtained from respondents is to follow established measures used in previous research.

The reliability of the survey instrument was tested for internal consistency through a pilot conducted in one of the institutions. The pilot sample size was established using the confidence interval approach at 95% confidence level. This is achieved by ensuring that there is uniformity in the way research questions are understood and interpreted by respondents. To check for reliability and validity, the first draft of the questionnaire was pre-tested in a pilot survey of 120 randomly selected students living in off-campus SHFs in Auchi Polytechnic, Auchi. In addition, a reliability analysis using Chronbach alpha was used to test the internal consistency of four measurements, namely, attribute importance (51 items), attributes satisfaction (51 items), consequences of satisfaction (51 items) and residential environment (51 items). An alpha level above .7 was accepted as a good indication of reliability. The Cronbach Alpha for the data is presented in Table 6.12 of Section 6.3.1 of Chapter Six.

5.8.5 Descriptive and inferential analysis

Descriptive tools that were used to analyse the data include the measurement of variability, dispersion and relationships. The results are presented in tables, charts, graphs, and percentage distribution. In order to make useful inference and generalise the results of the sample to the whole population, inferential tools such as the reliability test, validity test, t-test, analysis of variance, correlation analysis, and factor analysis were used to analyse the data.

5.8.6 Exploratory factor analysis (EFA) of dimensions of the residential environment

Exploratory factor analysis was used to validate the questionnaire. The purpose was to identify the minimum number of factors of the residential environment attributes that captured the variability in the pattern of correlations.

The principal factor axis (PFA) was used to determine the suitable the size of the sample and the strength of correlations among the dimensions of the attributes of the residential environment. A sample size ≥ 300 is considered as adequate and sufficient for a factor analysis, however, when the sample size is less than 300, an average test of communalities above .60 is required (Tabachnick & Fidell, 2013). Secondly, factor

analysis may not be appropriate if the correlation analysis, among attributes, produces fewer results that are above 0.3.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's test of sphericity were used to test for the partial correlations among variables and the correlation matrix respectively (Bartlett, 1954). The purpose is to determine the suitability of the data for factor analysis. For any research data, factor analysis is feasible only when the KMO value index is ≥.60 with a significant Bartlett's test of sphericity of p<.05 (Tabachnick & Fidell, 2013)

The principal factor analysis (PFA) method was used to extract the factors that were retained for further investigation and two methods; the orthogonal (uncorrelated) and oblique (correlated and uncorrelated) factor solutions were considered for the analysis. The orthogonal rotation was used when the factors are independent while the oblique rotation is used for data that are both correlated and uncorrelated. Examples of the orthogonal technique and oblique rotation methods are the varimax, and the direct oblimin and Promax respectively (Field, 2014). In this study, the direct oblimin was used as there is an existence of interrelationship among SHFs variables (Field, 2014).

The decision on which factor to retain was based on the fulfillment of three criteria; Kaiser's criterion, the scree test; and parallel analysis (Pallant, 2013: 191). Kaiser's criterion describes the amount of the total variance that is explained by that factor and accordingly, only factors with eigenvalues ≥ 1 were selected for further analysis. One of the major criticisms of the use of Kaiser's criterion to determine the extraction factor is that too many factors are included in the final selection. The scree test was used to reduce the factors to only those with eigenvalues that are above the point at which a curve changes direction and becomes horizontal (Catell, 1966; Zwick & Velicer, 1986; Hubbard & Allen, 1987; Pallant 2013.

5.9 CONCLUSIVE REMARKS

This chapter describes the methodology that was adopted to conduct the research. The research philosophy and paradigms, design/strategy and the data collection method were also discussed. The quantitative approach adopted for the study was based on a structured questionnaire that was administered to students residing in off-campus accommodation in selected universities, towns and cities. The procedures to

test for the validity and reliability of the survey instruments were also spelt out. Finally, seven tertiary institutions in South-South, Nigeria were selected for the study. The data collected from the field survey were analysed quantatively to provide answers to the research questions and hypotheses.

CHAPTER SIX

DATA ANALYSIS AND INTERPRETATION

6.0 INTRODUCTION

Chapter Five discusses the methodology that was adopted to conduct the study. Chapter six presents the findings obtained from the analysis of data and interpretation of the results. The analysis of the demographic and housing profile of the respondents and the relationships with satisfaction with attributes, importance of the attributes and consequences of quality of attributes on the behaviour of residents was conducted. The behaviour of residents investigated include loyalty, willingness to pay and word of mouth behaviour of residents. A correlation of the relationships among these constructs was also conducted.

6.1 DEMOGRAPHIC PROFILE OF RESPONDENTS

This section provides the description of the sample from which the data were taken. Respondents in this study were students who are currently tenants in off-campus student housing facilities (SHFs) in selected tertiary institutions in South-South Nigeria. A total of 979 self-completed questionnaires were administered to respondents, out of which 759 were returned. However, only 520 questionnaires were successfully completed and usable, thus indicating a response rate of 77%. The questionnaires that were not used were not fully completed. The high response rate could be attributed to the sampling methods that were used; namely: convenience and snowball sampling. The survey instrument consisted of five sections and each section dealt with particular aspects of the study as outlined in the Section 5.7 of the methodology chapter.

SHFs are designed and offered to support the needs of the students that are categorised by their demographic characteristics (Pullan, 2012:2; Oppewal *et al.,* 2005). Therefore, the demographic characteristics of students were pertinent to the description and segregation of SHFs based on the perception of satisfaction with attributes, importance of attributes and behaviours of residents of SHFs. Table 6.1 presents the summary of the demographic description of respondents in the sample.

Table 6.1: Demographic description of the sample

Demographic variables		Percent
Gender	Male	55
	Female	45
Age	Under 18 years	7.4
	19-21 years	42.5
	22-24 years	32.4
	25-27 years	12.7
	Above 27 years	5.0
Year of study	1st year	30.8
	2nd year	36.8
	3rd year	20.0
	4th year	12.4
Monthly income	< 4,500 Naira (300 Rand)	23.0
	4,501-9,000 Naira (301-600 Rand)	26.6
	9,001-13,500 Naira (601-900 Rand)	24.0
	13,501- 18,000 Naira (901-1,200 Rand)	15.6
	>18,000 Naira (1200 Rand)	10.8

The distribution revealed that of the study sample, 55% were male and 45% female. Majority (75%) of the respondents were between the age of 19-24 years while about 7% and 18% were below 18 years and above 25 years respectively. Academically, approximately 31%, 37%, 20% and 12% of respondents were in the 1st year, 2nd year, 3rd year and 4th year of study respectively. The level of study was used to indicate the number of years a student had experience of living in SHFs, whether on-campus accommodation or off-campus accommodation. The results support the trend in the ratio of gender and class distribution in tertiary institutions in Nigeria. As the years of study increases, the population of students in these classes reduces.

It can be seen from the Table 6.1 that about 26% and 23% of the sample receive a stipend that is above R900 and below R300 respectively. The remainder of the respondents earn a monthly income of between R300 and R900. The amount of

money that is available to students influence the choice of accommodation, hence satisfaction with housing and the corresponding behaviour of students. Though religion was included as a demographic variable in the questionnaire, the response to that question was very poor, hence, it could not be validly analysed. Again, the survey was not extended to postgraduate students as the majority of these categories of students choose to go to school either from their homes or distant locations.

6.2 HOUSING PROFILE AND PERCEPTION OF QUALITY OF SHFs

This section discusses the trend of patronage of SHFs types over the previous four academic sessions and the perception of quality of off-campus SHFs *vis-à-vis* on-campus housing.

6.2.1 Housing trend

In order to determine the residential trend from 2009/2010 to 2013/2014 academic sessions, respondents were requested to specify the types of accommodation they occupied during these years from the following three response options where given:

- single room with shared facilities;
- self-contained rooms with private amenities; and,
- shared-flats with separate amenities.

The trends of patronage of these accommodation types for the four-academic sessions is summarised in Table 6.2.

Table 6.2 Off-campus SHFs profile over four-academic sessions

	2013/2014	2012/2013	2011/2012	2010/2011
Single rooms with shared facilities	47.5%	50%	42%	55.9%
Self-contained rooms with private amenities	42%	45.2%	48.9%	35.4%
Shared rooms in a flat with private amenities	10.5%	4.8%	9.1%	8.7%

Except for the 2011/2012 session, the results indicated that the single-room with shared amenities was the most prefered accommodation for students and was closely

followed by self-contained rooms with private amenities. The shared room in a flat with private rooms was less popular with students than other housing types in all the sessions considered in the study. The single room with shared facilities was cheaper than other residence types, which probably may be reason for the high patronage.

6.2.2 Residential choice and demographic characteristics in the 2013/2014 academic sessions

Further analysis was carried out to establish the influence of demographic characteristics of students on the choice of SHFs in the 2013/2014 academic session. A total of 10.8%, 42.1% and 47.1% of respondents reside in shared flat with individual facilities, self-contained apartment with private amenities and single room with shared facilities respectively. A further cross-tabulation of the accommodation types occupied in 2013/2014 session and the demographic attributes such as gender, age, year of study and income level of students are presented in Tables 6.3-6.6

For the purpose of the study, the respondents were divided into five age groups; below 18 years, 19 -21 years, 22-24 years, 25-27 years and those respondents above 27 years. The result of the analysis as presented in Table 6.3 revealed that, the patronage of the single rooms with shared amenities was more popular with all the age groups. The self-contained accommodation was next to single room apartments in popularity for all age groups excepting the above 27 years group where the shared flat was the most preferred accommodation.

Table 6.3 Age and patronage of residential types in 2013/2014 session

	Age of respondents				
	Below 18 years	19-21 years	22-25 years	26-27 years	Above 27 years
Shared flat	.0%	13.2%	9.6%	17.6%	.0%
Self-contained	34.3%	40.0%	44.9%	38.3%	62.5%
Single room with shared facilities	65.7%	46.8%	45.5%	44.1%	37.5%

Table 6.4 showed the gender and housing types' distribution. More female students (49.8%) prefer single rooms with shared facilities than the other SHFs types while

about 46.3% and 45.9% of male students reside in self-contained apartments and single rooms respectively. With both male and female students, the shared flat with private facilities are less preferred. 62.5% of respondents above 27 years prefer self-contained rooms, whereas, 65.7% of under 18 years prefer single rooms with shared facilities. Older students are more selective and prefer privacy than younger ones.

Table 6.4: Gender and patronage of residential types in 2013/2014 academic sessions

	Sex of respondents	
	Male	Female
Shared flat	7.8%	11.7%
Self-contained	46.3%	38.5%
Single room	45.9%	49.8%

Table 6.5 presents the trend of distribution in the different types of accommodation and academic level according to the year of study. It is apparent from the results that a higher percentage of the first-year and third-year students prefer single room apartments while the self-contained accommodation is the first choice for 2nd year and 4th-year students. The results however revealed that a high percentage (33%) of 4th-year students also lived in single room apartments. The shared flat is less popular with students at all educational levels than the other residential types. Overall, 10.8%, 42.1% and 47.1% of students reside in shared flat with private facilities, self-contained apartment with private facilities and single rooms with shared facilities respectively.

Table 6.5: Year of study and patronage of housing types in the 2013/2014 sessions

	Year of study of respondents				
	1st year	2nd year	3rd year	4th year	Total
Shared flat	6.1%	12.6%	8.6%	21.1%	10.8%
Self-contained	35.8%	45.1%	44.1%	45.6%	42.1%
Single room	58.1%	42.3%	47.3%	33.3%	47.1%

This goes to show that as the students' progress over the years, patronage of cheaper apartments falls while the patronage of high rent apartments rises.

Table 6.6 outlined the distribution of patronage of SHFs types and the income available to students per month. A total of 58% and 41% of students who are on a

stipend of R300 per month live in the single rooms and self-contained apartments respectively. The trend is similar with the students in the R301-R600 income bracket. However, the group of students who earn between R901-R1200 prefered the self-contained apartments as the first choice of accommodation. The single room apartment however remained the most prefered accommodation choice for all the other income groups. Overall, the shared flat was less attractive with all the income groups.

Table 6.6: Income level and patronage of SHFs types in 2013/2014 sessions

	Monthly income of respondents				
	Below 300 Rand	301 - 600 Rand	601 - 900 Rand	901 - 1200 Rand	Above 1200 Rand
Shared flat	1.1%	12.3%	18.8%	9.8%	18.2%
Self-contained	40.7%	42.9%	40.6%	49.2%	36.3%
Single room	58.2%	44.8%	40.6%	41.0%	45.5%

The popularity of single rooms with shared facilities could be attributed to the low rent as more students with lower income tend to patronise low rent residence while students with high income patronise high rent apartments.

6.3 THE PERCEPTION OF QUALITY OF OFF-CAMPUS AND ON-CAMPUS SHFS

This section compares the perception of the quality of off-campus housing to on-campus SHFs by students. Residents were asked to rate the quality of off-campus residential accommodation in comparison to on-campus housing on a 7-points semantic scale with the response options ‘1’ worse and ‘7’ better. Five different demographic attributes namely, gender, age, income and years of study of students were analysed to observe the perception of quality by the different groups. The results are presented in Tables 6.7-6.10.

As can be seen in Table 6.7, the perception that the quality of off-campus SHFs are better than on-campus was high in the upper region of the evaluation scale. Between the perception of ‘5-7’ of the response scale, about 64% and 53% of the female and male respondents respectively perceived that the off-campus experience was better than on-campus SHFs.

Table 6.7: Gender and comparative quality evaluation of SHFs

Gender	Satisfaction with the overall quality of residence							
	1	2	3	4	5	6	7	Total
Female	8.0%	3.0%	9.0%	15.6%	23.6%	13.6%	27.1%	100.0%
Male	3.6%	8.1%	10.1%	23.5%	17.8%	12.1%	24.7%	100.0%

Table 6.8 highlights a similar trend of perception with the various age groups. In all the age categories, a higher percentage of students perceived that their off-campus accommodation was better than on-campus accommodation. Between the rating of '5-7' on a 7-point semantic-scale, about 45% to 67% of respondents within the age brackets in all the age rated their off-campus accommodation to be better than on-campus accommodation.

Table 6.8: Age and comparative quality evaluation of SHFs

Age of respondent (Years)	Quality of off-campus residence							
	1	2	3	4	5	6	7	Total
Above 27	8.3%	-	8.3%	16.7%	20.8%	4.2%	41.7%	100.0%
25-27	3.3%	18.3%	10.0%	23.3%	23.3%	10.0%	11.7%	100.0%
22-24	4.1%	3.4%	8.2%	17.7%	23.1%	17.0%	26.5%	100.0%
19-21	7.1%	4.1%	9.7%	20.9%	19.9%	12.2%	26.0%	100.0%
Below 18	5.6%	5.6%	5.6%	22.2%	16.7%	8.3%	36.1%	100.0%

The cross-tabulation of income and quality-perception is presented in Table 6.9. Likewise, between the rating for '5' to '7' on a 7-point semantic-scale, 82% and 61% of students that earn an income above R1200 and R601-R900 perceived that their off-campus accommodation was better than on-campus SHFs respectively. A high degree of support was also obtained for residents earning below R300 (56%), R301-R600 (52%) and R900-R1200 (46%). These findings signify that irrespective of income level of students, students perceived off-campus accommodation to be better than on-campus SHFs. In another vein, a higher level of perception of quality in the high income bracket indicated that preference for SHFs is connected to the proposition that

wealthy students are better positioned financially to secure high-quality accommodation (Thomsen & Eikemo, 2010:273).

Table 6.9: Income and comparative quality evaluation of SHFs

Rand	Quality of off-campus residence							
	1	2	3	4	5	6	7	Total
Above 1200	.0%	.0%	.0%	18.2%	29.5%	18.2%	34.1%	100.0%
901 - 1200	6.6%	11.5%	18.0%	18.0%	16.4%	9.8%	19.7%	100.0%
601 - 900	3.2%	9.7%	3.2%	22.6%	35.5%	10.8%	15.1%	100.0%
301 - 600	6.7%	5.8%	14.4%	21.2%	14.4%	13.5%	24.0%	100.0%
Below 300	8.2%	2.4%	12.9%	20.0%	12.9%	12.9%	30.6%	100.0%

The results of the cross-tabulation between year of study and perception of quality of off-campus SHFs are presented in Table 6.10. The table reveals a high evaluation score (4th year (71%), 3rd year (68%), 2nd year (55%) and 1st year (52%)) for ratings in the upper region (5-7) of the 7-point semantic scale. These could be interpreted to mean that the perception of quality increases as the student progresses academically.

Table 6.10: Year of study and comparative quality evaluation of SHFs

Year	Quality of off-campus residence							
	1	2	3	4	5	6	7	Total
4th	3.5%	8.8%	.0%	14.0%	26.3%	24.6%	22.8%	100.0%
3rd	5.4%	4.3%	5.4%	17.2%	31.2%	18.3%	18.3%	100.0%
2nd	3.0%	4.8%	10.9%	25.5%	23.0%	9.1%	23.6%	100.0%
1st	9.8%	6.3%	14.0%	18.9%	9.8%	8.4%	32.9%	100.0%

6.4: RESULTS OF EXPLORATORY FACTOR ANALYSIS OF ATTRIBUTES OF RESIDENTIAL SATISFACTION

An exploratory factor analysis was conducted to explore the fundamental dimensions that are responsible for the correlations among the observed variables. Factor analysis is a statistical approach that can be used to analyse interrelationships among a large number of variables and to explain these attributes in terms of their common underlying dimensions (factors). The main objectives of this operation were to reduce the number of items and classify the variables into correlated factors (Neill, 2010). Four basic approaches were used for the Principal Axis Factoring (PAF) analysis:

- data collection and generation of the correlation matrix;
- extraction of initial factor solution;
- rotation and interpretation (also validation); and
- construction of scales or factor scores to use in further analyses

The data set was based on a total of 53 SHFs variables of satisfaction with SHFs attributes and were subjected to the PAF analysis using the direct oblimin rotation method. The responses to these questions were measured on a seven-point semantic scale (‘1’: no satisfaction to ‘7’: high satisfaction). The suitability of the data for factor exploration was analysed prior to the performance of the PAF. The coefficients of the correlation matrix of most of the variables were above 0.30 and are significant at p = 0.01 to indicate that the data was adequate for factor analysis. Table 6.11 presents the results of the KMO measure of sampling adequacy and Bartlett’s test of sphericity.

Table 6.11: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.924
Bartlett's Test of Sphericity	Approx. Chi-Square	1.510E4
	df	1378
	Sig.	.000

The KMO Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in study variables that might be caused by common underlying factors. The value of the KMO Measure of Sampling Adequacy for this set of variables is .924, which is classified as 'marvelous' and is higher than the recommended value of 0.6 (Kaiser, 1970, 1974). The results indicate that the sample size was adequate to yield distinct and reliable factors extraction.

The data set was further subjected to Bartlett’s’ test of sphericity. The Bartlett's test of sphericity examines the hypothesis that the correlation matrix is not an identity matrix. An identity matrix indicates that a set of variables are unrelated and therefore unsuitable to reveal a clear pattern of the factors. The result showed that Bartlett’s test of sphericity was statistically significant at x^2 (1378) = 1540E4 and p<. 001 thus confirming that the original correlation matrix was not an identity matrix. Hence, the data were considered suitable for factor extraction procedures.

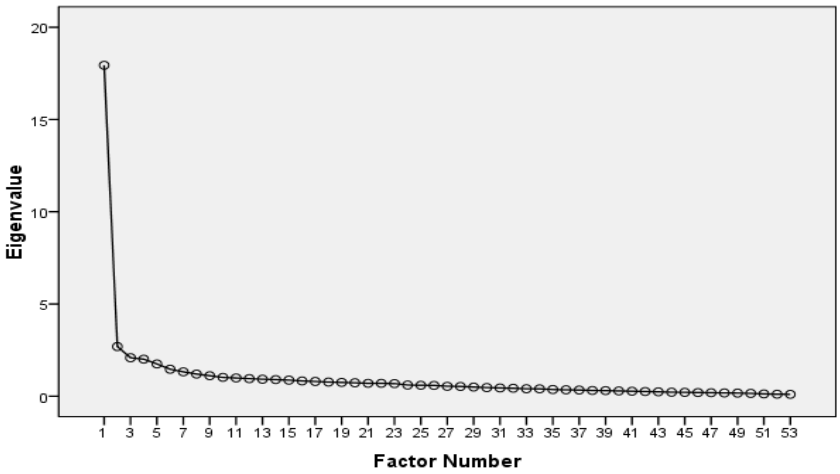
The extractions of the related items were accomplished with the principal axis factoring (PAF) analysis. The PAF explores the dimensions responsible for the correlations among the observed variables (Gaur & Gaur, 2009:132). In this study, the direct oblimin rotation method was used to extract the factors with correlated attributes. The analysis generated the eigenvalues, the percentages of variance explained, the item communalities, the scree plot, and the pattern of factor loadings.

The shared variations of each variable with others are presented in the estimate of communalities. The result revealed that most of the items have communalities that are above 0.50 after extraction. MacCallum *et al.* (1999) recommended a sample size of between 100 and 200 participants in situations where a substantial number of items have communalities above 0.5. Otherwise, a sample of at least 500 respondents is required to give reliable results. In another submission, Hair *et al.* (1998) suggested a sample size of 350 respondents for data with a loading of 0.30 to ensure practically and statistically significant results. The sample for this study is comprised of 520 respondents, therefore, the sample is considered adequate for empirical analysis.

Furthermore, a decision on the number of factors to be retained after extraction was determined with the use of eigenvalues and scree plot (Gaur & Gaur, 2009:133). Based on the Kaiser criterion, factors with eigenvalues above 1 explains more variance than a single variable, and were therefore considered to yield meaningful results.

The result of the total variance explained indicated a 10-factor solution with 51 variables that explained 61% of the extracted variance. However, the examination of the scree plot revealed that either a two, three, four or six factors solution is possible and justifiable (Figure 6.1). This assumption is based on Catell (1966)'s proposition that only the factors that are above the point of inflexions in a scree plot could reveal a possible and justifiable factor solution.

Figure 6.1: Scree plot of PAF



In order to identify a clear factor pattern, an iterative process was conducted on the six, four, three and two solutions with each item set to load at 0.30 and above. The aim was to obtain a factor that has a definite loading pattern. The comparison of the iteration results showed that the four-factor solution produced a clearer extraction of correlated attributes. These factors were named according to the attributes in each factor and the result is presented in Table 6.12 along with the results of reliability analysis.

6.4.1 Reliability analysis

A reliability test for internal consistency was conducted on the four-factor solution scale obtained from the PAF analysis. The Cronbach's alpha for the four factors ranged between 0.78 and 0.94, which are higher than the accepted lower limit of 0.7. These results suggested that a high internal consistency exists among the variables of each scale. The result of the reliability test is presented along with the results of the PAF analysis in Table 6.12.

Table 6.12: Results of principal axis factoring and reliability analysis of SHFs attributes.

Code	Dimension/attributes	Factor loading	Communalities
	F1: Neighbourhood services and management Eigenvalue: 17.95 Variance explained: 32.85% Cronbach's alpha: 0.94		
5.2	Electricity is available	.77	.74
5.1	Water supply is available	.75	.71
4.2.1	Neighbourhood is safe	.73	.74
4.2.2	The level of security is adequate	.63	.70
2.4.5	Drainage is adequate	.58	.68
6.5	The cleaning of residence is adequate	.58	.53
2.4.3	The condition of plumbing is good enough	.57	.70
5.4	Good access roads are available	.52	.66
2.4.2	Condition of kitchen equipment is adequate	.49	.69
2.4.1	Internet facilities are available	.49	.69
6.3	Terms of payment of rent are suitable	.46	.75
6.2	The rent is appropriate	.45	.69
2.4.4	The condition of electrical fittings is adequate	.45	.76
2.3.2	External finishes are good enough	.39	.77
4.1.1	The neighbourhood is clean	.37	.67
6.4	The lease agreement is appropriate	.34	.65
6.6	Garbage disposal is adequate	.31	.26
	F2 Pollution and security Eigenvalue: 2.64 Variance explained: 4.98% Cronbach's alpha: 0.78	**Factor loading**	**Communalities**
4.1.2	Neighbourhood has odour	.81	.66
4.1.3	Neighbourhood is noisy	.74	.63
4.2.3	The level of crime is high	.59	.56
4.2.4	Cult activities are high	.44	.26
	F3 Social issues Eigenvalue: 2.14 Variance explained: 3.96% Cronbach's alpha: 0.92	**Factor loading**	**Communalities**
3.5	Able to perform religious activities at home	.80	.65
3.8	Residence is close to the town centre	.77	.70
3.4	There is good rapport with neighbours	.73	.63
3.6	Residence is close to a place of worship	.69	.58
3.3	I am able to sleep without disturbance	.60	.72
3.11	Residence is close to an ATM/bank	.59	.64
3.12	Residence is close to health facilities	.55	.70
3.2	There is privacy in the residence	.55	.70

3.9	Residence is close to campus facilities	.59	.52
3.10	Residence is close to the shopping centre	.42	.28
3.13	Residence is close to the recreation centre	.40	.51
3.15	Residence is close to friends and relatives	.38	.56
3.7	Residence is close to the bus station	.38	.30
3.14	Residence is close a market	.34	.34
2.3.4	House is a new building	.32	.61
3.1	I can comfortably study at home	.31	.57
	F4 Physical dwelling aspects Eigenvalue: 2.00 Variance explained: 3.23% Cronbach's alpha: 0.90	**Factor loading**	**Communalities**
2.2.8	Door is good enough	.70	.70
2.2.2	Condition of internal wall is good enough suitable	.68	.43
2.2.7	Wardrobe is good enough	.65	.66
2.1.2	Size of kitchen is adequate	.64	.63
2.2.1	Condition of internal floor is adequate	.63	.43
2.1.1	Size of bedroom is wide enough	.62	.59
2.2.3	Condition of ceiling is adequate	.61	.55
2.2.10	Window size is wide enough	.54	.69
2.2.9	Painting of interior is good enough	.51	.64
2.2.6	Position of the window is appropriate	.44	.30
2.2.5	Daylighting is adequate	.37	.30
2.2.4	Ventilation is adequate	.35	.29
2.1.3	Size of toilet and bathroom is adequate	.35	.29
2.3.1	Able to re-organise my bedroom	.33	.62
	Items that did not load		
2.3.3	Overall house design is good enough		

6.5 THE INTEGRATION OF KANO MODEL AND IPA FOR THE EVALUATION OF SHFs ATTRIBUTES QUALITY

This section addresses the integration of the analytical Kano model (A-Kano model), the refined Kano model and Importance-Performance Analysis (IPA) to assess and prioritise SHFs attributes. The evaluation was conducted in three phases based on;

- determination of Kano categories based on the analytical Kano model (Xu *et al*., 2008);
- evaluation of the importance of attributes in Kano categories based on the refined Kano model (Yang, 2007:1130); and
- the Importance-Performance Analysis (IPA).

The outputs of these operations were integrated and compiled into a comprehensive table (Tables 6.23-6.26) that could serve as a bird's eye view of the strengths and weaknesses of individual attributes in the various SHFs dimensions.

6.5.1 Classification of Attributes of Residential Environment into the Kano Categories

The A-Kano model was used to transform the attributes of the residential environment into the Kano model classes. The analysis of the Kano questionnaire was based on 51 functional questions and non-functional questions that were designed to elicit the feelings of respondents when attributes of SHFs are available or not available respectively. All the questions in the Kano questionnaire were formulated in the form of the sample shown in Table 6.13. A comprehensive sample of the functional and non-functional items is presented in Section B of the survey instrument (see Appendix A).

Table 6.13: Sample of the functional and non-functional Kano questions

	Rating Scale 1. I don't like it 2. I can tolerate it 3. I am neutral 4. I expect it that way 5. I like it that way	**Functional questions** How will you feel when these attributes ***are*** available					**Non-functional questions** How will you feel when these attributes are ***not*** available				
SN	Attributes	1	2	3	4	5	1	2	3	4	5
3.15	Residence is close to friends/relatives										

The responses to the Kano questionnaire were re-coded to conform to the specifications of the analytical Kano model as described in chapter 5. The transformed functional scores (X_i) and non-functional scores (Y_i) were used to compute the Kano indices in line with the specifications of the analytical Kano model (A-Kano model) (Xu *et al.*, 2008:92). The non-functional score (X_i) and functional score (Y_i) indicate the average level of dissatisfaction and average level of satisfaction with attributes respectively and the results of the analysis are presented in Tables 6.14 -.6.17.

Three steps were taken to determine the category an attribute belongs to in the Kano model classifications. First, the means of the non-functional score (X_i) (x-axis) and functional score (Y_i) (y-axis) of each attribute were established and their position

located on a two-dimensional grid. Secondly, the grand means of the non-functional scores (X_i) and functional scores (Y_i) of all attributes in a given dimension were used to divide the two-dimensional grid into four quadrants. Mathematically, the average level of satisfaction and average level of disatisfaction were determined with $(X_i) = 1/j \sum_{j=i}^{j} WijXij$ and $(Y_i) = 1/j \sum_{j=i}^{j} WijYij$ respectively.

The attributes are then classified based on their location in the two-dimensional grid.

Attributes that fell into the top right quadrant and top left quadrant were classified as “one-dimensional” attributes and “attractive” attributes respectively. On the other hand, attributes in the bottom left grid and bottom right grid were presented as indifferent attributes and “must-be” attributes respectively. The classification of attributes of SHFs into the various dimensions of the Kano model categories was guided by the aforementioned procedures.

6.5.1.1 The classification of neighbourhood services and management attributes into Kano model categories

A total of 17 attributes of the neighbourhood services and management dimension were evaluated in line with section 6.5.1 and the results of the analysis are presented in Figure 6.2 and Table 6.14.

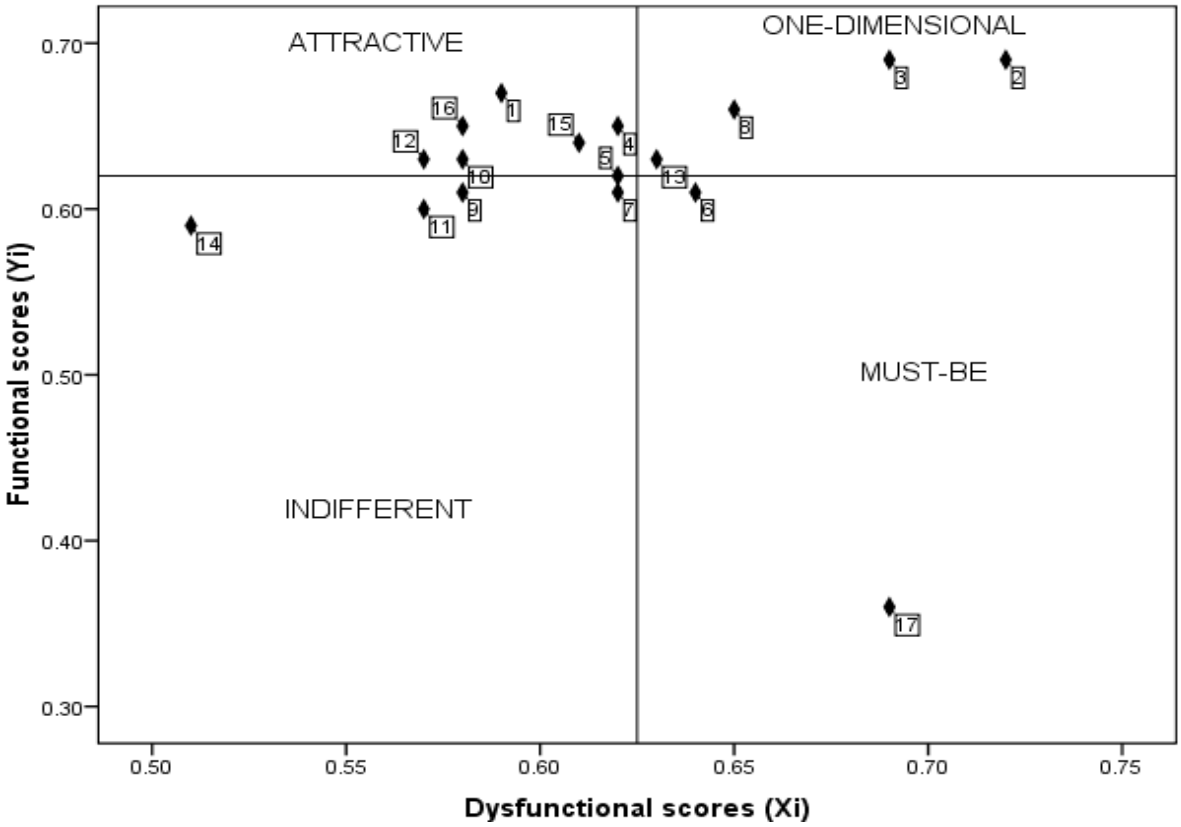
Table 6.14: Classification of neighbourhood services and management attributes into Kano model categories

	Attributes (f_i) F1 Neighbourhood services and management	Non-functional scores(X_i)	Functional scores(Y_i)	Kano model category
1	Electricity is available	.59	.67	O
2	Water supply is available	.72	.69	O
3	Neighbourhood is safe	.69	.69	O
4	The level of security is adequate	.62	.65	A
5	Drainage is good enough	.62	.62	A
6	The cleaning of residence is adequate	.64	.61	M
7	The condition of plumbing is good enough	.62	.61	I
8	Good access roads are available	.65	.66	O
9	The condition of kitchen equipment is adequate	.58	.61	I
10	Internet facilities are available	.58	.63	A
11	Terms of payment of rent are suitable	.57	.60	I
12	The rent is appropriate	.57	.63	A
13	The condition of electrical fittings is adequate	.63	.63	O
14	External finishes are good enough	.51	.59	I
15	The neighbourhood is clean	.61	.64	A
16	Lease agreement is adequate	.58	.65	A
17	Garbage disposal is adequate	.69	.36	M

O = “one-dimensional”, M = “must-be”, A = “attractive”, I = “indifferent”

The grand means of the non-functional scores (0.625) and functional scores (0.625) were used as a cross hair to divide the two-dimensional grid into four quadrants. The results showed that out of the 17 attributes, a total of six, four, two and five were classified as attractive, “one-dimensional”, “must-be” and “indifferent” attributes respectively.

Figure 6.2: Kano model of neighbourhood services and management attributes classification



Overall non-functional (x-axis) mean = 0.625; Overall functional mean (y-axis) = 0.625

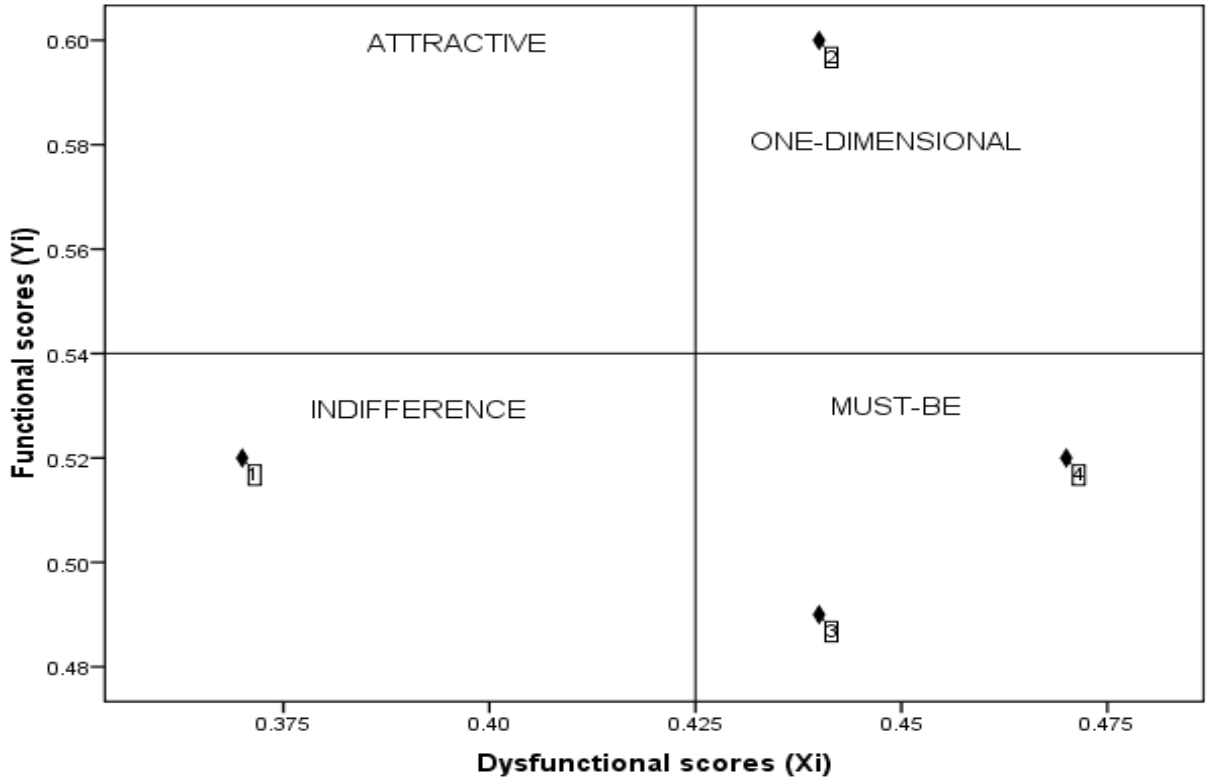
6.5.1.2 Classification of security and pollution attributes into the Kano categories

An overall non-functional mean score and overall functional mean score of 0.43 and 0.54 respectively, were used to divide the two-dimensional grid into four categories. A summary of the result of the classification into Kano categories is presented in Table 6.15 and Figure 6.3. One attribute each fell into the “one-dimensional” and “indifferent” quadrants while two were categorised as “must-be” attributes.

Table 6.15: The classification of the security and pollution attributes into the Kano Model categories

	Attributes (f_i) Pollution and security of the environment	Non-functional scores(X_i)	Functional scores(Y_i)	Kano model category
1	Neighbourhood has odour	.37	.52	I
2	Neighbourhood is noisy	.44	.60	O
3	The level of crime is high	.44	.49	M
4	Cultist activity is high	.47	.52	M

Figure 6.3: Kano model for the classification of the pollution and security of the environment attributes



Overall non-functional (x-axis) mean = 0.43; Overall functional mean (y-axis) = 0.54

6.5.1.3 The classification of the social attributes into Kano Model categories

A total of 16 attributes of the social factors dimension were analysed and classified into the Kano categories and the results are presented in Figure 6.4 and Table 6.16. A grand means of 0.56 and 0.62 for the non-functional scores and functional scores

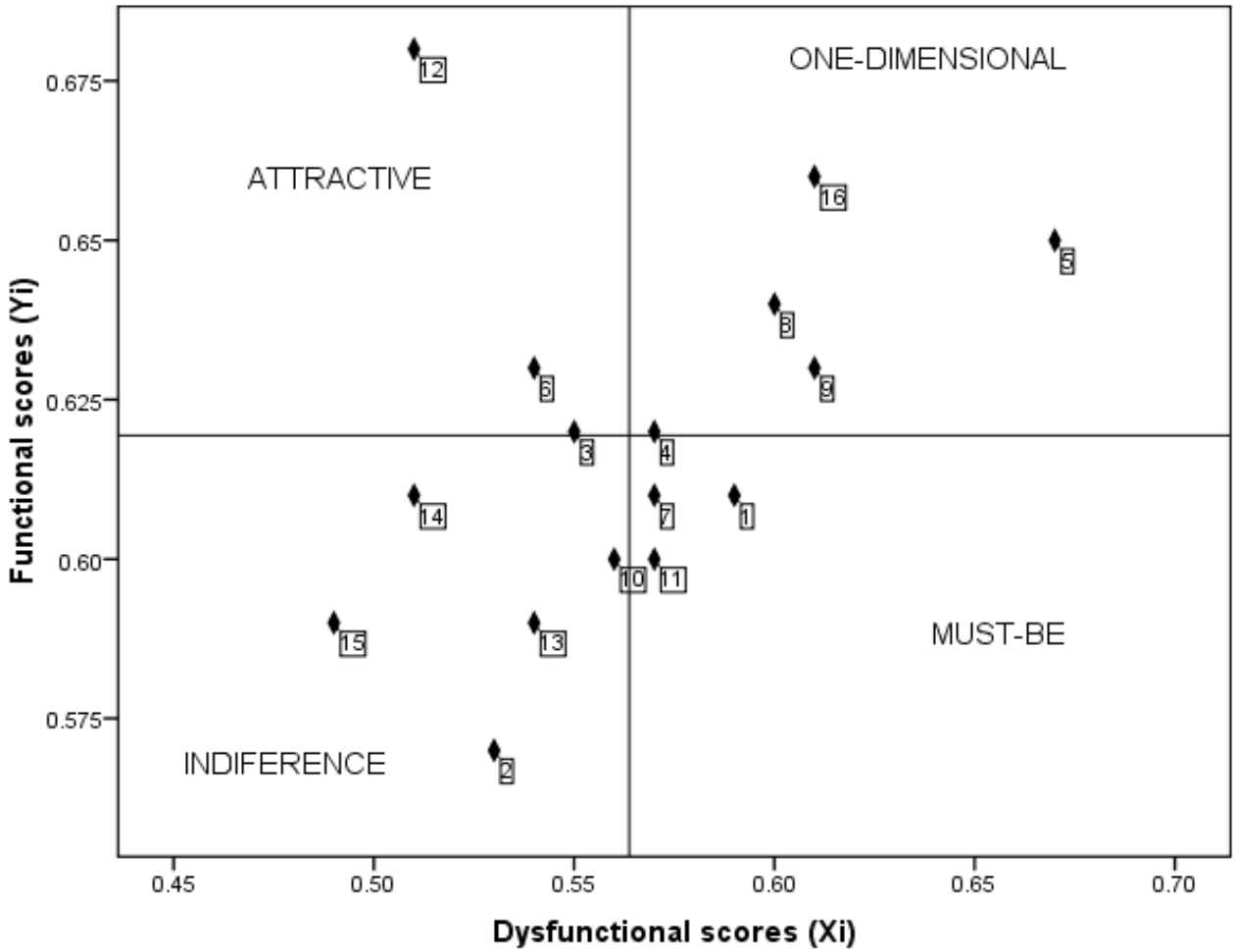
respectively was used to divide the grid into four quadrants to represent the four groups.

Table 6.16: The classification of the social attributes into Kano Model categories

	F3 Social factors Attributes (f_i)	**Non-functional scores(X_i)**	**Functional scores(Y_i)**	**Kano model category**
1	I am able to perform religious activities at home	.59	.61	M
2	Residence is close to the town center	.53	.57	I
3	There is good rapport with neighbours	.55	.62	A
4	Residence is close to a place of worship	.57	.62	O
5	I am able to sleep without disturbance	.67	.65	O
6	Residence is close to an ATM/bank	.54	.63	A
7	Residence is close to health facilities	.57	.61	M
8	There is privacy in the residence	.60	.64	O
9	Residence is close to campus	.61	.63	O
10	Residence is close to shopping center	.56	.60	I
11	Residence is close to the recreation center	.57	.60	M
12	Residence is close to friends and relatives	.51	.68	A
13	Residence is close to the bus station	.54	.59	I
14	Residence is close a market	.51	.61	I
15	House is a new building	.49	.59	I
16	I comfortably study at home	.61	.66	O

From Figure 6.4, it is clearly revealed that a total of 3, 5, 5 and 3 attributes were collected in the “must-be”, “one-dimensional”, “indifferent” and “attractive” categories respectively and the summary is presented in Table 6.16.

Figure 6.4: Kano model of social attributes classification



Overall non-functional (x-axis) mean = 0.56; Overall functional mean (y-axis) = 0.62

6.5.1.4 The classification of physical dwelling attributes into Kano model categories

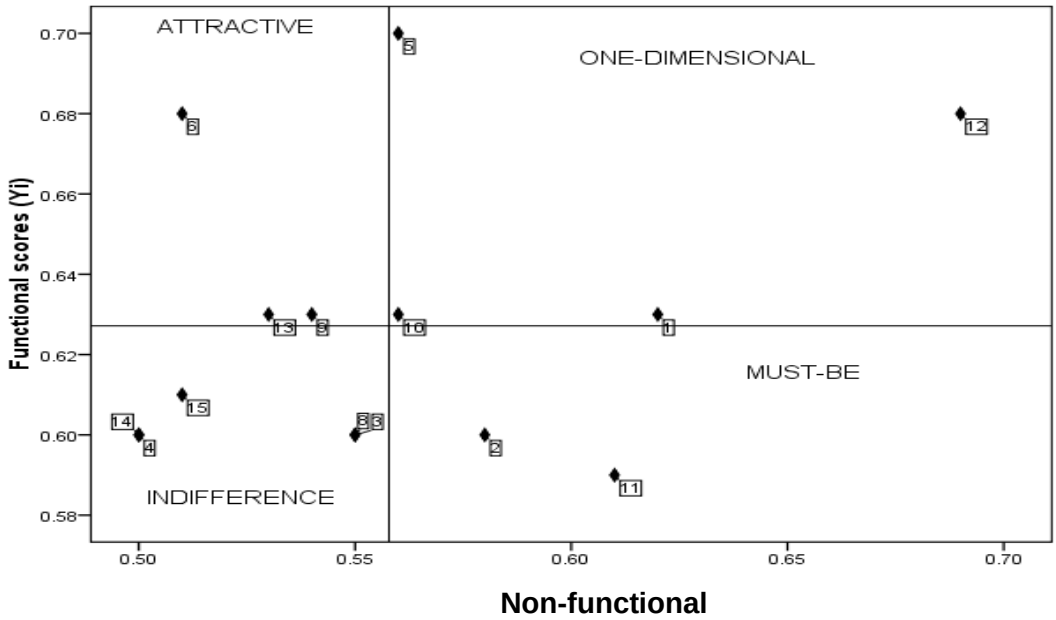
The physical dwelling attributes refer to the components of the building. A total of 14 attributes of this dimension were analysed to determine their category in the Kano model classification. The results are presented in Table 6.17 and Figure 6.5. The overall mean of 0.57 and 0.63 for the non-functional scores and functional scores respectively were used to divide the two-dimensional plane into four quadrants.

Table 6.17: The classification of physical dwelling attributes into Kano model categories

	F3 Social factors Attributes (f_i)	Non-functional scores(X_i)	Functional scores(Y_i)	Kano model category
1	Door is good enough	.62	.63	O
2	Condition of interior is good enough	.58	.60	M
3	Wardrobe is good enough	.55	.60	I
4	Size of kitchen is adequate	.50	.60	I
5	Condition of internal floor is adequate	.56	.70	O
6	Size of bedroom is wide enough	.51	.68	A
7	Condition of ceiling is adequate	.65	.63	M
8	Window size is wide enough	.55	.60	I
9	Painting of interior is good enough	.54	.63	A
10	Position of the window is appropriate	.56	.63	O
11	Daylighting is adequate	.61	.59	M
12	Ventilation is adequate	.69	.68	O
13	Size of toilet and bathroom is adequate	.53	.63	A
14	Able to re-organise my room	.50	.60	I

The results revealed that a total of three, four, four and three attributes were categorised as “must-be”, “one-dimensional”, “indifferent” and “attractive” elements respectively.

Figure 6.5: Kano model classification of physical dwelling attributes classification



Overall non-functional (x-axis) mean = 0.57; Overall functional mean (y-axis) = 0.63

6.5.2 Classification of residential attributes based on the refined Kano model

The second stage of the analysis involved the transformation of the Kano model into the refined Kano model categories. In the refined Kano model, each category of the traditional Kano model was further divided into two classes; the 'high importance' and 'low importance' categories. The overall importance mean of attributes in each dimension was computed and used to identify attributes either as 'high importance' or 'low importance' attributes. Attributes with greater individual importance means than the overall importance mean were classified as 'high importance' attributes while those with lower individual importance mean were classified as 'low importance' attributes. Table 6.18 was used to classify the refined Kano model attributes.

Table 6.18: model for the classification of attributes into the refined Kano model

Kano Model categories	**Refined Kano Model**	
	High importance (HI)	**Low importance (LI)**
"Attractive"/ Excitement	Highly attractive quality attributes	Less attractive quality attributes
"One-dimensional"/ Performance	High-value added quality attributes	Low-value added quality attributes
"Must-be" **/basic**	Critical quality attributes	Necessary quality attributes
"Indifferent"	Potential quality attributes	Care-free quality attributes

The results of the classification of the attributes of SHFs into the refined Kano model are presented in Tables 6.19-6.22 along with the IPA results.

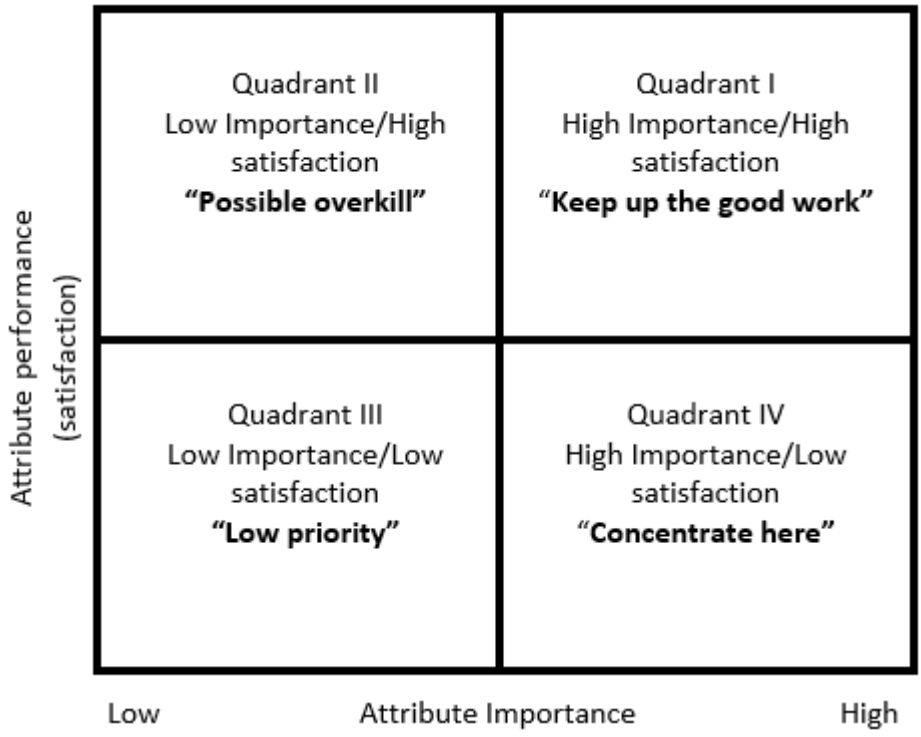
6.5.3 Importance Performance (Satisfaction) Analysis (IPA)

The goal of this section is to identify and prioritise SHFs variables that are doing well, those that need improvement and those that are not relevant (Wong *et al.,* 2011: 21; Raymond et *al.,* 2000 : 363). Two constructs; satisfaction with SHFs attributes and importance of SHFs attributes were used to determine the IPA. A single-item measure was used to evaluate both the satisfaction and importance of attributes. The

respondents were asked to rate the perception of importance and satisfaction with SHFs attributes on a 7-points semantic scale. The scale ranged from '1'- not important to 7- highly important for the importance scale, and 1- no satisfaction to '7'- high satisfaction for the satisfaction scale (see section C of Appendix A for detail).

The mean values for the importance of attributes and satisfaction with attributes of SHFs were computed and a coordinate of the two points was established on a two-dimensional plane. The importance of attributes and performance (satisfaction) of attributes were plotted on the x-axis and y-axis respectively. The grid in which the attributes fell into signifies the classification of these attributes in line with Figure 6.6.

Figure 6.6: Importance-performance analysis evaluation grid



Source: Martilla & James (1977)

- Quadrant 1 (keep up the good work);
- Quadrant 2 (possible overkill/Surplus);
- Quadrant 3 (low priority/Care-free); and
- Quadrant 4 (concentrate here/Improve).

Based on the foregoing, the various dimensions of SHFs were analysed and classified and the results are presented in the following sections.

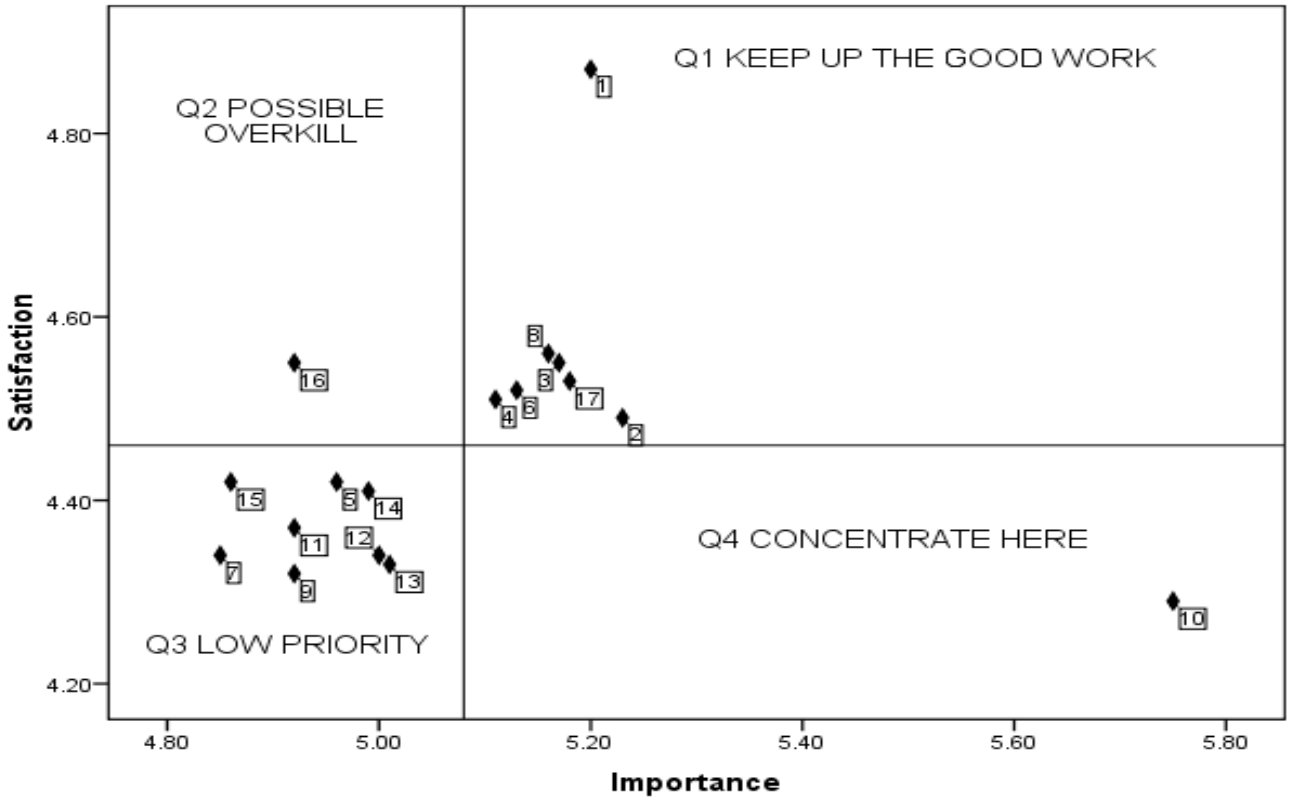
6.5.3.1 IPA FOR NEIGHBOURHOOD SERVICES AND MANAGEMENT DIMENSION

The neighbourhood and services and management dimension were subjected to an IPA analysis and the results are presented in Table 6.19 and Figure 6.7. The overall mean score of the importance of attributes (5.08) and satisfaction with attributes (4.46) were used to divide the grid into four quadrants. Seven attributes fell into the 'keep it up' quadrant, eight in 'low priority' quadrant and one in 'concentrate here' quadrant and one in the 'overkill' quadrant. Students in off-campus SHFs considered the internet facilities as highly important but were reasonably less satisfied with the performance of these attributes and services. Accordingly, a strategy to improve the quality of these attributes and services is required. Furthermore, students were adequately well satisfied with the performance of seven attributes that are related to security, accessibility and sanitation that were also seen as highly important elements.

Table 6.19: Results of IPA/refined Kano model for neighbourhood services and management attributes

Code	Dimension/attributes	Imp.	Sat.	IPA	Refined Kano M.
	F1: Neighbourhood services and management				
1	Electricity is available	5.20	4.87	Q1	O/HI
2	Water supply is available	5.23	4.49	Q1	O/HI
3	Neighbourhood is safe	5.17	4.55	Q1	O/HI
4	The level of security is adequate	5.11	4.51	Q1	A/HI
5	Drainage is good enough	4.96	4.42	Q3	A/LI
6	The cleaning of residence is adequate	5.13	4.52	Q1	M/HI
7	The condition of plumbing is good enough	4.85	4.34	Q3	I/LI
8	Good access roads are available	5.16	4.56	Q1	O/HI
9	The condition of kitchen equipment is adequate	4.92	4.32	Q3	I/LI
10	Internet facilities are available	5.75	4.29	Q4	A/LI
11	Terms of payment of rent are suitable	4.92	4.37	Q3	I/LI
12	The rent is appropriate	5.00	4.34	Q3	A/LI
13	The condition of electrical fittings is adequate	5.01	4.33	Q3	O/LI
14	External finishes are good enough	4.99	4.41	Q3	I/LI
15	The neighbourhood is clean	4.86	4.42	Q3	A/LI
16	The lease agreement is appropriate	4.92	4.55	Q2	A/LI
17	Garbage disposal is adequate	5.18	4.53	Q1	M/HI

Figure 6.7: IPA for neighbourhood services and management attributes



Overall importance mean score = 5.08; overall satisfaction mean score = 4.46

In addition, eight attributes were collected in the third quadrant which indicated that no action is required even though the attributes are performing poorly, they are considered to be of less importance to the residents.

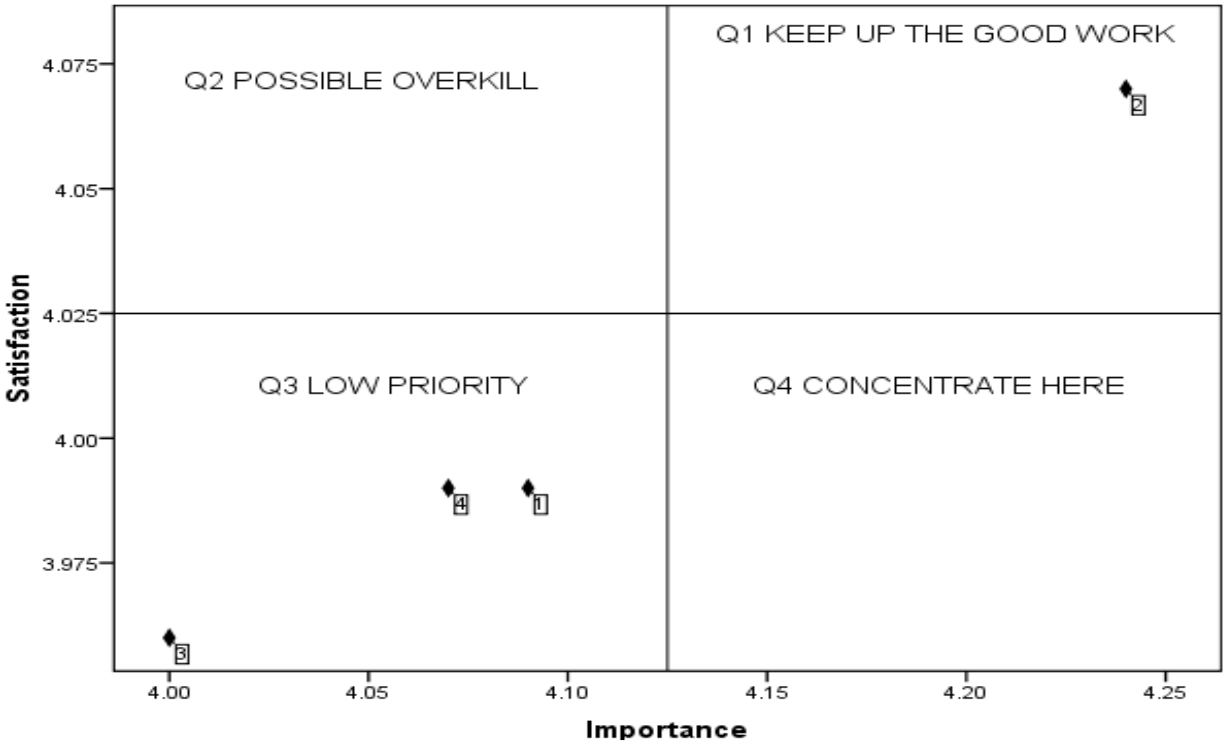
6.5.3.2 IPA of attributes of the pollution and security of the environment

The results of the analysis of IPA for the attributes in the pollution and security dimension are presented in Table 6.20 and Figure 6.8. The overall importance mean score of 4.13 and overall satisfaction mean score of 4.03 were used to divide the grid into four quadrants. The level of noise in the environment was located in the high importance/high satisfaction quadrants, thus suggesting that residents are concerned and are satisfied with it. Investors are to 'keep up the good work'. Contrastingly, residents were not satisfied with the level of odour, crime and cult activities in the neighbourhood, though the level of importance of these to them was below average. These attributes are therefore regarded as 'low priority' items to the students. The low perception of importance of these critical attributes may be connected to the fact that students have gotten used to the environment, thus making their relevance to diminish.

Table 6.20: Results of the IPA/combined Kano model for the pollution and security of environment attributes

	F2 Pollution and security	Imp.	Sat.	IPA	Refined Kano
1	Neighbourhood has odour	4.09	3.99	Q3	1/LI
2	Neighbourhood is noisy	4.24	4.07	Q1	O/HI
3	The level of crime is high	4.00	3.96	Q3	M/LI
4	Cultist related activity is high	4.07	3.99	Q3	M/LI

Figure 6.8: IPA for the pollution and security of environment attributes



Overall importance mean score = 4.13; overall satisfaction mean score = 4.03

6.5.3.3 IPA Results for the Social Factor Attributes

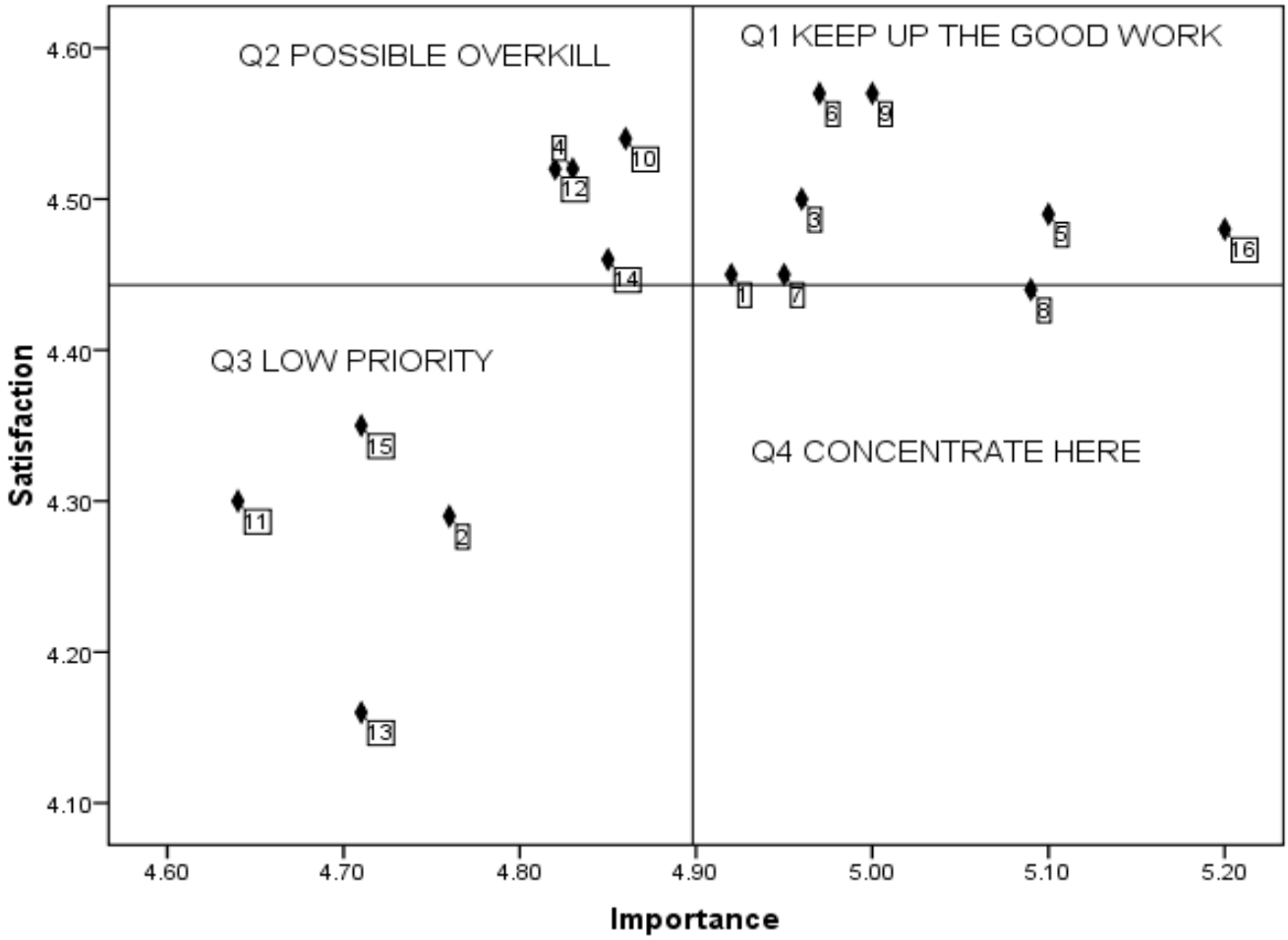
A total of 16 attributes in the social factors dimension were analysed and the results are presented in Table 6.21 and Figure 6.9. Seven attributes were located in the high importance-high satisfaction quadrant and the management action is for investors to keep up the good work. These items include the ability to conduct religious activities, and sleep without hindrance, good rapport with neighbours, and proximity to the ATM and health facilities. Quadrant II contained four items where students are perceived to be highly satisfied with the attributes, but are however less important to residents.

These attributes include proximity to places of worship, shopping centres and, friends and relatives. In the low importance-low satisfaction quadrant are four variables. Students are not satisfied with variables such as the proximity of SHFs to the town centres, recreation centres, bus stations and house is a new building. Because, the importance attached to these attributes was below average, the recommended action is that investors should ignore the consideration of these items in the development of SHFs. Two items namely, privacy in residence and proximity to the open market were collected in high importance/low satisfaction quadrants. These variables should be considered by developers in the selection of sites for SHFs and especially the enhancement of privacy in residence.

Table 6.21: Results of IPA/combined Kano model for social factor attributes

	F3 Social issues	**Imp.**	**Sat.**	**IPA**	**Refined Kano**
1	I am able to perform religious activities at home	4.92	4.45	Q1	M/HI
2	Residence is close to the town center	4.76	4.29	Q3	I/LI
3	There is good rapport with neighbours	4.96	4.50	Q1	A/LI
4	Residence is close to a place of worship	4.83	4.52	Q2	O/LI
5	I am able to sleep without disturbance	5.10	4.49	Q1	O/HI
6	Residence is close to an ATM/bank	4,97	4.57	Q1	A/HI
7	Residence is close to health facilities	4.95	4.45	Q1	M/HI
8	There is privacy in the residence	5.09	4.44	Q4	O/HI
9	Residence is close to campus	5.00	4.57	Q1	O/HI
10	Residence is close to the shopping center	4.86	4.54	Q2	I/LI
11	Residence is close to the recreation center	4.64	4.30	Q3	M/LI
12	Residence is close to friends and relatives	4.82	4.52	Q2	A/LI
13	Residence is close to the bus station	4.71	4.16	Q3	I/LI
14	Residence is close to a market	4.85	4.46	Q2	I/LI
15	House is a new building	4.71	4.35	Q3	I/LI
16	I am comfortable studying at home	5.20	4.48	Q1	O/HI

Figure 6.9: IPA for social factors attributes



Overall importance mean score = 4.90; overall satisfaction mean score = 4.44

6.5.3.4 IPA Results for Physical Dwelling Attributes

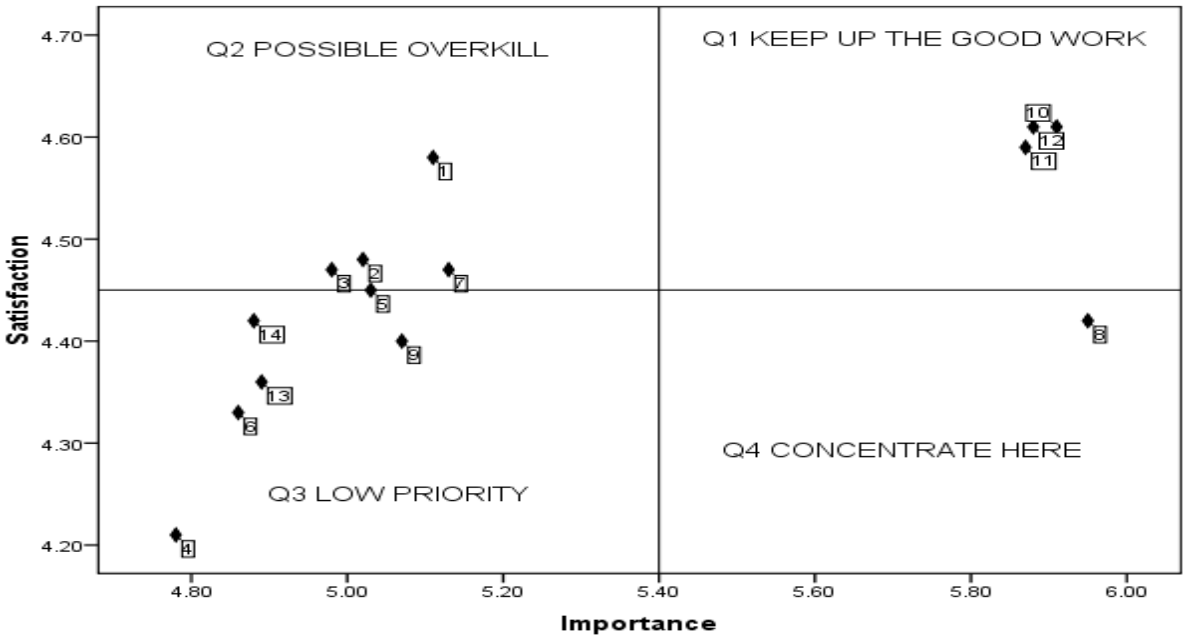
A total of 15 attributes of the physical dwelling environment were subjected to IPA evaluation and the results are presented in Table 6.22 and Figure 6.10. Three items were collected in the high satisfaction-high importance quadrant. These attributes include the position of the window, levels of ventilation and amount of daylight in the building space. Residents were highly satisfied with the performance of four attributes in quadrant II, even though the importance of these attributes was below average. Among these attributes are the quality of door, internal wall, wardrobe and the ceiling. Though the performance of these attributes was high, the associated importance was little. For investors to maximise the investment, focus should be diverted from resources in this quadrant to improve attributes that are important to residents. The attributes in quadrant IV are essential but residents were less satisfied with their performance. Developers of SHFs would do better, if emphasis and resources were

shifted from attributes in Quadrant II (possible overkill) to improve the performance of attributes in the high importance/low satisfaction quadrant.

Table 6.22: Results of IPA/combined Kano model for physical attributes

	F4 Physical dwelling aspects	Imp.	Sat.	IPA	Refined Kano
1	Door is good enough	5.11	4.58	Q2	O/LI
2	Condition of internal wall is suitable	5.02	4.48	Q2	M/LI
3	Wardrobe is good enough	4.98	4.47	Q2	I/LI
4	Size of kitchen is adequate	4.78	4.21	Q3	I/LI
5	Condition of internal floor is adequate	5.03	4.45	Q3	O/LI
6	Size of bedroom is wide enough	4.86	4.33	Q3	A/LI
7	Condition of ceiling is adequate	5.13	4.47	Q2	M/LI
8	Window size is wide enough	5.95	4.42	Q4	I/HI
9	Painting of interior is good enough	5.07	4.40	Q3	A/LI
10	Position of the window is appropriate	5.91	4.61	Q1	O/HI
11	Daylighting is adequate	5.87	4.59	Q1	M/HI
12	Ventilation is adequate	5.88	4.61	Q1	O/HI
13	Size of toilet and bathroom is adequate	4.89	4.36	Q3	A/LI
14	Able to re-organise my bedroom	4.88	4.42	Q3	I/LI

Figure 6.10: IPA for physical dwelling attributes



Overall importance mean score = 5.40; overall satisfaction mean score = 4.46

6.6 INTEGRATION OF THE KANO MODELS, REFINED KANO MODEL AND THE IPA FOR THE PRIORITISATION OF SHFs ATTRIBUTES

In this section, the results obtained from the A-Kano model analysis, refined Kano model classification and the output of the importance-performance (satisfaction) analysis (IPA) were integrated for each of the Kano model categories of the SHFs environment.

IPA was used to classify and recommend action for improvement while the Kano model factored in the linear and non-linear perception of performenace of attributes and overall satisfaction. The refined kano model segregate Kano atributes based on their level of importance.

The integration of the IPA, Kano model and the refined Kano model was used to identify the primary drivers of customer satisfaction and set out priorities for SHFs development and improvement. Based on integrated IPA and Kano model, a decision was made to combine two decision platforms; importance/performance platform and Kano factors platform. For example, an attribute may fall into the ‘concentrate here' quadrant which suggests that urgent attention is required, however, a further analysis with Kano model, may reveal that the attribute is not attractive. An “attractive” attribute yields satisfaction when it is made available but does not however lead to dissatisfaction when it is not available (Matzler & Sauerwein, 2002).

The integration of the IPA, traditional Kano model and the refined Kano model and the recommended actions for each attributes are presented in Tables 6.23-6.26.

Table 6.23: Neighbourhood services and management quality attributes

Rank	Quality attributes	Category in Kano model	Category in refined Kano model	Category in IPA model	Suggested actions
1	Electricity is available	O	High value-added	Improve	Top priority improvement attributes
2	Water supply is available	O	High value-added	Improve	Top priority improvement attributes
3	Neighbourhood is safe	O	High value-added	Keep up	Top priority maintenance attributes
4	Level of security is adequate	A	High attractive	Keep up	Sustain as a high attractive attributes
5	Drainage is good enough	A	Care-free	Improve	Residents are carefree, hence Improvement not critical
6	Cleaning of residence is adequate	M	Critical	Keep up	Keep up to the quality to the threshold level
7	Condition of plumbing is adequate	I	Care-free	Care-free	Calculated attention/measure required
8	Good access roads are available	O	High value-added	Keep up	High-value added attributes, hence sustenance required
9	Condition of kitchen facilities is adequate	I	Care-free	Care-free	Residents were carefree, no further action required
10	Internet service is available	A	Less attractive	Improve	Improve, but consider it as a low attractive attributes
11	Terms of rent payment are adequate	I	Care-free	Care-free	Residents were indifferent, not much attention is required
12	Rent is appropriate	A	Low value-added	Improve	Improvement on rent should be seen as low valued added
13	Condition of electrical fitting is adequate	O	Low value-added	Improve	Sustenance is required but item should be seen as low value added
14	External finishing is good enough	I	Care-free	Care-free	Residents were unconcerned, hence no further action is required
15	Neighbourhood is clean	A	Less attractive	Care-free	Calculated attention for the less attractive attributes
16	Lease agreement is appropriate	A	Less attractive	Care-free	Surplus services, hence no further action is required
17	Garbage disposal is adequate	M	Critical	Keep up	Keep up but not beyond the threshold level

Note: M = “must-be”; O= “One-dimensional”; A = “Attractive”; I = “Indifferent”

Table 6.14: Pollution and security attributes

Ranking	Quality attributes	Category in Kano model	Category in refined Kano model	Category in IPA model	Suggested actions
1	Neighbourhood has odour	I	Care-free	Care-free	Calculated attention required
2	Neighbourhood free of noise	O	High value-added	Keep up	High valued attributes, keep up the good work
3	Neighbourhood free of crime	M	Critical	Improve	Improve but not beyond the threshold level
4	Neighbourhood free of cult activities	M	Critical	Improve	Improve but not beyond the threshold level

Note: M = “must-be”; O= “One-dimensional”; A = “Attractive”; I = “Indifferent”

Table 6.25: Social factors attributes

Rank	Quality attributes	Category in Kano model	Category in refined Kano model	Category in IPA model	Suggested actions
1	Able to perform religious activities at home	M	Critical	Keep up	Keep up but not beyond the threshold
2	Residence is close to town center	I	Care-free	Care-free	No further action is required
3	There is good rapport with neighbours	A	Highly attractive	Keep up	Highly attractive, hence keep up
4	Residence is near a place of worship	O	Low value-added	Surplus	low value added, hence provide if possible
5	Able to sleep without disturbance	O	High value-added	Keep up	sustain as a high-value added linear attribute
6	Residence is close to bank/ATM	A	Highly attractive	Keep up	high possibility of attracting resident, keep up
7	Residence is close to health facilities	M	Critical	Keep up	Critical, keep up to the threshold level
8	There is privacy in residence	O	High value-added	Improve	Improve the high valued-added attribute
9	Residence is close to campus facilities	O	High value-added	Keep up	Keep up the level of high value-added item
10	Residence is close to shopping center	I	Care-free	Surplus	No further action is required
11	Residence is close to recreation center	M	Care-free	Care-free	No further action is required
12	Residence is close to friends and relatives	A	Less attractive	Surplus	less attractive and low priority, provide where possible

13	Residence is close to bus station	I	Care-free	Care-free	No further action is required
14	Residence is close to market	I	Care-free	Improve	Improve with a possibility of becoming an attractive item
15	House is a new building	I	Care-free	Care-free	No further action is required
16	I am comfortable studying at home	O	High value-added	Improve	Sustained as a high value-added attributes

Note: M = “Must-be”; O = “One-dimensional”; A = “Attractive”; I = “Indifferent”

Table 6.26: Physical dwelling attributes

Rank	Quality attributes	Category in Kano model	Category in refined Kano model	Category in IPA model	Suggested actions
1	Door is good enough	O	Low value-added	Surplus	Low priority, hence less attention required
2	Condition of internal wall is suitable	M	Necessary	Surplus	Entry level requirements should be sustained
3	Wardrobe is good enough	I	Care-free	Surplus	No further action is required
4	Size of kitchen is adequate	I	Care-free	Care-free	No further action is required
5	Condition of internal floor is adequate	O	Low value-added	Care-free	The more the better, but calculated action required
6	Size of bedroom is adequate	A	Less attractive	Surplus	Less attractive and low priority item. Measured attention
7	Condition of ceiling is adequate	M	Care-free	Improve	No further attention is required
8	Window size is wide enough	I	Potential	Care-free	Low priority with potential of becoming attractive item
9	Painting of internal room is good enough	A	Less attractive	Keep up	Less attractive but keep up
10	Position of window is adequate	O	High value-added	Keep up	High value-added item, keep up
11	Daylighting is adequate	M	Critical	Keep up	Critical, maintain to the threshold level
12	Ventilation is adequate	O	High value-added	Care-free	High value-added but taken for granted, keep up
13	Size of toilet and bathroom is adequate	A	Less attractive	Care-free	Less attractive, sustain
14	Able to reorganize my bedroom	I	Care-free	Care-free	No further action is required

Note: M = “Must-be”; O = “One-dimensional”; A = “Attractive”; I = “Indifferent”

Table 6.27: Summary of classifications of SHFs attributes into the Kano model categories

	"One-dimensional" attributes	**Dimension**
	Electricity is available	Neighbourhood services and mgt.
	Water is available	Neighbourhood services and mgt.
	Neighbourhood is safe	Neighbourhood services and mgt.
	Good access roads are available	Neighbourhood services and mgt.
	Condition of electrical fittings is adequate	Neighbourhood services and mgt.
	Level of noise in the neighbourhood	Pollution
	Residence is near to a place of worship	Social factors
	Able to sleep without disturbance	Social factors
	There is privacy in the residence	Social factors
	Residence is close to campus facilities	Social factors
	I am comfortable studying at home	Social factors
	Door is good enough	Physical dwelling attributes
	Position of the window is adequate	Physical dwelling attributes
	Condition of internal floor is adequate	Physical dwelling attributes
	Ventilation is adequate	Physical dwelling attributes
	"Must-be" attributes	
	Daylighting is adequate	Physical dwelling attributes
	Cleaning of residence is adequate	Physical dwelling attributes
	Garbage disposal is adequate	Physical dwelling attributes
	Condition of the ceiling is good enough	Physical aspects of building
	Level of crime in the neighbourhood	Security
	Level of cultism in the neighbourhood	Security
	Able to perform religious activity at home	Social
	Residence is close to health facilities	Social
	Proximity to the recreation center	Social factor attributes
	"Attractive" attributes	
	Security of residence	Neighbourhood services and mgt.
	Availability of Internet services	Neighbourhood services and mgt.
	Neighbourhood is clean	Neighbourhood services and mgt.
	The lease agreement is appropriate	Neighbourhood services and mgt.
	Drainage is good enough	Neighbourhood services and mgt.
	Rent is appropriate	Neighbourhood services and mgt.
	Size of bedroom is wide enough	Physical dwelling attributes
	Internal painting is good enough	Physical dwelling attributes
	Ventilation is adequate	Physical dwelling attributes
	Size of toilet and bath is good enough	Physical dwelling attributes
	There is good rapport with neighbours	Social factors attributes
	Residence is close to bank/ATM	Social factors attributes
	Residence is close to friends/relatives	Social factors attributes
	"Indifferent" attributes	
	Condition of plumbing is adequate	Neighbourhood services and mgt.

	Condition of kitchen facilities is adequate	Neighbourhood services and mgt.
	Terms of rent payments are adequate	Neighbourhood services and mgt.
	External finishes are good enough	Neighbourhood services and mgt.
	Wardrobe is good enough	Physical aspects of building
	Size of kitchen is wide enough	Physical aspects of building
	Window size is wide enough	Physical aspects of building
	Able to re-organise my room	Physical dwelling attributes
	Residence is close to the town center	Social factors attributes
	Residence is close to shopping center	Social factor attributes
	Residence is close to market	Social factors attributes
	Residence is close to the bus station	Social factor attributes
	House is a new building	Social factor attributes
	Neighbourhood has odour	Pollution and security

6.7 PERCEPTION OF SATISFACTION WITH ATTRIBUTES OF SHFs

This section deals with the analysis of residents' perception of satisfaction with attributes of SHFs as categorised in Kano model. Satisfaction with attributes was measured on a 7-points semantic scale from '1' no satisfaction to '7' high satisfaction. The mean and ranking of satisfaction with SHFs variables in each of the Kano categories are discussed in the following sections.

6.7.1 Perception of satisfaction with the "one-dimensional" attributes of SHFs

Table 6.28 indicate the mean and ranking of the perception of satisfaction with the "one-dimensional" attributes of SHFs.

The results showed that students are better satisfied with the position of the window in rooms, the adequacy of ventilation of space and the quality of door in that order. However, students were less satisfied with the level of noise in the neighbourhood, condition of electrical fittings and rent. Generally, the level of satisfaction the "one-dimensional" attributes was a little above average, which is a pointer to the poor performance of these attributes.

Table 6.28: Ranking of perception of satisfaction with "one-dimensional" attributes

	"One-dimensional" attributes	Mean	SD	Rank
	Position of the window is adequate	4.61	1.77	1st
	Ventilation is adequate	4.60	1.85	2nd
	Door is good enough	4.58	1.79	3rd
	Residence is close to campus facilities	4.57	1.73	4th
	Good access roads are available	4.56	1.86	5th
	Neighbourhood is safe	4.55	1.91	6th
	Residence is close to a place of worship	4.52	1.76	7th
	Able to sleep without disturbance	4.49	1.77	8th
	Electricity is available	4.49	1.81	9th
	Water is water	4.49	1.86	10th
	I am comfortable studying at home	4.48	1.77	11th
	Condition of internal floor is adequate	4.45	1.76	12th
	There is privacy in the residence	4.44	1.82	13th
	Rent is appropriate	4.34	1.86	14th
	Condition of electrical fittings is adequate	4.33	1.81	15th
	Level of noise in the neighbourhood	4.07	1.97	16th

6.7.2 Perception of satisfaction with "must-be" attributes of SHFs

Table 6.29 indicates the respondent's perception of satisfaction with the "must-be" attributes. Students perceived that they are most satisfied with the adequacy of daylight in the living space followed by the garbage disposal system in their residence. Students were however less satisfied with the level of cult activities and crime in the neighbourhood**.**

Table 6.29: Ranking of perception of satisfaction with "must-be" attributes of SHFs

	"Must-be" attributes	Mean	SD	Rank
	Daylighting is adequate	4.59	1.86	1st
	Garbage disposal is appropriate	4.53	1.86	2nd
	Adequacy of house cleaning	4.52	1.78	3rd
	Able to perform religious activity at home	4.45	1.71	4th
	Residence is close to health facilities	4.45	1.71	5th
	Level of cult activities is high in the neighbourhood	3.99	1.95	6th
	Level of crime is high in the neighbourhood	3.96	1.93	7th

6.7.3 Perception of satisfaction with “attractive” attributes of SHFs

Based on the results of the perception of satisfaction with the attractive elements of SHFs in Table 6.30, it could be seen that residents are highly satisfied with the proximity of residences to the ATMs and appropriateness of lease agreements and the level of security in the neighbourhood in that order. The satisfaction level with the size aspects and the availability of internet occupy the rear, though the level of satisfaction was above average.

Table 6.30: Ranking of the perception of satisfaction with the “attractive” attributes of SHFs

	“Attractive” attributes	**Mean**	**SD**	**Rank**
	Residence is close to bank/ATM	4.57	1.68	1st
	The lease agreement is appropriate	4.55	1.69	2nd
	Level of security in the environment	4.51	1.84	3rd
	Residence is close to friends/relatives	4.51	1.78	4th
	There is good rapport with neighbours	4.50	1.79	5th
	Neighbourhood is clean	4.42	1.84	6th
	Painting of interior is good enough	4.40	1.73	7th
	Toilet and bath are wide enough	4.37	1.87	8th
	The bedroom is wide enough	4.33	1.90	9th
	Internet facilities are available	4.29	1.83	10th

6.7.4 Perception of satisfaction with “indifferent” attributes of SHFs

Table 6.31 indicates the respondent’s perception of satisfaction with the indifferent attributes. The closeness of residences to shopping centres ranked highest followed by the condition of wardrobe and ceiling respectively. Students are however least satisfied with the size of the kitchen, closeness of residence to the bus station and the level of odour in the neighbourhood.

Table 6.31: Ranking of the perception of satisfaction with the "indifferent" attributes of SHFs

	"Indifferent" attributes	Mean	SD	Rank
	Residence is close to shopping centers	4.54	1.70	1st
	Wardrobe is good enough	4.47	1.79	2nd
	Condition of the ceiling is good enough	4.47	1.79	3rd
	Residence is close to the market	4.46	1.72	4th
	Drainage is good enough	4.42	1.71	5th
	Window size is wide enough	4.42	1.80	6th
	External finishes are good enough	4.41	1.76	7th
	Able to re-organise my room	4.41	1.81	8th
	Terms of rent payment are appropriate	4.37	1.79	9th
	House is a new building	4.35	1.82	10th
	Condition of plumbing is adequate	4.34	1.76	11th
	Condition of kitchen facilities is adequate	4.32	1.71	12th
	Residence is close to the recreation center	4.30	1.69	13th
	Residence is close to the town center	4.29	1.74	14th
	Size of kitchen is wide enough	4.21	1.77	15th
	Residence is close to a bus station	4.16	1.63	16th
	Neighbourhood has odour	3.99	1.85	17th

6.8 THE IMPACT OF SHFS ATTRIBUTES ON LOYALTY BEHAVIOUR OF RESIDENTS

As a consequence of the perception of satisfaction with attributes, students are compelled to behave in a particular way towards their residences. The following sections discuss the impact of SHFs attributes on the behaviour of residents of SHFs. The indicators of behaviour in this study are loyalty, willingness to pay and word of mouth. These constructs were measured with a 7-point semantic scale from '1' as no impact to '7' as high impact

6.8.1 The impact of the "one-dimensional" attributes on loyalty/retention behaviour of SHFs residents

The results of the analysis of the impact of the quality of the "one-dimensional" attributes of SHFs on loyalty behaviour is presented in Table 6.32. The results revealed that the loyalty behaviour towards their SHFs is higher in residences that are close to campus facilities, accommodation fitted with good doors, and where they can sleep without disturbance. Though the mean values for all the "one-dimensional" variables on loyalty behaviour were a little above average, the adequacy of the condition of internal floor, the state of electrical fittings and the closeness of residence

to places of worship had less impact on loyalty behaviour in the Kano model "one-dimensional" attributes category.

Table 6.32: Ranking of the impact of the "one-dimensional" attributes on loyalty/retention behaviour of SHFs residents

	"One-dimensional" attributes	Mean	SD	Rank
	Able to sleep without disturbance	4.91	1.74	1st
	Residence is close to campus facilities	4.90	1.72	2nd
	Door is good enough	4.89	1.61	3rd
	Water is available	4.87	1.70	4th
	Electricity is available	4.85	1.72	5th
	Neighbourhood is safe	4.85	1.76	6th
	Position of the window is adequate	4.82	1.72	7th
	Ventilation is adequate	4.82	1.66	8th
	Rent is appropriate	4.81	1.73	9th
	Good access roads are available	4.79	1.77	10th
	I am comfortable studying at home	4.77	1.85	11th
	There is privacy in the residence	4.75	1.75	12th
	Condition of internal floor is adequate	4.72	1.72	13th
	Condition of electrical fitting is adequate	4.71	1.75	14th
	Residence is near to a place of worship	4.62	1.77	15th

6.8.2 The impact of "must-be" SHFs attributes on the loyalty/retention behaviour of SHFs residents

Table 6.33 presents the respondent's perception of the impact of "must-be" attributes on loyalty behaviour of students. Students perceived that they are highly likely to be loyal to an SHFs when there is adequacy of daylight in their dwelling, residence is clean and with appropriate garbage disposal mechanism. The loyalty of students to SHFs is however lower in a neighbourhood with a high level of cult-related activities and crime.

Table 6.33: Ranking of the impact of "must-be" attributes on loyalty/retention behaviour of SHFs residents

	"Must-be" attributes	Mean	SD	Rank
	Daylighting is adequate	4.84	1.68	1st
	Cleaning of residence is adequate	4.82	1.71	2nd
	Garbage disposal is adequate	4.80	1.87	3rd
	Able to perform religious activity at home	4.65	1.72	4th
	Level of cultism in the neighbourhood	4.42	1.93	5th
	Level of crime in the neighbourhood	4.31	1.96	6th

6.8.3 The impact of “attractive” attributes on the loyalty/retention behaviour of SHFs residents

The results in Table 6.34 showed that a secured and clean SHFs environment with high internet services connectivity are “attractive” attributes that promote a high level of loyalty behaviour. Among the “attractive” attributes, students however perceived that the rapport with neighbour and the closeness of residence to ATM have less impact on their loyalty behaviour.

Table 6.34: Ranking of the impact of “attractive” attributes on loyalty/retention behaviour of SHFs residents

	“Attractive” attributes	Mean	SD	Rank
	Neighbourhood is clean	4.86	1.88	1st
	Residence is close to banks/ATM	4.84	1.82	2nd
	Security of residence	4.80	1.71	3rd
	Ventilation is adequate	4.75	1.71	4th
	Lease agreement is appropriate	4.72	1.72	5th
	There is good rapport with neighbours	4.69	1.75	6th
	Painting of interior is good enough	4.67	1.77	7th
	Internet facilities are available	4.66	1.86	8th
	Size of toilet and bath is wide enough	4.57	1.79	9th
	Size of bedroom is wide enough	4.56	1.94	10th

6.8.4 The impact of “indifferent” SHFs attributes on resident's loyalty/retention behaviour of SHFs residents

The perception of the impact of “indifferent” SHFs attributes on loyalty/retention behaviour is presented in Table 6.35. The results show that the condition of ceiling, terms of rent payment and window size impact highly on loyalty behaviour. However, the level of odour in the neighbourhood and proximity of residence to the bus station have less impact on loyalty behaviour with “indifferent” attributes.

Table 6.35: Ranking of the impact of "indifferent" **SHFs attributes on loyalty/retention behaviour SHFs residents**

	"Indifferent" attributes	**Mean**	**SD**	**Rank**
	Condition of the ceiling is good enough	4.82	1.66	1st
	Terms of rent payments is appropriate	4.79	1.71	2nd
	Window size is wide enough	4.76	1.75	3rd
	Residence is close to the shopping center	4.74	1.68	4th
	House is a new building	4.74	1.74	5th
	Wardrobe is good enough	4.73	1.71	6th
	Drainage is good enough	4.72	1.80	7th
	External finishes are good enough	4.71	1.63	8th
	Condition of plumbing is adequate	4.64	1.68	9th
	Condition of kitchen facilities is adequate	4.62	1.80	10th
	Able to re-organise my room	4.55	1.83	11th
	Residence is close to the town center	4.55	1.76	12th
	Size of kitchen is wide enough	4.47	1.80	13th
	Residence is close to bus station	4.46	1.83	14th
	Neighbourhood has odour	4.02	1.98	15th

6.9 THE IMPACT OF SHFS ATTRIBUTES ON THE WILLINGNESS TO PAY BEHAVIOUR

Willingness to pay was operationalised in this study as the readiness to pay a premium rent for the utilisation of attributes of SHFs. A 7-point semantic scale of '1' no impact to '7' high impact was used to measure the perception of influence of the quality of attributes on willingness to pay behaviour. The results on each of the SHFs Kano model dimensions are presented in the following sections.

6.9.1 The impact of "one-dimensional" attributes on the willingness to pay behaviour

Table 6.36 shows the results of the perception of the impact of "one-dimensional" attributes on willingness to pay behaviour. As can be seen from the table, students perceived that the safety of neighbourhood, closeness of residence to campus facilities and the quality of electricity supply are the most significant attributes impacting on their willingness to pay behaviour. The position of window, appropriate rent and level of noise has a lower impact on the willingness to pay behaviour.

Table 6.36: Ranking of the impact of "one-dimensional" SHFs attributes on willingness to pay behaviour

	"One-dimensional" attributes	Mean	SD	Rank
	Neighbourhood is safe	4.75	1.69	1st
	Residence is close to campus facilities	4.75	1.56	2nd
	Electricity is adequate	4.74	1.61	3rd
	Able to sleep without disturbance	4.73	1.68	4th
	Good access roads are available	4.70	1.61	5th
	Condition of electrical fittings is adequate	4.69	1.60	6th
	There is privacy in the residence	4.69	1.62	7th
	Door is good enough	4.69	1.59	8th
	Availability of water is adequate	4.68	1.71	9th
	I am comfortable studying at home	4.68	1.65	10th
	Ventilation is adequate	4.66	1.53	11th
	Residence is near a place of worship	4.65	1.62	12th
	Condition of internal floor is adequate	4.65	1.60	13th
	Position of the window is adequate	4.61	1.55	14th
	Rent is appropriate	4.60	1.72	15th
	Level of noise in the neighbourhood	4.31	1.82	16th

6.9.2 The impact of "must-be" SHFs attributes on the willingness to pay behaviour of residents

The results of the perception of the impact of "must-be" attributes on willingness to pay behaviour is presented in Table 6.37. It is apparent from this table that the perception of a clean residence, adequate garbage disposal strategy and adequacy of daylight are vital to the willingness of students to pay for SHFs attributes. However, though the means of the impact of the level of cult activities and crime in the environment are above average, the attributes are considered to have less impact compared to others in this category.

Table 6.37: Ranking of the impact of "must-be" SHFs attributes on willingness to pay behaviour

	"Must-be" attributes	Mean	SD	Rank
	Cleaning of residence is adequate	4.74	1.67	1st
	Garbage disposal is adequate	4.73	1.69	2nd
	Daylighting is adequate	4.62	1.57	3rd
	Able to perform religious activity at home	4.58	1.64	4th
	Level of cultism in the neighbourhood	4.36	1.79	5th
	Level of crime in the neighbourhood	4.30	1.77	6th

6.9.3 The impact of “attractive” SHFs attributes on the willingness to pay behaviour

The results obtained from the impact of “attractive” attributes on willingness to pay presented in Table 6.38. Among the “attractive” attributes, the results showed that the willingness to pay for “attractive” attributes of SHFs is improved in residences that are close to banks/ATMs Furthermore, an adequate level of security and a clean environment also motivate tenants to pay premium rent for a residence. The availability of internet services, quality of painting of the rooms and the size of the bedroom are necessary but of less significant than the other variables.

Table 6.38: Ranking of the impact of “attractive” SHFs attributes on willingness to pay behaviour of residents

	“Attractive” attributes	**Mean**	**SD**	**Rank**
	Residence is close to banks/ATM	4.91	1.65	1st
	Security of residence	4.68	1.61	2nd
	Neighbourhood is clean	4.68	1.67	3rd
	Lease agreement is appropriate	4.66	1.62	4th
	Ventilation is adequate	4.66	1.53	5th
	Size of toilet and bath is good enough	4.64	1.55	6th
	There is good rapport with neighbours	4.64	1.68	7th
	Internet facilities are available	4.54	1.70	8th
	Painting of interior is good enough	4.53	1,57	9th
	Size of bedroom is wide enough	4.41	1.69	10th

6.9.4 The impact of “indifferent” SHFs attributes on the willingness to pay behaviour

Table 6.39 presents the results of the impact of the “indifferent” attributes on willingness to pay behaviour of students. The ranking showed that closeness to shopping centre, a new house and condition of drainage are attributes that impact significantly on willingness to pay. The size of the window, terms of rent payment and the level of odour in the neighbourhood impact less on willingness to pay.

Table 6.39: Ranking of the impact of "indifferent" attributes on willingness to pay behaviour of residents

	"Indifferent" attributes	Mean	SD	Rank
	Residence is close to the shopping center	4.83	1.56	1st
	House is a new building	4.77	1.62	2nd
	Drainage is good enough	4.76	1.70	3rd
	Condition of the ceiling is good enough	4.68	1.60	4th
	External finishes are good enough	4.66	1.65	5th
	Wardrobe is good enough	4.66	1.63	6th
	Condition of kitchen facilities is adequate	4.61	1.67	7th
	Residence is close to a bus station	4.61	1.61	8th
	Able to re-organise my room	4.57	1.62	9th
	Condition of plumbing is adequate	4.55	1.68	10th
	Size of kitchen is wide enough	4.54	1.54	11th
	Residence is close to the town center	4.53	1.63	12th
	Window size is wide enough	4.49	1.71	13th
	Terms of rent payments are adequate	4.48	1.68	14th
	Neighbourhood has odour	4.18	1.79	15th

6.10 THE IMPACT OF ATTRIBUTES ON WORD OF MOUTH BEHAVIOUR OF RESIDENTS OF SHFS

The word of mouth behaviour is operationalised in this study as the willingness to tell other students about the quality of attributes of SHFs residence. A single-item 7-point semantic scale was used to elicit the impact of each SHFs attribute on the word of mouth behaviour of students. The perception of the impact ranged from '1' no impact to '7' high impact. The results obtained from the analysis of data are presented in subsequent sections.

6.10.1 The impact of "one-dimensional" SHFs attributes on the word of mouth behaviour of residents

Table 6.40 shows the results of data analysis of the impact of "one-dimensional" attributes of SHFs on word of mouth behaviour of residents. From the data in Table 6.40, it is apparent that the proximity to campus facilities, ability to sleep without disturbance and privacy in the residence influenced students to talk more about their SHFs. However, appropriateness of rent, good roads and the level of noise level in the neighbourhood impact less on students' word of mouth behaviour.

Table 6.40: Ranking of the impact of "one-dimensional" attributes of SHFs on word of mouth behaviour

	"One-dimensional" attributes	Mean	SD	Rank
	Residence is close to campus facilities	4.52	1.69	1st
	Able to sleep without disturbance	4.49	1.74	2nd
	There is privacy in the residence	4.44	1.65	3rd
	Availability of water is adequate	4.43	1.79	4th
	Condition of electrical fitting is adequate	4.42	1.68	5th
	Availability of electricity is adequate	4.41	1.75	6th
	Door is good is good enough	4.41	1.67	7th
	Neighbourhood is safe	4.40	1.86	8th
	Position of the window is adequate	4.40	1.65	9th
	Residence is close to a place of worship	4.38	1.67	10th
	Ventilation is adequate	4.38	1.67	11th
	Condition of internal floor is adequate	4.35	1.75	12th
	I am comfortable studying at home	4.30	1.78	13th
	Rent is appropriate	4.29	1.81	14th
	Good access roads are available	4.26	1.73	15th
	Level of noise in the neighbourhood	4.15	1.82	16th

6.10.2 The impact of "must-be" SHFs attributes on residents' word of mouth behaviour

Table 6.41 presents an analysis of data on the impact of the "must-be" attributes of SHFs on the word of mouth behaviour of students. The data revealed that in this category, students speak more positively about a residence that is clean and less when the level of cult activities and crime in the neighbourhood is high.

Table 6.41: Ranking of the impact of "must-be" attributes of SHFs on word of mouth behaviour

	"Must-be" attributes	Mean	SD	Rank
	Cleaning of residence is adequate	4.51	1.69	1st
	Garbage disposal is adequate	4.46	1.80	2nd
	Daylighting is adequate	4.44	1.63	3rd
	Able to perform religious activity at home	4.32	1.67	4th
	Level of crime in the neighbourhood	4.29	1.82	5th
	Level of cultism in the neighbourhood	4.25	1.85	6th

6.10.3 The Impact of the "attractive" SHFs attributes on the word of mouth behaviour of residents

The results of the impact of the "attractive" SHFs attributes on the word of mouth behaviour are presented in Table 6. 42. Within this category, the proximity of residence to banks/ATMs, clean environment and, the size of toilet and bath are ranked highest in influence. The appropriateness of the lease agreement, availability of Internet services and the size of bedrooms have a lesser impact on word of mouth behaviour.

Table 6.42: Ranking of the impact of "attractive" SHFs attributes on the word of mouth behaviour of residents

	"Attractive" attributes	Mean	SD	Rank
	Residence is close to banks/ATM	4.60	1.74	1st
	Neighbourhood is clean	4.47	1.86	2nd
	Size of toilet and bath is good enough	4.47	1.66	3rd
	Security of residence is adequate	4.46	1.76	4th
	Painting of interior is good enough	4.44	1.65	5th
	There is good rapport with neighbours	4.43	1.63	6th
	Ventilation is adequate	4.38	1.67	7th
	Lease agreement is appropriate	4.31	1.67	8th
	Internet facilities are available	4.29	1.75	9th
	Size of bedroom is wide enough	4.23	1.77	10th

6.10.4 The impact of "indifferent" SHFs attributes on the word of mouth behaviour of residents

The data on the impact of the "indifferent" attributes on the word of mouth behaviour of students were analysed and the results are presented in Table 6.43. Clearly, the results show that the quality of external finishes, the house is a new building and state of kitchen equipment have a higher impact on the willingness of residents to tell others about their accommodation. The condition of the ceiling, ability to re-organise personal space and the level of odour in the neighbourhood have less impact on the word of mouth behaviour of residents in this category.

Table 6.43: Ranking of the impact of "indifferent" attributes of SHFs on the word of mouth behaviour of residents

	"Indifferent" attributes	Mean	SD	Rank
	External finishes are good enough	4.56	1.67	1st
	House is a new building	4.52	1.72	2nd
	Condition of kitchen facilities is adequate	4.48	1.72	3rd
	Window size is wide enough	4.43	1.70	4th
	Residence is close to a bus station	4.43	1.68	5th
	Drainage is good enough	4.39	1.65	6th
	Residence is close to the shopping center	4.39	1.69	7th
	Terms of rent payments are adequate	4.36	1.70	8th
	Condition of plumbing is adequate	4.33	1.73	9th
	Size of kitchen is wide enough	4.32	1.70	10th
	Residence is close to the town center	4.32	1.68	11th
	Wardrobe is good enough	4.31	1.64	12th
	Condition of the ceiling is good enough	4.31	1.68	13th
	Able to re-organise my room	4.27	1.78	14th
	Neighbourhood has odour	4.13	1.84	15th

6.11 THE TESTS OF THE IMPACT OF THE DEMOGRAPHIC CHARACTERISTICS OF STUDENTS ON THE PERCEPTION OF QUALITY OF ATTRIBUTES OF SHFs

This section describes the test to determine whether the demographic characteristics of residents of SHFs have a statistically significant impact on the perception of quality of SHFs. A one-way ANOVA was used to test for differences in a variable with more than three groups, for example; the age, year of study and income levels. For variables with two groups such as gender, the independent t-test was used to test the difference in means of male and female respondents. In addition, a two-way "between groups" ANOVA was also conducted to determine the influence of two different categorically independent variables on the perception of quality of SHFs.

In this analysis, the quality of SHFs attributes were used as the independent variables and measured on a 7-point semantic scale that ranged from '1' worse to '7' better while the dependent variables are the demographic characteristics of students.

The following null hypotheses were tested for significance differences in class means:

i. H_o: the perception of quality of SHFs is the same in all gender groups (independent t-test);
ii. H_o: the perception of quality of SHFs is the same with all income groups (one-way ANOVA);

iii. H_o: the perception of quality of SHFs is the same with all years of study (one-way ANOVA);

iv. H_o: perception of quality of SHFs is the same with all age groups(one-way ANOVA)

The decision rule was to reject the null hypothesis if the test statistic is greater than a *p*-value of .05. Where a difference exists within a group, a *post hoc* analysis based on Tukey test was conducted to determine the groups that are significantly statistically different.

6.11.1 Gender and the perception of quality of SHFs

H_o: the perception of quality of SHFs is the same with gender groups (independent t-test).

An independent-samples t-test was conducted to evaluate the null hypothesis that there is no difference in the perception of satisfaction with the quality of SHFs by male and female students. The independent variable, gender, included two groups: male (M=4. 79; SD=1. 74, n=247) and female (m=4. 93; SD=1. 82, n=199); while the perception of quality of SHFs was the dependent variable and was measured on a 7-point semantic scale. The results showed that there is no statistically significant difference {t (444) =-.829, p = 0.41} in the way male and female students perceive the quality of SHFs attributes. Therefore, the null hypothesis is accepted. The implication of this result is that irrespective of gender, there is no difference in how the quality of attributes of SHFs is perceived, therefore, similar standards could be adopted in the choice of design of SHFs for both male and female students.

6.11.2 Income level of students and the perception of quality of SHFs

H_o: the perception of quality of SHFs is the same with all income groups (one-way ANOVA)

A one-way “between-groups” test was used to compare the means of satisfaction with the quality of SHFs and the income levels of students. Five income groups were identified for the study; Group 1: below 300 Rand, Group 2: 301-600 Rand, Group 3: 601-900 Rand, Group 4: 901-1200 Rand and Group 5: above 1200 Rand. The impact of income levels of students on the perception of satisfaction with the quality of SHFs at $p< 0.05$ was statistically significant {F (4,382) = 4.19, $p<.002$)}. The *post-hoc*

comparisons using the Tukey HSD test indicated that the mean score of Group 2 (M=4. 67, SD=1. 84), Group 3 (M=4. 70; SD=1. 54) and Group 4 (M=4. 34; SD=1. 87) were statistically different from Group 5 (M=5. 68; SD=1. 14). Group 1 (M= 4.88; SD=1. 90) did not differ significantly from other groups. This implied that students with income above R1200 perceived the quality of SHFs differently from students in other income groups. Therefore, in developing SHFs, their consideration should be different from students in other income groups.

6.11.3 Perception of quality of SHFs based on students' year of study

H_o: the perception of quality of SHFs is the same with all years of study (one-way ANOVA)

A one-way ANOVA between-means was used to compare the impact of the educational levels of students on the perception of quality of SHFs. Four educational levels were identified for the analysis; Group 1: 1st year, Group 2: 2nd year, Group 3:3rd year, Group 4: 4th year. The impact of educational levels of students on the perception of satisfaction with the quality of SHFs at $p< 0.05$ was not significant {F (4,457) = 1.93, $p< .104$)}. Thus, the null hypothesis is accepted that the perception of quality of residence does not differ with educational level. Developing SHFs, therefore, does not require special consideration in terms of quality for students in different academic levels.

6.11.4 Age of students and the perception of quality of SHFs

H_o: perception of quality of SHFs is the same with all age groups (one-way ANOVA)

A one-way ANOVA between means was conducted to explore the impact of age of students on satisfaction with the quality of SHFs. Participants were divided into five age groups, Group 1: below 18 years, Group 2: 19-21 years, Group 3: 22-24 years, Group 4: 25-27 years and Group 5: above 27 years. There was a statistically significant difference at $p< 0.05$ alpha level {F (4,458) = 3.08, p=0. 016}. The comparison of the *post-hoc* Tukey HSD test results indicated that the mean score of Group 3 (M=5. 10, SD=1. 64) was statistically different from Group 4 (M=4. 2; SD=1. 68) while Group 1 (M=5. 08; SD=1. 86), Group 2 (M= 4.83; SD = 1.81) and Group 5 (M=5. 21; SD= 1.91) were not statistically different. The null hypothesis is rejected and the alternative that the perception of quality of SHFs differs among age groups was

accepted. Thus, the perception of quality varies significantly between age groups 22-24 years and 25-27 years while there is no significant difference among the other groups. In SHFs development, therefore, consideration should be given to students within these age brackets as their perception of quality differs significantly.

6.12 TWO-WAY "BETWEEN-GROUPS" ANOVA TEST OF INTERACTION OF DEMOGRAPHIC VARIABLES ON THE PERCEPTION OF QUALITY OF SHFs

In this section, the main effects and joint effects of the interaction between two demographic variables on the perception of the quality of SHFs was examined and described accordingly. A two-way "between-groups" ANOVA was used to test three effects: the main effects for two individual variables and the interaction effect of combined variables. The following relationships were tested for statistically significant results and the results are presented in the following sections.

i. H_o: gender and age of students have no statistically significant impact on the perception of quality of SHFs (two-way ANOVA);
ii. H_o: the gender and income level of students have no statistically significant impact on the perception of quality of SHFs (two-way ANOVA);
iii. H_o: gender and year of study of students have no statistically significant impact on the perception of quality of SHFs (two-way ANOVA);
iv. H_o: income of students and year of study have no impact on the perception of quality of SHFs (two-way ANOVA); and
v. H_o: income of students and age have no statistically significant impact on the perception of quality of SHFs (two-way ANOVA).

6.12.1 The interaction between age and gender on the perception of quality of SHFs

A two-way "between-groups" ANOVA was conducted to explore the impact of gender and age on the overall perception of quality of SHFs. Participants were divided into five age groups, namely, Group 1: below 18 years; Group 2: 19-21 years; Group 3: 22-24 years; Group 4:25-27 years and Group 5: 27 years and above. The gender

consisted of the male and female groups. A null hypothesis was set up to test this relationship:

H_o: The interaction between the age and gender of students has no statistically significant impact on the perception of the overall perception of quality of SHFs.

The results in Table 6.44 showed that the interaction between the gender of respondents and age of students does not have significant effects on the perception of quality of SHFs, F (4, 434), *p*< .194, Eta Squared = .014. The main effect of the age of students on the perception of quality of SHFs was significant, F (4,434) = 3.35, *p*< 0.010, Eta Squared = 0.030 (moderate). The post-hoc comparisons using the Tukey HSD test indicated that the mean for the 22-24 years group is significantly different from the 25-27 years group.

However, the main effect of the impact of gender groups on perception of overall quality of SHFs, was not statistically significant F (2,434) = .242, *p*< .785, Eta Squared = 0.001 (low). This indicates that the combined influence of age and gender has no effect on the perception of quality.

Table 6.44: Two-way ANOVA results for the interaction of gender and age on the perception of quality of SHFs

Tests of Between-Subjects Effects

Dependent Variable: Quality of off-campus residence

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	62.749[a]	10	6.275	2.042	.028	.045
Intercept	465.096	1	465.096	151.389	.000	.259
Age80	41.183	4	10.296	3.351	.010	.030
Statusofsex70	1.486	2	.743	.242	.785	.001
Age80 * Statusofsex70	18.751	4	4.688	1.526	.194	.014
Error	1333.332	434	3.072			
Total	11900.000	445				
Corrected Total	1396.081	444				

a. R Squared = .045 (Adjusted R Squared = .023)

6.12.2 The interaction between the age of students and income levels on the perception of quality of SHFs

H_o: The age of students and income level have no impact on the perception of quality of off-campus SHFs.

A two-way between-groups ANOVA was conducted to determine the interaction between the age of students and income level on the perception of quality of SHFs. The results are presented in Table 6.45 and it is clearly shown that the interaction between the age of students and income level has no significant effects on the perception of quality of SHFs, F (15, 361) = 1.43, *p*< .132, Eta Squared = .056. However, there was a statistically significant main effect of income levels on the perception of quality F (4,361) = 4.45, p< .002, however the effect size was moderate (partial Eta squared =0.056). The comparison of the post-hoc Tukey HSD test revealed that the mean score for students on income level above R1200 was significantly different from students on 301-600 Rand , 601-900 Rand and 901-1200 Rand. In addition, the main effect of age of students on the perception of satisfaction with the quality of SHFs was not also significant, F (4,361) = 1.844, *p*< 0.120, Eta Squared = 0.02 (moderate). Though, quality perception of students in the income group above R1200 differs significantly from others, it is not influenced by the age of the residents. Hence, irrespective of age, the perception of quality for all age groups in a particular income bracket is similar.

Table 6.45: Two-way "between-groups" ANOVA on the interaction between age of student and income levels on the perception of quality of SHFs

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	152.888[a]	23	6.647	2.327	.001	.129
Intercept	3031.759	1	3031.759	1.061E3	.000	.746
Age80	21.071	4	5.268	1.844	.120	.020
Mincome110	50.895	4	12.724	4.454	.002	.047
Age80 * Mincome110	61.144	15	4.076	1.427	.132	.056
Error	1031.309	361	2.857			
Total	10045.000	385				
Corrected Total	1184.197	384				

a. R Squared = .129 (Adjusted R Squared = .074)

6.12.3 The interaction between age and year of study on the perception of quality of SHFs

H_o: The age of students and years of study have no impact on the perception of the quality of off-campus SHFs and on-campus SHFs;

The result of the two-way “between-groups” ANOVA is presented in Table 6.46. The results show that a statistically significantly effect exists in the interaction of the age of students and levels of education on the perception of quality of SHFs, F (12, 439) = 2.204, *p*< .011, Eta Squared = .057. The main effect of age of students on the perception of satisfaction with the quality of SHFs was significant, F (4,439) = 3.670, *p*< 0.006, Eta Squared = 0.032 (moderate). The post-hoc comparisons using the Tukey HSD test indicated that the mean for the 22-24 years group was significantly different from the 25-27 years group. The results also revealed that the main effect of the year of study of students on the perception of satisfaction with the quality of SHFs at *p*<.05 was also significant, F (4,439) = 3.758, *p*< 0.005, Eta Squared = 0.033 (moderate).

Therefore, the null hypothesis that there is no statistically significant effect of the interaction of age and year of study on the perception of quality of SHFs is rejected.

This goes to show that the perceptions of quality by age groups within an income bracket differs from one another and vice versa. Thus, in the development of SHFs to cater for an age group, the study levels must be taken into consideration as well as the differences in perception among study levels within an age group.

Table 6.46: Two-way "between-groups" ANOVA on the interaction between age and study year on the perception of quality of SHFs

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	150.455[a]	20	7.523	2.573	.000	.105
Intercept	2693.429	1	2693.429	921.086	.000	.677
Age80	42.927	4	10.732	3.670	.006	.032
Studyyear90	43.953	4	10.988	3.758	.005	.033
Age80 * Studyyear90	77.327	12	6.444	2.204	.011	.057
Error	1283.719	439	2.924			
Total	12342.000	460				
Corrected Total	1434.174	459				

a. R Squared = .105 (Adjusted R Squared = .064)

6.12.4 The interaction of income of students and gender on the perception of quality of SHFs

H_o: The income of students and gender have no impact on the comparative perception of the quality of off-campus SHFs and on-campus SHFs;

The results of the analysis of two-way ANOVA on the interaction between the gender and income of the student on the perception of quality is presented in Table 6.47. The results reveal that the interaction between income levels and gender at $p<.05$ have significant effects on the perception of quality of SHFs, F (4, 359) = 4.299 $p< .002$, Eta Squared = .046. The main effects of income of students on perception of satisfaction with the quality of SHFs was statistically significant F (4,359) = 4.695, $p< 0.001$, Eta Squared = 0.050 (moderate). The post-hoc comparisons using the Tukey HSD test indicated that the mean score is significant between the income group above R1200 and those within 301 to 1200 Rand income bracket. In this interaction though, the main effect of gender was not significant, F (1,359) = .2404, $p< .122$, Eta Squared = 0.007 (low). This is interpreted to mean that male and female students with different income perceived quality differently.

Table 6.47: Two-way "between-groups" ANOVA of the interaction of gender and income on the perception of quality of SHFs

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	113.707[a]	9	12.634	4.392	.000	.099
Intercept	7586.481	1	7586.481	2.637E3	.000	.880
Mincome110	54.032	4	13.508	4.695	.001	.050
Statusofsex70	6.917	1	6.917	2.404	.122	.007
Mincome110 * Statusofsex70	49.465	4	12.366	4.299	.002	.046
Error	1032.780	359	2.877			
Total	9522.000	369				
Corrected Total	1146.488	368				

a. R Squared = .099 (Adjusted R Squared = .077)

6.12.5 The interaction between the year of study of students and income level of students on the perception of quality of SHFs

H_o: The year of study and income level of students have no impact on the comparative perception of the quality of off-campus SHFs and on-campus SHFs.

A two-way "between-groups" ANOVA was conducted to compare the effect of the interaction between the year of study of students and income levels of students on the perception of quality of SHFs. The results in Table 6.51 showed that the interaction between the year of study and the income level of students on the perception of quality of SHFs was statistically significant at p<.05 level F (13, 363), p< .26, Eta Squared = .065. However, in this interaction, the main effects of the level of income of students {F (4,363) = 1,603, p< 0.173, Eta Squared = 0.017 (moderate)} and years of study of students {(F (4,363) = 1.501, p< .201, Eta Squared = 0.016 (low)} were not statistically significant. This is significant as students with different income on the same study level perceive quality differently. Hence, in developing SHFs for a group of students on an income level, consideration should be given to their study levels.

Table 6.48: Two-way "between-groups" ANOVA of the interaction between income level and year of study on the perception of quality of SHFs

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	137.918[a]	21	6.568	2.275	.001	.116
Intercept	2148.921	1	2148.921	744.505	.000	.672
Mincome110	18.502	4	4.625	1.603	.173	.017
Studyyear90	17.334	4	4.333	1.501	.201	.016
Mincome110 * Studyyear90	72.267	13	5.559	1.926	.026	.065
Error	1047.754	363	2.886			
Total	9989.000	385				
Corrected Total	1185.673	384				

a. R Squared = .116 (Adjusted R Squared = .065)

6.13 ONE-WAY "BETWEEN-GROUPS" ANOVA BETWEEN THE DEMOGRAPHIC CHARACTERISTICS OF STUDENTS AND THE CONSTRUCTS OF DIMENSIONS OF SHFs

This section describes the tests of the impact of differences in group means of demographic characteristics on satisfaction, importance of attributes and the behaviour of residents. The demographic characteristics investigated include the age, year of study and income levels of students. Similar procedures that were used in section 6.11 were adopted to determine the following relationships:

i. Age of respondents and satisfaction with the dimensions of SHFs;
ii. Age of respondents and importance of dimensions of SHFs;
iii. Age of respondents and loyalty to dimensions of SHFs;
iv. Age of respondents and willingness to pay for the dimensions of SHFs;
v. Age of respondents and word of mouth behaviour with dimensions of SHFs;

These relationships were repeated for gender, year of study and income of students. The dimensions of SHFs that were tested in this section are the:

i. Pollution and security aspects;
ii. Neighbourhood services and management;
iii. Social aspects; and,
iv. Physical dwelling dimension.

6.13.1 Age

A one-way “between-groups” ANOVA was used to determine whether there is a significance difference within the age groups and the dimensions of SHFs. A summary of results for these dimensions is presented in Tables 6.52-6.55.

6.13.1.1 Age and security and pollution dimension

The difference in means of age and satisfaction with attributes in the security and pollution dimension was not statistically significant at $p < .05$ {F (4,477) = .67, p = .613, Eta squared =, 006)}. The impact of age on the perception of importance of the security and pollution dimension was statistically significant at $p < .05$ {F (4,478) = 3.75, $p <$ .005, Eta squared = .0300}. An evaluation of the *post hoc* analysis revealed that the difference in means was significant between the above 27 years age group (M = 3.03, SD = 1.77) and two other groups (19- 21 years M = 4.27, SD = 1.82 and 25-27 years M = 3.97, SD = 1.56).

The impact of age on loyalty was statistically significant at p < .05 {F (4,478) =3.91, p < .004, Eta squared = 0.032)}. A significant difference was found between the age group above 27 years (M=2.98; SD=1.62) and three other age groups (19-21 years M=4.28; SD=1.72; 22-24 years M=4.18; SD=1.65 and 25-27 years M=4.51; SD=1.62). There was no statistical difference between the age group below 18 years.

The relationship between age and willingness to pay was statistically significant at $p <$ .05 {F (4,480) =2.83, p = .024)}. The significance was between the 27 years age group (M=3.34; SD=1.37) and other three groups (below 18 years (M=4.38; SD=1.37, 19-21 years M=4.38, SD=1.59 and 25-27 years M=4.41, SD=1.22).

The impact of age on the perception of satisfaction with the security and pollution dimension include attributes such as the odour and noise in the neighbourhood, level of crime and cult-related activities. The difference between the age groups was not significant. However, different age groups exhibit different loyalty behaviour to the security and pollution dimension. The mean score for the age group above 27 years was lowest and statistically different from other groups. Again, the group above 27 years also exhibited low willingness to pay behaviour for these attributes. It therefore means that the mature residents exhibit lower loyalty and willingness to pay in an

environment that is characterised by odour, noise, crime and cult-related activities than other age groups.

6.13.1.2 Age and, neighbourhood services and management

The results of the one-way “between-group” ANOVA for age and the neighbourhood services and management were not statistically significant. This indicates that with the attributes within this category, age is not a factor on the perception of satisfaction, loyalty, willingness to pay and word of mouth behaviour.

6.13.1.3 Age and Social factors

The one-way “between-groups” ANOVA for the effect of age on the importance of attributes of the social factor dimension was statistically significant at $p < .05$ ($F(4,479) = 1.48$, $p =$. The impact of age on satisfaction, loyalty, willingness to pay and word of mouth were not statistically significant. Thus, age does not influence significantly the perception of satisfaction and behaviour towards the dimension.

6.13.1.4 Age and the physical dwelling dimension

The one-way “between-groups” ANOVA between age and importance was statistically significant at $p < 0.05$. This indicates that different age groups perceived satisfaction, loyalty, willingness to pay and word of mouth behaviour with the physical dwelling dimension differently, therefore separate consideration should be given to them in the development of attributes in this dimension.

6.13.2 Gender

The results of the impact of the demographic characteristics of residents and the importance that is attached to the various dimensions of the residential environment are discussed in the following sections.

6.13.2.1 Gender and security and pollution dimension

In this dimension, the differences in group means of gender and the five constructs were examined with an independent t-test. The results, shown in Table 6.49, revealed that there was a statistically significant difference between gender groups and importance attached to attributes at $p < .05$ {$F(4, 462) = 2.93$, $p = .004$)}. The other dependent variables were not statistically significant (see Table 6.49).

Table 6.49: One-way "between-groups" ANOVA of the impact of gender on the security and pollution dimensions

Constructs	T-values	P-values	Remark
Satisfaction	T(461)=.718	.47	Not significant (male M=4.03; SD=1.58), Female (M=3.92; SD=1.67)
Importance	T(462)=-2.93	.004	Significant (male M=3.83; SD=1.67), Female (M=4.30; SD=1.78)
Loyalty	F(463)=-.305	.76	Not Significant (male M=4.14; SD=1.66), Female (M=4.19; SD=1.66)
Willingness to pay	T(464)=-.561	.575	Not Significant (male M=4.22; SD=1.48), Female (M=4.30; SD=1.55)
Word of mouth	T(407)=-1.20	.23	Not Significant (male M=4.09; SD=1.46), Female (M=4.27; SD=1.68)

Though, the impact of gender was not significant for the perception of satisfaction, loyalty, willingness to pay and word of mouth behaviour, it was significant for the importance that male and female students attach to these attributes which is higher for female students than their male counterpart. In all the other constructs, marginally, female students exhibit higher loyalty, willingness to pay for and word of mouth behaviour than the female students.

6.13.2.2 Gender and the Neighbourhood services and management dimension

The independent t-test revealed that male and female students do not differ in the way the five constructs of the neighbourhood and services and management dimension are perceived at $p < .05$ (see Table 6.50).

Table 6.50: One-way "between-groups" ANOVA of the impact of gender on the Neighbourhood services and management dimension

Constructs	T-values	P-values	Remark
Satisfaction	T(463)=.119	.91	Not significant (male M=4.43; SD=1.26), Female (M=4.42; SD=1.44)
Importance	T(464)=-1.50	.14	Not significant (male M=4.94; SD=1.23), Female (M=5.12; SD=1.25)
Loyalty	T(465)=-.051	.959	Not Significant (male M=4.75; SD=1.11), Female (M=4.75; SD=1.43)
Willingness to pay	T(466)=-1.02	.31	Not Significant (male M=4.62; SD=1.09), Female (M=4.73; SD=1.29)
Word of mouth	T(466)=-1.57	.17	Not Significant (male M=4.29; SD=1.17), Female (M=4.47; SD=1.33)

Excepting loyalty behaviour where perception was equal, female students exhibited higher perception of satisfaction and behaviour towards the neighbourhood services and management than their male counterpart. This shows that with these attributes, it is easy satisfy female students than their male counterpart.

6.13.2.3 Gender and social factors

The results of the independent t-test presented in Table 6.51 revealed that male and female students differ in the way the importance of the attributes of the neighbourhood services and management dimension are perceived. At $p < .05$, the impact is statistically significant {$t(464) = -2.56$, $p = .01$)}. All the other dependent variables were not statistically significant.

Table 6.51: One-way "between-groups" ANOVA of the impact of gender on the social factors

Constructs	T-values	P-values	Remark
Satisfaction	T(406)= -.56	.57	Not significant (male M=4.43; SD=1.16), Female (M=4.50; SD=1.38)
Importance	T(464)=-2.56	.01	Significant(male M=4.79; SD=1.17), Female (M=5.07; SD=1.20)
Loyalty	F(407)=-.17	.86	Not Significant (male M=4.72; SD=1.21), Female (M=4.74; SD=1.41)
Willingness to pay	T(463)=-.77	.44	Not Significant (male M=4.66; SD=1.10), Female (M=4.74; SD=1.30)
Word of mouth	T(464)=-1.38	.19	Not Significant (male M=4.36; SD=1.27), Female (M=4.52; SD=1.37)

Though, the female students perceived that the attributes of the social dimensions are more important than their male counterpart, there is no significant difference in the way satisfaction and behaviour were perceived. In all the constructs, mean scores for female students were higher than for male students.

6.13.2.4 Physical dwelling attributes

The results of the independent t-test conducted to investigate gender difference in the perception of five dependent variables are presented in Table 6.52.

Table 6.52: One-way "between-groups" ANOVA on the impact of gender on physical dwelling attributes

Constructs	T-values	P-values	Remark
Satisfaction	T(406)= -.56	.57	significant (male M=4.43; SD=1.16), Female (M=4.50; SD=1.38)
Importance	T(464)=-.38	.01	Significant (male M=4.79; SD=1.17), Female (M=5.07; SD=1.20)
Loyalty	F(407)=-.17	.86	Not Significant (male M=4.72; SD=1.21), Female (M=4.74; SD=1.41)
Willingness to pay	T(463)=-.77	.44	Not Significant (male M=4.66; SD=1.10), Female (M=4.74; SD=1.30)
Word of mouth	T(464)=-1.38	.19	Not Significant (male M=4.36; SD=1.27), Female (M=4.52; SD=1.37)

- Satisfaction with attributes: the analysis revealed that there is a gender difference in the perception of satisfaction with the physical dwelling dimension; thus male and female students perceive satisfaction with these attributes differently.
- Importance of attributes: The independent t-test revealed that the gender difference with the perception of the importance of the dimension of physical dwelling was statistically significant at $p < .05$ t (464) = .38.
- Loyalty behaviour: the gender differences in loyalty behaviour was not statistically significant;
- Willingness to pay behaviour: The independent t-test analysis revealed a statistically significant difference between males and females in their willingness to pay behaviour. An inspection of the mean scores revealed that female students (M=4.72, SD=1.27) reported slightly higher level of willingness to pay than the male (M=4.50; SD=1.01) counterpart.
- Word of mouth behaviour: the results of the t-test on gender variance in word of mouth behaviour reported a statistically significant impact at $p < .05$. The female (M=4.51, SD=1.36) students reported a slightly higher mean than the male (M=4.24, SD=1.29) students.

The impact of gender on perception of physical dwellings was significant for all the constructs, thus indicating that the attributes within the housing unit are critical to the success of SHFs. The mean scores of the female students were higher for all the constructs thus indicating that female students are better both in perception of satisfaction and behaviour towards the physical dwelling attributes. A focus on this group of residents by investors would be a better strategy for developing SHFs.

6.13.3 Educational Level

A one-way “between-groups” ANOVA was conducted to investigate the impact of differences in the means at four academic levels on the perception of satisfaction, importance, loyalty, willingness to pay and word of mouth behaviour with respect to SHFs dimensions as follows.

6.13.3.1 Educational level and the Security and pollution dimension

The results revealed that impact of the educational levels of students on perception of the five dependent variables with respect to the security and pollution dimension were not statistically significant. The results are presented in Table 6.53.

Table 6.53: One-way "between-groups" ANOVA on the impact of educational level on security and pollution dimension

Constructs	F-values	P-values	Eta squared	Remark
Satisfaction	F(3,472)=.81	.49	.01	Not significant
Importance	F(3,473)=2.38	.90	.01	Not Significant
Loyalty	F(3,473)=.50	.68	.00	Not Significant
Willingness to pay	F(3,475)=.07	.98	.00	Not Significant
Word of mouth	F(3,470)=.54	.66	.00	Not Significant

6.13.3.2 Educational level, and neighbourhood services and management

The one-way between-subjects ANOVA results for all the dependent variables in this dimension were not statistically significant (see Table 6.54).

Table 6.54: One-way "between-groups" ANOVA on the impact of educational level on neighbourhood services and management dimension

Constructs	F-values	P-values	Eta squared	Remark
Satisfaction	F(3,474)=.36	.78	.002	Not significant
Importance	F(3,475)=2.56	.06	.02	Not Significant
Loyalty	F(3,476)=.79	.52	.01	Not Significant
Willingness to pay	F(3,477)=1.03	.38	.01	Not Significant
Word of mouth	F(3,477)=2.11	.10	.01	Not Significant

6.13.3.3 Educational level and social factors

The one-way "between-subjects" ANOVA showed a statistically significant difference between educational levels and the importance of attributes. An inspection of the *post hoc* scores revealed that that difference was significant between the 1st year students (M=5. 12, SD=1. 29) and second year students (M=4. 76, SD=1. 06). The impact of educational levels on satisfaction, loyalty, willingness to pay and word of mouth was not statistically significant.

Table 6.55: One-way "between-groups" ANOVA on the impact of educational level on social factor dimension

Constructs	F-values	P-values	Eta squared	Remark
Satisfaction	F(3,474)=.36	.78	.002	Not significant
Importance	F(3,475)=2.63	.50	.02	Significant between the first (M=5.12; SD=1.29) and second (M=4.76; SD=1.06) year students
Loyalty	F(3,474)=1.02	.38	.01	Not Significant
Willingness to pay	F(3,471)=2.22	.09	.01	Not Significant
Word of mouth	F(3,475)=2.09	.10	.01	Not Significant

6.13.3.4 Educational level and Physical dwelling attributes

The impact of the educational levels of students on loyalty was statistically significant at $p < .05$ {F (4,478) =3.37, p =.02, Eta squared = 0.001)}. A significant difference was found between the first-year students (M=4.93, SD=1.47) and second-year students (M=4.48; SD=1.25). The impact of the other educational levels on loyalty were not statistically different. The results of the one-way "between-subjects" ANOVA on satisfaction, importance, willingness to pay and word of mouth were not statistically significant.

Table 6.56: One-way "between-groups" ANOVA on the impact of educational level on physical dwelling dimension

Constructs	F-values	P-values	Eta squared	Remark
Satisfaction	F(3,474)=.42	.74	.00	Not significant
Importance	F(3,475)=2.53	.06	.02	Not Significant
Loyalty	F(3,476)=3.37	.02	.001	Significant between the first (M=4.93; SD=1.47) and second (M=4.48; SD=1.25) year students
WTP	F(3,474)=1.00	.39	.01	Not Significant
WOM	F(3,474)=1.56	.20	.01	Not Significant

6.13.4 Income of Students

The income of students consisted of five levels and was used as the independent variable in the one-way "between-groups" ANOVA. The dependent variables are satisfaction, importance, loyalty, willingness to pay and word of mouth.

6.13.4.1 Income of students and security and pollution dimension

Table 6.57 revealed the impact of income of students on the perception of these constructs was not statistically significant.

Table 6.57: One-way "between-groups" ANOVA on the impact of income on security and pollution attributes

Constructs	F-values	P-values	Eta squared	Remark
Satisfaction	F(4,399)=1.78	.13	.02	Not significant
Importance	F(4,399)=.68	.60	.01	Not Significant
Loyalty	F(4,396)=.68	.60	.01	Not Significant
Willingness to pay	F(4,398)=.32	.87	.00	Not Significant
Word of mouth	F(4,393)=1.17	.32	.01	Not Significant

6.13.4.2 Income of students Neighbourhood services and management

Excepting the importance of attributes, the impact of income on the other four constructs was not statistically significant. At $p < .05$, the impact of income on the perception of importance of attributes was statistically significant {F (4,400) = 3.31, $p < .01$, Eta squared = .03. The difference in means is **s**ignificant between the group on 301-600 Rand (M=4.72; SD=1.46) and those earning above 1200 Rand (M=5.38; SD=1.07. The detail of results is presented in Table 6.58.

Table 6.58: One-way "between-groups" ANOVA on the impact of income on neighbourhood services and management dimension

Constructs	F-values	P-values	Eta squared	Remark
Satisfaction	F(4,400)=.32	.88	.00	Not significant
Importance	F(4,400)=3.31	.01	.03	Significant between income level 301-600 (M=4.72; SD=1.46) and above 1200 (M=5.38; SD=1.07)
Loyalty	F(4,399)=.98	.42	.01	Not Significant
WTP	F(4,400)=.50	.74	.01	Not Significant
WOM	F(4,400)=1.92	.11	.02	Not Significant

6.13.4.3 Income of students and social factors dimension

Apart from the importance of attributes, the effect of income on the other four constructs was not statistically significant. At $p < .05$, the impact of income on the perception of importance of attributes was statistically significant {F (4,400) = 2.40, $p < .05$, Eta squared = .02. The difference in means is **s**ignificant between the group on 301-600 Rand (M=4.65; SD=1.06) and those earning above 1200 Rand (M=5.23; SD=1.06. The detail of results is presented in Table 6.59.

Table 6.59: One-way "between-groups" ANOVA on the impact of income on social factors dimension

Constructs	F-values	P-values	Eta squared	Remark
Satisfaction	F(4,400)=1.20	.31	.01	Not significant
Importance	F(4,400)=2.40	.05	.02	Significant between income level 301-600 (M=4.65; SD=1.06) and above 1200 (M=5.23; SD=1.06)
Loyalty	F(4,398)=.27	.90	.00	Not significant
Willingness to pay	F(4,395)=.04	.99	.00	Not Significant
Word of mouth	F(4,398)=1.89	.11	.02	Not Significant

6.13.4.4 Income of students and the physical dwelling attributes

Excepting the importance of attributes, the impact of income on the other four constructs was not statistically significant. At $p < .05$, the impact of income on the perception of importance of attributes was statistically significant {F (4,400) = 3.88, p

< .00, Eta squared = .04. The difference in means is **s**ignificant between the group on above 1200 Rand (M=5.10; SD=1.35) and those on 301-600 (M = 4.77, SD = 1.35) and 601-900 Rand (M=4.90, SD=1.27). The detail of results is presented in Table 6.60.

Table 6.60: One-way "between-groups" ANOVA on the impact of income on physical dwelling dimension

Constructs	F-values	P-values	Eta squared	Remark
Satisfaction	F(4,400)=1.52	.20	.02	Not significant
Importance	F(4,400)=3.88	.00	.04	Significant between income group above 1200 Rand (M=5.10; SD=1.35) and, 301-600(M=4.77; SD=1.16) and 601-900(M=4.90; SD=1.27).
Loyalty	F(4,399)=1.76	.14	.02	Not significant
Willingness to pay	F(4,397)=.21	.94	.00	Not Significant
Word of mouth	F(4,397)=1.42	.23	.01	Not Significant

6.14 TWO-WAY BETWEEN-GROUPS ANOVA OF THE IMPACT OF RESIDENTS' DEMOGRAPHIC CHARACTERISTICS AND SATISFACTION AND IMPORTANCE, AND CONSEQUENCES ON BEHAVIOUR

A two-way "between-groups" ANOVA was conducted to determine the influence of two different categorically independent variables on the perception of satisfaction, importance and consequences on behaviour.

6.14.1 Security and pollution dimension

There was a significant difference between the males and females when considered jointly on the loyalty, willingness to pay and word of mouth; Wilk's lambda, F(4,472)=.94, p=.00, partial Eta squared=.02. A separate ANOVA was conducted for each dependent variable, with each ANOVA evaluated at an alpha level of.05.

6.14.2 Neighbourhood services and management dimension

There was no significant difference between the males and females when considered jointly on the loyalty, willingness to pay and word of mouth; Wilk's lambda, F(4,481)=.97, p=.20, partial Eta squared=.011.

6.14.3 Social factor dimension

There was no significant difference between the males and females when considered jointly on the loyalty, willingness to pay and word of mouth; Wilk's lambda, F(4,475)=.97, p=.15, partial Eta squared=.01.

6.14.4 Physical dwelling dimension

There was no significant difference between the males and females when considered jointly on the loyalty, willingness to pay and word of mouth; Wilk's lambda, F(4,478)=.96, p=.11, partial Eta squared=.01.

6.15 CORRELATION ANALYSIS OF DIMENSIONS

A correlation analysis was conducted to determine the relationship among the five constructs of satisfaction, importance, loyalty, willingness to pay and word of mouth for the dimensions of SHFs environment. The inter-item correlation matrix and the descriptive statistics for the various dimensions are presented in Tables 6.64-6.67.

6.15.1 Security and pollution dimensions

The results of the correlation among the constructs in the pollution and security dimension as shown in Table 6.61 revealed that a positive correlation exists among all the constructs though to a varying degree.

Table 6.61: Inter-correlation matrix between constructs of security and pollution dimension

	Satisfaction	Importance	Loyalty	WTP	WOM	Mean	SD
Satisfaction	1.00					4.02	1.60
Importance	.31	1.00				4.12	1.70
Loyalty	.24	.37	1.00			4.21	1.63
WTP	.28	.35	.55	1.00		4.29	1.50
WOM	.26	.21	.36	.48	1.00	4.19	1.54

Table 6.62 shows that there is a weak positive correlation between the behaviour of residents and, satisfaction and importance of attributes to users. Satisfaction with attributes correlated higher with willingness to pay while the importance of attributes to residents correlated better with loyalty.

The implication of these results is that student-residents who are highly loyal are more willing to pay for the attributes in this dimension, and residents with a higher willingness to pay for attributes have higher tendency to tell others about their residence.

Table 6.62: Ranking of inter-item correlation and behaviour with security and pollution dimension

	Ranking based on correlation coefficients		
Constructs	1st	2nd	3rd
Satisfaction	WTP (.28)	WOM (.26)	Loyalty (.24)
Importance	Loyalty (.37)	WTP (.35)	WOM (.21)

Table 6.63 shows the ranking of inter-item correlation of the behaviour of students to the dimension attributes of neighbourhood services and management. A stronger inter-item correlation exists among loyalty, willingness to pay and word of mouth. The results showed that willingness to pay correlated better to loyalty and word of mouth than that between word of mouth and loyalty. Loyalty and willingness to pay correlated better than between word of mouth and other behaviours. Though the correlation is weak, but the result indicates that when residents are satisfied, they are more willing to pay for attributes in the security and pollution dimension, whereas, a higher loyalty is given to attributes that are important to them.

Table 6.63: Inter-item correlation of behavioural factors

	Ranking based on correlation coefficients	
Constructs	1st	2nd
Loyalty	WTP (.55)	WOM (.36)
WTP	Loyalty (.55)	WOM (.48)
WOM	WTP (.48)	Loyalty (.36)

6.15.2 Neighbourhood services and management attributes

The results of the correlation among the constructs in the neighbourhood services and management attributes as shown in Table 6.64 revealed that a positive correlation exists among all the constructs though to a varying degree.

Table 6.64: Ranking of inter-item correlation and behaviour with neighbourhood services and management dimension

Inter-Item Correlation Matrix							
	Satisfaction	Importance	Loyalty	WTP	WOM	Mean	SD
Satisfaction	1.00					4.43	1.32
Importance	.37	1.00				5.01	1.22
Loyalty	.37	.55	1.00			4.77	1.24
WTP	.46	.40	.58	1.00		4.67	1.16
WOM	.29	.33	.36	.55	1.00	4.37	1.23

Table 6.65 shows that a moderately positive correlation exists between the behaviour of residents and, satisfaction and importance of attributes to users. Satisfaction with attributes correlated higher with willingness to pay while the importance of attributes to residents correlated better with loyalty.

Table 6.65: Inter-item correlation of behavioural factors

	Ranking based on correlation coefficients		
Constructs	1st	2nd	3rd
Satisfaction	WTP (.46)	Loyalty(.37)	WOM (.29)
Importance	Loyalty(.55)	WTP (.40)	WOM (.33)

Table 6.66 shows the ranking of inter-item correlation of the behaviour of students to the dimension attributes of neighbourhood services and management. A stronger inter-item correlation exists between the behaviour of loyalty, willingness to pay and word of mouth. The results show that residents are more willing to pay for attributes that give them better satisfaction and are also more loyal to attributes that are considered to be important to them.

Table 6.66: Inter-item correlation of behavioural factors

	Ranking based on correlation coefficients	
Constructs	1st	2nd
Loyalty	WTP (.58)	WOM (.36)
WTP	Loyalty (.58)	WOM (.55)
WOM	WTP (.55)	Loyalty (.36)

Again, the inter-correlation of a behavioural factor within this dimension reveals that more loyalty results in increase in willingness to pay behaviour and the more residents are willing to pay for attributes, the more they are ready to say something positive

about their residence. It is interesting that the impact of willingness to pay is stronger on loyalty and word of mouth behaviour in the neighbourhood services and management dimension. Hence, focusing on attributes that promote a willingness to pay behaviour will stimulate higher loyalty and word of mouth behaviour as well.

6.15.3 Social factors

Table 6.67 shows the inter-correlation among the constructs of satisfaction, importance, loyalty, willingness to pay and word of mouth. The results revealed that a positive though moderate relationship exists among the five constructs.

Table 6.67: Inter-Item Correlation Matrix and descriptive statistics of the social dimension

	Satisfaction	Importance	Loyalty	WTP	WOM	Mean	SD
Satisfaction	1.00					4.45	1.26
Importance	.34	1.00				4.91	1.17
Loyalty	.20	.43	1.00			4.74	1.29
WTP	.33	.24	.46	1.00		4.69	1.17
WOM	.29	.27	.34	.44	1.00	4.42	1.30

Among the key constructs of satisfaction and importance on behaviour, Table 6.68 revealed that willingness to pay correlated more to satisfaction, while loyalty and importance correlated better than the other behavioural constructs.

Table 6.68: Inter-item correlation of social factors

	Ranking based on correlation coefficients		
Constructs	1st	2nd	3rd
Satisfaction	WTP (.33)	WOM (.29)	Loyalty (.20)
Importance	Loyalty (.43)	WOM (.27)	WTP (.24)

Furthermore, the inter-item correlation of behaviour shows that willingness to pay correlates higher to loyalty and word of mouth, therefore, loyal residents are willing to pay for housing attributes as well as presents the SHFs positively to others.

Table 6.69: Inter-item correlation of behavioural factors

	Ranking based on correlation coefficients	
Constructs	1st	2nd
Loyalty	WTP (.46)	WOM (.34)
WTP	Loyalty (.46)	WOM (.44)
WOM	WTP (.44)	Loyalty (.34)

6.15.4 Physical dwelling attributes

The results of the correlation among the constructs in the pollution and security dimension as shown in Table 6.70 revealed that a positive correlation exists among all the constructs though to a varying degree.

Table 6.70: Inter-Item Correlation Matrix and descriptive statistics of the physical dwelling dimension

	Satisfaction	Importance	Loyalty	WTP	WOM	Mean	SD
Satisfaction	1.00					4.46	1.31
Importance	.31	1.00				5.01	1.28
Loyalty	.20	.54	1.00			4.70	1.31
WTP	.34	.34	.56	1.00		4.59	1.13
WOM	.39	.22	.37	.54	1.00	4.35	1.30

A further analysis was conducted to rank the degree of correlation among the constructs. Table 6.71 summarised the ranking of the correlation of the importance and satisfaction on behaviour. The importance of attributes in this dimension correlated higher with loyalty whereas, a greater correlation exists between satisfaction and the word of mouth than other behavioural constructs. Thus, the more residents perceive an attribute in this dimension to be important, the higher the loyalty behaviour.

Table 6.71: Inter-item correlation of social factors

Constructs	1st	2nd	3rd
Importance	Loyalty (.54)	WTP (.34)	WOM (.22)
Satisfaction	WOM (.39)	WTP (.34)	Loyalty (.20)

There is a stronger correlation between the perception of the importance of an attribute and loyalty. The results also show that behaviourally, loyal students were more willing to pay for attributes in this dimension and *vice-versa.* Word of mouth was found to be

highly correlated with both willingness to pay and loyalty and should therefore be encouraged by investors in SHFs

Table 6.72: Inter-item correlation of behavioural items of social factors

Behaviour	1st	2nd
Loyalty	WTP (.56)	WOM (.37)
WTP	Loyalty (.56)	WOM (.37)
WOM	WTP (.54)	Loyalty (.54)

Therefore, the more loyal residents are more likely to exhibit higher willingness to pay behaviour and vice-versa for attributes in the physical dwelling dimension and hence better word of mouth behaviour.

6.16 CORRELATION BETWEEN MEASURES IN THE KANO MODEL DIMENSIONS

The conceptual framework presented in Table 4.2 contained twelve hypotheses that were formulated to guide the study. The first two were intended to establish a relationship between the perception of availability of attributes of SHFs and performance of the attributes. The remaining 10 hypotheses focused on ascertaining the correlations between satisfaction and consequences/effects, and the importance of attributes and consequences/effects on the behaviour of residents.

In each of the hypotheses, four null sub-hypotheses were set up to deal with the relationships between the constructs (satisfaction, importance, willingness to pay, loyalty and word of mouth) and the four dimensions (“one-dimensional”, “must-be”, “attractive” and “indifferent”) of the Kano categories. The correlation coefficient was determined for the relationships and the test was considered significant for a $p < 0.01$. The results are presented as follows.

6.16.1 Hypothesis one

H_1: There is no statistically significant relationship between the expectations of performance of SHFs attributes and satisfaction with attributes of SHFs.

This hypothesis tests the relationship between the expectation of performance and the satisfaction with attributes of the SHFs environment categorised into the Kano model dimensions. Satisfaction with attributes was operationalised with a single-item measure of each attribute on a 7-points semantic scale (1= no satisfaction and 7= high

satisfaction). The expectation of performance was operationalised by rating the feelings of respondents when attributes of the SHFS are available. It was measured on a 5-points semantic scale and these data were derived from the functional questions of the Kano questionnaire (see section B of the survey instrument). An overall mean of expectation of performance and satisfaction was computed for each attribute and the correlation analysis was conducted on the basis of the Kano model classifications. An alpha level of $p < 0.01$ was used as the criteria to either reject or accept the null hypothesis. The results of the analysis are presented in Table 6.73.

Table 6.73: Correlation of expectation of performance and satisfaction with attributes

Sub-hypothesis	**Correlation coefficient**
Satisfaction and "one-dimensional" attributes	.29**
Satisfaction and "must-be" attributes	.20**
Satisfaction and "attractive" attributes	.23**
Satisfaction and "indifferent" attributes	.23**

The correlation coefficients between expectation of performance and satisfaction in the four Kano model dimensions were positively correlated and statistically significant at an alpha level of $p < .01$. Therefore, the null hypothesis is rejected in favour of the alternative. However, the correlation coefficients were small. The results indicates that the expectation of performance of attributes of the one-dimensional, must-be, attractive and indifferent categories are positive but weak and therefore has little influence on how residents of SHFs perceive their satisfaction with attributes of the housing environment.

6.16.2 Hypothesis two

H_o: There is no statistically significant relationship between the expectations of performance and the importance attached to attributes by residents of SHFs.

The analysis was conducted by correlating the mean score for expectation of performance with a mean score for importance of attributes to residents of SHFs. The correlation coefficients for the four Kano model dimensions were positive and statistically significant at $p < 0.01$ alpha level. As can be seen from Table 6.74**,** the

correlation coefficient for all the dimensions were high excepting for the “must-be” category (*r* = .38) that was moderate.

Table 6.74: Correlation of the importance of attributes and expectations of performance

Sub-hypothesis	Correlation coefficient
Importance and “”one-dimensional” attributes	.61**
Importance and “must-be” attributes	.38**
Importance and “attractive” attributes	.61**
Importance and “indifferent” attributes	.60**

This follows that the performance expected from attributes is higher for features that are rated more highly important than those that are less important. The results shows that residents of SHFs expects more performance for attributes that are important to them. Importance of attribute correlates higher with the “one-dimensional”, “attractive” and “indifferent attributes”, whereas, “the must-be attributes” is weakly correlated. This is therefore, an indication that residents of SHFs expect high performance from attributes that are important to them.

6.16.3 Hypothesis three

H_o: There is no statistically significant relationship between the expectations of performance and the word of mouth behaviour of residents of SHFs.

A correlation analysis was conducted to examine the relationship between expectation of performance and word of mouth behaviour of students. The results for the four Kano model classification were all positive and statistically significant at an alpha level of $p < 0.01$. The null hypothesis is rejected for the alternative. Table 6.75 revealed that a little correlation exists between the Kano model dimensions and word of mouth behaviour. This results implies that the perceptions or feelings or expectations have a small positive effect on the willingness of residents to say something in support of the SHFs environment. Thus, residents are not likely to present their housing environment to others based on the performance expected from attributes.

Table 6.75: Correlation of expectations of performance of SHFs attributes and word of mouth behaviour of residents

Sub-hypothesis	Correlation coefficient
Word of mouth behaviour and “one-dimensional” attributes	.17
Word of mouth behaviour and “must-be” attributes	.19
Word of mouth behaviour and “attractive” attributes	.11
Word of mouth behaviour and “indifferent” attributes	.17

6.16.4 Hypothesis four

H_o: There is no statistically significant relationship between expectations of performance and the willingness to pay behaviour of residents of SHFs.

The correlation coefficients between willingness to pay for SHFs attributes by residents and expectations of performance of housing attributes in the four Kano model dimensions were positively correlated and statistically significant at an alpha level of $p < .01$. Therefore, the null hypothesis is rejected in favour of the alternative. The small correlation points to the negligible impact of expectation of performance of attributes on the willingness to pay behaviour.

Table 6.76: Correlation of expectations of performance of SHFs attributes and a willingness to pay behaviour

Sub-hypotheses	Correlation coefficient
Willingness to pay behaviour and “one-dimensional” attributes	.25
Willingness to pay behaviour and “must-be” attributes	.08
Willingness to pay behaviour and “attractive” attributes	.16
Willingness to pay behaviour and “indifferent” attributes	.18

6.16.5 Hypothesis five

H_o: There is no statistically significant relationship between expectations of performance of attributes and the loyalty behaviour of residents of SHFs.

A correlation analysis was conducted to examine the relationship between expectations of performance and loyalty behaviour of students. The results for the four Kano model classifications were all positive and statistically significant at an alpha level of $p < 0.01$. The null hypothesis is rejected for the alternative. Table 6.79 revealed a moderate correlation for all the dimensions excepting the “must-be” attributes which reported a small correlation coefficient of 0.26. This implied that the feelings or perception of expectation of performance of SHFs attributes could be used to determine the level of loyalty towards SHFs by residents excepting for the must be attributes that is weal.

Table 6.77: Correlation of expectations of performance of attributes of SHFs and loyalty behaviour of residents

Sub-hypothesis	**Correlation coefficient**
Loyalty behaviour and “one-dimensional” attributes	.41
Loyalty behaviour and “must-be” attributes	.26
Loyalty behaviour and “attractive” attributes	.40
Loyalty behaviour and “indifferent” attributes	.44

6.16.6 Correlations between the importance of attributes and behaviour of residents of SHFs

Three hypotheses were set to test the relationships between the importance that is attached to attributes by residents of SHFs and their behaviour; loyalty, willingness to pay and word of mouth behaviour. Each of the four Kano categories were tested separately as independent hypothesis. The hypotheses and results are presented as follows.

6.16.7 Hypothesis six

H_o: There is no statistically significant relationship between the importance attached to attributes of SHFs by residents and the loyalty behaviour of residents of SHFs.

The results of the correlation of importance that is attached to attributes of SHFs and their loyalty behaviour to the “one-dimensional”, “must-be”, “attractive” and “indifferent”

attributes are presented in Table 6.78. The results show that there were statistically significant positive relationships between importance and loyalty behaviour for all the dimensions at $p < .01$, hence the hypothesis was rejected in favour of the alternative. The correlations of loyalty to "attractive" attributes and "indifferent" attributes were high while those for the "one-dimensional" and "must-be" attributes were moderate. This signifies that residents of SHFs are more likely to be loyal to attributes that are considered to be important to them.

Table 6.78: Correlation of importance of attributes of SHFs and loyalty behaviour of residents

Sub-hypothesis	Correlation coefficient
Importance and loyalty behaviour to "one-dimensional" attributes	.48
Importance and loyalty behaviour to "must-be" attributes	.40
Importance and loyalty behaviour to "attractive" attributes	.56
Importance and loyalty behaviour to "indifferent" attributes	.54

6.16.8 Hypothesis Seven

H_o: There is no statistically significant relationship between the importance attached to attributes of SHFs by residents and the willingness to pay behaviour of residents of SHFs.

The results for the relationship between importance that is attached to attributes of SHFs and willingness to pay behaviour was positive and statistically significant at $p < 0.01$ for all categories; excepting the correlation coefficient for the "must-be" attributes which was low; the others were moderately correlated. Therefore, the null hypothesis was rejected in favour of the alternative. Though a positive correlation exists between importance and willingness to pay, the relationship is moderate, hence, loyalty behaviour increases modestly with an increase in the level of importance that is attached to SHFs attributes. This is an indication that when attributes that are important to residents, which although not expected are provided in a SHFs, the implication on loyalty is encouraging.

Table 6.79: Correlation of importance of attributes of SHFs and willingness to pay behaviour of residents

Sub-hypothesis	Correlation coefficient
Importance and willingness to pay behaviour to “one-dimensional” attributes	.35
Importance and willingness to pay behaviour to “must-be” attributes	.29
Importance and willingness to pay behaviour to “attractive” attributes	.36
Importance and willingness to pay behaviour to “indifferent” attributes	.32

6.16.9 Hypothesis Eight

H_o: There is no statistically significant relationship between the importance attached to attributes of SHFs by residents and the word of mouth behaviour of residents of SHFs.

The results for the relationship between importance that is attached to attributes of SHFs and word of mouth behaviour of residents was positive and statistically significant at $p < 0.01$ for all categories. Hence, the null hypothesis was rejected in favour of the alternative. Again, the correlation coefficient was low for the “must-be” attributes while others were moderate. Therefore, a negligible increase in word of mouth behaviour is expected with an increase in the level of importance that residents attach to attributes of SHFs.

Table 6.80: Correlation of importance of attributes of SHFs and word of mouth behaviour of residents

Sub-hypothesis	Correlation coefficient
Importance and word of mouth behaviour to “one-dimensional” attributes	.32
Importance and word of mouth behaviour to “must-be” attributes	.28
Importance and word of mouth behaviour to “attractive” attributes	.31
Importance and word of mouth behaviour to “indifferent” attributes	.32

6.17.1 Correlations between satisfaction with attributes and behaviour of residents of SHFs

The correlation results between residents' satisfaction with attributes of SHFs and the behaviour of residents (loyalty, willingness to pay and word of mouth behaviour) are presented in the following sections.

6.17.1 Hypothesis Nine

H_o: There is no statistically significant relationship between satisfaction with attributes and the loyalty behaviour of residents of SHFs.

Table 6.81 shows the correlation between satisfaction with attributes and the loyalty behaviour of residents of SHFs to the categories. The correlations were positive and statistically significant at an alpha level of $p < 0.01$ for the "one-dimensional", "must-be", attractive and "indifferent" attributes. The null hypotheses were rejected in favour of the alternative that a statistically significant relationships exist between satisfaction with attributes and the behaviour of residents of SHFs towards the attributes in the Kano categories. The correlation coefficients were however low for all Kano categories. Thus, the impact of an increase in satisfaction on loyalty behaviour is low.

Table 6.81: Correlation of satisfaction with attributes of SHFs and loyalty behaviour of residents

Sub-hypothesis	Correlation coefficient
satisfaction and loyalty behaviour to "one-dimensional" attributes	.29
Satisfaction and loyalty behaviour to "must-be" attributes	.26
Satisfaction and loyalty behaviour to "attractive" attributes	.26
Satisfaction and loyalty behaviour to "indifferent" attributes	.25

6.17.2 Hypothesis Ten

H_o: There is no statistically significant relationship between satisfaction with attributes and the willingness to pay behaviour of residents of SHFs.

The correlation between satisfaction and willingness to pay for attributes of SHFs were positive and statistically significant at $p < 0.01$ for all categories, hence the null hypothesis was rejected in favour of the alternative that a statistically significant

relationships exist between satisfaction and willingness to pay. Table 6.82 reveals a moderate correlation for all the categories and a slightly higher coefficient for the "one-dimensional" attributes and least value for the must-be attributes. Therefore, the influence of an increase in satisfaction on willingness to pay is moderate for one-dimensional and attractive attributes.

Table 6.82: Correlation of satisfaction of attributes of SHFs and willingness to pay behaviour of residents

Sub-hypothesis	**Correlation coefficient**
satisfaction and willingness to pay behaviour to "one-dimensional" attributes	.42
Satisfaction and willingness to pay behaviour to "must-be" attributes	.30
Satisfaction and willingness to pay behaviour to "attractive" attributes	.40
Satisfaction and willingness to pay behaviour to "indifferent" attributes	.37

6.17.3 Hypothesis Eleven

H_o: There is no statistically significant relationship between satisfaction with attributes and the word of mouth behaviour of residents of SHFs.

Table 6.83 revealed that the satisfaction with attributes of SHFs and the word of mouth behaviour of residents was positively correlated with "one-dimensional", "must-be", "attractive" and "indifferent" attributes which were statistically significant at $p < 0.01$. Hence the null hypothesis was rejected in favour of the alternative. Comparatively, the coefficients were moderate for all the categories, though a lesser value was obtained for the must-be attributes. Thus, an increase in satisfaction produces moderate effects on the word of mouth behaviour of residents.

Table 6.83: Correlation of satisfaction with attributes of SHFs and word of mouth behaviour of residents

Sub-hypothesis	Correlation coefficient
satisfaction and word of mouth behaviour to “one-dimensional” attributes	.37
Satisfaction and word of mouth behaviour to “must-be” attributes	.30
Satisfaction and word of mouth behaviour to “attractive” attributes	.36
Satisfaction and word of mouth behaviour to “indifferent” attributes	.36

6.17.4 Hypothesis Twelve

H_o: There is no statistically significant relationship between the importance attached to attributes of SHFs and satisfaction with attributes by residents of SHFs.

The correlation results show that a moderate, positive statistically significant relationship exists between the importance attached to attributes of SHFs by residents and satisfaction. The hypothesis that there is no statistically significant relationship between importance of attributes and satisfaction with attributes was rejected.

Table 6.84: Correlation of satisfaction with attributes and importance of attributes of SHFs to residents

Sub-hypothesis	Correlation coefficient
“One-dimensional” attributes	.38
“Must-be” attributes	.31
“Attractive” attributes	.35
“Indifferent” attributes	.31

6.18 Inter-correlation of loyalty, willingness to pay and word of mouth behaviour

The correlations between the various constructs were conducted and the results are presented in Table 6.85-88.

6.18.1 Inter-correlation of behaviour ("one-dimensional" attributes)

An inter-correlation among the indicators of behaviour revealed that the highest correlation was between willingness to pay and word of mouth followed by willingness to pay and loyalty. This could be interpreted to mean that the perception of the importance of attributes by students stimulates a higher level of loyalty to SHFs than willingness to pay and word of mouth that are also positively related.

Table 6.85: Inter-correlation of importance of attributes of SHFs and behaviour with "one-dimensional" attributes

	Loyalty	WTP	WOM	Mean	SD
Loyalty	1.00			4.76	1.17
WTP	.54	1.00		4.66	1.08
WOM	.37	.57	1.00	4.35	1.21

**p= .001 (2-tailed).

6.18.2 Inter-correlation of behaviour ("must-be" attributes)

Inter correlation analysis among the indicators of behaviour revealed a high correlation between word of mouth and willingness to pay, moderate correlation between willingness to pay and loyalty, and, word of mouth and loyalty.

Table 6.86: Inter-correlation of importance of attributes of SHFs and behaviour with "must-be" attributes

	Loyalty	WTP	WOM	Mean	SD
Loyalty	1.00			4.64	1.19
WTP	.47	1.00		4.55	1.10
WOM	.32	.50	1.00	4.37	1.19

6.18.3: Inter-correlation of behaviour ("attractive" attributes)

The results of the inter-correlation analysis of the indicators of behaviour revealed a high correlation between loyalty and willingness to pay, and willingness to pay and word of mouth. A moderate correlation was reported between word of mouth and loyalty behaviours.

Table 6.87: Inter-correlation of importance of attributes of SHFs and behaviour with "attractive" attributes

	Loyalty	WTP	WOM	Mean	SD
Loyalty	1.00			4.70	1.22
WTP	.56	1.00		4.62	1.20
WOM	.33	.50	1.00	4.38	1.19

6.18.4 Inter-correlation of behaviour ("indifferent" attributes)

The results of the inter-correlation analysis of the indicators of behaviour revealed a high correlation between word of mouth and willingness to pay, and loyalty and willingness to pay. A moderate correlation was reported between loyalty and word of mouth behaviours.

Table 6.88: Inter-correlation of importance of attributes of SHFs and behaviour with "indifferent" attributes

	Loyalty	WTP	WOM	Mean	SD
Loyalty	1.00			4.68	1.26
WTP	.51	1.00		4.61	1.13
WOM	.37	.52	1.00	4.34	1.27

6.19 DISCUSSION AND INTERPRETATION OF KEY ISSUES IN THE STUDY

The discussion and interpretations of key findings of the study are presented in following sections.

6.19.1 INTERACTION BETWEEN DEMOGRAPHIC CHARACTERISTICS, HOUSING PROFILE AND PERCEPTION OF QUALITY OF OFF-CAMPUS SHFs.

OBJECTIVE 1: examine the impact of the demographic characteristics of students on the perception of quality and choice of SHFs types.

The examination of the influence of demographic characteristics of students on the choice of housing and perception of quality of off-campus SHFs was required in order to establish a possible segregation of the SHFs market along demographic lines. Success in housing is a function of patronage. The students perceived the attributes of off-campus SHFs to be better than on-campus accommodation; thus, a high demand indicates an improved prospect. However, quality housing most often goes with higher rent; thus higher quality housing costs more than lower quality SHFs. The pattern of income of students and the distribution of students into the various housing types is important in order to determine the willingness of students to spend money on their housing.

Age and gender are important variables that are used in the determination of satisfaction with housing and its attributes. Consistently and excepting the 2011/2012 session, the single room apartment was the dominant housing type patronised by all categories of students excepting those above 27 years of age who preferred the self-contained apartments. There is a robust market for single room apartment with shared facilities for students in all age, gender and income bracket excepting students that are above 27 years who preferred the self-contained apartment with private facilities.

Though both gender perceived that the quality of their residence is high, a higher percentage of female students perceived their off-campus accommodation to be better than their male counterparts; which is in agreement with the studies conducted by Li *et al*. (2005) and Khozaei *et al*. (2010:35). Within all the income groups, the single room apartment with shared facilities and self-contained apartments with private

facilities are highly popular and the shared flats are less popular. However, the patronage of the shared flat apartment increases as income level improves. This is in agreement with the findings of Thomsen and Eikemo (2010:273) who observed that access to better quality housing is a function of the amount of money at the disposal of the residents. Frank and Enkawa (2009) noted that the probable reasons are that higher income earners judge their residence better through the introduction of furniture that is capable of improving satisfaction.

The years of study represent the experience of students with SHFs. It is apparent that the percentage of students in single rooms decreases as students' advances to higher classes. The reverse is the case for shared flat which is considered to have better facilities and the level of patronage is uniform with the self-contained apartment over the years. The explanation for this trend could be drawn from the studies by Fourbert *et al* (1998:41) and Thomsen (2007:577) who asserted that the experiences that are gained by students are critical to preference and satisfaction. This experiences could be either from home or by living in one of the SHFs types. Though statistically, the difference may not be significant, it is however enough to serve as medium to segregate SHFs delivery for maximum patronage and satisfaction.

OBJECTIVE 2: Identify attributes of SHFs that might serve as drivers of resident satisfaction.

The second objective deals with the identification of drivers of resident satisfaction in the line with the sub-problem as stated below.

Sub-problem 1: Attributes that act as drivers of resident satisfaction are not sufficiently prioritised in the development of off-campus SHFs (Ukoha & Beamish, 1997: 445; Al-Noori, 1997:2; Stevenson & Leaman, 2010:439; McCrea *et al.,* 2013:

This objective was achieved with the use of the Kano model, refined Kano model and IPA to reveal attributes that are critical to business performance. Comprehensive details are provided in tables where attributes were classified based on whether they are high importance or low importance; "one-dimensional", "must-be", "attractive" or "indifferent" according to the Kano category. These dimensions were further modified

with the IPA requirements on whether to keep up the good work, concentrate here, low priority and area of possible overkill.

The results show that different classifications were obtained for different attributes thus suggesting a unique management action for each individual attribute. The implication of this evaluation for investors is that not all attributes posseses equal potentials to the improvement of satisfaction and patronage of SHFs when the performance level is increased. The implication is that a strategy which emphasises the development and improvement of attributes based on the evaluation of this nature has the capability to improve or minimise the use of resources and improve gain.
Furthermore, a hypothesis was formulated to establish how the perception of expectations of performance of attributes is correlated with the importance attached to attributes and satisfaction with attributes of SHFs.

6.19.2 HYPOTHESIS 1: THE PERCEPTION OF EXPECTATIONS AND SATISFACTION WITH ATTRIBUTES

One of the key challenges in housing development is the satisfaction of the expectations of housing occupants. Expectation is one of the key components in the determination of satisfaction, thus, students form pre-letting expectations of SHFs and these desires are either confirmed or disconfirmed. When expectations are not met, residents are dissatisfied and might lead to consequences which would definitely affect the fortune of the investors. In this study, the correlation of expectations and satisfaction with attribute reveals a very weak correlations for all the Kano categories. This shows that the strenght of relationships was positive but weak. This could be interpreted to mean that, the performance of attributes that are expected is weakly related with actual satisfaction that is gained by residents.

6.19.3 THE PERCEPTION OF EXPECTATIONS AND IMPORTANCE OF ATTRIBUTES BY RESIDENTS OF SHFs

Sub-problem 2: There is a lack of understanding of the relationship between expectations of performance of SHFs attributes and the importance that is attached to individual residential attributes by users (Greene & Ortuzar, 2002; McCrea *et al.,* 2013).

Residents are faced with constraints, hence, in selecting attributes, emphasis is placed on attributes that are core over those that are secondary. The relationship between the expectation of performance and importance that is attached to attributes by residents revealed the existence of a positive statistically significant correlation. The level of the correlation for the one-dimesnional attributes, “attractive” and “indifferent” atttributes was high while the coefficient for the must-be attributes was weak. The implications of this result could be interpreted to mean that students form high expectations of attributes that are important to them. It is expected that the must-be attributes are taken for granted once the need has been met, thus the low correlation may have resulted from the impact of the threshold level that exist for must-be attributes beyond which improvement is no longer valuable.

The wider implication of the findings associated with sub-problem 2 and hypothesis 2 is that SHFs developers must place emphasis on factoring the importance that is attached to attributes by residents in order to increase end user value when developing plans for the construction of new residences or renovating existing ones.

6.19.4 PERCEPTION OF EXPECTATIONS OF PERFORMANCE AND BEHAVIOUR

Equally important in this survey is the question of whether the expectations that students hold prior to occupying a SHF have any relationship with their behaviour toward housing attributes. Three hypotheses were formulated to explain the relationships between expectations and loyalty, willingness to pay and word of mouth. The discussion on each follows. This is important from the background that patronage and hence profitability in business depends on these three factors.

Sub-problem 3: There is a lack of understanding of the relationship between expectations of performance of SHFs attributes and the word of mouth behaviour of residents of SHFs (Eisingerich *et al.,* 2013:9).

This sub-problem and hypothesis deal with the claims that the fulfilment of expectations leads to the readiness by residents to engage in positive word of mouth to justify their residential transaction, informing and providing new referral through positive word of mouth. This is important as SHFs are fragmented and the information on availability and quality is not readily available. Hence, the word of mouth serves as

an alternative advertisement. The results were equally positively significant but weak for all the dimensions of the Kano model categories. Thus, the expectations of residents have a negligible effect on the willingness of residents to say something good in support of the SHFs environment.

The implication of this result is that investors need to find alternative medium to publicise their SHFs and quality of attributes in order to make them known to eligible tenants. Prior expectations may not motivate tenants to say something good about a residence.

Sub-problem 4: there is a lack of understanding of the relationship between expectations of performance and the willingness to pay behaviour of residents of SHFs (Kano *et al*.,1984, Greene & Ortuzar, 2002; Martzler *et al.,* 2004).

There is growing acceptance that the willingness to pay a premium price for the use of an attribute is critical to profitability. It costs more to provide high quality attributes, thus investors naturally impose higher prices to recoup the cost of procurement and subsequently make profit. The results of correlations of expectations and willingness to pay was weak; thus indicating that the perception of expectations of performance of attributes is not a reliable indicator of the willingness of residents to pay commensurate rent to enjoy the use of equivalent quality of residence.

Hypothesis H_5: There is no statistically significant relationship between expectations of performance of attributes and the loyalty behaviour of residents of SHFs.

Loyalty to residence is an important indicator to profitability, hence, investors are concerned about the retention of students in residence over their period in institutions. It costs more to get new customers. Frequent switching has dire consequences on SHFs investment as money is expended to put the residence in shape to attract and receive new customer which may not coincide with maintenance plans. The result show that there is a modest, positive and statistically significant relationship between expectations and loyalty to residence, though, the correlation was weak for the must-be attributes. The implication of this finding is that loyalty depends on the prior expectations of residents, hence, the expectations of residents could be used as an indicator of loyalty.

6.19.5 PERCEPTION OF IMPORTANCE OF ATTRIBUTES AND BEHAVIOUR

OBJECTIVE 4: to determine the interrelationships between satisfaction, loyalty, willingness to pay and word of mouth behaviour.

The relationship between the importance that is attached by residents to attributes of SHFs and their loyalty/retention, willingness to pay and word of mouth behaviour were tested and the discussions are as follows:

Sub-problem 6: there is a lack of understanding of the relationship between the importance that is attached to individual residential attributes by residents and the loyalty behaviour.

The correlation between the importance of SHFs and loyalty behaviour was modest, positive and statistically significant thus indicating that residents are loyal to attributes that are considered to be important to them. Also, the coefficient for the must-be attributes was smaller than the rest which again indicated that these attributes are entry level requirements that have threshold levels beyond which no further gain is acquired.

Sub-problem 7: There is a lack of understanding of the relationship between the importance that is attached to individual residential attributes by residents and the willingness to pay behaviour.

The relationship between the importance that is attached to attributes and willingness to pay premium prices was weak for the must be attributes and moderate for other dimensions. Therefore, residents are more likely to pay premium prices for attributes that are considered as important to them.

Sub-problem 8: there is a lack of understanding of the importance that is attached to individual residential attributes by residents and word of mouth behaviour.

Equally, the relationship between importance and word of mouth behaviour was weak, therefore, an alternative mode of making the quality of attributes of residence available to would-be tenants is recommended.

6.19.6 PERCEPTION OF SATISFACTION WITH ATTRIBUTES AND BEHAVIOUR

Satisfaction with the attributes of the SHFs environment is critical to patronage and subsequent behaviour towards housing attributes. The discussion on the results of the three hypothehses are presented herewith. The perception of satisfaction was a little above average for all the attributes thus indicating that residents of SHFs are not equally satisfied with attributes of SHFs; thus indicatiing that a need exists for the improvement of attributes to increase satisfaction, especially for the “one-dimensional” attributes. The satisfaction level was generally moderate for “attractive” attributes which indicate that this is an area of improvement for investors who apsire to gain competitive advantage over other investors. Investors should emphasise on indifferent attributes with caution as these attributes are considered to be irrelevant to residents.

6.19.7 PERCEPTION OF IMPACT OF ATTRIBUTES ON BEHAVIOUR

Different levels of mean scores were obtained for the impact of satisfaction with attributes on the behaviour of residents and were generally moderate for all the dimensions of the Kano categories. However, the mean score of attributes differs among behaviours which indicated the existence of differences on the impact of attributes on the different constructs. For example, on the loyalty behaviour, the ability to sleep without disturbance was the most important factor (4.91), whereas, it was the 4th factor in willingness to pay (4.73) and 4.49 in the word of mouth behaviour; thus indicating a variability on how a particular attribute influences students’ behaviour towards their attributes. Investors are encouraged to note the difference in the impact of individual attributes on behaviour and improve the attributes that contribute most to behaviour.

Another point to note by investors is the location of the attributes in the Kano categories. This is important in order to establish how residents respond to performance levels. The performance of attributes in the “one-dimensional” categories are linearly related to satisfaction, whereas, the must-be are significant only when the performance falls below the threshold levels. Though, the “attractive” elements do not

add or subtract from satisfaction when not available, investors could strategise to incorporate them in order to obtain a competitive advantage over other investors in the market. This conclusion is supported by the results of the hypotheses. Three hypotheses were formulated to further correlate the relationship between satisfaction with attributes and behaviour. The results are presented and discussed below.

Sub-problem 9: there is a lack of understanding of the relationship between satisfaction with individual SHFs attributes and the loyalty of residents to SHFs attributes.

The correlation between satisfaction with attributes and loyalty behaviour was low, though positive and statistically significant. This indicates that the level of satisfaction that is enjoyed by students and the relationship to loyalty behaviour is weak. Thus, the measure of satisfaction may not serve as an effective indicator of loyalty to residences by students of off-campus SHFs.

Sub-problem 10: there is a lack of understanding of the relationship between satisfaction with SHFs attributes and the willingness to pay behaviour of resident.

The results of the correlation between satisfaction and willingness to pay was modest, positive and statistically significant and a low correlation is reported for the “must-be” attributes. This is an indication that satisfied residents are more willing to pay for attributes of SHFs.

Sub-problem 11: There is a lack of understanding of the relationship between satisfaction with the attributes of SHFs and the word of mouth behaviour of residents.

The relationship between satisfaction with attributes and word of mouth behaviour was moderate, positive and statistically significant. This is an indication that when students are satisfied with the attributes of their residence, they are moderately willing to tell others of the quality and condition of their residence. The implication to investors is that keeping students satisfied with residence will encourage the use of word of mouth as alternative advertisement of housing.

6.20.1 RELATIONSHIP BETWEEN IMPORTANCE AND SATISFACTION WITH ATTRIBUTES

Sub-problem 12: there is a lack of understanding of the relationship between the importance of attributes to residents and satisfaction with the attributes of the SHFs.

The relationship between importance attached to attributes and satisfaction with attributes was moderate, positive and statistically significant. This is an indication that residents who consider attributes to be important are moderately satisfied with it.

6.21 CONCLUSIVE REMARKS

Chapter Six presents the analysis and interpretation of the results of the study. The problems and hypotheses were treated to illuminate the objectives of the study. Based on this evaluation, the primary drivers of satisfaction were identified to set priorities for the development and improvement of attributes with the aim of maximising resources. *C*orrelation analyses were performed to establish the relationships between the different constructs namely, satisfaction, importance, loyalty, willingness to pay and word of mouth behaviour.

CHAPTER SEVEN

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

The study set out with the aim of identifying attributes of the off-campus student housing that drive resident satisfaction and the consequence/effect on behaviours such as loyalty, willingness to pay and word of mouth. First, the study provides an integrated approach to understanding the symmetric and asymmetric influence of quality-attributes of the student housing facilities (SHFs) on resident satisfaction. Secondly, the research investigated the consequences/effects of satisfaction with attributes on resident behaviours such as loyalty, willingness to pay and word of mouth. Thirdly, the research examined the influence of the demographic characteristics of residents on the perception of satisfaction, importance, loyalty, willingness to pay and word of mouth behaviour of students residing in off-campus SHFs. Finally, the study examined the relationships between the different sets of variables as a whole, in order to determine the direction and significance of these relationships.

The purpose of this chapter therefore is to provide a summary of the research processes, findings with respect to study objectives and to discuss the contribution of the research to knowledge in the field of residential housing. It also highlights the limitations of the study and offers suggestions on areas for further research.

7.2 RESEARCH OVERVIEW

The involvement of the private sector in the provision of student housing is critical to the reduction of the gap between the demand and supply of SHFs, both in quantity and quality. While the role of these investors is desirable, realising investment goals requires that the attributes of these SHFs satisfy the needs and requirements of users. Given that, housing is a multi-attribute product, residents respond in different ways to the diverse levels of quality and quantity of attributes of SHFs. Two critical factors that influence choice of SHFs by residents are the yield of attributes to satisfaction, and importance of these attributes (Greene & Ortuzar, 2010:56; McCrea *et al.,* 2013:578).

Most residential studies viewed the relationship between satisfaction and quality-attributes as linear and symmetric; that is better quality of an attribute produces higher

satisfaction and vice versa. However, with certain attributes and individual residents, better quality of an attribute may not necessarily lead to a proportionate increase in satisfaction. This misconception poses a challenge to developers of SHFs who invest in high quality-attributes with the anticipation that by increasing the quality of attributes, satisfaction and positive behaviour will also increase; and hence a growth in profit. The implication is that investors may deliver attributes that are not important to residents or beyond their satisfaction threshold. Once this threshold is exceeded, an improvement in the quality of products may not produce similar marginal improvement in satisfaction.

It is therefore essential that investors of student housing consider the dynamics influencing satisfaction by paying attention to the importance of attributes, and the resulting consequences/effects on behaviour. The objective of this study was to suggest an efficient and effective way to deploy scarce resources to improve and maintain attributes that are essential and valued by residents of SHFs. As a consequence, the behaviour of residents towards SHFs investment is improved thus leading to increase in patronage and hence profitability.

7.2.1 Research problems, questions and objectives

Regardless of the crucial role that satisfaction with attributes plays in the success of SHFs development, most SHFs are conceived primarily to fulfil the economic benefits of the investors rather than what is important, that is, to offer satisfaction to tenants. The linkage between satisfaction with attributes, importance attached to attributes and consequences/effects on the behaviours of residents in off-campus SHFs settings is less understood in SHFs studies. The following offers a summary of the problems that were investigated in this study namely:

- developers of SHFs in South-South Nigeria do not have an adequate understanding of attributes that drive resident satisfaction as well as the importance that is attached to these attributes by occupants; and,
- the consequences/effects of attributes that drive satisfaction and the attached importance of the behaviour of residents such as loyalty, willingness to pay and word of mouth behaviour are not adequately understood in off-campus SHFs development.

From the above stated problems, the following sub-problems arose:

- Sub-problem 1: Attributes that act as drivers of resident satisfaction are not sufficiently prioritised in the development of off-campus SHFs (Ukoha & Beamish, 1997: 445; Al-Noori, 1997:2; Stevenson & Leaman, 2010:439; McCrea *et al.,* 2013: 538).
- Sub-problem 2: There is a lack of understanding of the relationship between expectations of performance of SHFs attributes and the level of importance that is attached to individual residential attributes by users (Greene & Ortuzar, 2002; McCrea *et al.,* 2013).
- Sub-problem 3: there is a lack of understanding of the relationship between expectations of performance of SHFs attributes, and the word of mouth behaviour of residents of SHFs (Eisingerich *et al.,* 2013:9)
- Sub-problem 4: there is a lack of understanding of the relationship between expectations of performance and the willingness to pay behaviour of residents of SHFs Kano, (1984, Greene & Ortuzar, 2002; Martzler *et al.,* 2004).
- Sub-problem 5: there is a lack of understanding of the relationship between expectations of performance of SHFs attributes, and the loyalty behaviour of residents to SHFs (Tam, 2010: 897).
- Sub-problem 6: there is a lack of understanding of the relationship between the importance that is attached to individual residential attributes by residents and the loyalty behaviour.
- Sub-problem 7: there is a lack of understanding of the relationship between the importance that is attached to individual residential attributes by residents and the willingness to pay behaviour.
- Sub-problem 8: there is a lack of understanding of the importance that is attached to individual residential attributes by residents and word of mouth behaviour.
- Sub-problem 9: there is a lack of understanding of the relationship between satisfaction with SHFs attributes and the loyalty of residents to SHFs attributes.
- Sub-problem 10: there is a lack of understanding of the relationship between satisfaction with SHFs attributes and the willingness to pay behaviour of resident.

- Sub-problem 11: there is a lack of understanding of the relationship between satisfaction with the attributes of SHFs and the word of mouth behaviour of residents.
- Sub-problem 12: there is a lack of understanding of the relationship between the importance of attributes to residents and satisfaction with the attributes of the SHFs.

7.2.2 Research aim and objectives

The study was designed to establish a basis for the efficient and effective deployment of scarce resources to provide attributes that are important to residents as well as offer resident satisfaction with the objective of provoking positive resident behaviour. Based on the above aim, the following research objectives were formulated to give direction to the study.

i. identify attributes of SHFs that might serve as drivers of residents' satisfaction;
ii. Identify attributes of SHFs that are important to residents of off-campus SHFs;
iii. examine the impact of the demographic characteristics of students on the perception of quality and choice of SHFs types;
iv. determine the relationship between residents' satisfaction and loyalty behaviour;
v. determine the relationship between residents' satisfaction and word of mouth behaviour;
vi. determine the relationship between residents' satisfaction and willingness to pay for housing attributes; and finally,
vii. submit appropriate recommendations to prospective investors regarding the development and upgrading of student accommodation.

In order to address the sub-problems listed in section 7.2.1, the following hypotheses were derived and data were generated through the questionnaire survey and analysed to provide necessary explanations.

- Hypothesis H_1: There is no statistically significant relationship between the expectations of performance of SHFs attributes and satisfaction with attributes of SHFs;
- Hypothesis H_2: There is no statistically significant relationship between the expectations of performance and the attached importance of attributes of SHFs;
- Hypothesis H_3: There is no statistically significant relationship between the expectations of performance and the word of mouth behaviour of residents of SHFs;
- Hypothesis H_4: There is no statistically significant relationship between expectations of performance and the willingness to pay behaviour of residents of SHFs;
- Hypothesis H_5: There is no statistically significant relationship between expectations of performance of attributes and the loyalty behaviour of residents of SHFs;
- Hypothesis H_6: There is no statistically significant relationship between the importance attached to attributes of SHFs by residents and the loyalty of residents to SHFs;
- Hypothesis H_7: There is no statistically significant relationship between the importance attached to attributes of SHFs by residents and the willingness to pay behaviour of residents of SHFs;
- Hypothesis H_8: There is no statistically significant relationship between the importance attached to attributes of SHFs by residents and the word of mouth behaviour of residents of SHFs;
- Hypothesis H_9: There is no statistically significant relationship between satisfaction with attributes and the loyalty of residents to SHFs;
- Hypothesis H_{10}: There is no statistically significant relationship between satisfaction with attributes and the willingness to pay behaviour of residents of SHFs; and
- Hypothesis H_{11}: There is no statistically significant relationship between satisfaction with attributes and the word of mouth behaviour of residents; and,
- Hypothesis H_{12}: There is no statistically significant relationship between the importance attached to attributes and satisfaction with attributes by residents.

7.3 CONCEPTUAL AND THEORETICAL ISSUES

In order to provide direction for the study, the thesis was divided into seven chapters with each dealing with a specific aspect of the research. The background to the problems of the study and the crisis in SHFs provision in tertiary institutions in Nigeria were discussed in Chapter One. The crisis in SHFs was traced to the increase in the population of students and reduction in grants for the development and renewal of existing students housing. It acknowledged the roles and challenges faced by private investors that are involved in the development of off-campus student accommodation. Critical to SHFs investment is the need to balance what is important to residents and the expectation of satisfaction from attributes of the residential environment. Also equally important are the consequences/effects of satisfaction on the behaviour of residents. Satisfaction with attributes influences residents behaviour with respect to issues such as loyalty, willingness to pay for attributes and word of mouth.

7.3.1 Typical understanding of resident satisfaction

Resident satisfaction is an important indicator of performance of housing projects. The design and incorporation of attributes into the housing environment is often influenced by the assumption that the quality of attributes and satisfaction are linearly and symmetrically related. However, evidence in the field of marketing, manufacturing and hospitality suggest that with some attributes, an asymmetric relationship exists between quality attributes, performance and satisfaction.

The Kano model (Kano *et al*., 1984) was used to show the existence of both linear and non-linear relationships between the performance of attributes and satisfaction. The Kano model categorises attributes as “one-dimensional”, “must-be”, “attractive” and “indifferent” attributes to reflect this view. With the one-dimensional attributes, a linear relationship exists, hence superior attribute results to better satisfaction. Whereas, the “must-be” attributes are the entry level requirements that are taken for granted when available but cause disatisfaction when not available. A threshold level exists for attributes in this category and an improvement beyond this point does not yield additional satisfaction to the resident. On the other hand, the “attractive” attributes are not expected by users, therefore, satisfaction is highly improved when these items are provided but no disatisfaction is caused when not delivered. However, satisfaction with

the “attractive” attributes was found to be significant only when the performance of the “one-dimensional” attributes is high.

7.4 HIGHLIGHTS OF CHAPTERS

The Chapter One deals with the discussions of the background problems, aim and objectives of the study. It also sets out the sub-problems, hypotheses, significance of study and delimitation. It emphasises that an effective and efficient deployment of scarce resources to develop, maintain and improve SHFs attributes require a clear understanding of the relationships between satisfaction with attributes, importance of attributes, loyalty, willingness to pay and word of mouth behaviour.

Chapter Two describes the political, economic and educational environment in Nigeria. It provides an overview of policies relevant to housing and student housing development in particular. The chapter further addresses the existing practices and aspects of off-campus facilities such as the objectives, design considerations, ownership structures and management of off-campus accommodation. The main findings were that off-campus accommodation varies in types, ownership, quality and quantity of attributes which in turn have considerable influence on preference for accommodation by students. Equally significant in the choice of residence are the demographic characteristics of residents such as age, year of study, income level, gender and the previous home experience. The chapter concluded by noting that attributes of residents and SHFs change overtime, therefore, there is need for periodic evaluation of satisfaction with student housing attributes.

Chapter Three reviews the literature on the concept of resident satisfaction with student housing facilities (SHFs). The discussions draw inferences from the dominant consumer satisfaction models such as the dissonance theory (Festinger, 1957), assimilation theory (Sheriff & Hovland, 1961), contrast theory, adaptation theory (Helson, 1947, 1964), the expectancy-disconfirmation theory (Oliver, 1980), value-perceptual theory and the equity theory.

The reviews found that in housing studies, satisfaction is treated as a latent or unobserved variable (Salini & Kenett, 2012:1). It was also observed that satisfaction serves as the dominant indicator used by developers, policy makers and analysts to

examine the success of housing development. Data from several sources indicated that resident satisfaction is used to predict individual perception of the general quality of life, which in turn affects the behaviour of residents. Consequently, resident satisfaction is conceptualised either as a predictor or a criterion variable (Tu & Lin, 2008:157). Certain problems that are critical to the evaluation of resident satisfaction are the questions of the constituents of the residential environment, the nature and the dynamic interaction between users and the environment, and a lack of reliable measures of resident satisfaction (Amerigo & Aragones, 1997:52).

Therefore, researchers often define the dimensions of the residential environment based on contextual issues, areas of application and the persuasion of the researcher. The dimensions of the environment common to SHFs studies include the physical dwelling attributes, neighbourhood and its physical surrounding, social factors and management factors (Muslim *et al.,* 2012:60). Literature indicated that the formation of a subjective perception of SHFs is influenced by the assessment of the objective attributes of the residential environment. Also noteworthy in resident satisfaction measurement are the intervening effects of the demographic characteristics of residents as moderator of perception of satisfaction with attributes. Key characteristics of residents that influence the perception of satisfaction in most SHFs studies include gender, age, year of study, income and the previous home experience.

7.4.1 Evaluation of resident satisfaction

Most residential satisfaction models found in literature adopt the user-based approach in contrast to technically-based approach in the evaluation of resident satisfaction. A large number of these residential satisfaction models deal with the relationships of the characteristics of the residents, the objective environmental attributes, subjective perception of environmental attributes, satisfaction with attributes and consequences/effects on environment related behaviour. General residential satisfaction models that were relevant to this study include the Francescato (1987), Weidemann and Anderson (1985) and Amerigo and Aragones (1997) models. Particular to SHFs studies, the conceptual frameworks developed by Amole (2009) and Khozaei *et al*., (2010) were applicable to this study.

7.4.2 Consequences/effects of satisfaction with attributes on behaviour

The response of residents to satisfaction is critical to profitability in business. The core behaviours of residents that are tied to satisfaction and importance of attributes include loyalty, willingness to pay and word of mouth behaviour. The impact of different quality-attributes influences the decision of residents either to remain loyal or switch recidence. Residence could also be influenced by advertisement of the qualities of a residential environment by word of mouth. Word of mouth is relevant in SHFs investment as an alternative advertisement as information on the quality of housing attributes, vacancy and location of accommodation are not readily available to potential tenants. Also critical to profitability is the willingness to pay behaviour. Willingness to pay reflects on the resident's willingness to pay a premium price for the use of an attribute. A building may be satisfactory, but due to constraints such as finance, residents may not be willing to pay a premium price to enjoy the product. Additionally, there is positive correlation between willingness to pay for attributes and the degree of importance that is attached to attributes by residential users (Greene & Ortuzar, 2010:83,84). These constructs were found to be critical to profitability.

Chapter Four deals with the formulation of the theoretical and conceptual framework that outlined the links between the constructs relevant to the study. The conceptual framework dealt with the classification of the SHFs attributes into the Kano model categories. The conceptual framework showed the relationships between different aspects of the constructs; such as the expectations of performance of attributes, satisfaction, importance, loyalty, willingness to pay and word of mouth behaviour. An integration of the analytical Kano model, refined Kano model and importance-performance analysis (IPA) was proposed to categorise the attributes of SHFs to reflect the symmetric and asymmetric relationships between the performance of attributes and satisfaction with attributes.

7.5 RESEARCH METHODOLOGY AND RESEARCH TECHNIQUES

Chapter Five dealt with the research methodology of the study. An appraisal of the problems identified in chapter one of the thesis pointed to a quantitative approach as the most appropriate method for the study. Therefore, a positivist approach was adopted in this study to collect data, treat problems and test hypotheses.

7.5.1 Development of the research instrument

In line with the positivist approach adopted for this study, a structured self-completion questionnaire was designed and used to collect primary data from respondents. The questions that were used to determine the Kano classification were comprised of the functional and non-functional questions that were measured on a 5-point semantic scale. The perception of importance of attributes and satisfaction with attributes, the impact of performance of attributes on loyalty behaviour, willingness to pay for attributes and word of mouth behaviour were measured on a 7-point semantic scale. A section each was devoted to elicit information on the housing profile and demographic characteristics of residents.

7.5.2 Sampling strategy

The respondents in this study were selected based on a two-stage sampling procedure. First, a purposive sampling decision was adopted to select the institutions that were included in the survey. Thereafter, the convenience and snowball sampling techniques were employed to select participants for the survey. The survey focused only on students residing in off-campus accommodation in seven university towns in South-South, Nigeria.

Chapter Six dealt with the analysis and interpretation of data. The primary drivers of satisfaction with SHFs were identified and priorities for the development and improvement of attributes with the aim of maximising resources were set. A correlation analysis was perfomed to establish the relationships between different constructs.

7.6 SUMMARY OF RESULTS

Below are the summary of results.

7.6.1 Identify Attributes of the Residential Environment that Serve as Drivers of Resident Satisfaction

With regards to the classification of attributes into the Kano categories and IPA evaluation, the following were the main findings:

7.6.1.1 Keep up the good work

Attributes that belong to this category performed satisfactorily and were also perceived to be important to residents of SHFs. Among these attributes are the high-value added "one-dimensional" quality that include the security of residence, level of noise in the neighbourhood, availability of good access roads, ability to sleep without disturbance, comfortably study at home and adequacy of ventilation in rooms. The position of windows in rooms was classified as a "one-dimensional" low-value added quality. Also worthy of noting are the "must-be" attributes which are viewed as entry level requirements and are taken for granted when provided but cause dissatisfaction when not available. The refined Kano model classified the "must-be" attributes into the critical quality attributes and necessary quality attributes. In the "keep up the good work" category were the adequacy of garbage disposal, adequacy of the cleaning of residence, ability to perform some form of religious service at home, the proximity of residence to a health facility and the adequacy of day-lighting in rooms. The existence of good rapport with neighbours and the closeness of residence to an ATM/banks were classified as highly "attractive" quality attributes.

7.6.1.2 Concentrate here

The "concentrate here" attributes were considered important, however, students-respondents were moderately satisfied with them. These attributes are critical to the attainment of investment goals. Investors are thus required to focus on improving these attributes to enhance performance and consequently, improve satisfaction and positive residence behaviour. Among the concentrate here attributes are the "one-dimensional" high-value quality attributes that include the quality of electricity services, availability of water supply and the level of privacy in the residence. Other attributes that were categorised as low-value one dimensional quality attributes include the perception that rent is appropriate, the condition of electrical fittings and the size of the window in rooms. The level of cult related activities in the environment was considered as a critical "must-be" attribute while the availability of internet services in rooms was classified as a less attractive quality attribute. Among the social factor attributes, residents were indifferent to the proximity of residences to an open market.

7.6.1.3 Possible overkill/surplus

Another category that was critical to investment were the “possible overkill” attributes. Students felt satisfied with these attributes that however, were less important to them. The implication of providing these attributes is that investors spend money to develop or improve attributes that are not important to housing occupants. Based on the Kano model category however, factors such as the proximity of residence to places of worship and the quality of the doors in residence were classified as low-value “one-dimensional” attributes. Whereas, the condition of internal wall and the closeness of residence to friends and neighbour were classified as necessary “must-be” quality attributes and less “attractive” quality attributes respectively. Attributes such as the condition of the wardrobe, condition of the ceiling and the closeness of residences to the shopping centre were classified as care-free “indifferent” quality attributes.

7.6.1.4 Low priority/care-free

Attributes in this category were considered as less satisfactory and less important to residents and were therefore low in occupant priority. However, based on Kano classification, it was revealed that the quality of the condition of internal floor was a low-value added “one-dimensional” attribute and the level of crime in the environment was considered as a critical “must-be” quality attribute. The cleanliness of the neighbourhood, suitability of lease agreement, the size of the bedroom, painting of internal space and the size of toilet and bath were classified as less “attractive” quality attributes. A high percentage of attributes in this category were classified as care-free “indifferent” attributes. These attributes include the drainage, condition of plumbing, the condition of kitchen equipment, the terms of rent payment, external finishes and the size of the kitchen. Others include the level of odour in the neighbourhood, the proximity of residences to places such as the town centre, recreation centre and bus station. The consideration of a residence as a new building was viewed as a low priority attribute.

7.6.2 Discussion on improvement strategies

The analytical Kano model, refined Kano model and the IPA were integrated and used to proffer robust improvement strategies for the improvement and development of attributes of SHFs. In essence, the strategy for improvement is based on IPA model

that investors should “keep up the good work” for attributes that are performing well and are important to residents. In addition, investors are to “concentrate here” for attributes that are not performing well but are important to residents. Equally significant are the “surplus or overkill” where attributes are performing highly even though they are not important to residents. The “low priority” include attributes that are not performing as well and are also not important to residents.

Different strategies are required in the quest to improve the quality of attributes with the aim of maximising profit and these differ subject to the IPA and Kano model classifications. This is important as investors may be limited in resources and may not be capable of giving equal attention to all the attributes at the same time. From the analysis, maintaining and improving attributes in the “keep up the good work and concentrate here” categories are critical to performance. It should be recognised as the analysis has revealed that all the attributes within these categories do not have equal capacity to increase satisfaction from an improved quality-attribute.

With “one-dimensional” attributes, the relationship between quality or performance and satisfaction is linearly related, hence maintenance of these attributes is required. High value-added attributes in the “keep up the good work” and “concentrate here” quadrants should be considered for improvement first before the low-value added attributes. This is significant as an improvement in the quality of the “one-dimensional” attributes produces equivalent increase in satisfaction and *vice-versa*.

Equally significant are the critical “must-be” attributes and necessary “must-be” attributes in both the “keep up the good work” and “concentrate here” quadrants. These attributes should be noted and the threshold level maintained especially for the critical “must-be” attributes. Though an improvement of the must be attributes is required, a quality of attributes that perform beyond this level will not yield further satisfaction. The “must-be” attributes in the “keep up the good work” and “concentrate here” categories should be maintained within the threshold level to keep the attributes from falling into a lower level to prevent dissatisfaction. On the other hand, maintaining the attributes above the threshold level will be a drain on the resources of the investors to improve attributes that have no added value to satisfaction.

Also worthy of note are the “attractive” attributes which are capable of stimulating satisfaction even when not expected by residents. “Attractive” attributes are excitement attributes that are not expected by residents but improve satisfaction when provided but do not lead to dissatisfaction when not provided. The refined Kano model classified these attributes into the highly “attractive” and low “attractive” attributes. In a competitive market where investors provide similar dwellings, providing excitement attributes that are in the category of “keep up the good work” and “concentrate here” ensures a competitive advantage. Providing unknown needs can provide an added-value and advantage. In the event of limited resources, investors may however ignore these attributes to focus on the “one-dimensional” and “must-be” attributes. A strong achievement in this area will delight the residents to respond more positively to SHFs.

Most often, the “indifferent” attributes are overlooked, because residents have no feeling of satisfaction or dissatisfaction towards them. “Indifferent” attributes are items that the residents are not keen about. These attributes should be ignored by investors, however, these attributes are capable of eliciting excitement from residents.

For the attributes that are located in the low priority and possible overkill categories, the management decision is that if resources are limited, investors may not invest too much on these attributes but should focus on improving the “concentrate here” attributes. However, certain elements that are classified as “one-dimensional” and “must-be” attributes within these categories may be considered for improvement. For example, the “must-be” attributes within these categories, though considered as low priority may be taken for granted by residents.

The implications of these actions are that investors ought to ensure that only attributes that contribute to resident satisfaction as well as profit are improved. The aim is to enable an effective and efficient deployment of resources for the improvement of SHFs attributes that are critical to satisfaction and profitability.

7.6 EFFECTS OF THE DEMOGRAPHIC CHARACTERISTICS OF STUDENTS ON THE PERCEPTION OF QUALITY AND CHOICE OF ACCOMMODATION

The discussion of the effects of the demographic characteristics of students on the perception of quality and choice of accommodation is presented in the following section.

7.7.1 The impact of demographic attributes of residents on the choice of accommodation

Students of different gender, income, years of study and age groups preferred the single room apartment with shared amenities over the self-contained apartments and shared flat with private amenities. However, students who were above 27 years preferred the self-contained accommodation as their first choice of residence. Nevertheless, the trend showed that the inclination to acquire the self-contained and shared flat apartments increased with age, income and year of study. The implication that could be drawn from this analysis are that age, income and year of study affect the perception of quality. Self-contained apartments and shared flats are more luxurious than the single room apartments with shared amenities.

Therefore, it seems from these findings that the demographic characteristics of residents could be used by investors to segment the demand for SHFs types and market segments. Regardless of these findings, it is clear that the impacts of the demographics variables on demand are not stable enough. Therefore, relying solely on the demographics statistics of students to provide effective strategies for the provision of SHFs types may not be totally reliable.

7.7.2 The perception of quality of off-campus accommodation

There was no statistically significant difference in the perception of quality of off-campus housing on the basis of gender and years of study. However, students of different gender held different levels of perception of quality between off-campus SHFs and on-campus accommodation. The female students (64%) had a more positive perception of quality of off-campus accommodation than did male students (52%). The perception of quality of off-campus residences was found to increase as the income of students rose and as students move to higher academic levels. A possible explanation of this trend might be that wealthy students could afford SHFs that have

better attributes that are found in self-contained and shared flat with private amenities. Secondly, students with higher income could possibly acquire superior personal amenities and furniture to re-arrange their residences to meet their individual needs. The perception of higher quality by senior students could be influenced by years of experience with campus accommodation. Senior students who had adapted to the environment could easily identify SHFs types and locations that yield higher quality as most of these off-campus accommodation facilities are not advertised. In addition, students may tend to relax judgement on the quality of attributes as a result of prolonged experience with the SHFs environment. Consequently, the quality of attributes of SHFs is taken for granted.

Equally important in the results are the impacts of the interaction between pairs of demographic variables on the perception of quality. The interaction between the age of students and year of study, gender and income level, and year of study and income levels on the perception of quality were statistically significant. Investors in off-campus accommodation might consider the individual and combined effects of the demographic characteristics of students on preference and perception of quality to segment the market. These findings are indicators that a more targeted approach to off-campus development and improvement may be a worthwhile effort.

7.8 THE PERCEPTION OF SATISFACTION WITH ATTRIBUTES OF SHFs

Satisfaction with attributes is recognised as a key indicator of the success of a project. It is essential to gain an understanding of the symmetric and asymmetric impact of the performance of SHFs attributes on the perception of satisfaction. Generally, the perception of satisfaction with attributes of SHFs was a little above average thus indicating a case of low performance by attributes. The summary of results of perception of satisfaction with the symmetric and asymmetric attributes of SHFs is presented as follows.

7.8.1 “One-dimensional” attributes

The rating of performance of the “one-dimensional” attributes showed that students were relatively highly satisfied with the positions of the windows (4.61), adequacy of ventilation in rooms (4.60) and the quality of doors (4.58). SHFs residents were however less satisfied with the rent (4.34), electrical fittings (4.33) and the level of

noise in the environment (4.07). Improving the performance of these attribute for better satisfaction could be achieved during design or construction stage at reduced cost to investors. For example, the positioning of the window and achieving adequacy in ventilation are issues that could be resolve at a considerably reduced cost during design. The quality of doors help to ensure the security of rooms. However, some of these attributes are within the investors' sphere of influence while some are in the public domain.

7.8.2 "Must-be" attributes

A higher level of satisfaction was associated with day-lighting (4.59), the garbage disposal (4.53) and a clean house (4.52), whereas residents were less satisfied with the level of cult activities (3.99) and crime (3.96). "Must-be" attributes are taken for granted once satisfied, however, it impacted negatively on satisfaction when performance is low. Investors are to note the quality and performance of attributes that yield satisfaction within the threshold levels in order to keep it up and also prevent the use of resources to over-develop attributes that will not be appreciated by residents.

7.8.3 "Attractive" attributes

The perception of satisfaction associated with the "attractive" attributes was a little above average. These include lease agreement (5.55), the proximity of residence to bank/ATM (4.57), and security of the residence (4.51). Other "attractive" attributes that residents were less satisfied with are the availability of internet facilities (4.29), the sizes of bedrooms and toilet and bath width. These attributes were not expected by residents, however, investors may gain competitive advantage by focusing on them. However, the impacts of "attractive" attributes are appreciated only when the performance of the "one-dimensional" and "must-be" attributes are adequate.

7.8.4 "Indifferent" attributes

The perception of satisfaction with "indifferent" attributes revealed that satisfaction was highest with proximity to shopping centre (4.54), quality of wardrobe (4.47) and ceiling 4.47). Less satisfactory attributes are the level of odour in the neighbourhood (3.99), proximity of residence to the bus station (4.16) and the size of kitchen (4.21). Although, residents may be unconcerned about these attributes, the possibility exists for them to become "attractive" variables in subsequent periods.

7.8.5 Discussion

There were no significance differences in the perception of satisfaction with the attributes of SHFs in the various Kano model categories. Generally, the levels of satisfaction with the attributes of SHFs were not encouraging as the results revealed that most were a little above average. In addition, the differences in the levels of satisfaction with these attributes were marginal. The possible reasons for this dismal perception of satisfaction with attributes could be attributed to the investors building solely to meet economic goals rather than doing so to satisfy the needs of residents.

7.9 PERCEPTION OF THE IMPACT OF ATTRIBUTES ON THE LOYALTY BEHAVIOUR OF RESIDENTS

The summary of results of the impact of quality-attributes on the loyalty behaviour of residents of SHFs is provided in the following sections.

7.9.1 Loyalty to “One-dimensional” attributes

From the students’ point of view, residents of SHFs were more concerned about their residence affording them the opportunity to comfortably sleep without disturbance (4.91), proximity of residence to campus facilities (4.90) and the quality of doors (4.89). Relatively, residents were perceived to be less influenced to be loyal by the condition of the internal floor (4.72), condition of electrical fittings (4.71) and proximity of residence to a place of worship (4.62). Though, these quality-attributes are symmetrically related to satisfaction, the perception of influence of these attributes on loyalty behaviour was a little above average. In general, therefore, it seems that within the “one-dimensional” category, the loyalty behaviour of students is influenced more by the social factors of the environment.

7.9.2 Loyalty to “Must-be” attributes

The impact of “must-be” attributes on loyalty behaviour are the adequacy of day-lighting (4.84) and clean residence (4.82). The result further revealed that loyalty behaviour was low in an environment with a high level of cult related activities (4.42) and crime (4.31).

7.9.3 Loyalty to “Attractive” attributes

The security of the house (4.80) and provision of internet services (4.66) though not expected by residents have higher impact on the loyalty behaviour of residents than the proximity of residence to bank (4.84) and the creation of an environment where neighbours can interact with one another (4.69).

7.9.4 Loyalty to “indifferent” attributes

The condition of the ceiling (4.82) and appropriate terms of payment of rent (4.79) have higher influence on loyalty behaviour. The proximity of residence to the bus station (4.46) and the level of odour in the environment (4.02) have little impact on the loyalty behaviour of resident of SHFs.

7.9.5 Discussions

The loyalty of residents to SHFs is seen as vital to success of projects. Loyal residents are less likely to switch residence and the cost to acquire new residents is higher than the cost of keeping existing occupants. From the results above however, though the general influence of quality-attributes on loyalty for the attributes in all the Kano model categories may be a little above average, the influence of quality on satisfaction among them differs. Surprisingly, the correlation between loyalty behaviour and satisfaction with attributes in the four Kano model categories was low. The low correlations between loyalty behaviour and satisfaction with SHFs attributes suggests that an increase in satisfaction only produces little impact on loyalty behaviour. Thus relying on satisfaction with attributes as an indicator of loyalty may not be entirely reliable. Contrarily, the correlation between loyalty behaviour and the importance attached to these attributes by residents was found to be stronger.

7.10 THE PERCEPTION OF THE IMPACT OF ATTRIBUTES ON THE WILLINGNESS TO PAY BEHAVIOUR OF RESIDENTS

7.10.1 Willingness to pay for “One-dimensional” attributes

Within the “one-dimensional” category, residents of SHFs were found to be more willing to pay for a residence in a safe neighbourhood (4.75) that is close to campus facilities (4.75) and with a high quality of electricity services. Appropriate rent (4.60)

and the level of noise in the environment (4.31) though significant have a lesser impact on the willingness to pay behaviour of residents of SHFs.

7.10.2 Willingness to pay for "Must-be" attributes

Among the "must-be" attributes, students in SHFs were more concerned about a clean environment (4.74) and an adequate garbage disposal system (4.73) when deciding on their willingness to pay for attributes. However, the level of cult activity (4.36) and crime rate (4.30) have a lower impact on the willingness to pay behaviour of residents of SHFs.

7.10.3 Willingness to pay for "Attractive" attributes

The "attractive" attributes that were not expected by residents but had impact on willingness to pay behaviour include the proximity of residence to bank/ATM (4.91) and the level of security of residence (4.68). The impact of the condition of internal painting (4.53) and the size of bedroom (4.41) on willingness to pay was low. Surprising residents by providing these attributes could increase the willingness to pay behaviour.

7.10.4 Willingness to pay for "Indifferent" attributes

Among the attributes considered as "indifferent" that had impact on willingness to pay behaviour are the proximity of residence to shopping centres (4.83) and the age of the building (4.77). Whereas, odour in the neighbourhood (4.48) and the terms of rent payment (4.18) exert lesser impact on the willingness to pay behaviour.

7.11 THE PERCEPTION OF THE IMPACT OF ATTRIBUTES ON THE WORD OF MOUTH BEHAVIOUR OF RESIDENTS

7.11.1 Word of mouth behaviour on "One-dimensional" attributes

Prominent "one-dimensional" attributes that impact on the word of mouth behaviour are the proximity of residence to campus facilities (4.52), ability to sleep without disturbance (4.49) and the degree of privacy in the residence(4.40). These are all social attributes of the residential environment which investors are to note in order to benefit from positive word of mouth behaviour from students. However, students were less influenced by appropriate rent (4.29), availability of good roads (4.26) and the noise level in the neighbourhood (4.15) to talk about their SHFs.

7.11.2 Word of mouth behaviour on “Must-be” attributes

Among the basic attributes of SHFs, students were perceived to speak more positively about their environment when the residence is clean (4.51) and garbage disposal (4.46) is appropriate and less positively when the level of cult activities (4.29) and crime in the neighbourhood (4.25) are high.

7.11.3 Word of mouth behaviour on “Attractive” attributes

Within this category, the proximity of residence to banks/ATMs (4.60), clean environment (4.47) and, the size of toilet and bath (4.47) are ranked highest for influence on word of mouth behaviour. The appropriateness of the lease agreement (4.31), availability of Internet services (4.29) and the size of bedrooms (4.23) have lesser impact on word of mouth behaviour.

7.11.4 Word of mouth behaviour on “Indifferent” attributes

The quality of external finishes (4.56), that the house is a new building (4.52) and the condition of kitchen equipment (4.48) impact higher on the willingness of residents to tell others about their accommodation. The condition of the ceiling (4.31), ability to re-organise personal space (4.27) and the level of odour (4.13) in the neighbourhood had less impact on word of mouth behaviour.

7.12 TEST OF RELATIONSHIPS

The hypotheses stated in section 7.2.2 were postulated in line with the research problems which are associated with indicators affecting SHFs success such as satisfaction, importance of attributes to residents and the behaviour. The correlation analysis offers support for positive statistically significant relationships for all the hypotheses. These hypotheses include the relationships between expectations of performance of attributes and satisfaction with attributes (H_1) and expectations of performance of attributes and the importance of attributes of SHFs (H_2). Other relationships also tested were the expectations of performance of attributes and the behaviours of residents such as word of mouth behaviour (H_3), willingness to pay behaviour (H_4) and loyalty behaviour (H_5). In addition, the relationships between the importance of attributes to residents and behaviours namely loyalty (H_6), willingness to pay (H_7) and word of mouth (H_8). A correlation analysis was also conducted to determine the relationship between satisfaction with attributes and behaviours namely,

loyalty (H_9), willingness to pay (H_{10}) and word of mouth (H_{11}). Lastly, the relationship between satisfaction with attributes and importance with attributes was also tested (H_{12}). For each of these hypotheses, the relationships were tested for the "one-dimensional", "must-be", "attractive" and "indifferent" attributes categories.

The implications of the results of correlation are interesting. Therefore, it can be said that the expectations of performance of attributes that are held by residents is positively related to satisfaction with attributes of SHFs but it is weak for all the dimensions. This suggests that though the expectations of performance of attributes by residents may be high, but the level of perception of satisfaction is weak. This could be interpreted to mean that high expectations are met with low satisfaction. In addition, the level of resident expectations of performance from an attribute is dependent on the degree of importance that is attached to such attributes. Furthermore, the loyalty, willingness to pay and word of mouth behaviour of residents is dependent on the level of expectations of performance from an attribute. This relationship was also held true for the importance attached to attributes and the corresponding behaviour of residents. Residents form expectations of performance either from experience of consumption or during consumption at post consumption stages.

The degree of correlation varied for constructs and dimensions. The relationship between expectations of performance of attribute, and resident satisfaction was low for all the Kano dimensions and high for the importance of attributes with all the Kano dimensions except the "must-be" attributes that was moderate. What this reveals is that residents hold high expectations of performance from attributes that are important to them especially for the "one-dimensional", "attractive" and "indifferent" attributes. And again, residents exhibit positive behaviour for attributes for which they expect a higher degree of performance. The relationship was low for word of mouth and willingness to pay but moderate for loyalty behaviour except for the "must-be" attributes where it was low.

The summary of the degree of correlation for satisfaction and behaviour, and importance and behaviour are outlined as follows for all the dimensions.

The degree of correlation between the importance of attributes to residents and:

- loyalty behaviour of residents was moderate for the “one-dimensional” attributes and “must-be” attributes but high for the “attractive” attributes and “indifferent” attributes.
- willingness to pay was moderate for the “one-dimensional”, “attractive” and “indifferent” attributes and low for the “must-be” attributes.
- word of mouth behaviour was moderate for the “one-dimensional” attributes, “attractive” and “indifferent” attributes but low for the “must-be” attributes.

The degree of correlation between satisfaction with attributes, and:

- loyalty behaviour was low for the attributes in all the dimensions;
- willingness to pay was moderate for all the attributes in all dimensions; and,
- word of mouth was moderate for the attributes in all the dimensions.

7.12.1 Discussion

The test of hypotheses provides evidence that the importance attached to attributes influences expectations of performance of attributes. Additionaly, the expectations of performance of attributes influences satisfaction and the behaviour of residents. These results have important implications for investors in SHFs. The expectations of performance of attributes correlated highly with the importance that is attached to attributes by residents. Thus, the expectations of performance is high for attributes that are important to residents and *vice-versa*. Expectations of performance are formed from previous home experiences (Thomsen, 2007). Surprisingly though, the expectations of performance of attributes by residents had a low positive effect on the perception of satisfaction with SHFs attributes.

In conclusion, the availability or improvement in the attributes of SHFs that are important to residents increases the loyalty/retention behaviour as well as the willingness to pay and word of mouth behaviour.

7.13 GENERAL FINDINGS

Generally, the study revealed that the perception of satisfaction with attributes of SHFs by residents was a little above average which is an indication that the expectations of residents are not fully met by the performance of the SHFs environment. As a consequence, the importance that is attached to attributes by residents of SHFs

impact was higher on loyalty, willingness to pay and word of mouth behaviour than does satisfaction with these attributes.

In order to improve the attributes of SHFs, suggestions were made to keep up the good work or improve certain attributes of the SHFs environment. However, some of these attributes were outside the influence of the investors, but within the public domain. For example, attributes within the neighbourhood services are the responsibility of the local authority. The viability of SHFs investment is therefore better served with both the investors and local authority actively involved in the improvement of the residential environment.

7.14 OVERALL CONCLUSIONS

The evidence from this study suggests that though the understanding of residents' satisfaction is essential to the success of SHFs investment, the knowledge of the levels of importance of attributes to residents is also equally significant. Prioritisation of attributes to be improved should form the basis of a sustainable strategy to SHFs investment. A combined adaptation of the Kano model and Importance-performance analysis (IPA) that recognises the symmetric and asymmetric components of attributes is essential. The research established that not all attributes require improvement at the same levels. For example, some attributes that were important to residents were found to perform well, whereas, others are performing poorly. In addition, some attributes that were not important to residents are performing well, however, some were not performing as well. Based on the IPA criteria, the suggested management action for cases identified above was for investors to focus on maintaining the quality of attributes that are important and are performing as well as improving attributes that are important but are not performing well. In the light of limited resources, attributes within the categories of "low priority" and "possible overkill" could be ignored. The suggested actions were moderated by applying the criteria of the refined Kano model where attributes were classified into the "one-dimensional", "must-be", "attractive" and "indifferent" attributes. The Kano model recognises that the responses of residents to certain quality-attributes may be symmetric and asymmetric. This information is apt when limited resources are available to investors to carry out the required improvement and there is the need to focus on attributes that are critical to investment goals. Suggestions were made for investors to focus on the high importance "one-

dimensional" attributes and "must-be" attributes. However, in a segmented market like the SHFs, emphasising on the "attractive" attributes within the "keep up the good work" and "concentrate here" quadrants is capable of giving an investor an advantage over other competitors. Though the "indifferent" attributes were considered as redundant elements, literature suggests that the likelihood exists that high importance "indifferent" attributes within the "keep up the good work" and "concentrate here" quadrants could evolve to become "attractive" elements.

Equally identified as significant to SHFs development are the impacts of demographic characteristics of residents on the perception of quality and preference for SHFs types. The characteristics of residents relevant to the determination of perception of quality, satisfaction and behaviour include the age of students, year of study, gender and income levels. This finding is consistent with the results of Amole (2009) and Khozaei *et al*. (2010).

7.15 CONTRIBUTION TO KNOWLEDGE

The research has contributed to the body of knowledge in the area of residential housing considering that currently, little effort has been directed to study the link between the perception of satisfaction, importance of attributes and behaviour in the area of SHFs. Specifically, in this regard, the following understandings have been provided:

i. the research has developed a bespoke methodology to achieve the research objectives;
ii. the research has increased the understanding of symmetric and asymmetric responses of residents to the performance of attributes by transforming the attributes of the SHFs environment into the Kano model categories;
iii. the research has increased the understanding of the application of an integrated approach that linked satisfaction and importance of attributes and the symmetric and asymmetric response to provide a potential solution for optimal prioritisation of the use of resources;
iv. the research has provided a detailed understanding of the relationship between the satisfaction and the importance attached to attributes of SHFs attributes and loyalty behaviour of residents;

v. the research has provided a detailed understanding of the relationship between satisfaction and the importance attached to attributes of SHFs attributes and willingness to pay behaviour of residents;
vi. the research has provided a detailed understanding of the relationships between the twin constructs of perception of satisfaction and the importance attached to attributes of SHFs attributes and word of mouth behaviour of residents; and,
vii. The research has provided a detailed understanding of the expectations of performance of attributes and, the relationship between satisfaction with attributes and importance associated with attributes.

7.16 RECOMMENDATIONS

The recommendations that follow from the findings of this study are presented in the following sections.

7.16.1 Recommendations for investors in SHFs

The findings of this study have a number of implications for future practice for investors in SHFs:

i. investors should explore the possibility of segmenting SHFs market by age, year of study, gender and income;
ii. the evaluation, design, delivery and improvement of attributes of SHFs should be based on the symmetric and asymmetric impact of quality of attributes on performance; and,
iii. attributes of SHFs should be prioritised for incorporation or improvement with regards to their impacts on the behaviour of residents that are critical to profitability such as loyalty, willingness to pay and word of mouth behaviour.

7.16.2 Recommendations for local authority

The findings of this study have a number of actions for the local authority to implement that could enhance the attraction and retention of residents in the neighbourhood:

i. the local authority must identify and fix attributes that are important to residents that are outside the domain of investors in order to improve the perception of satisfaction which has the capacity to increase the loyalty, willingness to pay and word of mouth behaviour of residents. By so doing, the attraction and retention of residents in the environment increases the economic potential of the neighbourhood; and,

ii. the local authority should set minimum standard requirements to serve as a guide for the development of off-campus accommodation with the goal of meeting the needs and expectations of residents.

7.16.3 Recommendation for tertiary institutions

The findings of this study have a number of implications for tertiary institutions that could improve the living and learning objectives of off-campus SHFs:

i. tertiary institutions should set up off-campus accommodation units to collaborate with SHFs investors in order to secure the interest of students that reside in off-campus SHFs.

7.17 RECOMMENDATIONS OF AREAS FOR FURTHER RESEARCH

Based on the extent of work undertaken in the study, the following areas are identified where further research is required.

i. the need for an intensive qualitative study to provide rich explanations to some of the quantitative results;

ii. the need to use structural equation modelling (SEM) to investigate the path analysis of the interrelationships between a pair of the key constructs; namely, expectations of performance of attributes, importance attached to attributes, satisfaction with attributes, loyalty behaviour, willingness to pay and the word of mouth behaviour;

iii. determining the satisfaction threshold levels for attributes of SHFs; and

iv. determine the relationship between intrinsic attributes that are within the influence of investors and extrinsic attributes that are the responsibility of external bodies.

7.18 CAUTION

Caution should be applied in adopting the findings and recommendations of this study as the research findings in their current state have not been validated.

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9.0 APPENDIX 1: SURVEY INSTRUMENT

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9th July 2014

To whom it may concern,

OC Bella Omunagbe PhD Candidate; NMMU Construction Management: Research project: Drivers and consequences of residents' satisfaction with off-campus student housing facilities in South-South, Nigeria.

I hereby confirm that Bella Omunagbe is a *bonafide* Doctoral candidate in the Department of Construction Management, Faculty of Engineering, the Built Environment and Information Technology, School of the Built Environment, at the Nelson Mandela Metropolitan University (NMMU).

Bella is conducting research on the topic **"Drivers and consequences of residents' satisfaction with off-campus student housing facilities in South-South, Nigeria"**.

The NMMU, Faculty, School and Department would like to appeal, on behalf of the candidate, for cooperation from prospective interviewees and their superiors. We would also like to confirm that any data collected as part of this academic exercise will be used in aggregate and in the strictest confidence. There will be no names of interviewees included in the interview guide nor in the completed doctoral thesis.

Thank you for this opportunity to write a recommendation for Bella. Should you require any further information, please do not hesitate to contact me.

Yours sincerely,

Winston M.W. Shakantu
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9th July 2014

Dear Respondent,

Research project: Drivers and consequences of residents' satisfaction with off-campus student housing facilities in South-South, Nigeria.

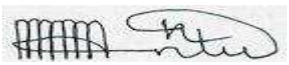
This is to invite you to participate in a PhD research survey on residents' satisfaction with off-campus student housing facilities in South-South Nigeria. The purpose of this study is to gain an understanding of the impact of the importance of attributes of housing, the levels of satisfaction derived from these attributes and the corresponding consequences on the behaviour of residents - such as loyalty, willingness to pay for accommodation and word of mouth.

You are requested to kindly complete the attached survey questionnaire. Your participation in this survey is voluntary and you may choose to withdraw at any point in time. In addition, your identity and the information given in this survey are confidential. Nevertheless, a summary of the results may be presented at scientific conferences or published in academic journals without reference to individual or personal opinions.

This questionnaire will take approximately 20 minutes to complete. You are kindly requested to diligently indicate your choice by ticking (✔) on the appropriate box against each question and take note that it is all about your opinions as there are no wrong or right answers.

Thank you for your time and cooperation.

OC Bella Omunagbe
Researcher



Prof. WM Shakantu
Promoter/Supervisor

SECTION A: HOUSING INFORMATION

Kindly indicate your answer by marking (✔) on the appropriate block or column.

1.1. Are you residing in an off campus accommodation?

Yes	1	No	2

1.2. Where did you reside in the following academic sessions?

	1	2
Sessions	Off-campus	On-campus
2013-2014		
2012-2013		
2011-2012		
2010-2011		

1.3. What type of accommodation did you reside in the following academic sessions?

	1	2	3	4
Sessions	Single Room	Self-Contained Room.	Shared Flat	On –Campus Hostel
2013-2014				
2012-2013				
2011-2012				
2010-2011				

1.4. How will you rate the quality of off- campus residential experience when compared to on-campus accommodation

WORSE ⟷ BETTER

1	2	3	4	5	6	7

SECTION B: STATEMENT RELATING TO PERCEPTION OF AVAILABILITY OF ATTRIBUTES

The following questions are to elicit your feelings when these residential environments attributes are available or not available. Please indicate your feeling based on the following rating scale by placing a mark (✔) in the appropriate column.

How will you feel when these attributes are:

S/N	RATING SCALE 1. 1 don't like it 2. I can tolerate it 3. I am neutral 4. I expect it that way 5. I like it that way ATTRIBUTES	available					NOT available				
		I dislike it	I can tolerate it	I am neutral	I expect it that way	I like it that way	I dislike it	I can tolerate it	I am neutral	I expect it that way	I like it that way
2.0	**DWELLING/PHYSICAL DIMENSION**										
2.1	**Size of internal space**										
2.1.1	Bedroom is wide enough	1	2	3	4	5	1	2	3	4	5
2.1.2	Kitchen is wide enough	1	2	3	4	5	1	2	3	4	5
2.1.3	Toilet & bath are wide enough	1	2	3	4	5	1	2	3	4	5
2.2	**Condition of Internal Components**										
2.2.1	Flooring is good enough	1	2	3	4	5	1	2	3	4	5
2.2.2	Wall finish is good enough	1	2	3	4	5	1	2	3	4	5
2.2.3	Ceiling is good enough	1	2	3	4	5	1	2	3	4	5
2.2.4	Ventilation is adequate	1	2	3	4	5	1	2	3	4	5
2.2.5	Daylight is adequate	1	2	3	4	5	1	2	3	4	5
2.2.6	Window position is appropriate	1	2	3	4	5	1	2	3	4	5
2.2.7	Wardrobe is good enough	1	2	3	4	5	1	2	3	4	5
2.2.8	Door is good enough	1	2	3	4	5	1	2	3	4	5
2.2.9	Painting of room is suitable	1	2	3	4	5	1	2	3	4	5
2.2.10	Window size is wide	1	2	3	4	5	1	2	3	4	5
2.3	**Housing Configuration**										
2.3.1	Ability to re-organize room	1	2	3	4	5	1	2	3	4	5
2.3.2	External finishing is good enough	1	2	3	4	5	1	2	3	4	5
2.3.3	Overall house design is good enough	1	2	3	4	5	1	2	3	4	5
2.3.4	House is a new building	1	2	3	4	5	1	2	3	4	5
2.4	**Internal House Services**										
2.4.1	Internet access is available	1	2	3	4	5	1	2	3	4	5
2.4.2	Condition of kitchen equipment is adequate	1	2	3	4	5	1	2	3	4	5
2.4.3	Condition of plumbing is adequate	1	2	3	4	5	1	2	3	4	5
2.4.4	Condition of electrical fittings is adequate	1	2	3	4	5	1	2	3	4	5
2.4.5	Drainage is good enough	1	2	3	4	5	1	2	3	4	5

3.0	**SOCIAL DIMENSIONS**											
3.1	Comfortable studying at home	1	2	3	4	5		1	2	3	4	5
3.2	There is privacy among house mates	1	2	3	4	5		1	2	3	4	5
3.3	Able to sleep without disturbance	1	2	3	4	5		1	2	3	4	5
3.4	There is rapport with neighbours	1	2	3	4	5		1	2	3	4	5
3.5	Perform religious services at home	1	2	3	4	5		1	2	3	4	5
3.6	Residence is near a place of worship	1	2	3	4	5		1	2	3	4	5
3.7	Residence is near a bus station	1	2	3	4	5		1	2	3	4	5
3.8	Residence is near a town center	1	2	3	4	5		1	2	3	4	5
3.9	Residence is close to campus	1	2	3	4	5		1	2	3	4	5
3.10	Residence is close to shops	1	2	3	4	5		1	2	3	4	5
3.11	Residence is close to banks/ATMs	1	2	3	4	5		1	2	3	4	5
3.12	Residence is close to health facilities	1	2	3	4	5		1	2	3	4	5
3.13	Residence is close to recreation centers	1	2	3	4	5		1	2	3	4	5
3.14	Residence is close to market	1	2	3	4	5		1	2	3	4	5
3.15	Residence is close to friends and relatives	1	2	3	4	5		1	2	3	4	5
4.0	**NEIGHBOURHOOD**											
4.1	**The Health Of The Environment**											
4.1.1	Neighbourhood is clean	1	2	3	4	5		1	2	3	4	5
4.1.2	Neighbourhood has odour	1	2	3	4	5		1	2	3	4	5
4.1.3	Neighbourhood is noisy	1	2	3	4	5		1	2	3	4	5
4.2	**Security of Neighbourhood**											
4.2.1	Neighbourhood is safe	1	2	3	4	5		1	2	3	4	5
4.2.2	Level of security in environment	1	2	3	4	5		1	2	3	4	5
4.2.3	The Level of crime is high	1	2	3	4	5		1	2	3	4	5
4.2.4	The Level of cult activities is high	1	2	3	4	5		1	2	3	4	5
5.0	**PUBLIC SERVICES**											
5.1	Water supply is available	1	2	3	4	5		1	2	3	4	5
5.2	Electricity is available	1	2	3	4	5		1	2	3	4	5
5.3	Banking facilities/ATMs are available	1	2	3	4	5		1	2	3	4	5
5.4	Good access road is available	1	2	3	4	5		1	2	3	4	5
6.0	**MANAGEMENT**											
6.2	Rent is appropriate	1	2	3	4	5		1	2	3	4	5
6.3	Terms of rent payment is appropriate	1	2	3	4	5		1	2	3	4	5
6.4	Lease agreement is suitable	1	2	3	4	5		1	2	3	4	5
6.5	Cleaning of residence is adequate	1	2	3	4	5		1	2	3	4	5
6.6	Garbage disposal is appropriate	1	2	3	4	5		1	2	3	4	5

SECTION C: THE PERCEPTION OF IMPORTANCE OF ATTRIBUTES AND SATISFACTION ASSOCIATED WITH ATTRIBUTES OF THE RESIDENTIAL ENVIRONMENT.

The following questions are to elicit the importance of these attributes to you and the level of satisfaction with the residential attributes as a resident. Please indicate the extent of your agreement with these statements by placing a mark (✔) in the appropriate column graded from 1-7.

S/N	ATTRIBUTES	Level of importance of Attributes								Level of Satisfaction with Attributes						
2.0	**DWELLING/PHYSICAL DIMENSION**															
2.1	**Size of internal space**															
2.1.1	Bedroom is wide enough	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.1.2	Kitchen is wide enough	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.1.3	Toilet & bath are wide enough	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.2	**Condition of Internal Components**															
2.2.1	Flooring is good enough	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.2.2	Wall finish is good enough	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.2.3	Ceiling is good enough	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.2.4	Ventilation is adequate	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.2.5	Daylight is adequate	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.2.6	Window position is appropriate	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.2.7	Wardrobe is good enough	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.2.8	Door is good enough	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.2.9	Painting of room is suitable	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.2.10	Window size is wide	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.3	**Housing Configuration**															
2.3.1	Ability to re-organize room	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.3.2	External finishing is good enough	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.3.3	Overall house design is good enough	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.3.4	House is a new building	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.4	**Internal House Services**															
2.4.1	Internet access is available	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.4.2	Condition of kitchen equipment is adequate	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.4.3	Condition of plumbing is adequate	1	2	3	4	5	6	7		1	2	3	4	5	6	7

2.4.4	Condition of electrical fittings is adequate	1	2	3	4	5	6	7		1	2	3	4	5	6	7
2.4.5	Drainage is good enough	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.0	**SOCIAL DIMENSIONS**															
3.1	Comfortable studying at home	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.2	There is privacy among house mates	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.3	Able to sleep without disturbance	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.4	There is rapport with neighbours	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.5	Perform religious services at home	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.6	Residence is near a place of worship	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.7	Residence is near a bus station	1	2	3	4	5	6	7		1	2	3	4	5		
3.8	Residence is near a town center	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.9	Residence is close to campus	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.10	Residence is close to shops	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.11	Residence is close to banks/ATMs	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.12	Residence is close to health facilities	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.13	Residence is close to recreation centers	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.14	Residence is close to market	1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.15	Residence is close to friends and relatives	1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.0	**NEIGHBOURHOOD**															
4.1	**The Health Of The Environment**															
4.1.1	Neighbourhood is clean	1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.1.2	Neighbourhood has odour	1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.1.3	Neighbourhood is noisy	1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.2	**Security of Neighbourhood**															
4.2.1	Neighbourhood is safe	1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.2.2	Level of security in environment	1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.2.3	The Level of crime is high	1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.2.4	The Level of cult activities is high	1	2	3	4	5	6	7		1	2	3	4	5	6	7
5.0	**PUBLIC SERVICES**	1	2	3	4	5	6	7		1	2	3	4	5	6	7
5.1	Water supply is available	1	2	3	4	5	6	7		1	2	3	4	5	6	7
5.2	Electricity is available	1	2	3	4	5	6	7		1	2	3	4	5	6	7
5.3	Banking facilities/ATMs are available	1	2	3	4	5	6	7		1	2	3	4	5	6	7
5.4	Good access road is available	1	2	3	4	5	6	7		1	2	3	4	5	6	7
6.0	**MANAGEMENT**															

6.1	Rent is appropriate	1	2	3	4	5	6	7		1	2	3	4	5	6	7
6.2	Terms of rent payment is appropriate	1	2	3	4	5	6	7		1	2	3	4	5	6	7
6.3	Lease agreement is suitable	1	2	3	4	5	6	7		1	2	3	4	5	6	7
6.4	Cleaning of residence is adequate	1	2	3	4	5	6	7		1	2	3	4	5	6	7
6.5	Garbage disposal is appropriate	1	2	3	4	5	6	7		1	2	3	4	5	6	7

SECTION D: PERCEPTION OF ATTRIBUTES ON BEHAVIOUR

The following questions are to elicit how these residential attributes impact on your behaviour such as loyalty/retention, willingness to pay and word of mouth. Please indicate the extent of your agreement with these statements by placing a mark (✔) in the appropriate column graded from 1-7.

		1=Low ⟷ 7=High																				
S/N	**ATTRIBUTES**	**IMPACT ON LOYALTY/ RETENTION**							**IMPACT ON WILLINGNESS TO PAY**							**IMPACT ON WORD OF MOUTH**						
2.0	**DWELLING/PHYSICAL DIMENSION**																					
2.1	**Size of internal space**																					
2.1.1	Bedroom is wide enough	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.1.2	Kitchen is wide enough	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.1.3	Toilet & bath are wide enough	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.2	**Condition of Internal Components**																					
2.2.1	Flooring is good enough	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.2.2	Wall finish is good enough	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.2.3	Ceiling is good enough	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.2.4	Ventilation is adequate	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.2.5	Daylight is adequate	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.2.6	Window position is appropriate	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.2.7	Wardrobe is good enough	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.2.8	Door is good enough	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.2.9	Painting of room is suitable	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.2.10	Window size is wide	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.3	**Housing Configuration**																					
2.3.1	Ability to re-organize room	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.3.2	External finishing is good enough	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.3.3	Overall house design is good enough	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.3.4	House is a new building	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.4	**Internal House Services**																					
2.4.1	Internet access is available	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.4.2	Condition of kitchen equipment is adequate	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.4.3	Condition of plumbing is adequate	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.4.4	Condition of electrical fittings is adequate	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2.4.5	Drainage is good enough	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3.0	**SOCIAL DIMENSIONS**																					
3.1	Comfortable studying at home	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3.2	There is privacy among house mates	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3.3	Able to sleep without disturbance	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7

3.4	There is rapport with neighbours	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.5	Perform religious services at home	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.6	Residence is near a place of worship	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.7	Residence is near a bus station	1	2	3	4	5	6	7		1	2	3	4	5				1	2	3	4	5	6	7
3.8	Residence is near a town center	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.9	Residence is close to campus	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.10	Residence is close to shops	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.11	Residence is close to banks/ATMs	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.12	Residence is close to health facilities	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.13	Residence is close to recreation centers	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.14	Residence is close to market	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
3.15	Residence is close to friends and relatives	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.0	**NEIGHBOURHOOD**																							
4.1	**The Health Of The Environment**																							
4.1.1	Neighbourhood is clean	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.1.2	Neighbourhood has odour	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.1.3	Neighbourhood is noisy	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.2	**Security of Neighbourhood**																							
4.2.1	Neighbourhood is safe	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.2.2	Level of security in environment	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.2.3	The Level of crime is high	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
4.2.4	The Level of cult activities is high	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
5.0	**PUBLIC SERVICES**																							
5.1	Water supply is available	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
5.2	Electricity is available	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
5.3	Banking facilities/ATMs are available	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
5.4	Good access road is available	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
6.0	**MANAGEMENT**																							
6.2	Rent is appropriate	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
6.3	Terms of rent payment is appropriate	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
6.4	Lease agreement is suitable	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
6.5	Cleaning of residence is adequate	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7
6.6	Garbage disposal is appropriate	1	2	3	4	5	6	7		1	2	3	4	5	6	7		1	2	3	4	5	6	7

SECTION E: DEMOGRAPHIC INFORMATION

The following questions provide demographic information about you. Please kindly indicate your response by putting a mark (✔) on the appropriate block.

7.0. Sex

Male	1	Female	2

8.0. Age

Age interval	Below 18yrs	19-21yrs	22-24yrs	25-27yrs	Above 27yrs
Check (✔)	1	2	3	4	5

9.0. Year of study

Year	1st Year	2nd Year	3rd Year	4th Year	5th Year
Check (✔)	1	2	3	4	5

10.0 Religion

Religion	Christianity	Islam	Traditional Rel.	others	Specify others
Check (✔)	1	2	3	4	

11.0 What's your monthly income?

Income Level	Below #60,000	#60,000 to #90,0000	#90,000 to #120,0000	#120,000 to #150,0000	#150,0000 and above
Check (✔)	1	2	3	4	5

THANK YOU, END OF QUESTIONAIRE.