

**VERTICAL HOUSING IN KERALA – A STUDY ON
OWNER’S SATISFACTION IN SELF OCCUPIED
APARTMENTS**

*Thesis submitted to
Cochin University of Science & Technology
For the award of the degree of
Doctor of Philosophy
under Faculty of Social Sciences*

By
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Under the supervision of
Dr. Muhammed Aslam M.K.



**SCHOOL OF MANAGEMENT STUDIES
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
KOCHI-682022
November 2018**

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Ph. D. Thesis under the Faculty of Social Sciences

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Certificate

This is to certify that the research work entitled ” VERTICAL HOUSING IN KERALA – A STUDY ON OWNER’ S SATISFACTION IN SELF OCCUPIED APARTMENTS ” is a record of bona fide research work done by Ms. Rafeeka Mol C.A , Research Scholar (Reg. No. 4159), under my supervision and guidance.

This thesis is the outcome of her original work and has not formed the basis for the award of any degree, diploma, associateship, fellowship or any other similar title and is work submitted for the award of degree of Doctor of Philosophy under the faculty of Social Sciences of Cochin University of Science and Technology. Also, I certify that the plagiarism check was done for this work using the official facility in the CUSAT Library and found satisfactory. All the relevant corrections and modifications suggested by the audience during the pre-submission seminar and recommended by the Doctoral Committee have been incorporated in the thesis.

Kochi 22

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Declaration

I, hereby declare that this thesis entitled “**VERTICAL HOUSING IN KERALA – A STUDY ON OWNER’ S SATISFACTION IN SELF OCCUPIED APARTMENTS** ” is a bona fide record of research work done by me and that this work has not formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or any other title for recognition.

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Abbreviations

AARS	Average Adjusted R Squared
ANOVA	Analysis of Variance
APC	Average Path Coefficient
ARS	Average R Squared
AVE	Average Variance Extracted
CB-SEM	Covariance Based Structural Equation Model
CFA	Confirmatory Factor Analysis
CS	Customer Satisfaction
EFA	Exploratory Factor Analysis
FA	Functional Attributes
GDP	Gross Domestic Production
GoF	Goodness of Fit
HA	Housing Attributes
HS	Housing Satisfaction
HR	Human Resource
HQ	Housing Quality
HQR	Housing Quality Attributes
IT	Information Technology
KMO	Kaiser-Meyer-Olkwin
LA	Location/Locational Attributes
LSA	Lifestyle Attributes

NA	Neighborhood Attributes
NQ	Neighborhood Quality
PCA	Principal Component Analysis
PLS	Partial Least Square
PRV	Perceived Value
PV	Perceived Value
RS	Residential Satisfaction
SA	Social Attributes
SPR	Sympson's Paradox Ratio
SPSS	Statistical Package for Social Sciences
VIF	Variance Inflation Factor

Abstract

Vertical Housing introduces a new concept to urban living that adapts to the evolving lifestyle of 21st Century contemporary India. Considering the increasing demand for land in the city, the transformation of single family dwelling typologies becomes a must, where tenants should be able to enjoy privacy as well as benefit from vertical solution amenities and prime location. Over the last 50 years the world has witnessed a dramatic growth in its urban population. A developing nation like India has to focus more on housing sector to cater to the housing needs of burgeoning population and to accelerate the economic growth.

The success of the housing sector will be measured in terms of quality and quantity. Mass housing schemes and collective apartments are help to solve quantity problems in Indian housing. To know whether these apartments are enhancing the quality aspect is highly relevant. The concept of residential satisfaction has been used as a key predictor of an individual's perception of general quality of life.

The present study aims to model the relationship between various house quality attributes, perceived value and satisfaction. For this purpose, five healthy housing quality attributes are identified, viz., physical, social, location, functional and lifestyle attributes. And the relation between these variables with residential satisfaction is measured and also tested the

mediation role of perceived value. This study used primary data collected from 370 self-occupied apartment owners who live in residential apartments in Kerala. A structured questionnaire is used to collect the required data. Socio-demographic profiling as well as hypothesis analysis is done using PLS-SEM, ANOVA and t-test.

Keyword: Residential apartments, Residential satisfaction, Housing satisfaction, Housing Quality, apartments in Kerala.

Chapter **1**
INTRODUCTION

INTRODUCTION

- 1.1 *Introduction*
- 1.2 *Housing Industry- An overview*
- 1.3 *Potential Contribution of the study*
- 1.4 *Relevance of the study*
- 1.5 *Organization of the thesis*

This chapter intends to provide a general introduction to the topic of this research. The chapter attempts to bring out the importance of housing sector in society so as to present the rationale for the study. The relevance and the need for the present research are also discussed. The potential and expected contributions of the study are also included in the chapter. Finally, the organization of the thesis is given.

1.1 Introduction

Vertical Housing introduces a new concept to urban living that adapts to the evolving lifestyle of 21st Century contemporary India. Considering the increasing demand for land in the city, the transformation of single family dwelling typologies becomes a must, where tenants should be able to enjoy privacy as well as benefit from vertical solution amenities and prime location. Over the last 50 years the world has

witnessed a dramatic growth in its urban population. Half of humanity now lives in cities, and within a few decades, nearly 60 per cent of the world's population will be urban dwellers. This urban growth is most rapid in the developing world with cities growing at rates that are extremely fast by historical standards. In the last two decades the urban population of the developing world has grown by an average of three million people per week, and by the middle of the twenty first century, the number of urban population in developing countries is expected to rise from 2.3 billion in 2005 to 5.3 billion in 2050 (UN Habitat 2008). The speed and scale of this growth impose significant pressures over the abilities of urban and national authorities to cope with the economic, social and environmental ill effects and consequences occurring from this intense urbanization (Hall & Barrett 2012). This situation is so severe that it is likely to strain the resources and imagination of the most accomplished of governments. (Yamen Nafeth AlBetawi, 2013)

Housing is, probably, one of the key issues that normally forefront the scene when considering challenges of urbanization and urban growth. This is not only because of being a basic human need, or because of having strong links with other life aspects, but also due to the complexity and multifaceted nature of this subject which makes it the centre of attention of a multiplicity of actors and disciplines. Despite this, several pieces of evidence have manifested significant failures in dealing with the challenge of housing particularly in the case of developing countries (Jang , et al 2012; Pugh 1990). Issues of housing shortages, affordability, inequality, overcrowding, tenure security and property rights, quality of

shelter, growth of slums and indiscriminate settlements still pose enormous challenges for governments and authorities against reaching what may be considered 'good housing quality'. One possible justification for this failure is the misunderstanding of the process of urbanization and the implications it has on housing, resulting in the employment of improper housing policies and programs.

The present research is about an attempt to investigate the new housing solution of Kerala i.e., residential apartments. The study throw lights on the reasons for shifting towards residential apartments from traditional free standing houses and the major factors influencing the satisfaction of apartment owners. Residential apartments are mushrooming day by day in Kerala and large number of builders and developers are coming to this competitive field. The study identifies various factors leading to satisfaction of apartments. It focuses on the relationship between such factors and satisfaction also the mediating role of perceived value .

Higher density urban housing has been linked to a range of benefit to social, economic and environmental outcomes. Increasing the provision of this housing is included as a goal in policies in many countries. It is likely that policy-makers will continue to support higher density housing as climate change and other environmental pressures add to the pressures on the demand for land. For example, increased flood risk will put some land and housing beyond use for residential purposes. Furthermore, it is likely that additional land will be required for energy and food. The literature provides some mixed evidence on the benefits of higher density housing, particularly the built form most associated with it, namely

apartments and multiunit or multifamily dwellings. Problems include inadequate space, noise pollution, suitability for families and children, and a lack of personal green/outdoor space. These studies raise questions about the quality, Perceived value and satisfaction for its residents. (Winston, 2015)

1.2. Housing Industry-An Overview

Housing is defined differently by different authorities. Housing is often called as "Shelter", particularly by economists. They also hold the view that apart from food and clothing, a house to dwell in is the third basic need of every human being. It is fundamental for man's existence and survival. Housing is one of the fundamental aspect of human life and a major factor in delivering healthy and attractive communities as it serves to define the life space of individuals. Increasing interest is now shown towards the study of how people think of their housing and how it affects their lives. Therefore, measuring the housing quality has become an important tool to assess the efficiency of housing provision and the extent to which people are satisfied with it.

A study by UN Habitat found that by 2030, about three billion people, or about 40 per cent of the world's population, would need proper housing. In simple terms, housing stands for providing a shelter that would ensure one's safety and support the activities of daily living. Various factors lead to homelessness and inappropriate housing, but the predominant factor is that the housing sector is not able to cope up with the rapid urbanization challenging the cities. There has been a tremendous influx of people into urban areas in search of job opportunities and better

living. As the aftermath of rapid urbanization, there has been an increase in the number of street dwellers, slums, encroachments, illegal settlements, shadow rental market etc, leading to an increasing number of people living in poor conditions, according to the formal housing system. This means that not all are without a house or a shelter, but the legal documents and living standards of most of the households do not comply with the formal housing system.

Hence, the housing issue that India is facing is not just about providing a shelter to the homeless but about how housing policies could enable the development of the households both socially and economically. To tackle these issues the policies and schemes adopted by the governments have been on the rise. But the effects of these policies have been a subject of concern, due to their inefficiency in addressing the issues. India being a developing country is a victim of rapid urbanization with 285 million people living in urban areas in 2001 to 380 million in 2011. There has been a 20 per cent increase in the number of homeless people in urban India (Dr. Kumuda). As per a study conducted by KPMG, the housing shortage in cities is found to be approximately 1.9 crores. According to the census taken in each state, Maharashtra, Uttar Pradesh and Bihar are in dire need of housing facilities. In contrast, Goa, the Seven Sisters and Himachal Pradesh are comparatively on the safer side

India has seen a gradual, structural shift from an agrarian based economy to services and manufacturing driven economy. Urban areas or cities are now at the centre stage of the development process. Growing urbanisation not only represents a demographic shift in population but also signifies a social, cultural and economic transformation. Currently

approximately 300 million people or 28% of India's population live in urban areas. According to a recent study by McKinsey Global Institute, by 2030, 40% of India's population or 600 million people will be living in cities. (Urbanization & Housing, Leela Nair, 2009).

Apartments become house substitute for the urban people of Kerala. The housing taste of people of Kerala is rapidly changed from the free standing homes to multistoried residential apartments. Industrialization and urbanization leads to housing shortage in cities. The unavailability of sufficient land in the urban areas, as well as sky rocketing of land prices made the urban people in more trouble. They can't afford to buy a piece of land and construct a home in cities. Even if they succeed to buy a small piece of land and construct a home, they can't afford many facilities due to lack of space. It may not have good parking space, good garden, children's play area, and other related amenities. All these situations are already identified by the developers and they have constructed large number of apartments in the urban Kerala, so as to accommodate the maximum urban population with minimum cost.

Kerala is presently experiencing a vertical growth in the house construction industry. Housing flats are mushrooming in the outskirts of urban Kerala day by day. The latest housing statistics in Kerala shows a clear cut shift from free standing houses to flat houses. (Govt. Census report 2011). The preference of housing of the Keralites is changing for the last 7 years and now it shows a clear picture that more than 20% of the people of Kerala are prefer to live in housing flats. (2010 annual report, Nirmithi Kendra).

People purchase flats as housing alternative and some others as investment. In many studies the researchers try to find answer to some question that why People of urban Kerala prefer housing flats, what are the reasons behind this rapid shift in housing, what are the factors influencing the purchase decisions of flats and what is the role of housing finance institutions in the purchase of flats etc. But none of the studies are focused on the satisfaction of life in apartments, factors leading to satisfaction of apartment, role of perceived value in housing satisfaction etc

1.2.1. Residential Apartments

Residential apartment is a part of housing, which has encouraging scope or development. House is a very complex term. The definition of the same has varied country to country and time to time. Housing being one of the three basic needs of life always remains in the top priorities of any person, society and economy. As a human being, an individual needs has own space and privacy, which can be provided by ownership of house. Thus housing deserves significant attention in the context of developing policies and strategies for human development.

A developing nation like India has to focus more on housing sector to cater to the housing needs of burgeoning population and to accelerate the economic growth. The housing sector has been globally used as an engine to propel the economic growth as it generates employment and demand in the market. The density of population in India as per 2011 census is 382 persons per sq.km, while in Kerala it is 859 persons per sq.km. The density of population in most of the urban areas in Kerala is

around 3000. Kerala, one of the smaller states has to accommodate about 3000 persons per square kilometer in urban area. Thus an independent house in four or five cents became a dream for an ordinary citizen. In this context, residential apartments have importance since the area of land is utilized to the maximum extent for housing.

Kerala has been acclaimed for its impressive achievements of quality of human life. It is shelter, which has been recognized as one of the most important determinants of quality of human life. An independent house used to be the dream of most of the 'malayalees'. But it may be observed that Kerala is a small state occupies, only 1.27 per cent of the geographical area of India but its share of population in the country is 3.44 per cent. As such there has been an acute shortage of land for residential buildings in the state.

The increasing concentration of activities relating to industries, commercial and institutional organizations at urban towns may draw naturally large inflow of population into urban areas. Such type of flow of population will increase the density. The urban areas become a permanent place for them to stay and settle themselves. This by the simple logic of law of demand and supply increases the pressure on the urban land and inflates the land price. The escalation of population concentration in urban centres, infiltration of modern culture in the lifestyle of Keralites, steep hike of land prices and spurt in material cost of house construction give rise to an unprecedented demand of high rise apartments in Kerala.

1.3. Potential Contributions of the Study

Upto 10-15 years back Kerala is having a traditional housing culture of buying a piece of land and constructing a house or even buying a house surrounded by some land. But presently the scenario is changed. Rapid urbanization, lack of land availability, high construction cost as well as busy life schedule of people leads a change in the housing concept. People start to shift to ready to occupy housing flats. Thus currently flats are become a major part of housing. When we are taking any decision regarding the housing aspects one must consider the flat dwellers also.

Over the last decade the residential apartment market has emerged as a lucrative, fast-growing and increasingly competitive sector of Indian economy. Focusing on Kerala – one of the fast growing state in India is presently experiencing a vertical growth in the house construction sector. The Present study examines the impacts of various quality and values on satisfaction of home buyers in Kerala.

Growing number of population and the rapid urbanization leads to acute housing shortage in Urban Kerala. Kerala is a typical land of housing priorities, unlike other states of India , Kerala is having a specific and separate outlook towards housing. Kerala people are more concerned about family matters. (nambiar, 2010, Kerala model life, report)

Housing deserves significant attention in the context of developing policies and strategies for human development. A developing nation like India has to focus more on housing sector to cater to the housing needs of burgeoning population and to accelerate the economic growth. The success of the housing sector will be measured in terms of quality and

quantity. Mass housing schemes and collective apartments are help to solve quantity problems in Indian housing. To know whether these apartments are enhancing the quality aspect is highly relevant. The concept of residential satisfaction has been used as a key predictor of an individual's perception of general quality of life.

Residential satisfaction after house purchase is an important managerial and theoretical issue for scholars in marketing and economic psychology (Muter et al. 2014), and it is equally surprising that there are hardly few investigations involving a house purchase in apartment sector in Indian context (Tan,2014)

1.4. Relevance of the Study

Vertical houses are relatively new concept in Kerala housing scenario. Housing has been a major concern for all people in the world, and it has been always considered as a basic human need. Housing fulfills physical needs by proving a sense of personal space and privacy. To what extent dwelling unit features, neighborhood features, building quality, services needs and expectations predict the occupants' residential satisfaction, which were classified as the exogenous variables. Determinants of good apartment housing can be measured through the investigation of the satisfaction levels perceived by the apartment's owners. The need for adequate and affordable housing is connected with the physical, psychological, environment, economic, financial, social, location, functional and lifestyle attributes.

The present study aims to model the relationship between various house quality attributes, perceived value and satisfaction. For this purpose, five healthy housing quality attributes are identified, viz., physical, psychological, social, locational, functional and lifestyle attributes. This study used primary data collected from 380 self-occupied apartment owners who live in residential in Kerala, using multi-stage random sampling method. A structured questionnaire is used to collect the required data. This study employs correlation and multiple linear regression models.

1.5. Organization of the Thesis

The present study is about vertical housing In Kerala – a study on owner’s satisfaction in self-occupied apartments. Here the researcher measure the owner’s satisfaction in self-occupied apartments after identifying the various attributes influencing satisfaction and its impact on satisfaction. The basic ground of this study is to measure the mediating role of perceived value between various quality attributes and housing satisfaction of apartment owners. Conceptualization of the model thus developed is tested for empirical validity by using the statistical method Warp-PLS Structural equation Modeling.

The Thesis is organized into 7 chapters as follows:

- Chapter 1: Introduction: This chapter attempts to introduce the research topic, an overview of housing sector, residential apartments, relevance of the study, and potential contributions of the study and the organization of the thesis.
- Chapter 2: Literature review and conceptual focus: Literature on housing studies, housing satisfaction, apartment life,

perceived value and owners satisfaction are reviewed very extensively. This chapter also explains the theoretical frame work of the study.

- Chapter 3: Research methodology: Chapter 3 deals with the rationale of the study, statement of the problem, objectives of the study, definition of the variables and hypothesis. For this study, the research utilizes Warp PLS is used. Measurement instrument, method of data collection and sampling
- Chapter 4 Data collection and sample profile: The data collection, analysis of socio-demographic feature of the respondent and the reliability analysis and validity analysis of the measures used in the study are also presented in this chapter
- Chapter 5: Hypotheses testing and model analysis: The testing of research hypotheses, analysis of both conceptual model and structural model are detailed in this chapter.
- Chapter 6: Discussion on Findings: This chapter shows the detailed summary of findings and discussions.
- Chapter 7: Implications and conclusion: Implications of the study is detailed in this chapter. Both theoretical and managerial implications as well as the summary of the research, limitations and the scope of future research are also included in this chapter.



Chapter 2

LITERATURE REVIEW AND CONCEPTUAL FOCUS

Literature review and conceptual focus

- 2.1 *Introduction to Housing*
- 2.2 *Housing in India*
- 2.3 *Housing in Kerala*
- 2.4 *Housing Apartments*
- 2.5 *Customer Satisfaction*
- 2.6 *Housing Quality*
- 2.7 *Perceived Value*
- 2.8 *Conceptual Focus of the Study*
- 2.9 *Gap in the Literature*
- 2.10 *Chapter Summary*

2.1 Introduction to Housing

Shelter is a basic human need and as an intrinsic part of human settlement, is closely linked with the process of overall socioeconomic development. Though a house is essentially a place of dwelling, it also fulfils many important social needs of the household. Besides providing shelter, it creates employment, generates voluntary saving and creates a conducive condition needed for achieving crucial goals (krishnamachari, 1980)

A house in a general sense represents the smallest unit from where the town planning scheme emerges. It is the first unit of society and it is the primary unit of human habitation. The need for a house does not confine itself to the availability of a structurally stable unit to stay. Houses must be so located and designed that they afford convenience, amenity, health and social life to community. Housing has potentiality to a great extent in promoting human welfare, social life, economic growth, health of community and various other aspects of human life. Housing is a commodity which is very much heterogeneous in nature (Thampuran, June 2011)

Housing is defined differently by different authorities. Housing is often called "Shelter", particularly by economists. They also hold the view that apart from food and clothing, a house to dwell in is the third basic need of every human being. It is fundamental for man's existence and survival. Housing plays a very important role in the human life and its society. Housing has a tremendous social and economic impact on our lives and the way we live. It has direct and immediate influence on health, education, economy, environment, political and social life of any society (Sinha, 1978).

A house, as a capital goods product and a type of real estate, had many unique characteristics that were different from other consumer goods products. One of the most important features was its association with land. Smith, Tschappat and Racster (1981) and Ratcliff (1961) pointed out that it was fundamental to realize that land, building, and public utilities were an inseparable process in house building. House

building was a marriage of land, labor, and materials. Its value included not only the house itself but also the total services that a house would render to the housing consumers in the future. (Tsai, 2001)

Housing was at the very heart of social development, wrote Feagin (1983). Sound housing provided housing consumers with a healthy life and good shelter. McCallum and Benjamin (1985) suggested that stable family life, decreased alcoholism, lower disease rates, increased longevity, and reduced infant mortality were positively related to good housing conditions. Gauldie (1974) and Burns and Grebler (1977) stressed that good housing did directly relate to an increased willingness to work and lowered the incidence of absenteeism, produced higher quality and utilization of a resident's education, and decreased the possibility of social deviance. Myrdal (1968) advocated that good quality housing provided a clean environment and superior place to study, and therefore it directly influenced the overall health and success of the education of the housing consumers. Good quality housing played a major role in reducing the burden of cost to the society. (Tsai, 2001).

(Naik, 1976) in his book, "You and Your Housing Co-operative", analyzed the housing problems faced by individuals which cannot be solved by themselves and emphasized the importance of a collective action to overcome the individual weaknesses. He suggested the role of housing co-operatives in accelerating the house construction activities by providing necessary finance. He also suggested that a review of the various schemes under implementation will help in a proper appraisal of the government policies and programmes for housing finance for the development of housing and the formulation of a new National Housing

Policy and Programme. In the opinion of Naik (1981) “housing is an essential element of life for most human beings. The modern concept of housing does not limit the idea of housing merely to the provision of shelter”

In their study, P. Ramachandran and S.B Deodhar (1979) analyzed the magnitude and complexity of the housing problem in the country and stated that the physical and financial resources of our country is too inadequate to be invested in housing. The steadily increasing trends in private investment in housing have had little impact towards the ever increasing housing shortage in the country. They emphasized the need for providing fiscal and financial benefits to borrowers so as to increase investment in housing.

A good quality residential area can be highlighted as an important issue in creating a sustainable living environment.(Mohd Ramzi Mohd Hussain□, 2014) . In the past, housing was defined as the physical space in which people resided and carried out their everyday lives. Consequently, housing policies at the start of urbanization were focused on meeting demand through "increase in quantity" of housing. However, housing has risen in significance from a simple residential space to a driver of change in quality of life. Thus, improvement of residential quality has become a major goal of urban policy and planning in the modern age (Xiaoyu *et al.*, 2007). This approach is meaningful in that citizens' satisfaction with life is closely linked to residential satisfaction. (Mikyoungh.A, September 2016)

2.2 Housing In India

India has seen a gradual, structural shift from an agrarian based economy to a services and manufacturing driven economy. Urban areas or cities are now at the centre stage of the development process. Growing urbanisation not only represents a demographic shift in population but also signifies a social, cultural and economic transformation. Currently approximately 300 million people or 28% of India's population live in urban areas. According to a recent study by McKinsey Global Institute, by 2030, 40% of India's population or 600 million people will be living in cities. (Urbanization & Housing, Leela Nair, 2009)

Francis Cherunilam and Oddeyar D Heggade (1987), in their book, "Housing in India", analysed the global housing problem particularly in developing countries like India and critically reviewed the measures taken by the Government to mitigate it. They also highlighted the importance of housing in the economy and pointed out the reasons for the slow growth in the housing sector. The increasing role of co-operatives in housing and the need for more investment in housing for fostering the socio economic development in modern societies were dealt with in the book.

According to Satyanarayana (1987), housing is an element of material culture, is one such device to overcome threats against physical elements or security to lives and serves as an important purpose by making the provision of shelter. It provides a place for the operation of many human activities Irrespective of place and time man is using a place of accommodation which is called a house. It helps people to interact within the family and with the outside world.

As stated in India year Book (1988) a certain minimum standard housing is essential for healthy and civilized existence. Housing activity serves to fulfill many of the fundamental objectives.

G. Gopikuttan (1988) analyzed the causes, consequences and dimensions of the changes in the trend of house construction activities in Kerala. He opined that the emergence of socio-political movements and growth of education have influenced greatly the housing pattern in the state. Further, the enhanced yield and price of plantation crops increased the demand for construction of new houses. Apart from this, the liberal attitude of housing finance agencies towards lending with a view to increasing their business gave great boost to housing in the state. According to Harichandran (1989), the objectives of the National Housing Policy include motivation to help people particularly the houseless to secure for themselves affordable shelter, to promote investment in housing order to achieve a sustained growth of nation's housing stock.

As stated by S.D. Gosangadi in Manorama year Book 1992, housing requires huge capital resources. Developing countries suffer from the syndrome of low investment, low capital formation, low productivity, low savings, leading to scarcity of resources. It is a vicious spiral from which they find difficult to extricate themselves.

G.C. Mathur (1993), former Director of National Building Organisation, made an evaluation of the housing backlog and inadequacy of housing services especially in urban areas and emphasized the need for public-private co-operation in urban housing. In order to generate and maximize public- private sector co-operation in housing, he proposed

certain measures such as constituting task force, Housing Technology Mission to evolve appropriate technology in housing construction, peoples' participation with support of government and public sector agencies and the development of private sector to invest more in housing sector.

Pramila Suri (1994), in her study, investigates social, economic and physical variables and their interrelationship in housing areas of the urban poor to portray life in these settlements and identified their shelter need priorities. She also analyzed the government response towards housing of the urban poor by reviewing the evaluation and pattern of its housing policies in the national context.

In his book, "Shelter for the Poor in the Fourth World", R. G. Gupta (1995) analyzed the housing situation in different Asian countries and emphasized the need for a global shelter strategy. The various environmental issues connected with the housing and the role of development authorities were also dealt with. He also emphasized the various forms of housing in different countries and the categories of houses constructed by public, co- operative and private sector.

Apart from providing decent houses to its members, to create an environment that is conducive to the fulfillment of the physical, social, economic and spiritual needs of its members. He concluded that housing co-operatives have the potential of becoming an effective instrument of providing an improved social life and making cities safer abodes of human existence(Ravi Shankar).

2.3 Housing In Kerala

On the welfare front, Kerala stands ahead of all the states in India. The physical quality of life indices of the state match even with the standards of developed nations. Despite its developed demographic profile, several sectors in Kerala continue to be weak; such as housing, power and industries.

As far as the housing sector is concerned, Kerala has implemented many innovative schemes and has made remarkable progress in housing. Despite the quantitative and qualitative improvement in housing stock in Kerala, the housing shortage persists. The problem of housing is a complex one in Kerala. It is quantitatively alarming and qualitatively depressing.

Kerala is presently experiencing a vertical growth in the house construction industry. Housing flats are mushrooming in the outskirts of urban Kerala day by day.(Govt. Census report 2011).The preference of housing of the Keralites is changing for the last 7 years and now it shows a picture that more than 20% of the people of Kerala is prefer to live in housing flats.(2010annual report, Nirmithi Kendra).

Growing number of population and the rapid urbanization leads to acute housing shortage in Urban Kerala. Kerala is a typical land of housing priorities, unlike other states of India, Kerala is having a specific and separate outlook towards housing. Kerala people are more concerned about family matters and housing decisions. For them house is their central symbol of social status. (Nambiar, 2010,Kerala model life,report).

“Flow of credit to trade and commerce in Kerala-a study of real estate and housing finance in Kerala”-Sunny Joesph, PhD,2005- says that Kerala is facing acute housing shortage in terms of both quality as well as quantity.

Living in apartments is gaining popularity, particularly among higher-income households. The times are changing, and owning a house is no longer a universal dream. These days people prefer apartments and flats to houses because of the convenience associated with life in apartments. (Muhammed, 2011) The amenities like gymnasium, playground, and swimming pool, tennis court, walking ways, parking lots, elevators and other facilities are demanded in an apartment complex in Kerala. (Nambiar, 2012)

Today's population is more comfortable with the idea of living in apartments than at any time in the last 50 years. The better method of constructing houses in the urban area includes the multi-storeyed residential apartments commonly called as flats. It definitely reduces the usage of land, avoid infrastructural problems and also helps to reduce cost. (D.P. Wyatt, Towards sustainable practice, Emerald,2008).

Houses are not only meant as a shelter but as a centre of the life-It should constitute better living space, recreational aspects, community living, prestige, convenience, etc-for the Kerala youth, “New generation housing concepts in Kerala,”(Devarajan, Dhanam,2011).

Statistical studies reveals that most peoples in Kerala prefer to live in city or the place close to their office or work site or Educational Institute. This is because of the travelling efforts results in tired body

health. So the result is that, they cannot work or study well. Therefore they prefer to live in flats or apartments. (K Rajiv Roshan, Health and Housing , 2010).

In Kerala the popularity of ‘Residential flats’ is increasing day by day. Without any bother of land purchasing, seeking permission for construction, cost of materials, or even labour charges, one can simply possess a shelter according to their pockets.(Shyam Sharma,2012).

Analyzing the question of housing in the country, C.V. Ananda Bose (1996), keeping the essence of Nirmithi Movement in Kerala underlines the need for propagating cost effective, environment friendly building technology to tackle the problem of rural housing. He emphasizes the need for bringing about a new design and construction culture, avoiding costs and eliminating wrong notions. He calls for an integrated approach involving P.R.Is, N.G.Os and women in addressing the task.

Growing number of population and the rapid urbanization leads to acute housing shortage in urban Kerala. Kerala is a typical land of housing priorities, unlike other states of India , Kerala is having a specific and separate outlook towards housing. (nambiar, 2010) Presently Kerala is completely shifting towards nuclear family system . It leads to increase in demand for housing. The work culture of the new generation people is quiet similar to western nation. Both the husband and wife in a family are working with either public sector or private sector firms and major share of the youngsters are employed with IT and other telecommunication sectors. (George, 2010). This shift lead to

more fuel to urbanization as well as the need for readymade shelters.

2.4 Housing Apartments

Residential apartment is a part of housing, which has encouraging scope or development. House is a very complex term. The definition of the same has varied country to country and time to time. Housing being one of the three basic needs of life always remains in the top priorities of any person, society and economy. As a human being, an individual needs has own space and privacy, which can be provided by ownership of house. Thus housing deserves significant attention in the context of developing policies and strategies for human development. A developing nation like India has to focus more on housing sector to cater to the housing needs of burgeoning population and to accelerate the economic growth. The housing sector has been globally used as an engine to propel the economic growth as it generates employment and demand in the market.

The density of population in India as per 2011 census is 382 persons per sq.km, while in Kerala it is 859 persons per sq.km. The density of population in most of the urban areas in Kerala is around 3000. Kerala, one of the smaller states has to accommodate about 3000 persons per square kilometer in urban area. Thus an independent house in four or five cents became a dream for an ordinary citizen. In this context, residential apartments have importance since the area of land is utilized to the maximum extent for housing.

Living in apartments is gaining popularity, particularly among higher-income households. The times are changing, and owning a house is no longer a universal dream. These days people refer apartments and flats

to houses because of the convenience associated with life in apartments. (muhammed, 2011) Apartments and flats offer access to amenities and technologies not available or affordable in single-family homes. It is uniquely qualified to address many of the most pressing needs. The various benefits apartments offer to a community are helping to reduce sprawl, conserve resources, preserve green space and reduce demand on public resources. Apartments create value for all citizens, including owners. (Ravi Sankar, 2010)

Today's population is more comfortable with the idea of living in apartments than at any time in the last 50 years. The rapid increase in the demand for higher quality residential space in Kerala could be attributable to the following reasons:

- a) The middle class sector's rise in disposable incomes and expectations levels.
- b) Accommodation for expatriate employees of the various companies coming to Kerala
- c) Expansion of Indian corporate, MNCs and IT Parks.
- d) Long term investments from NRI's into real estate sectors like residential & commercial projects in Kerala. (Mehtar, 2012).

People prefer to reside in ready to occupy homes rather than spending time in constructing individual homes. They also want the best of the amenities and facilities that they can have. Luxury apartments, villas and flats are thus widely popular in Kerala. People occupy these

mostly in areas where the IT sector is soaring rapidly. They relocate in order to pursue a better career, education or lifestyle (builders, 2011)

The better method of constructing houses in the urban area includes the multistoried residential apartments commonly called as flats. It definitely reduces the usage of land, avoid infrastructural problems and also helps to reduce cost. (D.P. Wyatt).

The apartment life in Kerala depends on location, security and atmosphere. So these elements are very much viable for discussing in this context. The location of the apartment in Kerala is generally in the center of the city. The most of the cities in Kerala are cultured and have a highly educated lifestyle. So the importance of the apartment location determines its potentiality to the end user and also for the builders. Since, the real estate projects are envisaged in a wiser manner so the apartment lifestyle can be enjoyed within its capability. Generally, the apartments are built within the eco-friendly environment so the body and mind of the occupants can be healthy and strong. Particularly, the modern amenities of an apartment culture exist in any apartment conglomeration. Examines the importance of developing social housing within the broader goal of a sound housing sector system in developing countries. It gives greater emphasis on the role of multi-storeyed apartments in housing.

A recent report in The Hindu mentioned that there are a large number of unoccupied houses and flats in Kerala. Going by the report the statistics are staggering for a small state like Kerala with a limited population but a high density of population. So why the prices are so high and why are so many houses lying idle, when the masses or the middle

class can barely afford a budget apartment of their own? One would wonder that with such low occupancy rates, the rentals or real estate prices should ideally be much lower. The empty houses are a result of speculative investments made in the last decade in Kerala plus a role played by the land grabbers or mafia as it is called. (September 2013).

This paper is an attempt to analyze the new concept of ‘Integrated Township’ as a sustainable urban neighborhood. The concept is developed by integrating three aspect of life ‘Live, Leisure and Work. Integrated Township provide micro quantum of facilities of a developed city and it avoid all sort of issues in the town for the beneficiaries. The study further looks at its relevance in the urbanization process of Kerala with special reference to the Kerala’s housing sector (Prasanth G, 30 nov).

2.5. Customer Satisfaction

Customer satisfaction has been studied from the perspective of the individual customer. The drives of their satisfaction are different at varying situations and individuals. It is a context specific concept that depends on the individuals experiences that leads to his satisfaction. Each individual has to be considered in isolation for studying their satisfaction (Oliver & Swan, 1989).

Consumer satisfaction has been studied from an industry-wide perspective to compare customer satisfaction scores across firms and industries. In this case, the decision makers would get a score or numerical value in order to compare the satisfaction scores of one firm or

organization to the industry. It finds the best performer in the case of satisfying customers (Mittal & Kamakura, 2001).

Research has examined customer satisfaction in a single organization or across several organizations. The ability of each department or units within the organization has been measured to know its ability to satisfy the customers. Once an organization can develop a score with respect to its consumer's satisfaction, it can compare the score with the satisfaction score of other firms in the same industry (Schlesinger & Zornitsky, 1991).

While measuring customer satisfaction, it is possible that attributes can have different satisfaction implications for different consumer and market segment like the usage context, segment population, and market environment that can influence satisfaction. Failure to consider such segment-specific variation may lead a firm to focus on the wrong aspect for a given set of consumers. Consumers with common satisfaction ratings and different characteristics may show different levels of repurchase behavior. It is clear that market and consumer segments should be important factors to consider while measuring customer satisfaction and its implication (Anderson & Mittal, 2000, Mittal & Kamakura, 2001).

The raising consumer expectations for a product may enhance the product's perceived performance. Studies have also shown that both expectations and perceived quality are positively related to satisfaction, especially at the cumulative or aggregate level and perceived performance may have a stronger influence on satisfaction than expectations. Like perceived quality, perceived value should also be enhanced by raising

expectations and should be positively related to consumer satisfaction (Chan et al, 2001).

Hinks et al (2001) in this research identified the fact that customer satisfaction in terms of new housing is more than just the technical quality of the constituent components of a house. Quality in new housing as far as the customer is concerned is very much an overall concept. This paper looks at some of the ways that other industries have attempted to measure the rather unformulated concept known as customer satisfaction and considers scope for translating them into the house building context.

Maloney et al (2002) evaluated concept of service encounters is examined in the context of perceived quality and customer satisfaction. Determinants of quality are analyzed in terms of how they influence perceived quality. The relationship between the criteria used by customers in choosing suppliers and the factors driving satisfaction are examined, and results of two studies of factors involved in contractor selection and satisfaction are reviewed.

Kim et al. (2005) suggested evaluation criteria based on performance value or the one frequently met in practice by development and application of a housing performance evaluation model for multi-family residential buildings. They presented model that can be used for objective and practical evaluation and comparison of residential housing alternatives and hence provided users more substantial and practical information about in-use housing performance. (Sun-Sook Kim, 1 2005,)

2.5.1. Theories of Satisfaction.

An attempt to classify satisfaction theories organizes them into two categories: content and process theories (Allen, 1991; Thierry & Koopman - Iwena, 1984). Content theories identify specific motives and needs conducive to satisfaction and include Need for Achievement Theory (McClelland, 1951, 1961), Hierarchy of Needs (Maslow, 1954), Internal-external locus of control (Rotter, 1966), Cognitive Evaluation Theory (Deci, 1975) and Two Factor Theory (Herzberg, Mausner, & Snyderman, 1959).

Process theories on the other hand, concentrate on dynamic thought processes and how they produce certain behaviors and attitudes and include Drive Theory (Hull, 1943, 1951), Equity Theory (Adams, 1963, 1965) and Expectancy Theory (Vroom, 1964). The foregoing theories, however, are also recognized as motivation theories in which satisfaction plays a role in one's level of motivation, such as the extent to which a particular need has been met and as such, is not a satisfaction theory per se (Thierry & Koopman -Iwena, 1984).

The confusion in categorizing the above theories as satisfaction theories, rather than motivation theories, is demonstrated in Maslow's Hierarchy of Needs for example, in which satisfaction decides whether a higher level of need in the hierarchy will evoke behavior. Another example is Equity Theory, which pays attention to behavior caused by dissatisfaction (dissonance). Despite the arguments proposed the following theories pertain to satisfaction: Need-Fulfillment Theory (Vroom, 1964), Discrepancy Theory (Locke, 1969), Event-Agent Theory (Schneider &

Locke, 1971), Social Comparison Theory (Festinger, 1950, 1954) and Facet-Satisfaction Model (Lawler, 1973). While not an exhaustive list, these are the most frequently mentioned satisfaction theories across decades of research (Elsinga & Hoekstra, 2005)

The Need-Fulfillment theory refers to satisfaction occurring as a result of the level of a component or outcome a person feels they are receiving (Vroom, 1964). According to this theory, all individuals have different needs, which determine their motivation. If these needs are fulfilled, then greater levels of satisfaction occur (Galster & Hesser, 1981). That is, satisfaction is the result of the degree to which the environment satisfies a person's need. There are two models that utilize the need fulfillment framework: the "subtractive" and the "multiplicative" models (Allen, 1991).

According to the subtractive model, a person's level of satisfaction is the result of the discrepancy between their needs and the extent to which the environment satisfies those needs. That is, the more discrepancy between the two then the lower the satisfaction level and vice versa. The multiplicative model calculates the product of the individual's needs and extent to which the environment satisfies those needs. The total of all the needs illustrates the individual's level of satisfaction. While there is support for these models, they are limited in applicability to individuals with high self-esteem. Therefore, the need - fulfilment framework does not provide a complete framework to understanding satisfaction (Allen, 1991; Galster & Hesser, 1981; Korman, 1971).

Discrepancy theory refers to the difference between an expected outcome level and the actual outcome a person receives (Locke, 1969). Dissatisfaction occurs when the actual outcome level is lower than the expected outcome level; however, when discrepancies between expected and real outcomes are reduced then satisfaction is achieved (Allen, 1991; Berry, 1997; Thierry & Koopman - Iwena, 1984). The Event-agent theory (Schneider & Locke, 1971) refers to satisfaction as being the result of the interaction between an event (relating to the things that happen) and an agent (relating to the cause of the event) (Thierry & Koopman - Iwena, 1984;). While the above theories are based on the notion that individuals balance their outcomes against what they are striving for, and this analysis is based on their desires and opinions, the Social Comparison theory maintains that this balancing is done with regard to the viewpoints and characteristics of one's group.

A person's satisfaction level is based on the interests and desires of the group they look to for guidance, and their perception about how they are doing in relation to that reference group (Festinger, 1950, 1954). Limitations of this theory lie in two directions: its applicability across different individuals such as those whose views are largely derived from group influences, compared to those who are independent in nature and have their own opinion; and its lack of applicability across individuals with similar characteristics but have different reference groups.

According to the Facet-Satisfaction Model (Lawler, 1973) satisfaction occurs only if actual rewards are equal to perceived equitable rewards. That is, if actual rewards are more or less than perceived equitable rewards, discomfort and guilt occurs. Discomfort results if a

person knows they are receiving more or less than they deserve. A criticism of this theory is its emphasis on perception, in that it reinforces the importance of perception of reality as opposed to reality itself.

Despite the various theories, they share common elements: they measure the difference between community conditions (Galster & Hesser, 1981; Grzeskowiak et al., 2006; Kaplan, 1985; Lu, 1999), and conclude that a person's satisfaction occurs when there is an absence, or at least a minimal number, of complaints and a high degree of congruence between actual and desired situations. However, incongruence between actual and desired conditions leads to dissatisfaction (Grzeskowiak et al., 2006).

Another commonality is the recognition of the complex nature and interdependence of the numerous factors that affect residential satisfaction (Kaplan, 1985). Within the literature there is little consensus on the most appropriate theory to address and explain the cause of satisfaction (Allen, 1991; Thierry & Koopman-Iwena, 1984). As a result various theoretical frameworks and models have been developed.

2.5.2 Residential Satisfaction

The literature dealing with residential satisfaction is surprisingly scant. More importantly, the majority of the literature available to date not only considers the relationship between homeownership and life satisfaction, but between homeownership and various other characteristics. These include social aspects like neighborhood stability or social involvement. Dietz and Haurin (2003) provide a literature review on various important social and economic benefits of homeownership. They

highlight fundamental differences in the behavior of homeowners and related agencies, but emphasize the need for further research, using more advanced econometric methods. Overall, however, the limited empirical evidence indicates a positive relationship between homeownership and life satisfaction (Rohe et al., 2002).

Housing satisfaction is the degree of contentment experienced by an individual or a family member with regard to the current housing situation. Varady & Preiser (1998) defined Housing satisfaction as the "perceived gap between a respondent's needs and aspiration and the reality of the current residential context". The concept of housing satisfaction has been used as a key predictor of an individual's perceptions of general "quality of life" (Djebarni & Al-Abed, 2000). According to Ogu (2002) the concept of housing or residential satisfaction is often employed to evaluate residents' perceptions of and feelings for their housing units and the environment.

Housing satisfaction is influenced by a broad array of objective and subjectively perceived conditions (Theodori, 2001). Habitability of a house is influenced not only by the engineering elements, but also by social, behavioral, cultural, and other elements in the entire societal-environmental system. The house is only one link in a chain of factors that determine people's relative satisfaction with their accommodation. Satisfaction on housing and neighborhood conditions are one of the important indicators that reflect quality of life. These indicators are also important in the process of evaluating housing policy with the objective to increase the quality of housing and neighborhood.

Jerome et al. (1991) in the study "The Maze of Urban Housing Markets : Theory, evidence, and Policy", examined the determinants of housing demands which they described as being influenced by elements outside housing markets and within housing market. The elements outside housing markets include income and preference distributions and prices; of non-housing good, while the element within housing market includes market valuations of substitute submarkets.

Bruin and cook (1997) explored that behavioral characteristic like residential characteristics, safety and security and friendly relationship with their neighborhood pose are the powerful factors of housing satisfaction.

Nayar, K. R. (1997) has correlated the housing amenities to health improvements and examined the conventional idea that health-promoting factors such as housing conditions, availability of drinking water, sanitary facilities, etc, could contribute to health improvement among the population sometimes even more significantly than health services. The study indicates a definite contribution of housing conditions including sanitary facilities in health improvement.

Ukoha, O. (1997) found that the satisfaction is based on the services provided by the construction company. The satisfaction level also depends on some economic factors like economy benefit, improvement in quality of life, planning and environmental issues.

Carolyn, S.T. (1998) suggest that customers' shows their frustration and dissatisfaction and take harsh actions like legal actions

against the developers due to some reasons like take long time for handovering the project, not fulfilled promises and poor services.

Liu (1999) found that both physical and social factors influence the residential satisfaction. A customer satisfaction is mainly depends on cleanliness and maintenance of the flat.

Kundu, A., Bagchi, S. and Kundu, D. (1999) have pointed out that a low figure for the percentage of households having an amenity in a state does not necessarily reflect non-availability of that amenity or the extent of its deprivation, it could be partially attributed to natural, social and cultural factors.

Al-Momani (2000) examined the quality in service provided by the construction company and also the researcher evaluates the service quality by using SERVQUAL gap analysis. He found that the construction company pays little attention to the customer needs like customization and this leads to poor performance of the company.

Holm, M.G. (2000) states that housing satisfaction is majority depends on the construction process. He also examined the difference between the customer satisfaction and the construction company perception and also evaluates the difference between the customers' expectations and the construction company perception.

Djebarni and Al-Abed (2000) found that customers who purchase their flat for low cost are highly dissatisfied with the facilities provided by the construction company. Apartment size is one of the important factors to evaluate the customer satisfaction.

Soetanto (2001) suggest that performance of a construction company should be improved to increase the customer satisfaction level. Satisfactory performance of the company leads to maintain harmonious relationship with the customers’.

Parker and Mathews (2001) states that satisfaction can be measured by determine the relationship between the customer expectations and what they received. This method is widely used to measure the customer satisfaction level.

Maloney (2002) states that customer as an organization that includes the interest of the construction service buyer, potential users and other interest groups.

Elsinga and Hoekstra (2005), by using eight EU countries data from the European Community Household and Panel (ECHP), found that housing quality is an important determinant of housing satisfaction. Their results also show that the housing quality index and the subjective perception of the dwelling size have the largest influence on housing satisfaction.

Discoli, et. al., (2006). Nowadays, cities have become the target of quality of life measurement since they exhibit contemporary culture, ranging from technological development to social progress. Indeed, the process of urban planning and management is aimed at raising quality of life, especially with regard to improvement of facilities and services that fulfil socio-economic needs such as education, health, housing, entertainment, and safety.

Edelman, B. and Mitra, A. (2006) have a different view regarding the availability and accessibility of basic amenities by observing the prevailing conditions of slum areas which revealed a positive relationship between political contact and access to amenities. They also considered that the social capital is effective in generating improved outcome, political contact is merely a transitory respite. Therefore, they have suggested that awareness among the residents has to be created to counter the practice of their being used for voting bank in exchange for short-term gains. The social capital that the low income households possess needs to be nurtured and used in their interest to develop access to basic amenities and improved living conditions.

Shaw, A. (2007) opined that a state's income, is not the only criterion to be considered important in examining basic amenities for even when income is the same, there could be differences in the availability of basic services depending upon the policies of the government and the priority being given to investment by the state government in core urban services and their availability across towns of all sizes. However, the poorer states will need continued assistance from the central government to catch up with their economically well off counterparts.

Bodey, K. and Grace, D. (2007) observed that 'When customers are comfortable dealing with service providers, they are more willing to complain when service failures occur'.

Vera-Toscano, E. and Ateca-Amestoy, V. (2008) conceived housing as one of the largest consumption and investment item of individual's lifetime, and considered it, more than a dwelling unit, which

provides security, privacy, neighborhood and social relations, status, community facilities and services, access to jobs and control over the environment.

Novak, Jeffery Michael (2008) indicates that customer satisfaction is measured by comparing buyers' satisfaction and perception based on their location.

Hall, et.al. (2008) in study entitled "Quality of life in urban neighborhoods in Costa Rica", considered valuation of amenities in urban neighborhoods and satisfaction with both those neighborhoods and life in general. Authors concluded that housing and safety satisfaction represent the key components of life satisfaction.

Nahmens (2009), observed the customer satisfaction with service quality and home-buyer expectations and their perceptions of service quality. The target groups of his study were buyers of single family houses built during calendar year 2001 in five counties in central Florida and data collected on late June 2003 and lasted until August 2003. Under the single family group they have selected randomly 150 samples. Researcher has identified five dimensions of service quality namely appearance, reliability, timeliness, knowledge and empathy. It is observed that the influence of these variables on customer satisfaction with service quality can positively impact home builders through improved reputation and increased local referrals.

Chatterjee, M. (2009) has carried out a study entitled "Perception of Housing Environment among High Rise Dwellers." The study was

aimed at comparing the housing environment perception of the adult inhabitants of high rise and non-high rise households of Kolkata. The findings indicated an unfavorable perception of the housing environment by the residents of high rise buildings irrespective of their genders. Furthermore, there were significant differences between the housing environment perception scores obtained by the male as well as the female residents of both types of buildings.

Mohit, M.A., Ibrahim, M. and Rashid, Y.R. (2010). concluded that Customer's Residential Satisfaction is a feeling of contentment or fulfillment when the customer has ultimately achieved what he has expected in a house; residential satisfaction has been used as a key predictor of an individual's perception of general "quality of life"; residential satisfaction is an ad hoc evaluative measure for judging the success of developments constructed by private and public sectors, and an assessment tool of residents' perceptions of inadequacies in their current housing environment in order to improve the status quo.

Anna M.Santiago(2010) in the article “Low income home ownership: does it necessarily mean sacrificing neighborhood quality to buy a home?” states that low income homebuyers may be forced to buy a home in disadvantaged region. This is a latent problem because buying home in such region may limit appreciation, may reduce the quality of life.

Salfarina, et al., (2011) carried out a study on "Trends, Problems and Needs of Urban Housing in Malaysia". Survey method was used to collect data. The findings of the study show that housing purchasing trend in urban Malaysia is determined by demographic profiles, mainly by

education level, age, gender and income. The period of housing ownership also influenced the socio-cultural interactions and satisfaction of house owners with their neighborhoods. The findings also show that the main concerns for house buyers in urban areas are price and location of the house. Location of houses and distance from work place are also regarded as the main concern. However, respondents are fairly satisfied with religious and socio-cultural facilities in the housing areas and most importantly not many regard ethnicity as an issue in their decision-making, when buying a house.

Jiboye (2011) examined the housing performance in order to provide a rationale for residential quality improvement in Nigeria. The results show that the performance of public housing was significantly determined by the quality of the dwelling units as well as the quality and adequacy of basic facilities like water, roads, drainages and electricity. Other relevant determinants of housing performance identified include; adequacy of natural ventilation and lighting, noise level within neighborhood, privacy level, adequacy of space and neighborhood quality among several others.

Dekker (2011) found that satisfaction level is high for elder customers and customers with high income because customers can customize their apartment based on their income level and experience.

Thomas, et.al., (2011) explained that the satisfaction level of residents (customers) with respect to quality of workmanship and quality of materials in the construction, quality of repair and maintenance works, surrounding environment of the residential estate, performance of the

agencies responsible for estate management, and overall (individual) satisfaction of living in that particular residential estate are some of the factors that are deemed important.

Zainal, N. R., Kaur, G., Ahmad, N. A., and Khalili, J. M. (2012) have enlightened the issue of considering housing condition as a social economic indicator of urban poverty. They examined the relationship between housing conditions and the quality of life of the urban poor in Malaysia and found that there are significant positive relationships between housing conditions, health, safety, and social support which provide empirical evidence of the relationship between housing conditions and quality of life.

Forsythe (2012) opined that in today's rapidly changing world, there is a drastic change in the life style of the people. People prefer to have a comfortable living with modern dressing styles and rich looks, sumptuous food, air-conditioned rooms, luxury cars and homes with all facilities/ amenities. They want to fulfill their life-time ambition of owning a beautiful house with an aesthetical appeal, and they attain the status of "customers" in the context of home-buying once they complete the transaction of purchase or occupy a residential house or apartment as an owner.

Mustafa (2012) suggests that buying behavior model and the gap analysis model are used to calculate the satisfaction level. The author use delivery system as an independent variable and house buyer characteristics as a moderate variable to measure the satisfaction level of the customer.

Fang, Yipping (2012) states that customers who lived in an area for longer period showed more dissatisfaction levels towards their neighborhoods.

Houshyar and Eslamdoust (2013) had assessed Citizens' Satisfaction from the Quality of Residential Spaces Based on Characteristics of Social– Economic in Oshnaviyeh, a city in Iran. The results of study show a satisfactory level of quality residential spaces Oshnaviyeh citizens is having a significant relationship with their social characteristics such as gender education and income.

Sakthivel and Ahamed (2013) in the study entitled " A Study to determine the Home-Buyer's Preferences through Voice of Customer", had developed a theoretical model linking home buyer's preferences and customer satisfaction stating that it will be helpful to the construction industry in order to understand the needs/ expectations of the home-buying customer and ultimately in achieving customer satisfaction.

Melissa Martin (2013) states that two sets of customer satisfaction measures are find from the homebuilding company to evaluate its performance they are future financial performance and association timing between the customers and the company. He founds that timing has a large impact in customer satisfaction measures.

Balathandayutham and Sritharan (2013) presented a research paper on "Detailed Investigation of Residential Satisfaction in Apartment's Management Service". The purpose of study was to investigate the residential satisfaction of apartment management service. Simple random sampling was carried out. Questionnaires were collected from 105

respondents. Data required was collected from apartment residents of Chennai city. Analysis was done through ANOVA. Taking the age factor into consideration, it is proven that below 30 age group respondents are highly satisfied when compared to above 50 age group respondents.

Khan and Tarique (2013) had carried out study on Patterns of Availability of Housing and Household Amenities in Odisha, the study reveals that, barring a few exceptions, the level of availability of housing and household amenities is high in the north-central and south-eastern coastal districts of the state of Odisha, while, it is moderate to low level in the northern, north-western and south-western parts of the state. In other words, as we move away from the coast, towards, the interior part of the state, the accessibility in housing and household amenities showing a decreasing pattern in the state.

Wokekoro and Owei (2014) assessed urban residential quality of life in two neighborhoods from the oldest part of Port Harcourt city. The study set out to ascertain residents' perception of neighborhood attributes, residential quality of life as whole and the variables considered by residents to be the most important to enhance residential quality of life. The study adopted a passive-observational research design. The univariate analytical method was adopted to analyze the data. A key conclusion of the study was that the improvement of neighborhood residential conditions as perceived by the residents was important in raising residential quality of life.

Streimikiene (2014) in his research paper "Quality of Life and Housing", presented the concept of assessment of housing dimension in

the quality of life index and the main indicators relevant to this dimension of quality of life. Author opined that the housing indicators reflecting the quality of life can be assessed by applying quality of housing, quality of housing environment and housing cost burdens indicators. Paper concluded that an ideal set of indicators to measure housing conditions must provide information about the physical characteristics of the dwelling and the broader environmental characteristics of the areas where the dwellings are located.

Mary and Surulivel (2014) carried out a Study on buyer satisfaction in residential apartment with reference to VGN Infra Pvt. Ltd.

The study observes the performance of the construction company and its customer satisfaction. The performance is calculated according to the degree of customer satisfaction as professed by customers themselves. The result of this study discovered that the location and before and after sales services provided by the construction company has a major influence on customer satisfaction. It also covers social aspects like neighborhood stability or social involvement.

Dietz and Haurin (2003) provide a literature review on various important social and economic benefits of homeownership. They highlight fundamental differences in the behavior of homeowners and related agencies, but emphasize the need for further research, using more advanced econometric methods. Overall, however, the limited empirical evidence indicates a positive relationship between homeownership and life satisfaction (Rohe et al., 2002).

Housing satisfaction is the degree of contentment experienced by an individual or a family member with regard to the current housing situation. Varady & Preiser (1998) defined Housing satisfaction as the 'perceived gap between a respondent's needs and aspiration and the reality of the current residential context'. The concept of housing satisfaction has been used as a key predictor of an individual's perceptions of general 'quality of life' (Djebarni & Al-Abed, 2000).

According to Ogu (2002) the concept of housing or residential satisfaction is often employed to evaluate residents' perceptions of and feelings for their housing units and the environment.

Housing satisfaction is influenced by a broad array of objective and subjectively perceived conditions (Theodori, 2001). Habitability of a house is influenced not only by the engineering elements, but also by social, behavioral, cultural, and other elements in the entire societal-environmental system. The house is only one link in a chain of factors that determine people's relative satisfaction with their accommodation. Satisfaction on housing and neighborhood conditions are one of the important indicators that reflect quality of life. These indicators are also important in the process of evaluating housing policy with the objective to increase the quality of housing and neighborhood.

Bruin and cook (1997) explored that behavioral characteristic like residential characteristics, safety and security and friendly relationship with their neighborhood pose are the powerful factors of housing satisfaction.

Housing has been a major concern for all people in the world, and it has been always considered as a basic human need. Housing fulfills physical needs by providing a sense of personal space and privacy. To what extent dwelling unit features, neighborhood features, building quality, services needs and expectations predict the occupants' residential satisfaction, which were classified as the exogenous variables. Determinants of good apartment housing can be measured through the investigation of the satisfaction levels perceived by the apartment's owners. The need for adequate and affordable housing is connected with the physical, psychological, social and managerial aspects. Five dimensions of healthy housing quality are identified, viz., physical, psychological, social, managerial and overall apartment satisfaction. This study employs correlation and multiple linear regression models. Using regression analysis, it is found that price satisfaction is positively and significantly related to comfort, safety, psychological vitality, social identity, managerial maintenance and operation management whereas negatively and significantly related to social integration (such as Physical, Psychological, Social and Managerial) of Large Residential Apartments in Pondicherry, based on owners' perceptions. (Dr. N. Sinouvassane, 3 July 2017)

As it is well known home ownership is not only one of the most important ways of wealth accumulation, but also one of the most important signals of personal success. Moreover, many researchers consider that variables containing information provided by subjective measures, e.g. housing satisfaction cannot be used as indicators of individuals' actions.

The main critique is that what individuals say is not necessarily what individuals do. According to this, the main objective of this study is threefold. Firstly, we provide new evidence on the determinants of housing satisfaction using primary and secondary data. Secondly, we analyze how important is homeownership for housing satisfaction. And thirdly, we test whether housing satisfaction is really triggering housing sector.

We use the predicted values of individuals' housing satisfaction as an explanatory variable in a model estimating the determinants of housing mobility. Following this strategy we do not incur in potential endogenous problems that might arise from directly using self-reported housing satisfaction. Thus it is crucial to correctly predict housing satisfaction, especially given that to our knowledge housing satisfaction as a dependent variable has not received the adequate treatment. One of the advantages of our study is the use of panel data models. These models allow us to control for the presence of specific unobserved individual/household effects –heterogeneity-, which cannot be accounted for by means of cross-section data. Additionally, the analysis we conduct is of significance if we aim at providing a wider perspective of the phenomenon. Given the considerable number of peculiarities in housing markets, we expect to find marked inter-country differences in the attitudes towards homeownership and housing mobility.

The degree to which home owners' needs and aspirations are met by their housing conditions is a concern for housing developers. Measures of housing satisfaction provide necessary information to evaluate the performance and success of the current and future housing projects

(Natham,1995). Thus, the result of this study would assist housing developers (private and Gov.) in understanding and predicting of the overall satisfaction of their housing development projects.

Increasing interest is shown towards the study of how households think of their housing and how it affects their lives. Satisfaction with their housing and neighborhood conditions indicate a high degree of congruence between actual and desired situations. An incongruity between housing needs and aspirations may lead to dissatisfaction.

As defined by Gansetal (2005), positive externalities are benefits that fall on others that are not directly involved in a transaction. Households choose to be homeowners because they see a favorable combination of what is important to them and what they expect as a reward or benefit. Previous studies also found that homeownership creates a positive externality in that homeowners are more likely to improve homeowners' connection to their neighbors (social capital investment). Social ties with neighbors living nearby may mitigate neighborhood instability and promote neighborhood cohesion by encouraging households to stay as they can derive financial and emotional support from its social networks (Kan, 2007). There is little evidence about the relationship between social capital investment and housing satisfaction. Vera-Toscana and Alteca-Amestoy (2008) have shown that homeowners evaluate their housing situation based on social interaction with others in Spain. It is reasonable to assume that social capital investment may enhance the positive effects of homeownership on housing satisfaction. Housing is more than just bricks and mortar and it is the building block of

a community, and the community builds a common stock of social relationships. Homeowners are able to reach a desired social status by communicating with others in the social connection as this can promote self-esteem among homeowners (Rohe and Stegman, 1994).

According to Rohe and Steward (1996), homeowners are generally committed to remaining in a neighborhood for a long time as transaction costs associated with buying and selling houses are relatively high. Buying a house involves a lot of transaction costs such as legal fees, stamp duty and mortgage processing fees, as well as hidden costs such as the time it takes to find the right house. Households choose to be homeowners only when they are reasonably sure that they will not incur such costs again for a long time. As a result, homeownership is often thought to promote the stability in the neighborhood. Furthermore, increased length of tenure in the neighborhood will encourage investment in community by participating in social networks and local improvement organizations. Homeowners will consume the benefits of community over a longer time period when they stay in their communities. Given the reduced mobility that homeowners possessed, it is reasonable to believe that duration of residence is a predictor of housing satisfaction.

Households seem to be willing to pay more to live around homeowners as homeownership appears to increase home maintenance. Rohe and Steward (1996) explained that homeowners are more likely to invest in their property maintenance and improvement at a higher standard as this improvement could be reflected in the form of higher property values. Furthermore, this improvement can be capitalized into the value of their homes at the time of sale. As a result, good property maintenance

will provide positive externalities to others as it may have some positive cumulative influence on the value of all properties in the neighborhood property value.

Owning a house is also proved to be an effective instrument to hedge against inflation as compared to other assets (Fama and Schewert, 1977; Rubens et al., 1989; Bond and Seiler, 1998). There is little empirical evidence to support the claim that property value of homeownership has positive effects on housing satisfaction. However, it is reasonable to assume that housing satisfaction might be expected to rise with higher property value and appreciation.

In order to assess the relationship between housing satisfaction and homeownership, several determinants of housing satisfaction are used as control variables in this study. Most empirical studies have identified a number of important determinants of housing satisfaction, such as housing and neighborhood characteristics and the socio-economic status of households. Housing and neighborhood characteristics can be measured through objective and subjective attributes of housing (Francescato et al., 1989; Wiedemann and Anderson, 1985). Objective measures refer to the evaluation of the physical characteristics, facilities, services and environment, whereas subjective measures refer to perception, emotions, attitudes, and also intention towards the housing attributes (Mohitetal., 2009).

This study will have integrated both objective and subjective attributes of housing for the assessment of housing satisfaction. Savasdosara et.al.,(1989) found that friendly and helpful neighbors, public

facilities such as recreational facilities and parking space, environmental conditions such as cleanliness, and housing and location characteristics are important considerations to the formation of housing satisfaction that housing and locational variables have significant effects on housing satisfaction . It will also show that the housing quality index and the subjective perception of the dwelling size have the largest influence on housing satisfaction. Salleh (2008) found that the dwelling unit factor (area of the dining, kitchen and living room), the neighborhood factor relating to educational facilities, the neighborhood factor relating to security infrastructure (police, parking lot, fire brigade, facilities for the handicapped) and the neighborhood factor relating to central facilities (telephone, market, public transport) are the most important determinant of housing satisfaction among residents in private housing.

In addition to housing and neighborhood determinants, households' socio-demographic will be taken into consideration in evaluating housing satisfaction. Empirical studies will have to identify a number of important households' socio-demographic determinants of housing satisfaction, such as age, educational attainment, income, and life cycle changes (Lu, 1999; Amole, 2009).

2.5.3. Models of Residential Satisfaction.

There have been many attempts to develop a theoretical model of community satisfaction (Allen, 1991; Amerigo & Aragonés, 1997). However, most have been criticised for lacking a theoretical basis, while others have examined the characteristics of the environment (physical and social) and the user (cognitive and behavioural) but have not organised

these variables into a model to examine the relationships among them (Adriaanse, 2007; Allen, 1991; Amerigo & Aragonés, 1997). Traditionally, community satisfaction research has utilised either the belief affect model (Allport, 1935; Fishbein & Ajzen, 1975) or the functional approach model (Katz, 1960).

The belief-affect model indicates that when people develop an overall attitude about an object, they combine their set of beliefs about that object (Allport, 1935; Fishbein & Ajzen, 1975). The functional approach model (Katz, 1960) points to attitudes as being expressions of one's values, and in terms of community satisfaction refers to an expression of one's identification with their neighborhood. These classic models, however, have been challenged in that others have queried the extent to which people make judgments that involve such complete or careful analyses of information. It has been shown (Moreland & Zajonc, 1977; Wilson, 1979) that people evaluate an object quicker than they evaluate factual beliefs, and processing of these occurs in separate sections of the cognitive system (Miller, Tsemberis, Malia, & Grega, 1980).

Additionally, when assessing the predictors of satisfaction within the belief-affect model, a variety of neighborhood aspects should be examined or else the aspects determined to be important to overall satisfaction, depends more on the researcher's selection criteria, rather than the respondent's beliefs (Miller et al., 1980). Despite criticisms of the belief-affect model, Miller et al. (1980) examined this model with two contemporary satisfaction models, the availability approach and the

commitment approach to determine the most appropriate model of community satisfaction.

The availability approach attempts to counter the criticisms of the belief-affect model by proposing that satisfaction is based on general beliefs about the community as well as evaluations of the neighborhood's actual qualities (Miller et al., 1980). A person's beliefs about the community can influence the interpretation of available objective information. The difference between the availability approach and the belief affect approach are the criteria by which the elements of a judgment are chosen (Miller et al., 1980). With the belief-affect approach, a person samples a broad range of qualities of the object to maximise accuracy while with the availability approach judgments are chosen for their availability in memory rather than for their ability to provide an accurate model of the full range of neighborhood qualities (Miller et al., 1980).

The commitment approach determines that one's satisfaction with a community depends on their financial or emotional ties to it (Miller et al., 1980). The more emotional or financial ties, such as through community involvement and homeownership, a person has to the community, the higher their community satisfaction (Miller et al., 1980). A person's satisfaction with community services and facilities also increases their commitment to that community. This model indicates that processes operate differently than the other two models propose (Miller et al., 1980). Rather than indicating that people make assessment depending on the degree of their involvement in a community, it indicates that assessments are also made via one's satisfaction with elements of the community (Miller et al., 1980).

Based on the finding by Miller et al. (1980) the different models are not equally useful to predict satisfaction. While the belief-affect approach accounted for variance in residential satisfaction, there were difficulties operationalizing this approach. For example, it was difficult to indicate which neighborhood qualities create satisfaction as only a single factor solution was generated when factor analysis was conducted.

However, this was evidence that a single dimension characterizes evaluative thought about communities (Miller et al., 1980). In regards to the commitment approach, the variables were not strongly related to residential satisfaction (Miller et al., 1980), a weakness that is not reflected in the plethora of research conducted in this area. The availability approach, like the belief-affect approach, had variables that correlated significantly with satisfaction, and the variance within this model was identified as being comparable with the belief-affect model (Miller et al., 1980). There was a substantive overlap between these two approaches; however, the availability approach made a significant independent contribution to explaining variance in satisfaction and is more effectively operationalized than the belief-affect approach (Miller et al., 1980). A disadvantage of the availability approach, however, is that there is no empirical rule for selecting predictors of satisfaction (Miller et al., 1980). As a result of Miller et al., (1980) research, it is suggested that there is not one dominant approach to replace the others therefore, researchers need to recognise that there are several approaches that can assist to understand community satisfaction (Miller et al., 1980).

Since Miller et al., (1980) research, other models have been developed to help explain community satisfaction. Amerigo and Aragonés (1990) attempted to develop a theoretical model by examining how a person interacts with their environment. This model demonstrates the elements composed by a resident to form residential satisfaction, and shows residential satisfaction to be a precursor to satisfaction with life in general. Objective attributes of the environment such as access to local services and housing quality, contribute to residential satisfaction via three potential pathways (Amerigo & Aragonés, 1990). The first pathway shows a link between objective attributes of residential environment and residential satisfaction which indicate its direct role in forming residential satisfaction. The second pathway shows that objective attributes become subjective after they have been evaluated by the person which gives rise to a degree of satisfaction (Amerigo & Aragonés, 1997). Hence, the subjective attributes (i.e., one's perception of public safety or perception of access to amenities) are influenced by personal characteristics such as a person's socio demographic background, age and income level and the perception of their real and ideal residential environment (Amerigo & Aragonés, 1997).

If a person experiences residential satisfaction they then work at maintaining or increasing congruence with that environment (Amerigo & Aragonés, 1997). The third pathway shows the formation of residential satisfaction when objective attributes are filtered through personal characteristics of the individual. The degree to which the environment meets the needs associated with these personal characteristics leads to the direct calculation of residential satisfaction. (Aydoğan, 2005)

Customer satisfaction in housing can have societal implications far beyond those of standard consumer product experiences. Housing satisfaction is an important component of overall life satisfaction. Also, housing satisfaction has long been a major research topic in such disciplines as sociology, psychology, planning, civil engineering, marketing and geography . (Lu, Y. ,Seock, 2008)

Satisfaction is an overall customer attitude towards products, or is an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfillment of some need, goal or desire . Furthermore, especially in the service field, customer satisfaction is typically defined as an overall assessment of the performance of various attributes that constitute a service (Fonseca, 2009).

Residents' satisfaction in the model of Djebarni and Al-Abed (2000) measured by tow variables (housing environment and housing quality). Housing environment items are dwelling unit (number of bedrooms, size, beauty etc.), neighborhood (neighbour, roads, lighting, and etc.), and community services (drainage system, fire protection, and transportation). Housing quality items are dwelling interior schedule, dwelling exterior schedule, and dwelling environment schedule.

Customer satisfaction is an important factor in the development of the construction process and customer relationship. As construction companies face-increasing competition, greater attention continues to be placed on customer relationships and satisfied customers. Customer satisfaction enables construction companies to differentiate themselves from their competitors and create sustainable advantage. The primary

purpose of buildings is to provide occupants with conducive, safe, comfortable, healthy and secured indoor environment to carry out different kinds of activities ranging from work, study, leisure and family life to social interactions. In order to achieve this purpose, buildings are designed, planned, constructed and managed based on standards and specifications established by governments, professionals and experts, who are supposed to have adequate knowledge of user's needs and expectations.

Customer companies in their efforts to improve quality in the competitive market place. It can be seen as either a goal or a measurement tool in the development of construction quality. It is also apparent that high customer satisfaction leads to the strengthening of the relationship between a customer and a company, and this deep sense of collaboration has been found to be profitable. Satisfaction studies cut across a wide range of disciplines in the management and social sciences as well as the built environment. Generally speaking, satisfaction is a subjective evaluation of the performance of products or services in meeting the needs and expectations of users or customers. It compares the benefits or values users or customers derive to that expected when a product or service is consumed. In a nutshell, satisfaction is a measure of the difference between the actual and expected performance of products or services in meeting users' needs and expectations from the users' or consumers' perspective during or after a consumption experience. Buildings like any other products are designed and constructed with lots of expectations by clients, professionals, users and the community. To clients, buildings require huge capital investment and are expected to bring returns on

investment, while to professionals (e.g. architects, builders and engineers) buildings are products of their creativity and imaginative thinking. On the part of users and community, one crucial expectation is that buildings will meet their needs and aspirations by supporting their daily activities and ultimately improve the aesthetic quality of the built environment.

Mishra (2009) suggested objective of the study was to know the satisfaction level of customer residing in various townships or cooperative societies and to find out the expectations & need of the customers from the builder. The main factors of this study is purchasing residential property depend upon quality and name of developer for this company should have strong goodwill in market.

Yim et.al., (2010) they evaluated residential satisfaction, the effect in corporation performance based on a previous research of the influence on consumers' behavior by consumers' recognition of the quality of residential environment of apartment house. This study provides a hint to improve homebuilders' management scope and to find alternative policies of the government by verifying evaluate the dynamics of customer satisfaction and quality. An empirical analysis is conducted to explore customer satisfaction in construction as perceived by two customer groups: public and private customers. Results indicate that the need for contractors to improve performance related mostly to quality assurance, handover procedures and material. Public customers were found to be less satisfied with the contractor's performance than private customers.

Karna, S., Sorvala, V.M. and Junnonen, J.M. (2009) in the study "Classifying and clustering construction projects by customer satisfaction",

observed that improving the quality of construction projects from customer's perspective has gained increasing interest and customer satisfaction has been identified as one of the major challenges in the whole construction industry.

Cao , D., Li, Z. and Ramani, K. (2010) observed that home-buying customers actually influence the demand of a construction project. In order to satisfy the home-buyer's preferences, the builder (or promoter) has to prepare him from the learned lessons of the past projects or understand the customer's needs or expectations through a scientific feedback system. But the main problem is that the feedback of one client cannot be directly used for another client, as the main preference of one buyer may not be the preference of another. Customers definitely differ in their preferences and buying behavior relative to the same product.

2.5.4. Determinants of Residential Satisfaction

Residential satisfaction is measured from various quality attributes of the apartment and some socio demographic situation of the owner. Based on the literature quality attributes includes physical features of the apartment, neighborhood qualities, location benefits, environment factors, social factors, lifestyle amenities offered by the apartment. In the literature, housing characteristics, neighborhood characteristics, and household characteristics have been viewed as the essential elements of the residential satisfaction (Lu 1999; Amerigo and Aragonés 1997; Galster and Hesser 1981). Housing characteristics include the size and age of houses (Fang 2006; Levy-Leboyer and Ratiu 1993; Rodgers 1980), interior and proximal exterior environments (Phillips, Siu, and Yeh 2005), and other aspects of housing, e.g., building neighborhood social, economic, and physical features are major components

of residential satisfaction (Sirgy and Cornwell 2002). The social features most often regarded as important include interaction with neighbors, attachment of the communities, perceptions of privacy and safety at home, and others (Bruin and Cook 1997; Feldman 1996; Weidemann and Anderson 1982).

Neighborhood socio-economic status and home values, and community cost of living are factors used to measure the economic features of neighborhood (Lu 1999; Galster and Hesser 1981). Physical features are other infrastructural and equipment settings, and these regard the quality of environment of the community, such as lighting of streets (Dahmann 1983), crowding and noise level (Gomez-Jacinto and Hombrados-Mendieta 2002; Bonnes, Bonaiuto and Ercolani 1991), and green area or open space (Turner 2005; Bender and others 1997). In addition, empirical studies have identified a number of important factors belonging to household characteristics, such as age, income, duration of residence, and ownership of house (Lu 1999; Spear 1974). But there is little agreement on the effect of these factors on residential satisfaction. Lu (1999) argues that the inconsistent or conflicting results of research may be due to different definitions of key variables as well as to inappropriate statistical techniques employed quality and disrepair (Paris and Kangari 2005).

2.6. Housing Quality

The definition for housing quality varies widely based on peoples' perspectives. A good habitat requires enough space, separate rooms for different purposes and enough privacy, good climatic conditions such as enough sunlight, free passing of air and availability of water nearby, good

drainage and sanitary facilities. This list will extend and vary with respect to demography. Planners and designers definitely need inputs in this area. Effects of globalization and urbanization considerably influence living patterns. This in turn brings about changes in perceptions and preferences. These changes will appear in the housing scenario and it is essential that planners incorporate these changes during initial planning of any housing project. (Thampuran, June 2011)

Research on the subject of housing quality has been conducted since the mid-20th century. The oldest available research dates from the mid-1940s and was conducted in residential areas in the United States. In 1946, Solow] measured the value of housing quality using a survey that comprised two distinct parts. The first covered the appraisal of structures and apartments, and the second the evaluation of environmental factors. Two years later, Twichell developed a method for measuring housing quality. It introduced an overcrowding factor into housing quality assessment and was focused on assessing the physical neighborhood environment . In 1970, Kain and Quigley estimated the market value of specific housing aspects. They measured the qualitative and quantitative dimensions of housing quality on several levels: apartment units, structure, parcels, and micro-neighborhoods.

To this day, quality assessment research has remained in a similar framework, but the number of evaluated indicators has increased. Housing quality assessments are carried out in order to maximize design quality, ensure the healthy housing quality of apartments, assess apartment safety, ensure high indoor thermal and acoustic comfort and determine which spatial quality factors are affected by renovations, and so on.

Due to the large number of foreign studies on housing quality, this research narrowed its focus mostly to the ones conducted over the last 10 years. Existing research can be divided into two categories: research dealing with tenant satisfaction with the conditions in the apartment (health conditions, security, indoor thermal and acoustic comfort, and atmosphere and comfort and research that measures total satisfaction with housing through the assessment of apartments, buildings, and immediate surroundings.

Housing is one of the key issues that normally forefront the scene when considering challenges of urbanization and urban growth. It is a fundamental aspect of human life and a major factor in delivering healthy and attractive communities as it serves to define the life space of individuals. Increasing interest is now shown towards the study of how people think of their housing and how it affects their lives. Therefore, measuring the housing quality has become an important tool to assess the efficiency of housing provision and the extent to which people are satisfied with it.

The conclusions of these studies were made on the basis of conducted tenant surveys. The surveys measured customer satisfaction using a number of criteria relevant to the assessment of specific housing characteristics. As a special category, research dealing with the definition of housing characteristics essential to future tenants (apartment buyers) should be singled out.

In 2015, Mridha measured the overall residential satisfaction of dwellers living in developer-built medium-rise apartment buildings . Sima

(2015) made a comparative study of respondents' impressions of and preferences for different apartment layouts in order to optimize the floor plan design of medium-sized apartments. James measured the long-term impact of structural features and physical amenities on the residential satisfaction of renters in multifamily housing . In 2016 in New Zealand, Bennett *et al.* conducted a field test of a rental housing warrant of fitness to assess its practicality and utility for improving housing quality in terms of health and safety .In China, Shin *et al.* investigated changes in public perception of an apartment through an analysis of apartment characteristics that appeared on television and in newspaper advertisements.

2.6.1. Physical attributes /features

Based on an analysis of the existing research, some of the studies were singled out and used to identify specific housing quality criteria. The first item is quality of physical factors or attributes of the apartment or houses : It can be measured by the size of the apartment (Seira,2010) , the design of the apartment (Marino and Ferdinando, 2015) Aesthetic or the beauty or the view of the apartment(Muyiwa Lawrence Akinluyi,2015), the quality of finishing (Rafeekamol,2016) and some other parameters.

Physical quality refers to the space and living environment of the apartment including number of bedroom, number of bathroom, quality of kitchen, availability of balcony (Assethomes, 2015).

In the past, housing was defined as the physical space in which people resided and carried out their everyday lives. Consequently, housing policies at the start of urbanization were focused on meeting demand through "increase in quantity" of housing. However, housing has risen in

significance from a simple residential space to a driver of change in quality of life. Thus, improvement of residential quality has become a major goal of urban policy and planning in the modern age (Xiaoyu *et al.*, 2007). This approach is meaningful in that citizens' satisfaction with life is closely linked to residential satisfaction. (Mikyong.H.A, September 2016).

Physical factors are those related to the physical characteristics of a dwelling and its surrounding environment, whereas social factors concern the personal characteristics of the people who reside in these dwellings as well as their feelings and perceptions of the environment. Lifestyle qualities are the add on benefits offered by the apartment to the owners. .

Regarding the physical factors, empirical studies have shown that housing satisfaction is associated with an improvement of security control (Mohit *et al.*, 2010); dwelling design and privacy (Day, 2000); unit size and length of stay (Fang, 2006); property value, housing adequacy and available housing space (Vera-Toscano and Ateca-Amestoy, 2008); adaptability and flexibility of spaces (Altas and Ozsoy, 1998); and satisfaction with the facilities of surrounding environment (Berkoz *et al.*, 2009). All of these factors emphasises the importance of the physical attributes of the constructed environment on residents' satisfaction. In the other words, a dwelling can provide more satisfaction to its residents if, besides being available, it meets the residents' requirements.

2.6.2. Locational Attributes/ Factors

An apartment quality is mostly associated with the location and neighborhood. The quality of a apartment can't be separated from the area, location and the neighborhood environment. Location as well as neighborhood advantages are added value to the apartment quality .

location of housing is an essential factor contributing to housing satisfaction among households. Favorable location attributes generally refer to accessibility to the central business district, local amenities such as shopping centers, schools and transportation centers (Gibson, 2007; Potter & Cantarero, 2006; Tan, 2011). Thus, housing development should strive to provide quality self-containing housing within a functional residential development in the location where households can find a place within the neighborhood to work and to fulfill recreational needs so as to respond to the satisfaction level of the residents.

“A good neighbor is better than a brother far off,” an old Korean saying, represents the importance of close relationships and high neighborhood satisfaction. The modern city provides better sanitation (sewers and trash collection), better infrastructure (roads and utilities), and better services (police, fire, and medical) on average than ancient cities did but, at the same time, some argue that it has also diminished residents' sense of neighborhood and community. The neighborhood remains the most basic environmental unit in which our social lives occur, and it necessarily affects the quality of life of residents. (Misun Hur, September 2008)

Neighborhood and community attributes, such as residential density measured in different ways, size of the community, the location of the residence in a metropolitan area, and neighborhood socioeconomic characteristics are also incorporated into the modeling of residential satisfaction (Campbell et al. 1976)

For many, residential satisfaction is strongly related to location, public transport, services, and familiarity with area, social networks and cost of living. As people age, isolation becomes a growing problem and access and mobility become increasingly critical. Affordable and reliable transportation options are essential for older people. Public transport allows elderly to live independently, access medical and social services, contact society, friends and relatives and provides them with the feeling of belonging to the community. Therefore residential areas need good public transport for residential satisfaction for the older people. Good and accessible shopping centers provide older adults with a place to walk, to meet others and to stay active.

2.6.3. Social Attributes/ Factors

House is known to be the social need of a human being. To be social animal, to gain social recognition, to be a part of society one really need a house. The primary need of a shelter is to provide safety and security for their life. Thus social attributes contribute towards the quality of housing. Social quality includes safety and security(Piyush, Bhatt, Pitroda, 2016) convenience (Rathode piyush,2016).community living Community involvement provides opportunities for people to socialise and form bonds, which in turn increases a sense of place (Hay, 1998). Sense of

place is enhanced because residents perceive the community as having a social environment, which results in them being more likely to engage in community. It has also been found that residents with children are more likely to participate in the community and form social ties, as they have stronger connections to their community through their children (Mesch & Manor, 1998; Riger & Lavrakas, 1981). As a result, residents with children experience more sense of place than residents without children (Riger & Lavrakas, 1981).

Within communities, developing friendship networks through community involvement increases a person's level of social support (Lewicka, 2010; Mesch & Manor, 1998). This external social support can include emotional support such as advice about problems and companionship, as well as instrumental support such as lending and borrowing household items (Mesch & Manor, 1998; Semenza & March, 2009). The existence of social support enables a person to feel supported socially and emotionally by other community members and that they belong in the community, resulting in higher levels of sense of place (Hay, 1998a, 1998b; Lewicka, 2010; Mesch & Manor, 1998)

Social Environment of a housing area influences the level of residential satisfaction of residents through the following items: level of noise, security, crime, accidents, relations with neighbors, and relationship with the community. Residents' satisfaction rating with the social environment (Table 6) shows that residents are slightly satisfied with this component. While the residents' are slightly satisfied with community relations, neighbour relations, noise level and accidents, they have expressed dissatisfaction with the level of security and fear of crime in

their housing areas. The analysis of Pearson correlation (r) shows that except the noise level in which the correlation value is low, the rest of the social environment variables have significantly high correlations with the component. (Mohammad Abdul Mohit a, 2015).

Regarding social factors, studies have shown that housing satisfaction is associated with the personality characteristics of the residents (Bruin and Cook, 1997), perceived quality and physical comfort (Turkoglu,1997), residents' relationship with management staff (James *et al.*, 2009), home ownership (Elsinga and Hoekstra, 2005; Rent and Rent, 1978) and aggregate income (Frank and Enkawa, 2008). These factors emphasise the influence that residents' personality has on their satisfaction. Thus, one may conclude that, if these factors affect housing satisfaction, the provision of housing that fulfils everyone's needs is impossible. This may be true, but most researchers assume that there are similarities between people's perceptions of the environment. These similarities allow researchers to draw generalization about the influence of these factors on satisfaction, yet at the same time be aware that two people will not be exactly similar.

2.6.4. Functional Attributes/ Factors

The functional attributes of an apartment covers the basic necessities or amenities as well as functional necessities . Availability of sufficient and uninterrupted water, gas and electricity supply, proper waste disposal system, sufficient parking facilities, quality lift service, etc. This would include amenities such as green spaces, environmental health or pollution, upkeep and cleanliness, pace of life, as well as the social milieu. (shneider, 2013).

Housing environment will determine the quality and satisfaction of life in apartments. The environmental factors like surroundings, crime, noise, atmosphere, background etc are specially considered by an individual while making an apartment purchase decision.(neelam, 2014). The overall satisfaction of apartment life will depends upon the quality of functional environment..(Ram,2014)

2.6.5. Lifestyle Attributes/ Factors

Lifestyle attributes are the amenities or the value added services offered by the builders along with the apartment such as Children play area, Common facility Hall, Health clubs, swimming pools, Availability of Domestic helper, CCTV facilities, Crush,etc .Since majority of the apartments are owned by IT professionals and other working class people it is highly recommended while constructing an apartment (Savitha manoharan, DLF Developers)

Based on theories in environmental psychology (ABT Associates 2006; Staples et al. 1999), desirable amenities usually include green space, newer buildings, availability of community recreational facilities, proximity to water bodies, and others. Undesirable neighborhood amenities include, but are not limited to, the following: litter, noise, crime, junk and trash accumulation, and undesirable land uses (such as proximity to factories, highways, or airports). Undesirable amenities tend to contribute to lower levels of neighborhood satisfaction from residents (Galster and Hesser 1981; Miller et al., 1980).

2.7. Housing Satisfaction/ Residential satisfaction

Housing satisfaction is one of the main triggering events in housing sector. Housing satisfaction depends on the current conditions of inhabitants and their housing expectations (Campbell et al., 1976; Wiesenfeld, 1992). Housing need and demand shape expectations (Bardo and Hughey, 1984). When expectations are reduced, housing satisfaction increases. In the literature, many researchers in different fields have examined the personal, physical, economic, social, institutional and managerial dimensions of housing satisfaction.

The interest in the relationship between housing satisfaction and housing mobility can be explained not only by the fact that this variable is crucial in determining housing sector, but also by the conjecture that this variable is capturing dimensions of the housing situation that cannot be captured by other more objective variables. For instance, Forsythe (2012) opined that in today's rapidly changing world; there is a drastic change in the life style of the people. People prefer to have a comfortable living with modern dressing styles and rich looks, sumptuous food, air-conditioned rooms, luxury cars and homes with all facilities/ amenities.

They want to fulfill their lifetime ambition of owning a beautiful house with an aesthetical appeal, and they attain the status of "customers" in the context of home-buying once they complete the transaction of purchase or occupy a residential house or apartment as an owner. Following this conceptualization we consider housing satisfaction a good predictor of housing sector and of changes in housing demand. If we assume that housing satisfaction is important for explaining objective

individual's economic behavior, then a more accurate analysis of the determinants of housing satisfaction and its importance on housing mobility is needed.

The research of residential satisfaction and environmental quality has become one of the important objectives of urban planning. Since the 1970s researchers have increasingly examined the relationship between resident satisfaction and physical and social aspects of the residential environments. Some of these studies are theoretical, while others are practical. In the theoretical approach, satisfaction studies have been concerned with developing the RS model, which intends to find out the process of RS. User satisfaction has been discussed in various empirical studies which examine personal characteristics (cognitive, affective or behavioral) or physical and social features of residential environment (Amerigo, 2002).

Residential satisfaction is a complex, multidimensional concept that is conceptualized in many different ways but is generally analyzed by assessing satisfaction with dwelling design (i.e. internal and exterior design features, age, size, structure, functionality, aesthetic feelings (Lu 1999, Phillips et al. 2005), satisfaction with neighborhood (i.e. services, facilities, attractiveness, green space, safety) (Sirgy and Cornwell 2002, Lovejoy et al., 2010), and satisfaction with neighbors (i.e. social interactions) (Amerigo and Aragonés 1997, Adriaanse 2007).

The concept of residential satisfaction comes from the idea that satisfaction levels reflect the gap between one's reality and expectations (Campbell, Converse, & Rodgers, 1976). Such conceptualization of

satisfaction essentially treats satisfaction as a function of how much (and how good) one can acquire and how close his or her perceived situation is to his or her aspired-to level. This definition helps explain both the existence of a strong correlation between one's material wellbeing and his or her perceived feelings and the lack of absolute correspondence between the two. This concept has been introduced into residential studies to measure the degree to which residential environment can meet the needs of its inhabitants and further the attainment of their goals (Francescato, 2002; Galster & Hesser, 1981; Giles-Corti & Donovan, 2002).

The theoretical underpinnings on residential satisfaction are based upon the idea that residential satisfaction measures the difference between households' actual and desired/aspired housing and neighborhood situations (Galster, 1987). Households usually make their judgments about residential conditions based on their needs and aspirations. Satisfaction with households' housing conditions indicates the absence of any complaints and a high degree of congruence between actual and desired situations. On the other hand, incongruence between housing needs and aspirations may lead to dissatisfaction.

2.8. Perceived Value

Perceived value refers to the value consumers received from the value they paid. (Park, J., Robertson, R. & Wu, C, 2006)" Consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (Zeithaml 1988, p.14). Wang et al. (2004) suggest that perceived customer value is made up of 4 dimensions: perceived sacrifices, functional value, emotional value, and social value

(Figure 2).Based on the theory by Sheth et al., (1991), Sweeney and Soutar (2001) developed the so-called "PERVAL" model. In this model, two aspects of functional value (quality and price) were differentiated. Perceived value was measured using the cost in terms of money and time.

Perceived value is widely defined as the evolution of the desirability of the product (services) on the basis of the perceived worthiness of the tradeoff between the product's costs and benefits (Tzeng, 2011). For example, A definition Netemeyer (2004) views perceived value of cost as the customers overall assessment of the utility of the product based on perception of what is received (e.g., quality, consumer satisfaction) and what is given (e.g., price and non-monetary costs). While such trade-offs are most commonly represented by a ratio or comparison between quality and price (Cravens t al., 1988: Monroe & Drew, 1991: Sweeney& Soutar, 2001).

Perceived quality and perceived performance are the two terms synonymously used in the consumer satisfaction literature which means the consumer's global judgment of the overall excellence of a product. It is not generally value or price related. However, it is intuitive, and it has been shown that consumer satisfaction depends on value to some extent which in turn depends on price. Adding the value component to explain consumer satisfaction framework to increase the comparability of the results across products with different prices as well as across consumers with different incomes would be a suitable way of explaining the concept of consumer satisfaction (Fornell et at.,1996, Lancaster, 1971).

Perceived value was important to the success of organizations because it was a proxy of competitive success (Buzzell & Gale, 1987). With the multitude of clubs in the United States, members many times define clubs by their perceived value proposition. Bojanic (1996) described three value propositions: (1) comparable quality at a comparable price, (2) superior quality at superior price, (3) inferior quality at a discounted price. These value alternatives may be defined clubs as they define themselves by both dues, joining fees, and quality in a competitive marketplace. The delivery of perceived value becomes a competitive strategic decision.

Perceived value has been defined in various ways by researchers and focuses usually on the relationship between price, quality, tangible, and intangible benefits. Zeithaml (1988) defined consumer value as “the consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given” (p.14). Monroe (1990) suggested that value was the tradeoff between quality and benefits received and the price paid. . Zeithaml (1988, p.12) discussed PEVA as an overall assessment of the usefulness of the product, which is based on the consumer's perception of what is received and what is given. The findings were: 1) value is low price;2) value is whatever I want in a product;3) value is the quality I get for the price I pay; 4) value is what I get for what I give.

Quality attributes are directly influence owners satisfaction in self occupied apartments. However the presence of perceived value may change the level of satisfaction to an extent since house is a financial asset

requires huge amount of investment. Along with quality attributes the perceived value may contribute satisfaction. Basically higher the perceived value better will be the satisfaction. Here in the present study perceived value act as a mediating variable between the perceived quality attributes and residential satisfaction of apartment owners.

2.9. Gaps in the Literature

Studies on housing sectors are sufficient in national and international scenario, but few in state level, especially in Kerala. Most of the housing studies are focused on ordinary housing problems but there are limited studies on residential apartments. Even though in India some studies are existing in residential apartment , very few in Kerala. Majority of the studies on residential satisfaction have been focussed on the evaluation of traditional homes. There have only been limited studies examining the experience of residents in private residential apartments in a developing country. Hence, this study will contribute to the existing knowledge of factors influencing residential satisfaction in the context of apartments in India.

Furthermore, factors influencing housing satisfaction has been studied in most of the literature. The relation between such factors and satisfaction and the mediating role of perceived value are also included in the present study.

2.10. Conceptual Focus of the Study

Having offered the existing and relevant literature on the core and underpinning construct that go in to the making of the thematic content of the proposed study, an attempt is now directed towards outlining a

conceptual framework that provides the focus and structure to the empirical validation visualized in the present research. The literature presents enough insights to suggest and substantiate an integrated model to proposed linkages among the apartment quality attributes , Perceived Value for the apartment and Owners Satisfaction.

Residential apartments are now became the house substitute in Kerala housing scenario. Urban Kerala is presently experiencing a vertical growth in the house construction sector. Buying a piece of land and constructing a house became a dream in urban area. For make the dream home reality, people of Kerala is having lots of housing solutions like buying a piece of land and constructing a house by themselves or buying a freestanding house or buying an apartment. The first choices requires sufficient time, money and supervision to complete. The second choice is also very expensive since urban land is very costly added with the cost of house with sufficient facilities. The best and simplest, cheapest and wisest decision is to go for apartments. Thus according to CREDAI, 2012 the only possible solution for shelter in urban Kerala is to go for an apartment with sufficient facilities.

The present study is focusing on the apartment buyers satisfaction aspects. The study try to finds out various factors influencing residential satisfaction first. Then to find out the relationship between these factors called as attributes and residential satisfaction. The present study also try to identify the mediating role of Perceived value between various quality attributes and Satisfaction.

2.10.1 Variables under Study

From the existing literature researcher identified five major factors as house quality attributes as independent factors for the study. They are physical attributes, location attributes, social attributes, functional attributes and lifestyle attributes.

2.10.2. Linkages between Independent and Dependent Variables

For a complete analysis of residential satisfaction there are five components of housing environment are measured. These are - physical features, housing support services, public facilities, social environment, and neighborhood facilities. (Mohammad Abdul Mohit a, 2015)

Regarding the physical factors, empirical studies have shown that housing satisfaction is associated with an improvement of aesthetics (Mohit *et al.*, 2010); dwelling design and privacy (Day, 2000); unit size and length of stay (Fang, 2006); property value, housing adequacy and available housing space (Vera-Toscano and Ateca-Amestoy, 2008); adaptability and flexibility of spaces (Altas and Ozsoy, 1998); and satisfaction with the facilities of surrounding environment (Berkoz *et al.*, 2009). All of these factors emphasises the importance of the physical attributes of the constructed environment on residents' satisfaction. In the other words, a dwelling can provide more satisfaction to its residents if, besides being available, it meets the residents' requirements.

Location of housing is an essential factor contributing to housing satisfaction among households. Favorable locational attributes generally refer to accessibility to the central business district, local amenities such as shopping centers, schools and transportation centers (Gibson, 2007; Potter

& Cantarero, 2006; Tan, 2011). Thus, housing development should strive to provide quality self-containing housing within a functional residential development in the location where households can find a place within the neighborhood to work and to fulfill recreational needs so as to respond to the satisfaction level of the residents.

Previous research has identified a number of factors that contribute to residential Satisfaction. Some studies have shown the significance of the lifestyle environment, such as parks, amenities and housing (Braubach, 2007; Chapman & Lombard, 2006; da Luz Reis & Lay, 2010; James et al., 2009; Potter & Cantarero, 2006; Uzzell, Pol, &Badenas, 2002), while others have found social factors such as belongingness and social support (Adriaanse, 2007; Braubach, 2007; Tartaglia, 2006; Wood, Frank, & Giles- Corti, 2010; Young, Russell, & Powers, 2004) or personal factors such as length or residence and homeownership (Obst & Stafurik, 2010; Ross, 2002) to be important.

Social Environment of a housing area influences the level of residential satisfaction of residents through the following items: level of noise, security, crime, accidents, relations with neighbors, and relationship with the community. Residents' satisfaction rating with the social environment (Table 6) shows that residents are slightly satisfied with this component. While the residents' are slightly satisfied with community relations, neighborhood relations, noise level and accidents, they have expressed dissatisfaction with the level of security and fear of crime in their housing areas. The analysis of Pearson correlation (r) shows that except the noise level in which the correlation value is low, the rest of the

social environment variables have significantly high correlations with the component. (Mohammad Abdul Mohit a, 2015)

Housing environment will determine the quality and satisfaction of life in apartments. The functional attributes factors like uninterrupted supply of power, water and gas, parking facility, lift service, waste disposal system etc are specially considered by an individual while making an apartment purchase decision.(neelam, 2014). The overall satisfaction of apartment life will depends upon the quality of housing environment. Environment may be of internal and external environment.(Ram,2014)

Neighborhood satisfaction is defined as a perceived status of comfort or discomfort of the residents within a neighborhood. Residents' satisfaction with the built environment is measured by resident characteristics, housing attributes, and neighborhood and community characteristics (Campbell et al. 1976). Models of residential satisfaction often incorporate an individual's subjective perception of satisfaction and objective housing and neighborhood attributes which might be related to satisfaction. The theoretical framework of neighborhood satisfaction has changed little since its initial conceptualization in the 1960s. (Li, 2012)

One of the most discussed topics in the housing literature is housing satisfaction. Consequently, an extensive body of literature exists on the factors that are associated with housing satisfaction. These factors can be broadly categorized as social lifestyle environmental and physical. Physical factors are those related to the physical characteristics of a dwelling and its surrounding environment, whereas

social factors concern the personal characteristics of the people who reside in these dwellings as well as their feelings and perceptions of the environment. Lifestyle qualities are the add on benefits offered by the apartment to the owners.

The above literature shows that the five housing attributes are directly relates to residential satisfaction, thus the hypothesis developed are

H1: Physical attributes has a significant impact on housing satisfaction

H2: location attributes has a significant impact on housing satisfaction

H3: Social attributes has a significant impact on housing satisfaction

H4: Functional attributes has a significant impact on housing satisfaction

H5: lifestyle attributes has a significant impact on housing satisfaction

2.10.3. Perceived Value as a Mediating Variable

Even though the above quality attributes are contributing towards the residential satisfaction, the value perceived by an apartment owner may mediate the relationship between these variables and satisfaction.

Zeithmel(1988,p14) has suggested that perceived value can be regarded as a “consumer’s overall assessment of the utility of a product based on perception of what is received and what is given. Perceived value is the worth that a product or service has in the mind of the consumer.

Customer perceived value based on the product's theoretical ability to fulfill a need and provide satisfaction, also referred as utility. (Gilsman & Merran, 1980).

According to economic theory and practical experience, the importance of the perceived value of products and services grows during periods of economic recession. In such circumstances, customers are more sensitive to "value-for-money" deals (Ariston, Lawney, 2002). Thus perceived value in the housing sector is highly meaningful since house is one of the high involvement financial decisions. Based on the relevance of perceived value the following hypotheses are formulated under study

H6: The relation between physical attributes and satisfaction is mediated by perceived value.

H7: The relation between location attributes and satisfaction is mediated by perceived value.

H8: The relation between social attributes and satisfaction is mediated by perceived value .

H9: The relation between functional attributes and satisfaction is mediated by perceived value .

H10: The relation between lifestyle attributes and satisfaction is mediated by perceived value.

H11: Perceived value has a positive impact on the satisfaction of the apartment owners.

Other Personal and Apartment Specific Hypotheses

H12 : There is a significant difference in residential satisfaction with respect to age

H13: There is a significant difference in residential satisfaction with respect to gender

H 14: There is a significant difference in residential satisfaction with respect to marital status

H15: There is a significant difference in residential satisfaction with respect to occupation

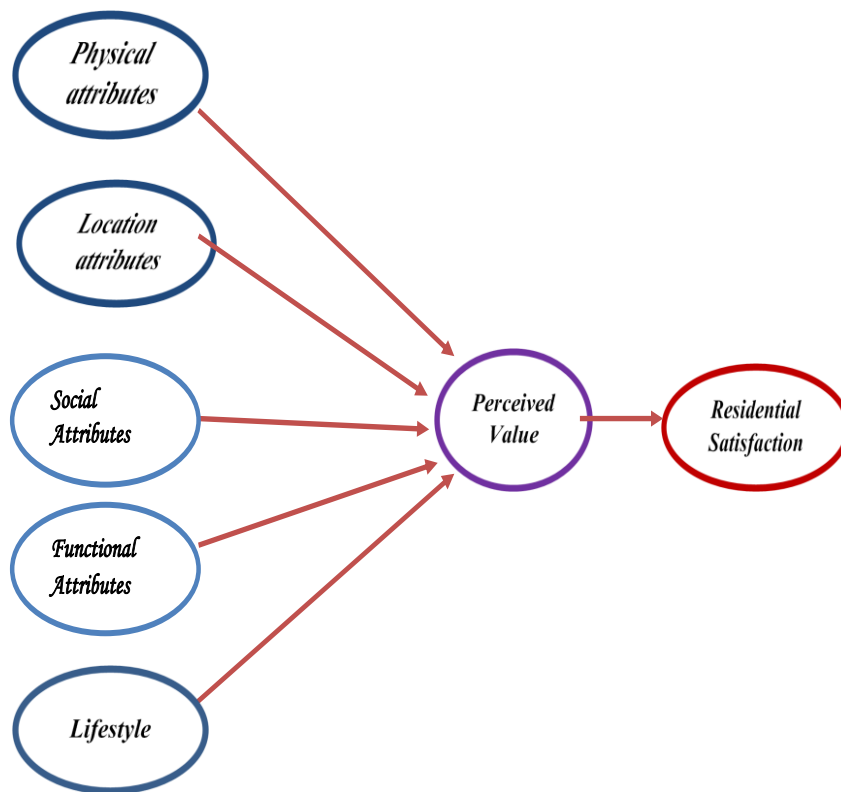
H16: There is a significant difference in residential satisfaction with respect to Income

H 17: There is a significant difference in residential satisfaction with respect to type of apartment

H 18: There is a significant difference in residential satisfaction with respect to place of apartment

2.11. Conceptual Framework of the Study

The model (figure 2.1) to be tested proposes that the house quality attributes (physical, location, social, environment, lifestyle) are directly influence the residential satisfaction in apartments. The role perceived value between these attributes and satisfaction is also stated in the framework

Figure No. 2.1 Conceptual Framework of the study

Based on the literature review, the variable that are significantly impacting the residential satisfaction were identified. From the observation made from the critical analysis of review of literature, the

conceptual framework was developed as shown in Figure 2.1. The independent variables are physical attributes, location attributes, social attributes, functional attributes and lifestyle attributes. The dependent variable is residential satisfaction of self-occupied apartments. Perceived value act as a mediating factor between the above five independent variable and the dependent variable residential satisfaction.

2.12. Importance of the Study

The State of Kerala is in the forefront among other states with respect to high rate of density of population and social economical and cultural developments as influenced the growth of housing in the state and which in turn depends on the housing problem. Though Kerala is a small State, it is seriously affected mainly by the housing problems. Though Kerala is not industrially so advanced, there is good flow of money from Gulf and other countries which has stimulated the demand for housing in a big way in recent years. Many other factors such as density of population, developed road transport, high standard of living and number of financial institution stimulate the increase of housing in Kerala.

There are two types of housing agencies in India and also the State of Kerala. The Government's role will have to be the improvement of slums and provision of housing to the weaker section of the society and encouragement and support of housing finance institution that promotes housing in a constructive way. Thus the importance of housing industry in nation's economy is amply highlighted. Moreover, a study of this kind is relevant as far as the services and finance to housing area and its role in the economy of the state are concerned. In terms of employment, direct

employment of the housing agencies, it accounts for Housing in India varies significantly and can reflect the socio-economic mix of its vast population. In the last decade, there has been tremendous growth in the country's housing sector, along with demographic changes, rise in income, growth in the number of nuclear families, and urbanisation.(KPMG,2016)

High urbanisation rate, coupled with high rate of migration from rural areas is stressing the limited urban infrastructure; sub-optimal usage of urban land (low FAR/FSI) has resulted in raising the cost of land in urban area (National Housing Board).

2.13. Chapter Summary

This chapter discussed in detailed about the various reviews of literature on housing scenario covering Indian housing sector, housing in Kerala, housing apartments, its quality attributes, perceived value and satisfaction of apartment owners .This chapter reviewed five major housing attributes contributing towards satisfaction of apartment owners. Reviews on perceived value, consumer satisfaction and residential/housing satisfaction also presented in the above chapter. Major research in the above domains are quoted and explained in this chapter. This chapter also contribute towards the theoretical foundation of the study.



Chapter 3

RESEARCH AND METHODOLOGY

RESEARCH AND METHODOLOGY

- 3.1. *Rationale of the study*
- 3.2. *Statement of the problem*
- 3.3. *Objectives of the research*
- 3.4. *Variables in the study*
- 3.5. *Hypotheses*
- 3.6. *Methodology*
- 3.7. *Data collection*
- 3.8. *Statistical analysis & validation*
- 3.9. *Scope of the study*
- 3.10 *Chapter summary*

This chapter presents the different aspects of the research methodology used for the study which include rationale for the study, statement of the problem, objectives of the study, variables of the study, Hypotheses to be tested, research design, sampling design, tools for data collection and statistical analysis.

3.1 Rationale of the Study

Housing being one of the three basic needs of life always remains in the top priorities of any person, society and economy. As a human being, an individual needs has own space and privacy, which can be provided by ownership of house. Thus housing deserves significant attention in the context of developing policies and strategies for human development. Kerala one of the smaller state has to accommodate about 2542 persons in a square kilometer in urban area. Migration from rural as well as from other states add fuel to this problem. Unavailability of land, sky rocketing of existing land price, increasing construction, material and labour cost makes the urban housing scenario more worse. Now the urban Kerala is experiencing a rapid shift from housing units to apartments.

3.2. Statement of the Problem

Housing deserves significant attention in the context of developing policies and strategies for human development. A developing nation like India has to focus more on housing sector to cater to the housing needs of burgeoning population and to accelerate the economic growth. The success of the housing sector will be measured in terms of quality and quantity. Mass housing schemes and collective apartments are help to solve quantity problems in Indian housing. To know whether these apartments are enhancing the quality aspect is highly relevant. The concept of housing satisfaction has been used as a key predictor of an individual's perception of general quality of life

Real estate development corporations are concerned about housing quality and customer satisfaction. Customer satisfaction studies can help companies determine the key factors which influence user satisfaction. These studies' results can be used enhance the quality of housing and its environment, promote the housing market, improve the quality of life and promote suggestions to policy makers. Residential satisfaction after house purchase is an important managerial and theoretical issue for scholars in marketing and economic psychology (Muter et al. 2014), and it is equally surprising that there are hardly few investigations involving a house purchase in apartment sector in Indian context (Tan,2014),

3.3 Objectives of the Research

General

To explain and ascertain owner's satisfaction in self-occupied apartments in terms of quality attributes and perceived value.

Specific objectives

1. To understand the relationship between quality attributes(Physical, location, social, functional, lifestyle) and owner's satisfaction in self-occupied apartments in Kerala
2. To establish the linkage between quality attributes (Physical, location, social, functional , lifestyle) and perceived value
3. To statistically test a model linking quality attributes (Physical, location, social, functional, lifestyle) perceived value and Satisfaction.

4. To study the mediating role of perceived value in the relation between residential quality attributes and perceived value
5. To study whether residential satisfaction vary based on age, gender, marital status, income and occupation.
6. To study whether residential satisfaction vary based on type and place of apartment.

3.4 Variables in the Study

From the conceptual framework, following are the variables under study:

1. Residential Satisfaction (Dependent variable)

The word Residential satisfaction is interchangeably used with 'Housing satisfaction' in this study. It means the total satisfaction derived out of apartments and its surrounding environment.

2. Perceived Value (Mediating variable)

Perceived value shows the value received by an apartment owners in return to what he/she is paid for it.

3. Physical attributes

Physical attributes are the physical qualities of an apartment including size of the apartment, view, amenities etc

4. Location attributes

Location attributes are interchangeably used as locational attribute in this study. It means the locational quality or advantages received by an apartment owner.

5. Social attribute

Social attributes are the social benefits received in terms of safety, security, privacy, community living and neighborhood relations

6. Functional attributes

Functional attributes means the functional qualities of an apartment including supply of water, power and gas, Insurance, good waste management system, repairs and maintenance.

7. Lifestyle attributes

Lifestyle attributes are the value added benefits offered by the apartment to the owners to cope up with the present life style. It includes availability of children play area, health club swimming pool, 24 hour CCTV surveillance, domestic helper, parking facilities etc.

Age, gender, marital status, income, occupation, type of apartment, place of apartment also taken as independent variables. Residential satisfaction was considered as the major dependent. Besides testing the conceptual model, the relationship of residential satisfaction with variables like age, gender, marital status, income, occupation, type of apartment, place of apartment were also tested.

3.5 Hypotheses

Based on the conceptual framework and literature review following hypotheses were developed.

H1: Physical attributes has a significant impact on residential satisfaction

- H2: Location attributes has a significant impact on residential satisfaction
- H3: Social attributes has a significant impact on residential satisfaction
- H4: Functional attributes has a significant impact on residential satisfaction
- H5: Lifestyle attributes has a significant impact on residential satisfaction
- H6: The relation between physical attributes and satisfaction is mediated by perceived value.
- H7: The relation between location attributes and satisfaction is mediated by perceived value.
- H8: The relation between social attributes and satisfaction is mediated by perceived value .
- H9: The relation between functional attributes and satisfaction is mediated by perceive value .
- H10: The relation between lifestyle attributes and satisfaction is mediated by perceived value .
- H11: Perceived value has a positive impact on the satisfaction of the apartment owners.
- H12 : There is a significant difference in residential satisfaction with respect to age
- H13: There is a significant difference in residential satisfaction with respect to gender
- H 14: There is a significant difference in residential satisfaction with respect to marital status

H15: There is a significant difference in residential satisfaction with respect to occupation

H16: There is a significant difference in residential satisfaction with respect to Income

H 17: There is a significant difference in residential satisfaction with respect to type of apartment

H 18: There is a significant difference in residential satisfaction with respect to place of apartment.

3.6 Methodology

The objectives of the study were finalized after the review of literature and hypotheses were formulated accordingly. The methodology followed for carrying out the study is detailed in this section. It includes specifying the research design, sample design, sample selection procedure, data analysis strategy and data collection tool and instrument is given in this section

3.7 Research Design

The research is both descriptive and explanatory. A descriptive study used to “make descriptions of the phenomena or the characteristics associated with subject population: who, what, when, where, and how of a topic”(coper and schindler, 2003), The methods typically used in a descriptive research could be surveys, panels, observations, or secondary data analyzed in a quantitative manner . In this study, both primary data and secondary data were used as a part of descriptive research. Statistics on various available data regarding self-occupied residential apartments, its quality attributes and various scales of the different concepts were

utilized in order to measure impact of the variables under study. The descriptive part deals with the identification of various factors influencing satisfaction of owner occupied residential apartments in Kerala.

Table No 3.1. Number of apartments and apartment units in Kerala

Table. 6(b) Number of apartments in Kerala according to average number of apartment units				
Sl:No	Name of District	No. of Apartments	No. of apartment units	No. of units/house per Apartments
1	Thiruvananthapuram	178	6745	38
2	Kollam	4	73	18
3	Pathanamthitta	11	250	23
4	Alappuzha	2	70	35
5	Kottayam	35	1163	33
6	Idukki	0	0	0
7	Ernakulam	554	18859	34
8	Thrissur	119	4071	34
9	Palakkad	14	449	32
10	Malappuram	1	23	23
11	Kozhikode	83	2420	29
12	Wayanad	0	0	0
13	Kannur	26	1101	42
14	Kasaragod	5	110	22
	KERALA	1032	35334	34
Source	Executive Summary , survey conducted by Town and Country Planning Department ,Kerala,2011			

3.7.1. Sample Design

Since the source list (sampling frame) for the population is available for the present study, it was decided to proceed with a probability sampling method for this study.

3.7.2. Sampling Method

Multistage random sampling technique was used for this study. It is probabilistic sampling method which is suitable when the source list or the sample frame of the population is available .

3.7.3 Unit of Observation/Sampling Unit

The unit of observation is residential apartment owners who are residing in their own apartment at least for one year.

3.7.4 Sample Size: 370

3.7.5 Sample Selection Procedure

For selecting samples, the researcher identified the latest published list of apartments from the Kerala Urban Development Survey and identified the districts having highest number of residential apartments. From this researcher identified and then selected the 4 major district having highest number of apartments. They are Ernakulum, Trivandrum, Thrissur and Calicut respectively. It also gives a clear representation of districts from South, North and Central Kerala. After identifying the district, the next step is to find out the top rated apartments of each district with the help of latest CREDAI rating scores. Thus top 10 apartments were selected from each district in the second stage of sample selection. After selecting the top 10 apartment, researcher approached every selected apartments and identified and prepared the list of the owners occupied apartments and from that final sample is selected on random basis.

3.7.6. Sampling Design

Total 35334 apartments units are in Kerala

- 21414 owner occupied apartment unit.
- Sample size is 370
- Sample Area- from 4 major districts where 90% of the total apartments situated. Based on their proportion of population sample is also taken proportionately. (Ernakulum, Trivandrum, Thrissur and Calicut).
- From Each district 10 major apartments of builders were selected with the help of CREDAI rating.
- From each builder collected the list of owner occupied apartments .
- From that list random selection is made

3.7.7. Data Collection

Before data collection, the researcher approached obtained and prior permission from the apartment association to collect data from the owners. Firstly, the president of residence association was approached with letter of introduction. The purpose of the survey and the study objectives were briefly explained to him. The list of owner occupied apartments is collected from the president and distributed the questionnaires to owners who are available there. The data collection is confined to the period June 2015 to January 2016. Questionnaires were collected within one or two days and in some cases a reminder was made. Owners who were busy and unable to complete in a reasonable time were

excluded. A total of 450 questionnaires were distributed, of which 370 were received back usable for data analysis.

3.7.8. Instrument for Data Collection

Questionnaire was used to collect responses from the sample.

With an extensive literature review, researcher identified various factors that contribute to housing quality. Then questionnaire was developed through a pilot survey done among the designers/builders, academicians and practitioners in the housing industry in the state of Kerala, India. The two aspects of validity namely content validity, and face validity of the instrument were assured in the initial stages of questionnaire development. For content validity, the questionnaire was developed on the basis of a detailed review and analysis of the prescriptive, conceptual, practitioner and empirical literature, so as to ensure the content validity. For face validity, the questionnaire was supplied to three groups of experts covering different areas namely, academicians (three), designers/builders (six) and practitioners in the housing field (three). Each of them was briefed about the purpose of the study and its scope. These experts then scrutinized the questionnaire and gave their comments regarding the relevance and contents of the questionnaire. They were requested to critically examine the questionnaire, and to give objective feedback and suggestions with regard to comprehensiveness/coverage, redundancy level, consistency and the number of factors. Based on the above, the relevance of each factor in the questionnaire were ranked on a five point lickert's scale.

The final instrument has 43 items. These were arranged in 2 sections. The questionnaire begins with request and instruction to the respondents to fill in the questionnaire. The first section consisted of questions related to age, gender, qualification, income, type of apartment, type of family, and various other socio-demographic related questions.. The second section consisted of scales related to the variables under study. The final instrument had four scales to measure the major variables of study. Housing/Residential satisfaction with 3 questions, Perceived Value with (4 items), Physical attributes (7items) , Social Attributes (5items), Locational attributes (7 items), followed by Functional attributes (5 items) and Lifestyle attributes (5 items). All the questions were on a 5 point lickerts scale ranging from “Strongly disagree” to “Strongly agree”

3.7.9 Data Analysis Strategy

At the time of collecting the data itself the strategy for analyzing the data was fixed. First of all, the statistical procedures were performed using statistical software packages SPSS 21. Descriptive statistics, correlation matrix and Factor analysis were done using SPSS. Exploratory factor analysis was done to identify and understand the factor structure of the variables under study. The conceptual model was tested using Structural Equation Modeling based on Partial Least Squares in WARP PLS 4.0.

3.8. Statistical Analysis & Validation

The Statistical package SPSS 21 was used for coding, editing and basic analysis of the data . Descriptive inferential statistical tools were

used to obtain different measures, Coefficients and Test results. Exploratory Factor Analysis was performed on the pilot data to understand the significant item underlying there in the measures of construct. Statistical tests including Frequencies, Linear Regression and Multiple Regression Analysis were used for hypotheses testing. The evaluation of Measurement Model and Structural Model were tested with Structural Equation Modeling (SEM) using Warp –PLS 5.0. The measurement model was used to test the validity and reliability of the measures of construct and the structural model was tested for the model fit and the Hypotheses testing. Model estimation delivers empirical measures of the relationship between the indicators and the construct (measurement models) as well as between the constructs (Structural model). The Confirmatory Factor Analysis was conducted together with the Structural Equation Modelling. The present study used the following statistical tools for data analysis and validation.

3.8.1. Exploratory Factor Analysis

Exploratory Factor Analysis can be useful for establishing construct validity. In the present study, since the scales used for measuring the constructs are adaptations of the existing scales, face validity and content validity were assumed as established. However, the factor structure or dimensionality of the measures is assessed because of its vital importance in the model specification in structural equation modelling and the conceptual framework. In addition the Career re-entry Factors scale is being used in Indian context for the first time, thus dimensionality of all measures were analysed initially by Exploratory Factor Analysis. The present study used Principal Component Analysis (PCA) for extracting the

factors. The Varimax procedures in orthogonal approach maximize the sum of variances of the required loadings of the factor matrix and provide a clearest separation of the factors (Hair et al., 2009). The Varimax rotation was used in the present study. Varimax rotation was performed on the extracted factor structure for a simplified and easily interpretable factor solution. The items that load higher than 0.5 were retained while low loading items were eliminated. The loadings of all indicators should be 0.5 or above on their hypothesized component to be considered practically significant (Hair et al., 2009).

3.9. Scope of the Study

Scope of the study is defined by the following elements:

3.9.1. Population:

Sampling frame for the population is existing. (survey report of Town and Country Planning Department on Private Residential apartments in Kerala, 2011-12). And the unit of observation for this study is owner occupied residential apartments in Kerala.

3.9.2. Place of the Study:

The area of study is Kerala State. From Kerala leading districts are s selected were the majority of the apartments are situated. Based on this Ernakulam district , Trivandrum district ,Thrissur district and Calicut district were the selected since 90% of the apartments in Kerala are situated at these 4 districts. It can be also considered as the representation of South, Central and North Zones of Kerala.

3.9.3. Data Source:

In order to achieve the stated objectives, the researcher utilized primary data and secondary data. Primary data was collected from the owner occupied residential apartments in Kerala using structured questionnaire and secondary data were collected from various books, journals and survey reports of Town and Country planning department, Kerala. Various digital data base of Emerald, Proquest, Jstor, Sage, Science Direct etc are also utilized for the study.

3.9.4. Period of data collection.

The data was collected during the period June 2015 to January 2016

3.10. Chapter Summary

This chapter covered the major aspects of research methodology used in the study. Rationale of the study and research Objectives are explained in detail. Conceptual framework of the study, Hypotheses, variables, research design, sampling design, data collection, instrument for data collection etc. were also discussed. Statistical analysis and validation as well as scope of the study is also included in this chapter.



Chapter **4****DATA COLLECTION AND SAMPLE PROFILE****DATA COLLECTION AND SAMPLE PROFILE**

- 4.1 *Data Collection Records*
- 4.2 *Sample Profile*
- 4.3 *Socio-Demographic Profile Of The Respondents*
- 4.4 *Reliability and Factor Analysis*
- 4.5 *Descriptive Statistics*
- 4.6 *Normality of the data*
- 4.7 *Correlation Analysis*
- 4.8 *Chapter Summary*

This chapter depicts records of data collection, profile of the sample and the socio-demographic profile of the respondents in detail. This chapter also discusses about the reliability analysis, factor analysis and descriptive statistics of the variables. Thus this chapter deals with the primary analysis of final data collected.

4.1 Data Collection Records

Out of 450 questionnaires distributed, 392 questionnaires were collected back .After completing the initial screening, the incomplete and inadequate questionnaires were rejected. The data set was entered in to

SPSS for further processing .The data set was tested for outliers through bootstrapping which showed that there were 22 responses that cannot be used for the study .Thus, the usable responses finally available for analysis came to 370 responses which was sufficient to ensure data adequacy in the study.

4.1.1. Data Collection Administration

First of all,the researcher collected list of CREDAI rated builders from the selected four districts. From this list, researcher identified top builders and after selecting the builders , the list of owner occupied apartments are collected from each such apartments. Then the final sample selection is started on a random basis from the list of owner occupied or self occupied residential apartment owners of each such apartments. The filled in Questionnaires were collected back in the same day or in the very next day and in some cases a reminder was made and those who were busy and unable to complete in a reasonable time were excluded .

4.2 Sample Profile

Table 4.1 Sample profile

District	No of Sample	Percentage
Ernakulam	260	70%
Tiruvanathapuram	50	14%
Thrissur	35	9%
Kozhikode	25	7%
Total	370	100

Sample profile is designed based on the percentage of apartments existing in each district. According to the source list around seventy percentage of the total apartments in Kerala are situated in Ernakulam district. So around seventy percentage of the sample is selected from Ernakulam district. The same procedure is followed for the other leading districts too.

4.3 Socio-Demographic Profile of the Respondents

Profile of the respondents according to the demographic characteristics such as age, gender, location, marital status, occupation and income of the respondents are discussed under this section.

4.3.1 Age Profile of Respondents

Table 4.2. Age Profile

Sl.No	Age class	Frequency	Percentage
1	Below 25yrs	22	6%
2	25yrs to 40 yrs	190	51%
3	40yrs to 55 yrs	96	26%
4	Above 55yrs	62	17%
	Total	370	100

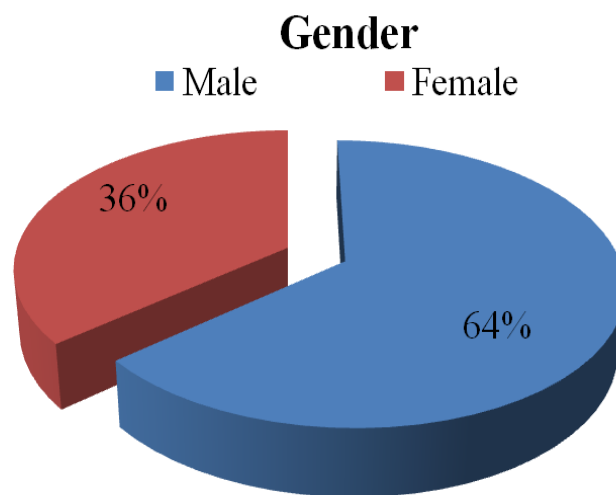
Here, Age is classified into four categories. According to this classification, Majority of the respondents comes under age group of 25-40 years, ie 51% of the respondents comes under this age group. 26% of respondents lies between 40-55 age group, 17% of the respondents are at above 55 age group and only 6% in the age group of below 25 years .

4.3.2 Gender Profile of Respondents

Table 4.3 Classification on the basis of Gender

Sl.No	Gender	Frequency	Percentage
1	Male	237	64%
2	Female	133	34%

Figure 4.1 Gender



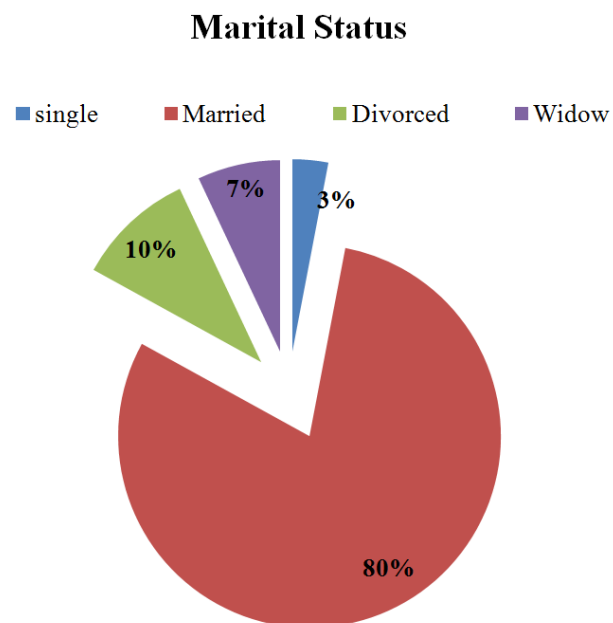
Gender is an important demographic variable. Here the data shows that about 64% of the apartment owners are male category and the remaining 36% is female category .

4.3.3 Marital Status of Respondents

Table No 4.4 Marital Status of Respondents

Sl.No	Marital Status	Frequency	Percentage
1	Married	296	80%
2	Single	11	3%
3	Widow	26	7%
4	Divorced	37	10%
	Total	370	100

Figure 4.2 Marital Status of the Apartment Owners



The marital status of the respondents are given in the diagram (4.2) . The Most of the respondents are married that is about 80% and 10% of the respondents are divorced and 7% are widow and only 3 percentage of the respondents are unmarried .

4.3.4 Location of Respondents

The respondents are classified into two based on the location. On the basis of location apartment owners are divided as urban category and rural category.

Table No 4.5 Location of Respondent

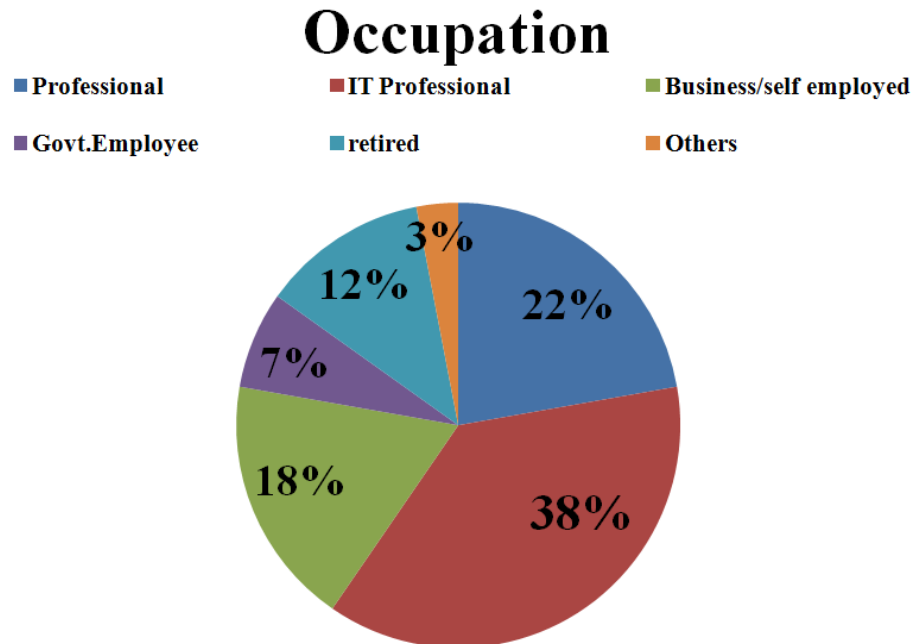
Sl.No	Location	Frequency	Percentage
1	Urban	275	74
2	Rural	95	26
	Total	370	100

Among the apartment owners majority of the respondents (74%) are coming under the catogory of urban area , and the remaining 26% the apartment owners are coming under the category of rural area .

4.3.5. Occupation of the Respondents

The respondents are classified into six categories like professionals, IT professional, business/self-employed, government employee, retired and others.

Figure 4.3 Occupation of Apartment Owners



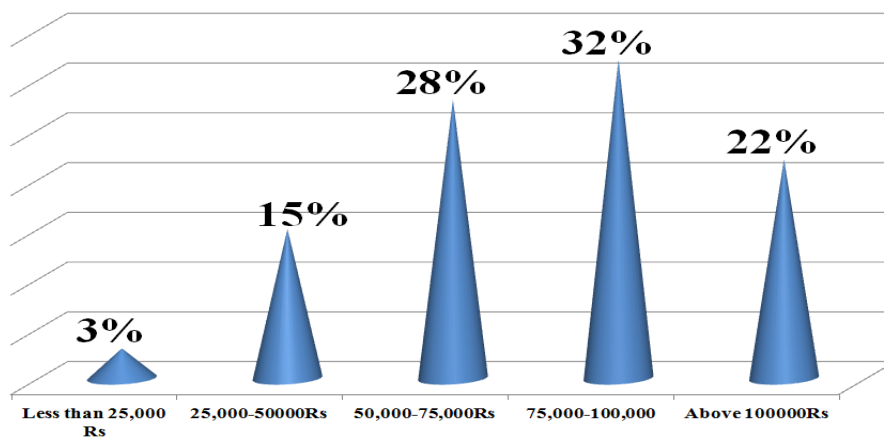
Among the apartment owners, majority of the respondents (38%) are IT Professionals and followed by professionals with 22%, which means around 60% of the apartment owners are Professionals. The remaining details shows that respondents belongs to business/ self-employment sector is having 18%, retired (12%), government employees(7%), and others (3%)

4.3.6. Income of Apartment Owners

The respondents are classified according to their earnings or monthly income. Since the majority of the respondents are above the age

of 25, almost all are earning members. The respondents are classified under five heads, respondents having monthly income below 25,000, 25,000 to 50,000, 50,000 to 75,000, 75,000 to 1,00,000 and above 1,00,000.

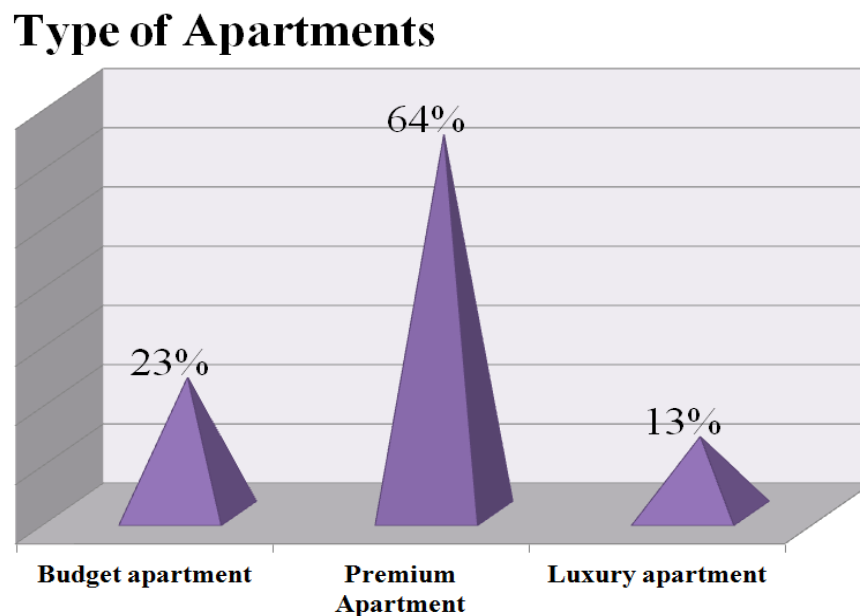
Figure 4.4 Incomes of Apartment Owners



Among the apartment owners majority of them are falls under the income category of 75,000 to 1,00,000 (32%), followed by category of 50,000 to 75,000 (28%), then above 100,000 (22%), 25,000-50,000 (15%) and below 25,000 Rs (3%)

4.3.7 .Types of Apartment

Here the apartment owners are classified into three different heads based on the type of apartment they purchased. Apartments are classified into three, budget apartments, premium apartments and luxury apartments .

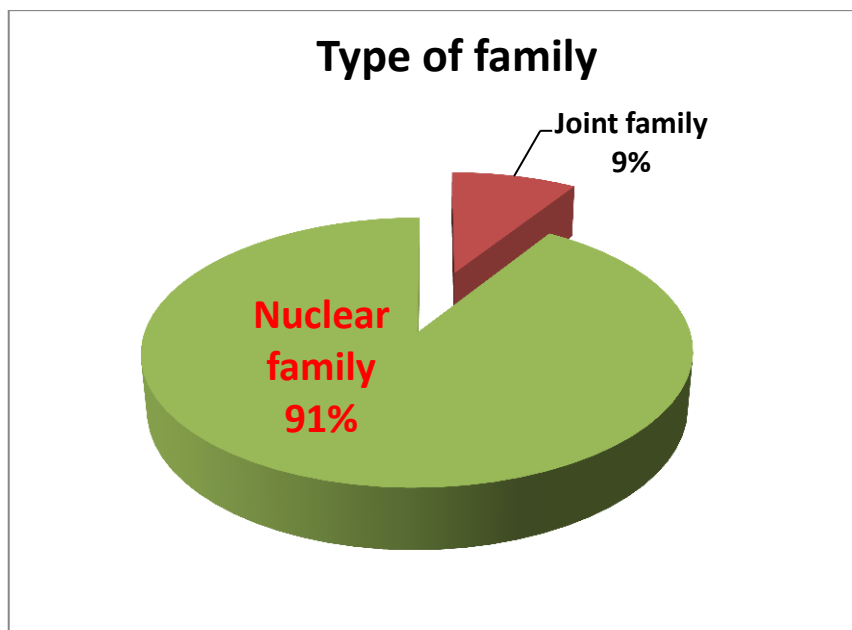
Figure 4.5 Type of Apartment

Based on the response majority of the apartment owners are residing in premium apartments ie about 64% of the apartment owners are having premium apartments followed by budget apartments(23%), and luxury apartment(13%).

4.3.8 Type of family

The respondents are classified into two based on the type of family. The two categories are joint family and nuclear family.

Figure 4.6 Family Type of Apartment owners



Majority of the respondents are having nuclear family (91%) and only 9% of the respondents are having joint family.

These are the important socio-demographic profile of owner occupied residential apartments in Kerala. Before going into the analysis of hypothesis, the reliability as well as factor analysis to be conducted.

4.4 Reliability and Factor Analysis

It is mandatory for a measurement instrument to have good reliability both the composite reliability and Cronbach's alpha coefficients should be equal to or greater than 0.7. The reliability analysis by internal consistency method was conducted for various housing quality attributes. Some of the items were deleted so as to enhance the reliability. The final cronbach's alpha of dependent and independent variables as is listed below.

4.4.1. Physical Attributes

i. Reliability

Reliability analysis by internal consistency method was conducted for Physical attributes scale. The scale had 7 items. The reliability analysis with Cronbach's alpha revealed the entire item-total correlation is above acceptable minimum. The analysis shows a Cronbach;s alpha of 0.926, which confirmed that all the item-total correlation is acceptable.

ii. Factor Analysis

Explanatory factor analysis using principal component analysis with Varimax rotation of 8 items was conducted for factor extraction of work factors. KMO and Bartlett's Test of Sphericity for physical attributes were performed for the scale items. The following table shows the result of both the analysis.

Table 4.6: Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of sphericity for physical attributes

	0.928	
Bartlett's Test of Sphericity	Approx. Chi-Square	1504.164
	Df	66
	Sig.	.000

From the above table we can see that the KMO measure is 0.928, which is above the obligatory minimum of 0.5, hence sampling adequacy is well confirmed. Bartlett's Test of Sphericity is significant ($p < 0.01$) at 1504.16, therefore the stability of the dataset for factor analysis is confirmed.

The Principal Component Analysis with Varimax Rotation resulted in the extraction of one factor. Factor loadings of 0.5 or above were taken as significant loadings. The factor structure explains 58.539 % variance for physical attributes. Thus the percentage of variance explained by the factor structure is acceptable.

4.4.2 Location Attributes

i. Reliability

Reliability analysis by internal consistency method was conducted for location attributes scale. The scale had 7 items initially. The reliability analysis with Cronbach's alpha revealed the entire item-total correlation is above the acceptable minimum. The analysis shows a Cronbach's alpha of 0.880, which confirmed that all the item-total correlation is acceptable.

ii. Factor Analysis

Principal Component Analysis(PCA) with Varimax rotation of 7 items was performed. KMO and Bartlett's Test of Sphericity for location attributes were performed for the scale items. The following table presents the result of both the analysis.

Table 4.7 : Kaiser-kMeyer- Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity for Location Factors

KMO	0.893	
Bartlett's Test of Sphericity	Approx. Chi-Square	688.44
	Df	25
	Sig.	.000

The above table shows that the KMO measure is 0.893, which is well above the obligatory minimum of 0.5, hence sampling adequacy is confirmed. Bartlett's Test of Sphericity is significant ($p < 0.01$) at 688.44, therefore the stability of this dataset for factor analysis is confirmed.

The principal component analysis with Varimax rotation resulted in the extraction of one factor. Factor loadings of 0.5 or above were taken as significant loadings. The factor structure explains 61.473% variance for Location attributes. Thus the percentage of variance explained by the factor structure is acceptable

4.4.3 Social Attributes

i. Reliability

Reliability analysis by internal consistency method was conducted for social factors scale. The scale had 5 items. The reliability analysis with

Cronbach's alpha revealed the entire item-total correlation is above the acceptable minimum. The analysis yields a Cronbach's alpha of 0.841, which confirmed that all the item-total correlation is acceptable.

ii. Factor Analysis

Principal Component Analysis (PCA) with Varimax rotation of 5 items were conducted. KMO and Bartlett's Test of Sphericity for social factors were performed for the scale items. The following table presents the result of both the analysis.

Table 4.8 : Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity for Social attributes

KMO	0.952	
Bartlett's Test of Sphericity	Approx. Chi-Square	875.66
	Df	10
	Sig.	.000

The above table depicts that the KMO measure is 0.952, which is well above the obligatory minimum of 0.5, hence sampling adequacy is confirmed. Bartlett's Test of Sphericity is significant ($p < 0.01$) at 875.66, therefore the stability of this dataset for factor analysis is confirmed.

The principal component analysis with Varimax rotation resulted in the extraction of one factor. Factor loadings of 0.5 or above were taken as significant loadings. The factor structure explains 63.479% variance for social attributes. Thus the percentage of variance explained by the factor structure is acceptable.

4.4.4. Functional Attributes

i. Reliability

The initial scale of the functional attributes had 7 items. Two items were dropped since these items registered low item-total correlation in the reliability analysis using Cronbach's alpha for functional attributes, thus resulting in a 5-item scale. Deletion of these items from the scale resulted in improved reliability of the scale. The final Cronbach's alpha coefficient was 0.809 with a 5-item scale.

ii. Factor Analysis

Principal Component Analysis with Varimax rotation of 5 items was done. KMO and Bartlett's Test of Sphericity for functional attributes were performed for the scale items. The following table presents the result of both the analyses.

Table 4.9 : Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity for Functional Attributes

KMO	0.906	
Bartlett's Test of Sphericity	Approx. Chi-Square	741.956
	Df	15
	Sig.	.000

The above table depicts that the KMO measure is 0.906, which is well above the obligatory minimum of 0.5, hence sampling adequacy is confirmed. Bartlett's Test of Sphericity is significant ($p < 0.01$) at 741.956, therefore the stability of this dataset for factor analysis is confirmed.

The Principal Component Analysis with Varimax rotation resulted in the extraction of one factor. Factor loadings of 0.5 or higher were taken as significant loadings. The factor structure explains 66.81% variance for functional factors. Thus the percentage of variance explained by the factor structure is acceptable.

4.4.5. Lifestyle Attributes

i. Reliability

Reliability analysis by internal consistency method was conducted for lifestyle attributes scale. The scale had 5 items. The reliability analysis with Cronbach's alpha revealed the entire item-total correlation is above acceptable minimum. The analysis shows a Cronbach's alpha of 0.889, which confirmed that all the item-total correlation is acceptable.

ii. Factor Analysis

Explanatory Factor Analysis using Principal Component Analysis with Varimax rotation of 8 items was conducted for factor extraction of work factors. KMO and Bartlett's Test of Sphericity for lifestyle attributes were performed for the scale items. The following table shows the result of both the analysis.

Table 4.10 : **Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity for Lifestyle attributes**

KMO	0.914	
Bartlett's Test of Sphericity	Approx. Chi-Square	1897.319
	Df	45
	Sig.	.000

From the above table we can see that the KMO measure is 0.914, which is above the obligatory minimum of 0.5, hence sampling adequacy is well confirmed. Bartlett's Test of Sphericity is significant ($p < 0.01$) at 1897.319, therefore the stability of the dataset for factor analysis is confirmed.

The Principal Component Analysis with Varimax Rotation resulted in the extraction of one factor. Factor loadings of 0.5 or above were taken as significant loadings. The factor structure explains 56 % variance for lifestyle attributes. Thus the percentage of variance explained by the factor structure is acceptable.

4.4.6 Perceived Value

i. Reliability

Reliability analysis by internal consistency method was conducted for perceived value scale. The scale had 4 items. The reliability analysis with Cronbach's alpha revealed the entire item-total correlation is above the acceptable minimum. The analysis yields a Cronbach's alpha of 0.856, which confirmed that all the item-total correlation is acceptable.

ii. Factor Analysis

Principal Component Analysis(PCA) with Varimax rotation of 4 items was done. KMO and Bartlett's Test of Sphericity for Perceived Value was performed for the scale items. The following table presents the result of both the analyses.

Table 4. 11: Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett’s Test of Sphericity for Perceived Value

KMO	0.890	
Bartlett’s Test of Sphericity	Approx. Chi-Square	1158.93
	Df	21
	Sig.	.000

The above table depict that the KMO measure is 0.890, which is well above the obligatory minimum of 0.5, hence sampling adequacy is confirmed. Bartlett’s Test of Sphericity is significant ($p < 0.01$) at 1158.93, therefore the stability of this dataset for factor analysis is confirmed.

The principal component analysis with Varimax rotation resulted in the extraction of one factor. Factor loadings of 0.5 or higher were taken as significant loadings. The factor structure explains 55.30% variance for perceived value. Thus the percentage of variance explained by the factor structure is acceptable.

4.4.7 Satisfaction

i. Reliability

Reliability analysis by internal consistency method was conducted for satisfaction scale. The scale had 3 items. The reliability analysis with Cranach’s alpha revealed the entire item-total correlation is above the acceptable minimum. The analysis yields a Cranach’s alpha of 0.838, which established that all the item-total correlation is acceptable.

ii. Factor Analysis

Principal Component Analysis(PCA) with Varimax rotation of 3 items was done. KMO and Bartlett's Test of Sphericity for satisfaction were performed for the scale items. The following table presents the result of both the analysis

Table 4.12 : Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity for Satisfaction

KMO	0.838	
Bartlett's Test of Sphericity	Approx. Chi-Square	791.441
	Df	10
	Sig.	.000

The above table shows that the KMO measure is 0.838, which is well above the obligatory minimum of 0.5, hence sampling adequacy is confirmed. Bartlett's Test of Sphericity is significant ($p < 0.01$) at 791.441, therefore the stability of this dataset for factor analysis is confirmed.

The Principal Component Analysis with Varimax rotation resulted in the extraction of one factor. Factor loadings of 0.5 or higher were taken as significant loadings. The factor structure explains 60.49% variance for satisfaction. Thus the percentage of variance explained by the factor structure is acceptable.

4.4.8. Reliability Analysis of Different Measures of the Study

For the present study, the reliability was tested by computing Cronbach's Alpha (α) and composite reliability for all the measures. The values of Cronbach's alpha are given in the table 4.13

Table 4.13 : Reliability Analysis of Measures of Construct

SI No.	Measure	No of Items	Cronbach's alpha () coefficients
1	Physical Attributes(PA)	07	0.926
2	Location Attributes (LA)	07	0.880
3	Social Attributes(SA)	05	0.841
4	Functional Attributes (FA)	05	0.809
5	Lifestyle Attributes(LSA)	05	0.889
6	Perceived Value	04	0.856
7	Satisfaction	03	0.838

As seen in the table 4.22 the Cronbach's Alpha coefficient from 0.809 to 0.926, it is above the 0.7 threshold. Hence, it can be concluded that all the measures of the study has an acceptable reliability.

4.4.9. Exploratory Factor Analysis

Principal Component Analysis with Varimax Rotation was conducted using SPSS 21.0. KMO and Bartlett's Test of Sphericity were performed for the scale items. The following table presents the results of both the analysis:

Table No. 4.14. Exploratory Factor Analysis

S.L.No	Measures	KMO	Bartlett's Test of Sphericity			Percentage of variance explained
			Approx. Chi-Square	df	Sig.	
1	Physical attributes	.928	1504.164	66	.000	58.539%
2	Location attributes	.893	688.44	25	.000	61.473%
3	Social attributes	.952	875.66	10	.000	63.479%
4	Functional attributes	.906	741.956	15	.000	66.81%
5	Lifestyle attributes	.914	1897.319	45	.000	56%
6	Perceived value	.890	1158.93	21	.000	55.30%
7	Satisfaction	.838	791.441	10	.000	60.49%

Above table shows that the KMO measures of all the variables which lies between .838 to .952, which are exceeding the obligatory minimum of 0.5, thus sampling adequacy is confirmed. Bartlett's Test of Sphericity is significant ($p < 0.01$) and the test value was high leading to the conclusion that there were correlation in the data set appropriate for factor analysis, hence the stability of the data set for factor analysis is confirmed.

4.5. Descriptive Statistics

The table (4.15) below shows the descriptive statistics of both dependent and independent variable under the study. The mean and the standard deviation are also present. Standard deviation shows the spread of the data. It is clear from the table that all mean score are on the higher

scale and the standard deviation on the lower scale, indicating that the respondents have understood the questions in the same way and the questions have been answered properly.

Table 4.15 Descriptive Statistics

VARIABLE	N	MEAN	MEDIAN	STANDARD DEVIATION
PHYSICALATTRIBUTES	370	3.9110	3.933	.37614
LOCATION ATTRIBUTES	370	4.2788	4.333	.53209
SOCIAL ATTRIBUTES	370	4.3004	4.000	.57689
FUNCTIONALATTRIBUTES	370	4.2415	4.000	.59758
LIFESTYLE ATTRIBUTES	370	4.1020	4.111	.38571
PERCEIVED VALUE	370	3.6462	3.7143	.56076
RESIDENTIAL SATISFACTION	370	3.4728	3.9001	.52781

4.6. Analysis of Normality of Data

Normality of the data is a conventional assumption in the estimation process. Data distribution with a either highly skewed nature or with Kurtosis is indicative of non-normality which has random effects on specification or estimation. Therefore an attempt has been made to ascertain the normality of the data with its skewness and kurtosis values. In case of all variables, the skewness values are negative which indicate a

left skewed distribution . All variables have skewed less than 1 . kurtosis values are also within the specified limit

Table 4.16 Skewness and Kurtosis

VARIABLE	Mean	Standard Deviation	Skewness	Kurtosis
	Statistics	Statistics	Statistics	Statistics
PHYSICALATTRIBUTES	3.890	.39110	-.333	3.614
LOCATIONATTRIBUTES	4.161	.42788	-.433	4.569
SOCIAL ATTRIBUTES	4.228	.53104	-.400	5.7i9
FUNCTIONALATTRIBUTES	4.331	.52315	-.800	.3.555
LIFESTYLE ATTRIBUTES	4.221	51420	-.121	4.671
PERCEIVED VALUE	4.022	.56462	-.343	4.076
RESIDENTIAL SATISFACTION	3.997	.4-.4728	-.501	3.010

4.7. Correlation Analysis of Variables

Table 4.17 Correlation Matrix of Variables

	<i>HAAvg</i>	<i>LAAvg</i>	<i>SAAvg</i>	<i>FAAvg</i>	<i>LSAAvg</i>	<i>PRVAvg</i>	<i>RSAvg</i>
<i>HAAvg</i>	1						
<i>LAAvg</i>	.179 ^{**}	1					
<i>SAAvg</i>	.075	.241 ^{**}	1				
<i>FAAvg</i>	.229 ^{**}	.395 ^{**}	.332 ^{**}	1			
<i>LSAAvg</i>	.334 ^{**}	.395 ^{**}	.394 ^{**}	.472 ^{**}	1		
<i>PRVAvg</i>	.402 ^{**}	.402 ^{**}	.339 ^{**}	.484 ^{**}	.435 ^{**}	1	
<i>RSAvg</i>	.383 ^{**}	.474 ^{**}	.411 ^{**}	.584 ^{**}	.490 ^{**}	.506 ^{**}	1

Correlation using Karl Pearson's for values of relationship among variables of this study is discussed here. The magnitude of the correlation between physical attributes, location attributes, social attributes, functional attributes, lifestyle attributes, perceived value and residential satisfaction are given in the above table.

4.8. Chapter Summary

Chapter 4 deals with data collection records, sample profile reliability and validity of measures and descriptive statistics. The socio-demographic profile are analyzed for the better understanding and interpretation of the results in detail. Normality assumption of dependent variable is also discussed in the chapter.



Chapter 5

HYPOTHESES TESTING AND MODEL ANALYSIS

5.1 Testing Of Hypotheses

5.2 Conceptual Model Analysis

5.3 Measurement Model Analysis

5.4 Structural Model Analysis

5.5 Common Method Variance

5.6 Chapter Summary

After discussing about the details of data collection, sample profile, factor validity, reliability and descriptive statistics, the next stage is to proceed to the testing of Hypotheses and empirical analysis of the conceptual model. Data analysis was conducted using SPSS 21.0 and Warp PLS 5.0. The test of Hypotheses dealing with the positive influence of variables and its mediation are presented first. Then the conceptual model analysis using PLS is presented. Model analysis presented in two segments. The first segment discusses about reliability and validity of the measurement model. The structural model analysis and its interpretations are stated in the second segment .In addition to this Common Method Variance is also discussed in the present chapter.

5.1 Testing of Hypotheses

All the paths in the structural model were examined to test the hypotheses. There were 11 hypotheses including the meditation hypotheses developed for study. In order to find the influence of independent variables on meditating variable, 5 hypotheses were developed. To check the impact of meditating variable on the dependent variables, 1 hypotheses were developed. To test the effect of meditating variable in the relationship between independent variables and dependent variables, 5 hypotheses were developed. Each and every test of the Hypotheses starts with the statement of alternative Hypotheses.

5.1.1 Testing of Hypotheses-1

H1: Physical attributes has a significant impact on housing satisfaction

To find out the influence of physical attributes on housing satisfaction, a linear regression analysis was performed.

Table 5.1: Regression Analysis results for Physical attributes on Residential Satisfaction

Hypotheses	Adjusted R Square	Path coefficient (β)	Std. Error	p-value
Physical Attributes → Housing Satisfaction	0.14	.381	0.064	P<0.01

From above table , the regression analysis result is found to be significant at 1% level, and it is conveys that adjusted R square value is 0.14 with a β value of 0.371 which indicates that 14% variation in housing

satisfaction is accounted by physical attributes. Therefore, the results support the Hypotheses 1 that ‘ physical attributes has a significant positive impact on housing satisfaction’.

5.1.2 Testing of Hypotheses-2

H2: Location attributes has a significant impact on housing satisfaction

To find out the influence of location attributes on housing satisfaction, a linear regression analysis was performed.

Table 5.2: Regression Analysis results for location attributes on housing satisfaction

Hypotheses	Adjusted R Square	Path coefficient (β)	Std. Error	p-value
Location Attributes → Housing Satisfaction	0.31	.561	0.054	P<0.01

From above table , the regression analysis result is found to be significant at 1% level, and it is conveys that adjusted R square value is 0.31 with a β value of 0.561 which indicates that 31% variation in housing satisfaction is accounted by Location attributes. Therefore, the results support the Hypotheses 2 that ‘ location attributes has a significant positive impact on housing satisfaction’.

5.1.3 Testing of Hypotheses-3

H3: Social attributes has a significant impact on housing satisfaction

To find out the influence of social attributes on housing satisfaction, a linear regression analysis was performed.

Table 5.3: Regression Analysis results for Social attributes on Housing Satisfaction

Hypotheses	Adjusted R Square	Path coefficient (β)	Std. Error	p-value
Social Attributes → Housing Satisfaction	0.13	.360	0.062	P<0.01

From above table, the regression analysis result is found to be significant at 1% level, and it conveys that adjusted R square value is 0.13 with a β value of 0.360 which indicates that 13% variation in Housing satisfaction is accounted by social attributes. Therefore, the results support the Hypotheses 3 that 'social attributes has a significant positive impact on housing Satisfaction'.

5.1.4. Testing of Hypotheses-4

H1: Functional attributes has a significant impact on Housing satisfaction

To find out the influence of functional attributes on housing satisfaction, a linear regression analysis was performed.

Table 5.4: Regression Analysis results for functional attributes on housing satisfaction

Hypotheses	Adjusted R Square	Path coefficient (β)	Std. Error	p-value
Functional Attributes → Housing Satisfaction	0.27	.520	0.059	P<0.01

From above table , the regression analysis result is found to be significant at 1% level, and it is conveys that adjusted R square value is 0.27 with a β value of 0.520 which indicates that 27 % variation in housing satisfaction is accounted by functional attributes. Therefore, the results support the Hypotheses 4 that functional attributes has a significant positive impact on housing satisfaction’.

5.1.5 Testing of Hypotheses-5

H1: Lifestyle attributes has a significant impact on housing satisfaction

To find out the influence of lifestyle attributes on housing satisfaction, a linear regression analysis was performed.

Table 5.5: Regression Analysis results for Lifestyle attributes on Housing Satisfaction

Hypotheses	Adjusted R Square	Path coefficient (β)	Std. Error	p-value
Lifestyle Attributes → Housing Satisfaction	0.16	0.40	0.068	P<0.01

From above table, the regression analysis result is found to be significant at 1% level, and it conveys that adjusted R square value is 0.16 with a β value of 0.40 which indicates that 16% variation in housing satisfaction is accounted by lifestyle attributes. Therefore, the results support the Hypotheses 5 that 'lifestyle attributes has a significant positive impact on Housing Satisfaction'

5.2. Mediation Analysis

Barron and Kenny approach was one of the most important method to test the impact of mediator on a relationship between independent and dependent variables. According to Baron and Kenny(1986), four conditions are necessary to establish mediation:

- Step 1: There must be a casual relationship between independent variable, X and dependent variable Y
- Step 2: The Independent Variable, X should be correlated with the mediating variable, M
- Step 3: The mediating variable M should have a causal relationship with the dependent variable, Y

Step 4: The effect of independent variable on dependent variable must be lower than the direct relationship between independent and dependent variable when the mediation variable is controlled.

H6: The relation between physical attributes and residential satisfaction is mediated by perceived value

Warp PLS was used to test the significance of a mediating effect of a variable M, which is hypothesized to mediate the relationship between Variable X and Y, by using Baron & Kenny's (1986) criteria. In order to do the mediation analysis, two models are built. The first model was drawn with two variables X pointing at Y, without mediation variable (M) being included in the model. The second model was drawn with mediating variable (X pointing at Y, X pointing at M and M pointing at Y)

Table 5.6: Mediation Analysis (Perceived Value): Path Coefficient

Path	Path Coefficient	R ²	P Value
PA - HS	.40	.16	0.000
PA - PRV	.37	.14	0.000
PRV - RS	.67	.25	0.000
PA- RS (PRV controlled)	.13	.54	0.000

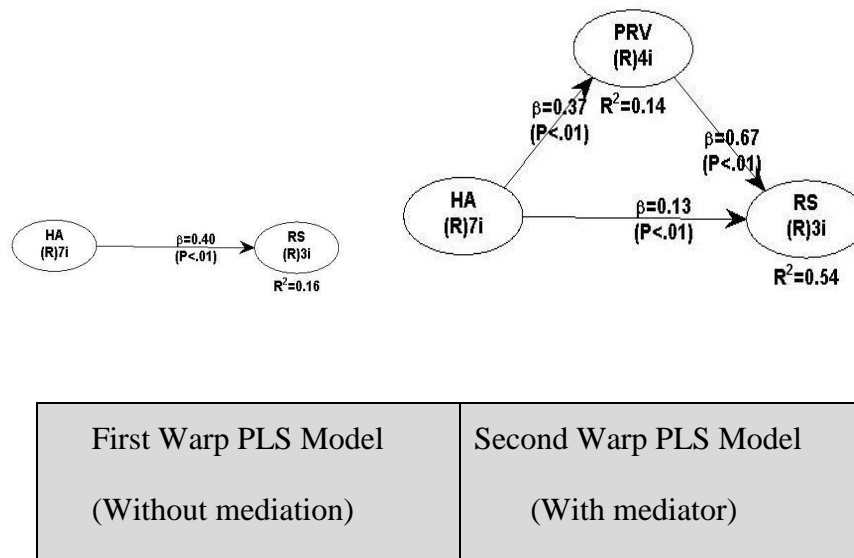


Fig 5.1: Models showing the mediation effect of perceived value on the relationship between physical attributes and residential Satisfaction

According to the above table and figure, two models are created for undertaking the mediating effect significance test. The mediating variable is perceived value and it is hypothesized that perceived value mediates the relationship between physical attribute and residential satisfaction.

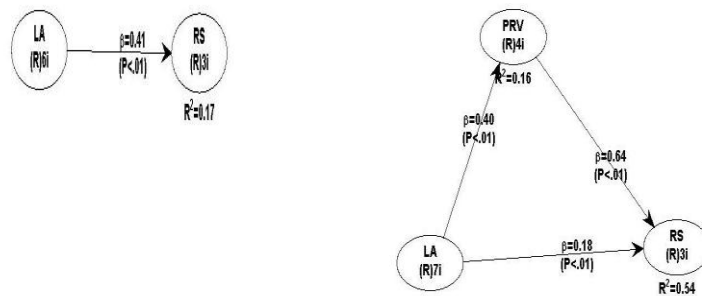
The first model shows, the direct relationship between physical attributes and residential satisfaction is depicted and its significant ($p < .01$, $B = .40$). In the second model, all the paths are significant including the direct effect of physical attributes and residential satisfaction, but the strength of the relationship is decreased by 0.27 ($B = 0.13$) indicating a partial mediation. Thus it can be concluded that perceived value partially mediate the relationship between physical attributes and residential satisfaction.

H7: The relation between location attributes and residential satisfaction is mediated by perceived value.

The next Hypotheses is that the relation between location attributes and residential satisfaction is mediated by perceived value.

Table 5.7: Mediation Analysis (Perceived Value): Path Coefficient

Path	Path Coefficient	R 2	P Value
LA - RS	0.41	0.17	0.000
LA - PRV	.0.40	0.16	0.000
PRV - RS	0.64	0.34	0.000
LA- RS (PRVcontrolled)	0.13	0.54	0.000



First Warp PLS Model (Without mediation)	Second Warp PLS Model (With mediator)
---------------------------------------------	------------------------------------------

Fig 5.2: Models showing the mediation effect of perceived value on the relationship between location attributes and residential Satisfaction

According to the above table and figure, two models are created for undertaking the mediating effect significance test. The mediating variable is perceived value and it is hypothesized that perceived value mediates the relationship between location attribute and residential satisfaction.

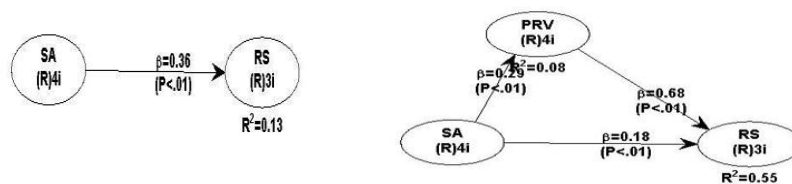
The first model shows, the direct relationship between location attributes and residential satisfaction is depicted and it's significant ($p < .01$, $B = .41$). In the second model, all the paths are significant including the direct effect of location attributes and residential satisfaction, but the strength of the relationship is decreased by 0.28 ($B = 0.18$) indicating a partial mediation. Thus it can be concluded that perceived value partially mediate the relationship between location attributes and residential satisfaction.

H8: The relation between social attributes and residential satisfaction is mediated by perceived value..

Warp PLS was used to test the significance of a mediating effect of a variable M, which is hypothesized to mediate the relationship between Variable X and Y, by using Baron & Kenny's (1986) criteria. In order to do the mediation analysis two models are built. The first model was drawn with two variables X pointing at Y, without mediation variable (M) being included in the model,. The second model was drawn with mediating variable (X pointing at Y, X pointing at M and M pointing at Y)

Table 5.8: Mediation Analysis (Perceived Value): Path Coefficient

Path	Path Coefficient	R 2	P Value
SA - RS	0.36	0.13	0.000
SA - PRV	.0.29	0.08	0.000
PRV - RS	0.68	0.35	0.000
SA- RS (PRV controlled)	0.18	0.55	0.000



First Warp PLS Model (Without mediation)	Second Warp PLS Model (With mediator)
---------------------------------------------	------------------------------------------

Fig 5.3 Models showing the mediation effect of perceived value on the relationship between social attributes and housing satisfaction

From the first model, it is clear that the direct relationship between social attributes and residential satisfaction is significant ($p < .01$, $B = 0.36$). In the second model, all the paths are significant including the direct effect of social attributes and residential satisfaction, but the strength of the direct relationship decreased by 0.18 ($B = 0.18$) indicating a partial

mediation. Thus, it can be concluded that social trust partially mediates the relationship between social attributes and residential satisfaction

The mediation analysis of perceived value on the relationship between intensity of social attributes and residential satisfaction indicates that perceived value serves as a foundation for residential satisfaction. Creating higher perceived value will help to improve the satisfaction of apartment owners .

H9: The relation between functional attributes and residential satisfaction is mediated by perceived value .

Warp PLS was used to test the significance of a mediating effect of a variable M, which is hypothesized to mediate the relationship between Variable X and Y, by using Baron & Kenny's (1986) criteria. In order to do the mediation analysis two models are built . The first model was drawn with two variables X pointing at Y, without mediation variable (M) being included in the model,. The second model was drawn with mediating variable (X pointing at Y, X pointing at M and M pointing at Y)

Table 5.9: Mediation Analysis (perceived value): Path Coefficient

Path	Path Coefficient	R 2	P Value
FA - RS	.52	.27	0.000
FA - PRV	.45	.20	0.000
PRV - RS	.62	.35	0.000
FA- RS (PRV controlled)	.26	.58	0.000

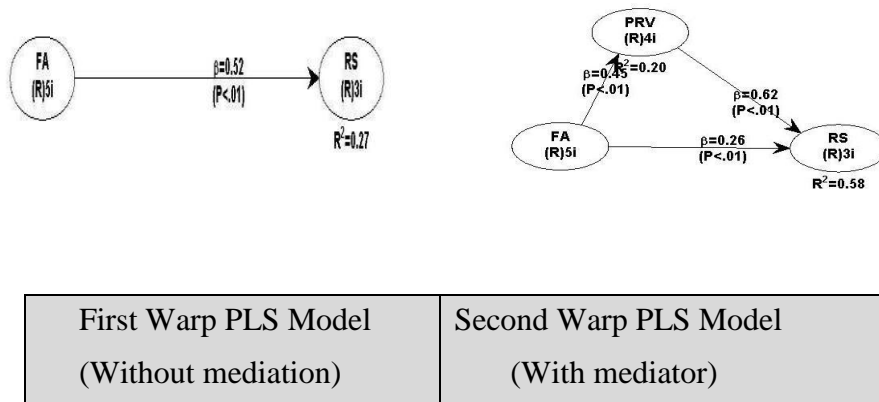


Fig 5.4: Models showing the mediation effect of perceived value on the relationship between functional attributes and housing satisfaction

According to the above table and figure, two models are created for undertaking the mediating effect significance test. The mediating variable is perceived value and it is hypothesized that perceived value mediates the relationship between functional attribute and residential satisfaction.

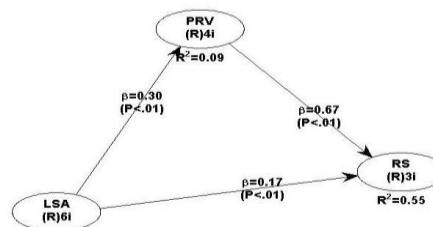
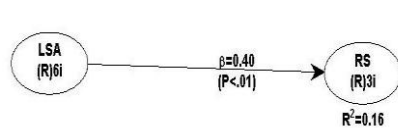
The first model shows, the direct relationship between functional attributes and residential satisfaction is depicted and its significant ($p < .01$, $B = .52$). In the second model, all the paths are significant including the direct effect of functional attributes and residential satisfaction, but the strength of the relationship is decreased by 0.26 ($B = 0.26$) indicating a partial mediation. Thus it can be concluded that perceived value partially mediate the relationship between functional attributes and residential satisfaction.

H10: The relation between lifestyle attributes and housing satisfaction is mediated by perceived value .

Warp PLS was used to test the significance of a mediating effect of a variable M, which is hypothesized to mediate the relationship between Variable X and Y, by using Baron & Kenny’s (1986) criteria. In order to do the mediation analysis two models are built . The first model was drawn with two variables X pointing at Y, without mediation variable (M) being included in the model,. The second model was drawn with mediating variable (X pointing at Y, X pointing at M and M pointing at Y)

Table 5.10: Mediation Analysis (Perceived Value): Path Coefficient

Path	Path Coefficient	R 2	P Value
LSA - RS	.40	.16	0.000
LSA - PRV	.30	.09	0.000
PRV - RS	.67	.25	0.000
LSA- RS (PRV controlled)	.17	.55	0.000



First Warp PLS Model (Without mediation)	Second Warp PLS Model (With mediator)
---------------------------------------------	------------------------------------------

Figure 5.5 Models showing the mediation effect of perceived value on the relationship between lifestyle attributes and housing satisfaction

According to the above table and figure, two models are created for undertaking the mediating effect significance test. The mediating variable is perceived value and it is hypothesized that perceived value mediates the relationship between lifestyle attribute and residential satisfaction.

The first model shows, the direct relationship between lifestyle attributes and residential satisfaction is depicted and it's significant ($p < .01$, $B = .40$) In the second model, all the paths are significant including the direct effect of lifestyle attributes and residential satisfaction, but the strength of the relationship is decreased by 0.23 ($B = 0.17$) indicating a partial mediation. Thus it can be concluded that perceived value partially mediate the relationship between lifestyle attributes and residential satisfaction

H11: Perceived value has a positive impact on the residential satisfaction of the apartment owners.

In the present study, proposed relationship between perceived value and residential satisfaction is tested. Hypotheses was tested with Structural Equation Modeling using Warp PLS 5.0. The study conducted mediation analysis in the following process. PLS bootstrapping gives the path coefficient in the meditational model. In order to measure the direct path between perceived value and housing satisfaction.

Table 5.11 Path Coefficient

Path	Path Coefficient	Std. Error	Effect Size	Sig
PV—RS	0.297	0.064	0.083	P<0.001

5.3 Model Analysis of the Study

This section discusses about the measurement model. The measurement model in PLS-SEM and reflective.

5.3.1 Conceptual Model Analysis

Hypotheses 1 to 11 are about relationships among the variables under study. These hypotheses are proposed to be tested through Structural Equation Modeling using Partial Least Square (PLS-SEM) method. The diagram, Figure 5.6 depicts the Hypothesized relationships among the variables of the study through a path model. House quality attributes contribute satisfaction directly and indirectly through the mediating influence of perceived value.

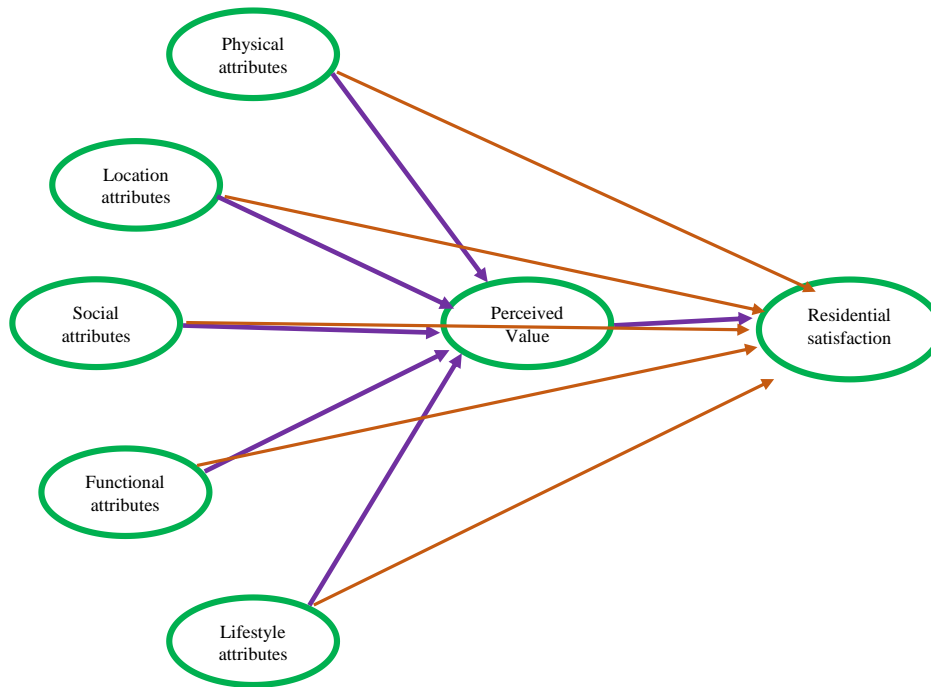


Figure 5.6. Conceptual Model of the Study

Here the researcher identified five house quality attributes – physical attributes, location attributes, social attributes, functional attributes and lifestyle attributes based on thorough literature survey and discussion with the builders, developers and other major players of residential apartment market. Then the researcher identifies the relation between these quality attributes and perceived value and also to residential satisfaction. The conceptual model clearly focus the mediating role of perceived value between these quality attributes and residential satisfaction .

5.4 Analysis of the Measurement Model of the Study

There are six latent constructs under study in this research. These are measured in reflective mode where the construct is assumed to cause the indicators to vary.

5.4.1. Reliability Measures

Table below shows the composite reliability and Cronbach' alpha coefficient for the sample. Both the coefficient are shown above 0.7 recommended threshold, meaning the instrument used has adequate reliability (Nunnally, 1978)

Table 5.12 Reliability of Measures Validity Analysis

<i>Construct</i>	<i>Physical attributes</i>	<i>Location attributes</i>	<i>Social attributes</i>	<i>Functional attributes</i>	<i>Lifestyle attributes</i>	<i>Perceived Value</i>	<i>Residential Satisfaction</i>
<i>Cronbach' Alpha</i>	0.784	0.804	0.745	0.806	0.768	0.86	0.89
<i>Composite Reliability</i>	0.84	0.853	0.791	0.848	0.794	0.89	0.906

5.4.2 Convergent validity

Convergent validity refers to the degree to which two measures of constructs that theoretically should be related, are in fact related. We can ensure the convergent validity by examining the loadings of indicators. The rule of convergent validity is that the loadings of all indicators should be 0.50 (Hair et al., 2010) or above and they should be significant at $p > = 0.05$ and $t > = 2.0$ (Fornell & Larcker, 1981).

Convergent validity of the scale is captured by PLS through the measure of average variance extracted (AVE) of each construct. It indicates the construct's variance explained by all its indicators together. If this measure is more than 0.5 (i.e., 50 % of the variance explained), one can consider convergent validity as established (Fornell & Larcker, 1981). An AVE of 0.5 signifies that 50% of the construct's variation is explained by its measurement block consisting of all indicators. AVE values of all constructs were found to be higher than 0.5, thus confirming the convergent validity of the constructs (Table 5.9). Another check for convergent validity is at the indicator level where all indicators should load on their respective latent constructs with significant t values (Gefen & Straub, 2005).

Table 5.13. Convergent Validity

Items	PA	LA	SA	FA	LSA	PV	RS	SE	P value
PA1	0.612	-0.02	-0.11	-0.032	0.026	0.342	-0.329	0.049	<0.001
PA2	0.756	-0.026	-0.135	-0.058	0.038	0.035	-0.053	0.048	<0.001
PA3	0.742	0.065	-0.137	-0.113	0.086	0.141	-0.022	0.048	<0.001
PA4	0.668	0.005	0.135	-0.083	0.152	0.061	0.034	0.049	<0.001
PA5	0.68	-0.065	0.107	0.145	-0.134	-0.207	0.138	0.048	<0.001
PA6	0.566	-0.03	0.131	0.091	-0.095	-0.238	0.139	0.049	<0.001
PA7	0.582	0.072	0.057	0.091	-0.111	-0.181	0.108	0.049	<0.001
LA1	0.051	0.594	-0.155	-0.071	0.055	0.282	-0.311	0.049	<0.001
LA2	0.095	0.731	-0.004	0.009	-0.091	-0.024	-0.054	0.048	<0.001
LA3	0.051	0.699	0.013	-0.255	0.076	0.124	-0.037	0.048	<0.001
LA4	-0.067	0.621	0.002	-0.074	0.218	-0.032	0.036	0.049	<0.001
LA5	-0.203	0.755	-0.077	0.023	-0.001	-0.027	0.013	0.048	<0.001
LA6	0.031	0.667	0.021	0.135	-0.018	-0.216	0.218	0.049	<0.001
LA7	0.062	0.61	0.212	0.25	-0.232	-0.086	0.119	0.049	<0.001
SA1	-0.081	0.035	0.842	-0.143	0.089	-0.004	0.033	0.047	<0.001
SA2	-0.068	0.109	0.908	-0.11	0.011	-0.032	0.042	0.047	<0.001
SA3	0.026	0.001	0.894	-0.143	0.035	-0.078	0.075	0.047	<0.001
SA4	0.034	-0.068	0.849	0.004	-0.02	0.053	-0.039	0.047	<0.001
SA5	0.133	-0.123	0.583	0.59	-0.17	0.099	-0.171	0.049	<0.001
FA1	0.134	-0.124	0.456	0.641	-0.17	0.098	-0.167	0.049	<0.001
FA2	0	0.03	-0.19	0.76	0.074	0.133	-0.121	0.048	<0.001
FA3	-0.052	-0.011	0	0.817	0.145	-0.041	0.019	0.047	<0.001
FA4	-0.104	0.154	-0.143	0.678	0.003	-0.128	0.125	0.048	<0.001
FA5	0.042	-0.06	-0.081	0.644	-0.105	-0.067	0.153	0.049	<0.001
LS1	0.15	-0.16	0.384	0.003	0.641	-0.035	0.057	0.049	<0.001
LS2	0.049	-0.215	0.002	0.103	0.665	-0.129	0.106	0.049	<0.001
LS3	0.039	0.009	0.043	-0.012	0.785	-0.128	0.146	0.048	<0.001
LS4	-0.079	0.224	-0.195	-0.069	0.676	0.157	-0.157	0.048	<0.001
LS5	-0.166	0.138	-0.237	-0.023	0.633	0.162	-0.182	0.049	<0.001
PV1	0.061	-0.103	-0.075	0.171	-0.002	0.76	-0.032	0.048	<0.001
PV2	-0.008	-0.034	-0.011	-0.066	0.053	0.8	0.028	0.048	<0.001
PV3	-0.02	0.084	0.107	-0.211	0.043	0.749	-0.17	0.048	<0.001
PV4	-0.04	0.065	-0.023	0.125	-0.112	0.647	0.2	0.049	<0.001
RS1	0.013	-0.036	0.039	0.021	-0.038	0.264	0.857	0.047	<0.001
RS2	0.018	0.025	-0.023	-0.039	0.038	-0.181	0.901	0.047	<0.001
RS3	-0.034	0.011	-0.017	0.022	-0.002	-0.078	0.803	0.048	<0.001

Convergent validity for the measurement models are established by acceptable AVE criteria and the significant indicator loadings on latent constructs

5.4.3. Discriminant Validity

Discriminant validity of scales used in a model is established by checking whether the square root of AVE of a construct is greater than the inter-construct correlation between the construct concerned and other constructs present in the model (Fornell & Larcker, 1981). Another check for discriminant validity is at the indicator level. Here, absence of cross loadings of indicators indicates discriminant validity, i.e., indicators should indeed load on their respective latent constructs only. In the following paragraphs, discriminant validity of the measurement model is assessed at both construct-level and indicator

This is the value on the diagonal of the table containing correlation among latent variables, which are the square root of average variance extracted for the each latent variable, should be higher than any of the value above or below them in the same column. Based on the criterion, it can be seen from the Table No 5.14 that all latent variables meet the discriminant validity criteria.

Table 5.14 Discriminant Validity Measures

	PA	LA	SA	FA	LSA	PV	RS
PA	0.641						
LA	0.205	0.614					
SA	0.187	0.088	0.828				
FA	0.48	0.396	0.271	0.604			
LSA	0.202	0.388	0.205	0.378	0.703		
PV	0.316	0.365	0.356	0.448	0.635	0.846	
RS	0.208	0.108	0.143	0.142	0.156	0.075	0.887

5.5 Analysis of the Structural Model

This section presents the detailed analysis of the structural model which represents the hypothesized relationships among the variables under study. A PLS model is primarily assessed by the weights of the latent constructs and the path coefficients on similar lines of a regression analysis (Chin, 1998). The structural model evaluation is given by the PLS path diagram in Figure 5.7

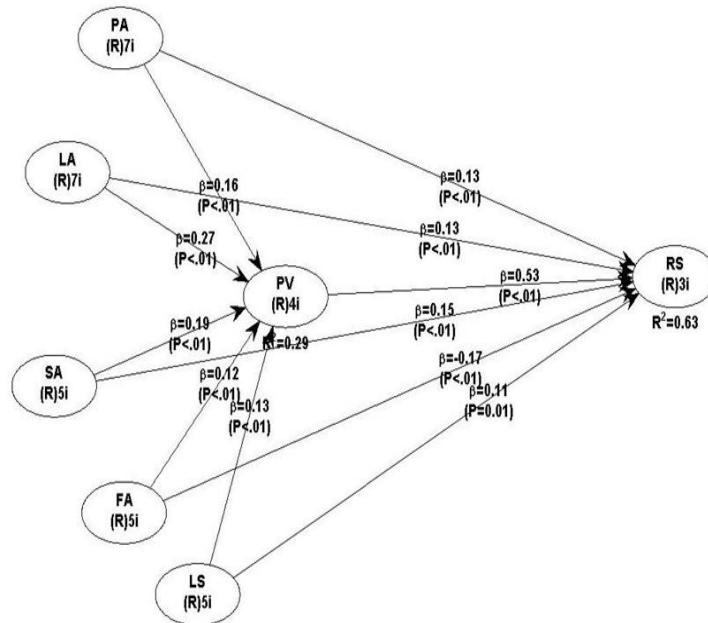


Figure 5.7 Structural Model

The structural model of residential satisfaction is shown in the above figure 5.7. Here residential satisfaction is the dependent variable of the study. House quality attributes- physical, location, social, functional and lifestyle attributes are independent variables and perceived value as mediating variable. From the figure 5.7 the structural model of the study along with p value and R square value can be clearly measured. The figure shows R square value of residential satisfaction is 0.63 ie. the study variables explains 63% variance in the dependent variable residential satisfaction .It clearly depict a higher R square value which states that these are the major independent variables which contribute towards residential satisfaction.

It also shows the path coefficient of all hypothesized relationships were significant at p values less than or equal to 0.001.

5.5.1 Path Coefficients and p value in the Structural Model

Table 5.15 Path coefficient and p value

Hypotheses		Path Co-efficient	P value	Accepted/Rejected
Physical attributes	Residential satisfaction	.138	<0.001	Accepted
Location attributes	Residential satisfaction	.139	<0.001	Accepted
social attributes	Residential satisfaction	.159	<0.001	Accepted
Functional attributes	Residential satisfaction	.177	<0.001	Accepted
Lifestyle attributes	Residential satisfaction	.116	<0.001	Accepted
Physical attributes	Perceived value	.168	<0.001	Accepted
Location attributes	Perceived value	.279	<0.001	Accepted
social attributes	Perceived value	.198	<0.001	Accepted
Functional attributes	Perceived value	.125	<0.001	Accepted
Lifestyle attributes	Perceived value	.137	<0.001	Accepted
Perceived Value	Residential satisfaction	.534	<0.001	Accepted

Path coefficients indicate whether the hypothesized relationships among the constructs exist or not and if they do, they are in the predicted directions. According to Lohmoller (1989) and Chin (1998), the path should be above 0.1 and 0.2 to be meaningful and theoretically interesting (Chin, 1998). As Table 5.15 shows, all paths in the model are above 0.1 indicating that the hypothesized paths are meaningful.

A latent construct and all its measurement indicators together are called a block. Thus a measurement model has many blocks. Structural

model (the inner model) consists of the hypothesized structural paths between the latent constructs. Analysis of the model starts with the evaluation of measurement model and in the event of satisfactory results on the validity and reliability of the model, it proceeds to the next stage of structural model evaluation.

Measurement model assessment is done in terms of unidimensionality, discriminant validity and convergent validity (Tenenhaus, et al., 2005). Structural model is assessed using path coefficients and weights of the constructs. Path coefficients and weights are interpreted in the same way as beta coefficients and R² of regression analysis.

5.5.2 R Squared and Q squared Co-Efficient Results

Table 5.16. R square and Q square Coefficients

Constructs	Perceived value	Residential satisfaction
R- Square	0.293	0.631
Q- Square	0.294	0.631

The R square coefficient for perceived value is 0.293 and residential satisfaction is 0.631. According to Chin (1998), R squared value of 0.67 is considered substantial, 0.33 moderate and 0.19 as weak. The study clearly shows that around 63% variations in the endogenous construct or the outcome variable of this study i.e, residential satisfaction

is being explained by the five quality attributes(physical, location, social, functional and lifestyle) and perceived value.

Q squared coefficient or predictive validity is also called as Stone Geisser Q squared coefficient.(Geisser, 1974: Stone, 1974). If the difference between predicted and original values is smaller , the Q square will be greater, thus signifying the predictive relevance of the structural model. A value of Q squared coefficient greater than zero is considered acceptable (Hair, et.al.,1998: Chin, 1998). As per table 5.16 the endogenous variables of the study have Q squared coefficient within the limit and thus good predictive validity .

5.5.3 Model Fit and Quality Indices

The analysis of the structural model of the study can be done with ten model fit and quality indices like Average Path Co-efficient (APC) , Average R square (ARS), Average Adjusted R square (AARS), Average full Co-linearity VIF(AFVIF), Average Block Variance Inflation Factor (AVIF), Tenenhaus GOF (GOF) and Sympon's Paradox Ratio (SPR). All these indices are clearly reported in the below table.

Table 5.17: Model Fit Indices

Fit Indices	Value	Threshold limit
Average path coefficient (APC)	0.290	P<0.001
Average R-squared (ARS)	0.462	P<0.001
Average adjusted R-squared (AARS)	0.455	P<0.001
Average block VIF (AVIF)	1.295	ideally <= 3.3
Average full collinearity VIF (AFVIF)	1.554	ideally <= 3.3
Tenenhaus GoF (GoF)	0.403	large >= 0.36
Sympon's paradox ratio (SPR)	1	ideally = 1

It is recommended that the p value for APC, ARS, and AARS be equal to or less than 0.001. By the table report it is clear that APC, ARS and AARS values of the model are significant at 0.001. The other indices AVIF and AFVIF shows the multicollinearity factors. It is reported that both AVIF and AFVIF are equal to or lower than 3.3, that shows low collinearity between variables.

According to Wetwels et.al.,(2009), The GoF Path Coefficients in the Structural Model Path coefficients indicate whether the Hypothesised relationships among the constructs exist or not and if they do, they are in the predicted directions. According to Lohmoller (1989) as quoted in Chin (1998), the path should be above 0.1 and 0.2 to be meaningful and theoretically interesting (Chin, 1998). The GoF value of model is 0.403 which shows the large fit

5.6 Analysis of Personal And Apartment Related Hypotheses

Age and Residential Satisfaction

Age was categorized into four groups as shown in the table .There were 22 apartment owners in the age group of below 25years . 190 owners in the category of 25 -40yrs , 96 owners in the age group of 40 -55yrs and 62 apartment owners in the age group of above 55years.The mean score of residential satisfaction were 4.1041, 4.1146, 4.1050 and 4.0918 respectively. Table 5.18 gives the results of one way ANOVA to explore the impact of age on residential satisfaction of self-occupied apartments in Kerala.

Table 5.18 ANOVA-Age and residential satisfaction

Age Sample	N	Mean	SD	F	Sigma
Below 25 yrs	22	4.1041	.41328	0.072	0.933
25 – 40 yrs	190	4.1146	.38621		
40 – 55yrs	96	4.1050	.40336		
Above 55yrs	62	4.0918	.39578		

The results of one way ANOVA indicated that the difference in residential satisfaction in different age group were statistically not significant ($F= 0.072$, p value= 0.933). It is therefore concluded that residential satisfaction of self-occupied apartment owners doesn't vary with the difference in age and thus age is not a differentiating factor as regards to residential satisfaction.

Gender and Residential satisfaction

Gender was categorized into two groups as shown in the table i.e., male and female. There were 237 apartment owners are belongs to male category and remaining 133 are female. The mean score of residential satisfaction were 4.1624 for male and 4.0314 for female. Inorder to test whether this results are statistically significant , independent sample t-test was done. T-test results are given in the table below . The results explains that there is no significant difference between gender and residential

satisfaction. The results shows that t value is 0.084 and p value is 0.899 which means there is no significant difference is exist in gender and residential satisfaction.

Table 5.19 t- test –Gender and Residential satisfaction

Gender	N	Mean	SD	T	Sigma
Male	237	4.1624	.35738	0.184	0.899
Female	133	4.0314	.41242		

Marital Status and Residential satisfaction

Marital status of the apartment owners was categorized into four groups as shown in the table .There were 296 apartment owners in the age group of married . 11 owners in the category of single ,26 owners in the Widow and 37 apartment owners belongs to divorced category. The mean score of residential satisfaction were 4.0321, 4.2910, 4.1020 and 4.0773 respectively. Table 5.20 gives the results of one way ANOVA to explore the impact of marital status on residential satisfaction of self-occupied apartments in Kerala.

Table 5.20 ANOVA-Marital status and residential satisfaction

Marital Status	N	Mean	SD	F	Sigma
Married	296	4.0321	.29772	12.920	0.000
Single	11	4.2910	.39168		
Widow	26	4.1020	.38512		
Divorced	37	4.0773	.30210		

Above table shows that marital status shows that there exist a significant relation between marital status and residential satisfaction of apartment owners. Based on the oneway ANOVA the following results are derived ,F value is 12.920 and p value is .000 which is significant. Change in the marital status bring changes in responsibilities and duties. However it is true that one way ANOVA indicated that the difference in mean residential satisfaction score.

Occupation and Residential satisfaction

Based on occupation apartment owners was categorized into six groups as shown in the table .There were 80 apartment owners comes under professional group, 140 apartment owners are IT professionals , 67 are business people or self-employed,44 owners are government employees, 28 persons are retired one and remaining 11 persons belongs to other category.

The mean score of residential satisfaction were 4.1146, 4.0307, 4.2727, 4.1102, 4.1020 and 4.0415 respectively. Table 5.21 gives the

results of one way ANOVA to explore the impact of occupation on residential satisfaction of self-occupied apartments in Kerala.

Table 5.21 ANOVA Occupation and residential satisfaction

Occupation	N	Mean	SD	F	Sigma
Professional	80	4.1146	.38405	13.876	0.000
IT Professional	140	4.0307	.39024		
Business/Employer	67	4.2727	.36638		
Govt.Employee	44	4.1102	.41021		
Retired	28	4.1020	.38229		
Others	11	4.0415	.38505		

Above table of occupation shows that there exist a significant relation between occupation and residential satisfaction of apartment owners. Based on the oneway ANOVA the following results are derived ,F value is 13.876 and p value is .000 which is significant. Major share of the apartment owners are professionals, especially IT professionals. According to the reports of skyline builders and developers, the major customer of the residential apartments are IT professionals since it offer convenience and easy lifestyle to them. It itself shows that there exist considerable difference in the residential satisfaction among these different occupational groups.

Income and Residential satisfaction

Based on the monthly income of apartment owners, they are categorized into five groups as shown in the table. There were 11 apartment owners comes under the income slab of below 25,000Rs, 56 apartment owners are under the income slab of 25,000-50,000Rs, 103 apartment owners are under the income slab of 50,000- 75,000 Rs, 119 apartment owners are under the income slab of 75,000-100000Rs and 81 belongs to above 1,00,000 category.

Table 5.22 ANOVA Monthly income and residential satisfaction

Income	N	Mean	SD	F	Sigma
Below 25,000	11	4.1146	.38521	14.120	0.000
25,000-50,000	56	4.0151	.40361		
50,000-75,000	103	4.1256	.39427		
75,000-1,00,000	119	4.1015	.38572		
Above 1,00,000	11	4.3210	.32816		

The results of ANOVA –income and residential satisfaction show the mean score are 4.1146, 4.0151, 4.1256, 4.1015 and 4.3210 respectively. Table 5.22 gives the results of one way ANOVA to explore the impact of Income on residential satisfaction of self-occupied apartments in Kerala. It is found that F value is 14.120 and p value is

significant ($p = .000$), which states that there exist significant difference in residential satisfaction based on income of the apartment owners

Location and residential satisfaction

On the basis of location two groups are formed urban area and rural area. Among 370 respondents 275 apartments owners hold apartment at Urban area and 95 at rural area. The mean score of residential satisfaction were 4.0418 for urban area and 4.1254 for rural area. Inorder to test whether this results are statistically significant , independent sample t-test was done. T-test results are given in the table below . The results explain that there is significant difference between residential satisfaction and location of the apartment as the p value is significant ($p=0.000$).

Table 5.23 T-test Location and residential satisfaction

Location	N	Mean	SD	T	Sigma
Urban	275	4.0418	.4130	-3.010	0.000
Rural	95	4.1254	.3270		

Type of apartment and Residential satisfaction

Based on the type of apartment they possess , they are categorized into three groups as shown in the table .

Table 5.24 ANOVA Type of apartment and residential satisfaction

Type of Apartment	N	Mean	SD	F	Sigma
Budget Apartments	85	4.0146	.38521		
Premium apartment	237	4.2151	.40361	13.640	0.000
Luxury apartmen	48	4.1656	.39427		

The results of ANOVA –type of apartment and residential satisfaction shows the mean score are 4.0146, 4.2151 and 4.1656 for budget apartments, premium apartments and luxury apartments respectively Table 5.18 gives the results of one way ANOVA .

Anova was performed to test whether there is significant difference in residential satisfaction with different types of apartments. One way ANOVA indicated that difference in mean residential satisfaction score for the different type of apartments is significant at 0.05 level, $F= 13.640$ and $p\text{ value}=.000$.

5.7. Chapter Summary

This chapter deals with model analysis of the study showing the relationship between various house quality attributes (Physical, Social, Location, Functional, Lifestyle) and residential satisfaction. The mediating role of perceived value is also tested with PLS-SEM mediation analysis. PLS SEM analysis and the results discussed in this chapter adequately offers the explanatory relationship between variables under the study.



Chapter **6**

DISCUSSION ON FINDINGS

DISCUSSION ON FINDINGS

6.1. Summary Of The Findings

6.2. Discussion On Demographic Findings

6.3. Discussion On Hypotheses Findings

6.4. Chapter Summary

6.1. Summary of the Findings

This study examined the satisfaction of self-occupied residential apartments in Kerala. It clearly states the relationship between various house quality attributes (physical, location, social, environment and lifestyle) and satisfaction. It also focuses on the mediating effect of perceived value between these quality attributes and satisfaction. Based on the complete analysis, the findings of the study are listed below.

6.1.1. Findings from the Socio-Demographic Background

1. Majority of the respondents comes under age group of 25-40 years, ie about 51% of the respondents are comes under this age group, followed by the age group of 40 - 55yrs.
2. Majority of the apartment owners are male, the data shows that about 64% of the apartment owners are male category and the remaining 36% is female category.
3. The marital status of the apartment owners shows that, most of the respondents are married that is about 80% and 10% of the respondents are divorced and 7% are widow and only 3 % percentage of the respondents are unmarried.
4. Among the apartment owners, majority of the respondents (74%) are coming under the urban and the remaining 26% the apartment owners are coming under the rural area.
5. Around 60% of the respondents are professionals including IT professionals.18% of the respondents are business people 12% of them are from retired category
6. Among the respondents majority of them are falls under the income category of 75,000 to 1,00,000 (32%), followed by category of 50,000 to 75,000 (28%).
7. Majority of the respondents are residing in Premium Apartments ie about 64% of the apartment owners are having Premium apartments followed by Budget apartments(23%), and Luxury Apartment(13%).
8. Majority of the respondents are belongs to Nuclear Family (91%) and only 9% of the respondents are having joint family

6.1.2. Findings from the Testing of Hypotheses

- Physical attributes of apartments significantly influences owner's satisfaction in self-occupied apartments in Kerala
- Location attributes of apartments significantly influences owner's satisfaction in self-occupied apartments in Kerala
- Social attributes of apartments significantly influences owner's satisfaction in self-occupied apartments in Kerala
- Functional attributes of apartments significantly influences owner's satisfaction in self-occupied apartments in Kerala
- Lifestyle attributes of apartments significantly influences owner's satisfaction in self-occupied apartments in Kerala
- The relation between Physical attributes of apartments and owner's satisfaction in self-occupied apartments in Kerala partially mediated by perceived value
- The relation between social attributes of apartments and owner's satisfaction in self-occupied apartments in Kerala partially mediated by perceived value
- The relation between location attributes of apartments and owner's satisfaction in self-occupied apartments in Kerala partially mediated by perceived value
- The relation between functional attributes of apartments and owner's satisfaction in self-occupied apartments in Kerala mediated by perceived value

- The relation between lifestyle attributes of apartments and owner's satisfaction in self-occupied apartments in Kerala partially mediated by perceived value

Hypotheses Relating to Personal and Apartment Factors to Residential Satisfaction.

- Age, marital status, occupation and income has a significant influence on residential satisfaction.
- Gender and educational qualification has no significant influence on residential satisfaction.
- Residential satisfaction of apartment owners shows significant difference with respect to type of apartment and place of apartment.

6.2. Discussion on Demographic Findings

The results of the question who buys an apartment can be clearly traced out from the following socio-demographic outcomes of the analysis.

- Apartments are mostly preferred by professionals especially IT professional in Kerala. This statement is very true that the lifestyle and work culture of the IT professionals demand convenient and easy housing system. Apartments are the most convenient and easy housing solution presently available in Kerala. This statement is supported by many studies including (baby,2005), (Mehtar,2012).
- Apartments are mostly preferred and designed for nuclear families in Kerala. This statement shows that most of the apartments are occupied by nuclear families. Apartments are suitable for the lifestyle

of nuclear families not for joint families with more number of family members. This statement is supported by various reports and studies which includes, (Safiya., 2014),(Rafeekamol,2018)

- Premium apartments or medium sized apartments are mostly preferred by the people of Kerala. Among the three categories of apartment i.e., budget, premium and luxury, majority of the respondents prefer premium apartments. This statement is supported by the reports of various builders and developers like (Asset Homes,2016), (CREDAI, 2011), (Holyfaith Builders 2012) and (DLF,.2014)
- Marital status of the respondents shows that majority of the owners are married i.e. about 80% of the respondents are married category, 10% of them are divorced and 7% are widows, only 3% of the respondents are falling under the single category. These findings are supported by various studies which includes, (Asset Homes. 2015) ,(Confidence Builders Annual Report 2105-16), (DLF Homes, 2016)
- Monthly household Income of the respondents, shows that majority of the families are coming under the income slab of 75 ,000 to 1,00,000 Rupees. i.e., around 32% of the respondents are coming under this income slab. Followed by 50,000- 75,000Rs Income slab i.e. about 28% of the respondents. It definitely shows that majority of the apartment owners are having more than Rs 50,000 monthly household income. The reports of the major financial Institutions like HDFC, IDBI (2016) states that housing loan for apartment purchase is mostly applied by those people who are having more than 50,000 rupees monthly earnings.

- Age of the apartment owners shows that, majority of the respondents are coming under the age group of 25- 40yrs. i.e., 51% of the apartment owners are falling under this age group, followed by 40-55yrs of age by 26% of the respondents. The statistics also depict that about 17% of the respondents are above 55 years of age which means retired persons.

These findings are easily justifiable with some reports. According to the reports of Mental and Marital Health of Kerala, 2017, it clearly says that In Kerala people starts to shift to new houses immediately after the marriage, and the average age slab of marriage is lies between 25 to 30. About the above 55 yr age category , Reports from Realtor, 2016 says that for the want of safety and security as well as loneliness more number of retired people prefer to buy residential apartments in Kerala.

- Apartments are more popular in urban areas than rural areas. Based on the analysis we can see the majority of the apartment owners are belongs to urban areas. Around 74% of the respondents are from urban area and the remaining 26% at rural area. Many number of reports and studies supports this view point. Residential apartments are mainly meant for urban population therefore majority of our projects are at urban centers. (Skyline Builders ,2017)

6.3. Discussion On Testing of Hypotheses

- **Physical Attributes And Satisfaction**

Physical attributes significantly influence owners satisfaction in self-occupied apartments in Kerala i.e., better the physical attributes more will be the owners satisfaction, it shows a positive relationship between these variables. The prior researchers stressed on the point that the physical amenities or physical qualities or physical facilities of the apartments are highly contributing towards the owners satisfaction in apartments. The result of the present study substantiate the result of earlier studies of Vararady and Corrozza (2000) that the satisfaction with the dwelling units features like property size and area, number of bedrooms, kitchen and bathrooms, external appearance are contributing towards the housing satisfaction in residential apartments . This harmonize with the findings of Al- Abed (2000) who proposes that apartments interior features and exterior features leads to housing satisfaction of apartments. (Muhammed Mohit 2012), in his study “Assessment of Residential Satisfaction with Public Housing in Hulhumale’, Maldives “found that the level of residential satisfaction varies and is dependent on the physical features of the dwelling. Thus the findings of the study , physical attributes are significantly influence the owners satisfaction in self-occupied apartments is justifiable with the findings of earlier and similar studies. This research findings strongly support that physical attributes of the apartments highly influences owners satisfaction in self-occupied apartments in Kerala.

Location Attributes and Satisfaction

Location attributes significantly influence owners satisfaction in self-occupied apartments in Kerala i.e., locational advantages are known to be the first preference of apartment buyers, it shows that location definitely have a positive relationship with satisfaction. By location attributes includes the location advantages or location qualities or location facilities of the apartments which contributing towards the owners satisfaction in apartments. The result of the present study substantiates the result of some earlier studies. The studies in the literature show that housing satisfaction refers nothing more than satisfaction from the location (e.g. Fried and Gleicher, 1961; Duncan, 1971; Lu, 1999; Burby and Rohe, 1990; Parkes et al., 2002; Kelekci and Berköz, 2006; and Erdođan et al., 2007).). (e.g. Kasarda and Janowitz, 1974; Galster and Hesser, 1981; and Erdođan et al., 2007). Similar findings are also stated by(e.g. Onibokun, 1974; Campbell et al., 1976; Türkođlu, 1997; and Kelekci and Berköz,.) Apartment as a form vertical housing is a facility for urban society lifestyle who requires handy housing, effective (easy access to the workplace) value. (SB Astuti1, Vol. 3 No. 5 May 2015) variable like nearness to workplace, nearness to public transport, nearness to educational institutions, nearness to hospitals, shopping malls and other urban services are the major determinants of location attributes which influence the housing satisfaction in apartments.. Thus the study finding , Location is significantly influence the owners satisfaction in self-occupied apartments is justifiable with the findings of earlier and similar studies. This research findings strongly support that location attributes of the apartments highly influences owners satisfaction in self-occupied apartments in Kerala.

- **Social Attributes and Satisfaction**

Social attributes significantly influence owners satisfaction in self-occupied apartments in Kerala i.e., social concerns like safety and security are the major factor influencing the apartment purchase decision in Kerala. Here social factors like safety, security, neighborhood relations, community relations, are measured. The prior researchers stressed on the point that the social relations and social qualities of the apartments are highly contributing towards the owners satisfaction in apartments. The satisfaction within vertical housing is related to the sense of togetherness, explained in Tim Cho's (2007) research stating that to create a culture based vertical housing concept, emphasizes on the need of community space for togetherness. James *et al.*, (2009), (Elsinga and Hoekstra, (2005), Semenza & March, (2009); Stedman, (2003) are having same opinion that social attributes are influencing residential satisfaction. The result of the present study also substantiate the result of earlier studies of Toscano, E.V., & Amestoy, V.A., (2008), (Morris, E.W., (1978), Vararady and Corrozza (2000), according to them, the satisfaction in residential apartments are deeply influenced by various social factors like safety, security, and community relations and are contributing towards the housing satisfaction in residential apartments. This harmonize with the findings of He, L., & Zhao, L. (2006.) who proposes that apartments social environment leads to housing satisfaction of apartments. (Campbell et al. 1976). and (Li, 2012) gave stress to the neighborhood aspects of social attributes.). The following studies are also support the statement that, housing satisfaction is found to be positively related to

neighborhood satisfaction (Galster and Hesser 1981; Ha and Weber 1991) (Li, 2012). Thus the findings of the study, social attributes are significantly influence the owners satisfaction in self-occupied apartments is justifiable with the findings of earlier and similar studies. This research findings strongly support that Social attributes of the apartments highly influences owners satisfaction in self-occupied apartments in Kerala. Thus the Hypotheses is proved. Social attributes of apartments significantly influences owner's satisfaction in self-occupied apartments in Kerala

Functional Attributes and Satisfaction

Functional attributes significantly influence owner's Satisfaction in self-occupied apartments in Kerala. Functional attributes includes the basic housing facilities like uninterrupted supply of water, power and electricity, efficient waste disposal system, maintenance, organization and management and noise free environment and green environment Functional attributes shows the functional qualities and efficiency According to the present study satisfaction in apartments can improve by improving the quality and efficiency of functional attributes. Higher the functional quality better will be the satisfaction of apartment owners. Studies made by Akinluyi et al. 2012, Azuin binti ramli, 2014, proposed similar findings that the functional qualities are to be maintained high so as to improve the satisfaction of apartment dwellers. Thus the findings of the study, functional attributes are significantly influence the owners satisfaction in self-occupied apartments is justifiable with the findings of earlier and similar studies. This research findings strongly support that functional attributes of the apartments highly influences owners satisfaction in self-occupied apartments in Kerala. Thus the below

Hypotheses is proved functional attributes of apartments significantly influences owner's satisfaction in self-occupied apartments in Kerala

Lifestyle Attributes and Satisfaction

Lifestyle is not only to be interpreted as an activity, but can also be a representation of a background of culture, age, gender, education, occupation and even religion. A community with a certain lifestyle will be contained and manifested in the quality of environment profile. Apartment as a form vertical housing is a facility for urban society lifestyle who requires handy housing, effective (easy access to the workplace), privacy and has a high investment value. Apartment facility is a similarity point for the different cultured inhabitants. The similar profile of the user are facilitated in the public territory, such as the swimming pool, gym center, parking area, center/café and shopping area. The findings of this study is matching with the studies of Amerigo,2012 and C.B.Baby ,2014 .According to them, lifestyle amenities or value added services are highly influencing the satisfaction of the owners in highrise apartments.. This harmonize with the findings of Al- Abed (2000) who proposes that modern and added features of apartments leads to housing satisfaction of apartments .(Muhammed mohit 2012), in his study “Assessment of Residential Satisfaction with Public Housing in Hulhumale’, Maldives”. Thus the findings of the study lifestyle attributes are significantly influence the owner's satisfaction in self-occupied apartments is justifiable with the findings of earlier and similar studies. This research findings strongly support that Lifestyle attributes of the apartments highly influences owners satisfaction in self-occupied apartments in Kerala. Thus the below Hypotheses is proved. Lifestyle attributes of apartments

significantly influences owner's satisfaction in self-occupied apartments in Kerala

Perceived Value and Satisfaction

Perceived value is widely defined as the evaluation of the desirability of the product (services) on the basis of the perceived worthiness of the tradeoff between the product's costs and benefits (Tzeng, 2011). For example, A definition Netemeyer (2004) views perceived value of cost as the customers overall assessment of the utility of the product based on perception of what is received (e.g., quality, consumer satisfaction) and what is given (e.g., price and non-monetary costs). While such trade-offs are most commonly represented by a ratio or comparison between quality and price (Cravens et al., 1988; Monroe & Drew, 1991; Sweeney & Soutar, 2001).

Perceived value is to be taken care of while measuring residential satisfaction of apartments. While considering perceived value we can see that, any change in perceived value will partially influence the relationship between the house quality attributes and satisfaction of self-occupied apartment owners. That clearly shows the mediating role of perceived value between the house quality attributes and satisfaction

Mediating role of perceived value

Mediating role of perceived value is tested separately with five house quality attributes and residential satisfaction. The relation between all these five quality attributes and satisfaction is partially mediated through perceived value. Better the perceived value higher will be the satisfaction of apartment owners. Studies on tourism, health, education we

can generally see these mediating role of perceived value between quality and satisfaction. Ratna Roostika , 2009 stated the same opinion in the educational sector that satisfaction is not merely connected to quality factors but also incorporated by the value elements. In housing sector, Ailar, 2011 states in his study at Malaysian housing explains that without measuring perceived value measuring housing satisfaction is meaningless. Thus relationship between house quality attributes (physical attributes, location attributes, social attributes, functional attributes and lifestyle attributes) and satisfaction is partially mediated by perceived value.

Measuring perceived value is very essential for the analysis of housing satisfaction. Without considering what they received in return to what they are given, one cannot judge the satisfaction. Especially in housing sector where huge financial commitment is required for the purchase of an apartment or a house. (Rajkrishnan 2014).

Marital status, Occupation and Income has a significant influence on residential satisfaction

The present study has brought out significant variation in residential satisfaction of apartment owners with respect to age, gender, marital status, occupation and income. These are tested separately and found that there exist significant difference in residential satisfaction with respect to age, gender, marital status, occupation and income.

The findings with respect to age is similar to Nasser and Manoj. P.K, (2016), in which it was found that people belongs to the age group of 25 to 40 are more attracted towards apartment life and that is why they are highly satisfied than any other age group. However in some of the studies

like Amerigo,(1998) claimed that there is no significant age impact on residential satisfaction.

With regards to marital status almost all the studies propose a significant impact on residential satisfaction. Rathod Piyush,2016 : Dr.Rajiv Bhatt, 2016:Dr. Jayesh Pitroda,2016: in their study at Gujarat, says that a change in marital status bring changes in responsibilities , thus the chance of variation in residential satisfaction due to a change in marital status.

With regards to income and occupation also there exist significant differences in residential satisfaction. The findings of present study is supported by many of the previous findings. Mastura Jaffer(2013) and Noor lissa Hassan(2013) supported the view point that in their study, Income and occupation are the two factors which shows significant influence on residential satisfaction.

Age and Gender of owners has no significant variation in residential satisfaction

With regards to gender and age , the present study brought out no significant variation in residential satisfaction. Male or female is not a matter of fact for residential satisfaction in this study. The results of the study is supported by Abayomi Omonori (2014), Akinloye Lawal (2014).

Age may not influence the residential satisfaction. This statement is also supported by Kellekc, D.O.H. and Bebköz, L. (2005). Liu, A. (1999) and Oladapo, A. (2006).They are stated that residential satisfaction is influences by large nuber of factors but it doesn't have a direct relation with age of the apartment owners.

Type of apartment and Location of apartment has a significant influence on residential satisfaction

The analysis of the present study shows that there exist significant difference in residential satisfaction of apartment owners .With regards to location of the apartment there are two classification that is rural and urban. Reports from CREDAI survey, 2014 says that Urban population is highly demanded by residential apartments, but rural people are still having the delicacy towards the old nalukettu and other housing alternatives.

With regards to type of apartment also, the present study shows a significant variation in residential satisfaction. In the present study apartments are classified into three categories, Budget apartments, Premium apartment and Luxury apartments. Studies from Malaysia and Nigeria states that (Ukoha, O. and Beamish, J. (1997) Renaissance Capital (2011) the type or the grade of apartment will influence the residential satisfaction since depending upon the grade apartment quality may vary. So there exist a difference in residential satisfaction.

While analysing all the above personal and apartment related Hypotheses , it is clearly visible that major part of the personal and apartment factors bought significantly variation in residential satisfaction

6.4. Summary of the Chapter

The chapter gives the major findings of the study. A detailed discussion with respect to each findings is made it also compares with findings of related studies done previously in the area.



Chapter **7**

IMPLICATIONS AND CONCLUSION

IMPLICATIONS AND CONCLUSION

- 7.1 *Overview of the Study*
- 7.2 *Implications of the Study*
- 7.3 *The Scope for Future Research*
- 7.4 *Limitations*
- 7.5 *Conclusion*

The main purpose of this chapter is to present an overview of the study, a summary of the findings, the theoretical and practical implications, and the scope for future research.

7.1 Overview of the Study

Vertical houses are gaining popularity in Indian housing scenario. Housing is one of the key issues that normally forefront the scene when considering challenges of urbanisation and urban growth. It is a fundamental aspect of human life and a major factor in delivering healthy and attractive communities as it serves to define the life space of individuals. Increasing interest is now shown towards the study of how people think of their housing and how it affects their lives. Therefore, measuring the housing quality has become an important tool to assess the

efficiency of housing provision and the extent to which people are satisfied with it.

The present study is focus towards the vertical growth of housing sector especially in urban Kerala. The study explains the relationship between housing quality attributes and residential satisfaction and also state the mediating role of perceived value of apartment owners .Since the vertical housing is stood at an innovative phase, getting proper and sufficient literature became a herculean task for the researcher . however the objectives of the study were finalized only after the review of literature.

Statistics on various available data regarding self-occupied residential apartments, its quality attributes and various scales of the different concepts were utilized in order to measure impact of the variables under study. The descriptive part deals with the identification of various factors influencing satisfaction of owner occupied residential apartments in Kerala..The analysis part contribute various hypothetical contribution which proves the relationship between house quality attributes of apartments and owner's satisfaction in self-occupied apartments in Kerala mediated by Perceived Value

7.2 Implications of the Study

This study makes significant contribution to the theory and practice in the context of residential satisfaction of apartment owners. The theoretical and practical implications are presented in the below sessions.

7.2.1 Theoretical Implications of the findings

The findings from this study give valuable insights into theoretical perspectives of residential satisfaction of apartments in Kerala. The identification and analysis of factors influencing residential satisfaction provides better understanding about the theme. The study list out that there are many factors influencing- physical factors, locational factors, social factors, environmental factors and lifestyle factors are contributing towards residential satisfaction. The socio-demographic features of apartment owners clearly states the age, gender, income, profession, family type and other specifications of apartment owners.

Housing satisfaction model for the Vertical housing system is valid contribution of the present study. In spite of having large number of housing satisfaction models, the theoretical model for residential satisfaction has not been developed in modern housing alternatives like apartments and villas. The results of the present study found relationship between various house quality attributes (physical, Locational, Social, Environmental and Lifestyle) and satisfaction. The mediation analysis of Perceived Value between these quality attributes and satisfaction is highly meaningful, as the study explains the importance of perceived value while measuring satisfaction of vertical houses in Kerala.

7.2.2 Practical Implications of the study

The results of this study have significant practical and managerial implications. Firstly, there are five underlying attributes(physical, locational, social, functional and lifestyle) which seem to be fundamental elements that contribute to owners' satisfaction In residential apartments .

Builders and developers should also concentrate on perceived value and to reduce costs of time and money so as to improve the satisfaction.

Measuring residential satisfaction of apartment owners will help the urban planners, builders and developers to identify post purchase response of the apartment owners. They can able to sort out the most important factors influencing satisfaction of apartment life. Builders and developers can able to plan accordingly for the future business and marketing strategies. By analyzing the socio-demographic profiles builders can identify the category of people who buy an apartment instead of a free standing house in urban Kerala.

Proper understanding about the attributes help the apartment buyers in taking right decision while selection stage. They can clearly demand about the physical features or requirements, locational advantages, Social factors or neighborhood situations, Functional qualities or management, and the lifestyle amenities or value added benefits they prefer before their purchase.

The same factors can be equally important to town planners, builders and developers who are focusing on the vertical growth of housing sector in Kerala.

7.3. The Scope for Further Research

- Further research can also focus on the other unexplored antecedents which might influence the residential satisfaction of apartments.
- Comparitative analysis of residential satisfaction among apartment owners and renters are possible.

- Potential research should examine the role of affordability in residential satisfaction of apartments.
- As the present study is solely focused on the residential satisfaction, but it can extent to measure the quality of life and wellbeing.
- The future research can focus on studying the influence of variables used in the present study on the other housing alternatives like villas and other gated colonies.

7.4. Limitations of the study

There may be possibility of cultural bias from the part of respondents while generating the results as the study confined to the State of Kerala.

The present study measured the satisfaction of self-occupied apartment owners but the satisfaction of rented apartments are not included in the study.

The present study measured satisfaction of apartments . But it does not consider the satisfaction of gated villas, which is equally relevant in present scenario.

The present study may be more meaningful if it is consider for a comparative analysis of satisfaction between the owners of apartment Vs owners of other housing forms

7.5. Conclusion of the study

It is very clear that vertical housing will be the future of housing sector in Urban Kerala The congruence and dissonance between residents

and their housing situations are essential to prevent the decreasing quality of urban environment. Thus, the study can serve as a guide for urban planners and property developers in planning and designing of residential apartments. Furthermore, property developers can gain valuable insight on the quality attributes and the role of perceived value in determining the satisfaction of residential apartment, so that they can meet each home buyers needs and improve the level of satisfaction. Giving proper attention to the location attributes and social security measures will help to enhance the residential satisfaction in apartments. Proper understanding about the contribution of these attributes towards satisfaction will also guide the probable apartment buyers in their future purchase decisions.



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Appendices

Questionnaire

Dear Sir/Madam,

I am Rafeeka Mol. C.A, Research Scholar of CUSAT, doing a study among the residential apartment owners with special focus on the **Vertical Housing in Kerala – A study on owner’s satisfaction in self occupied apartments** . I request your valuable support and cooperation in collecting necessary data for this work. Kindly spare some of your valuable time to fill the questionnaire. I assure you that any information provided by you will be kept confidential and will be used for academic purpose only. Thank you very much for being a part of this study.

Part 1: General Information

1. Gender Male Female
2. Age
 Below 25 years 25-40years 40-55 years
 Above 55
3. Residential Status
 Resident NRI
4. Education
 SSLC or equivalent Plus Two/equivalent Bachelors Degree
 Masters Degree Doctors Degree Others
5. Occupation
 Professional IT Professional
 Business/self employed
 Govt. employee Retired Others

6. Marital status

Single Married Divorced Widow/Widower

7. Type of family

Joint family Nuclear family

8. Family Income(per month)

Less than 25,000 Rs 25,000 -50,000 Rs
50,000-75,000 Rs
75,000-100,000 Rs Above 100,000 Rs

Part 2 - Information related to Apartment

9. Please specify the type of apartment you own

Budget (below 30lakh) Premium (below 60lakh)
Luxury(Above 60lakh)

10. Location of the apartment

Urban Rural

11. Are you a first time apartment buyer?

Yes No

PART-2 (Exploratory Section)

12. Please indicate your view point on the following factors. Kindly mark a '✓' on the appropriate box

Physical Attributes Scale

PA.1	The size of the apartment is sufficient and suited to my needs	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PA.2	Layout of the apartment really fit my needs.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PA.3	My apartment provides sufficient facilities available.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PA.4	It possess quality of finishing	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PA.5	My apartment offers modern housing utilities	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PA.6	My apartment have a good view and aesthetic appeal	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PA.7	My apartment provides best of the common amenities.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Location Attribute Scale

LA 1	Location is the most important factor in purchasing an apartment for me.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
LA 2	My apartment is closer to my/spouse workplace	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
LA 3	My apartment is closer to educational institutions	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
LA 4	My apartment is closer to Public transport	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
LA 5	My apartment is closer to hospital/health/shopping centre	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
LA 6	My apartment situated at a convenient location	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
LA 7	My apartment is situated at a crime free and eco friendly location	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Social Attribute Scale

SA.1	My apartment is a safe and secure place to live	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
SA.2	My apartment provides me community living	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
SA.3	My apartment makes me proud	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
SA.4	My apartment give privacy and pleasure	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
SA.5	My apartment offers better neighborhood relations	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

FUNCTIONAL ATTRIBUTES

FA. 1	My apartment is having good waste disposal system	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
FA. 2	My apartment offers proper repairs and maintenance system	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
FA. 3	My apartment offers uninterrupted supply of water, power and cooking gas	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
FA. 4	My apartment is having insurance coverage and disaster management measures.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
FA. 5	My apartment quality functions in common area management, lift, , party hall etc	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

LIFESTYLE ATTRIBUTES

LSA 1	My apartment offers good valet parking facilities.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
LSA 2	My apartment offers children play area, beautiful park and lawn for our leisure.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
LSA 3	My apartment is having health club, swimming pool/ day care and gym facility	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
LSA 4	My apartment is under 24 hour CCTV surveillance.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
LSA 5	It is easy for me to have a domestic helper in my apartment	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

PERCEIVED VALUE

PRV.1	Overall, the value of my apartment is high to me	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PRV.2	Compared to what I gave up, the ability of this apartment to satisfy my needs and wants are high	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PRV.3	My apartment offers value for money	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PRV.4	My apartment is reasonably priced and is affordable to me	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

SATISFACTION

RS.1	I am satisfied with my residential apartment.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
RS.2	If I purchase again it will be an apartment and not a villa /individual house.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
RS.3	I will recommend my children/relatives to purchase an apartment.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Name of the Apartment:

Place:

Thank You Have a nice Day



||| List of Publications and Presentations |||

PUBLICATIONS

1. Customer satisfaction in Residential Apartments in Kerala published in Asian Journal of Management (AJM) (print ISSN 0976-495X, online ISSN 2321-5763), January- march 2018, Vol. 9, issue 1, pp. 342-346
2. Socio-Demographic profile of flat owners in Cochin Corporation, Kerala’ published in Zenith International Journal of Business Economics & Management Research. ISSN 2249-8826, November 2017, Vol. 7(11), pp. 192-198
3. Why flats in Kerala - An empirical paper based on flat dwellers opinion. Meridian, Research Journal of MES Asmabi College (ISSN 4784) January 2013. Vol 1 pp.32-35

Paper Presentaions

1. “Locational Attributes Influencing Residential Apartment Buying Behaviour”, UGC Sponsored International Conference on emerging Trends in Finance and Management , MES Asmabi College, Kodungallur on Nov.26th and 27th 2015.
2. Shift in Housing preference of Urban Kerala: A study on Residential Apartments “ International Conference Innovations in Business and Finance organised by Commerce Association of Kerala at St.Peters College Kolenchery on 29-30 May 2015.



