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**INSTITUTE OF ENGINEERING**  
**PULCHOWK CAMPUS**

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**Residential Satisfaction in Housing Community of Lalitpur**

By

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## ABSTRACT

This research assess the residential satisfaction of people living in two Housing community of Lalitpur on physical features of houses, planning of community and its neighborhood. Data was collected through structured and unstructured questionnaire using Kobo Toolbox. Descriptive analysis and cross tabulation was done for data analysis to find in which community residents were more satisfied and what are the factors that influenced them to choose that particular community. To analyze the residential satisfaction, 3 attributes were considered as; satisfaction with characteristics of individual housing unit, satisfaction with neighborhood environment and satisfaction with facility and convenience provided by the housing community. The findings of overall satisfaction shows that residents were fairly satisfied with their respective housing community though satisfaction level of resident of Cityscape was comparatively high with respect to residents of civil homes. Among the 3 categories, overall satisfaction was found same among satisfaction with characteristics of individual housing unit and satisfaction with neighborhood environment with mean score of 3.86 each and satisfaction with facility and convenience provided by the housing community was found least with mean score of 3.53.

**Keywords:** Residential Satisfaction, Housing Community, Neighborhood, Quality of Building material and Construction, Overall Satisfaction

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## **ACRONYMS AND ABBREVIATIONS**

BUS	Building Use Survey
DRS	Determinants of Residential Satisfaction
MoUD	Ministry of Urban Development
PREQIs	Perceived Residential Environment Quality Indicators
POE	Post Occupancy Evaluation
POS	Post Occupancy Evaluation
RES	Residential Environment Satisfaction
RS	Residential satisfaction
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific

# CHAPTER 1. INTRODUCTION

## 1.1 Background

One of the most obvious features of the contemporary world is urbanization. It is an ongoing process that deals with the dynamics of the entire metropolitan population. The elements that affect urbanization are the geographic position, population increase due to natural factors, and infrastructure accessibility, migration between rural and urban areas, cross-country migration, and environments that social, economic, and environmental trends, as well as cultural factors and goals (Ritchie, 2018). According to United Nations, among total world's population, 68% will live in urban areas by 2050 AD (Nations, 2019). The need for improved urban life quality cannot be understated given the world's rapidly increasing urban population.

Population of Nepal is categorized by rapidly increasing population density in main urban centers, along the main highways and its periphery, and the areas which are close to the border with India. Though overall population growth has slowed since 2001, and recent preliminary report states that has decreased by 0.93% again but urban population growth has been growing 3.4% per year from 2001 to 2011, compared with 3.6% per year from 1991 to 2001 (these data's are referred as latest since recent data about urban population growth has not been published). According to Timsina, (2020) Kathmandu Metropolitan City is the only urban center of Nepal which resides population above 1 million with increasing rate of 4.0% per year, similarly population of medium cities (100,000– 300,000) is growing at 3.5% per year and population of small cities (50,000– 100,000) at 3.6%. As per Shrestha, (2022) recently published data of Census 2021 shows the population growth rate of two provinces, Madhesh and Lumbini is the highest by 722,143 and 624,953 respectively. Now, Madhesh Province has replaced Bagmati Province as the province having highest population accommodating 20.99% of country's total population. According to the preliminary census report, the country's 66 percent population lives in cities while the rest live in countryside implying there is increasing need of well planned, well designed urban centers having proper infrastructure and sites and services.

About 66% of total population of Nepal lives in city area. Among those urban areas, Kathmandu Valley is the most populous city and is one of the fastest-growing urban agglomerations in South Asia (Muzzini & Aparicio, 2013). 24% of the total urban

population resides inside Kathmandu Valley, with Kathmandu Metropolitan City alone accounting for 9.7 per cent (MoUD, 2015). Such rapid population growth in Kathmandu Valley, has resulted in haphazard growth of settlements which has resulted in rapid urbanization, growing poverty, high cost of land and construction and dependence on the traditional practice of owner built houses. These situations has resulted in rise of need of housings. The government's strategy of implementation of the site and services program as well as land-pooling projects in the 1970s and 1980s profited local landowners, but private-sector developments that took place during 1990s and 2000s were only reachable to upper-middle and high income groups (Shrestha B. K., 2010). Urban centers has been growing haphazardly since 1950s due to rural-urban migration. Due to the unmanaged urban growth, number of problems are also increasing like a lack of proper planned infrastructure, haphazard squatter settlement, a severe scarcity of housing and a low level or no services. The fast growth has affected the quality of life in different districts of the city.

The present-day urban situation of Kathmandu is controlled by individual haphazard housing expansions. Contemporary houses are usually different in color, design, architecture and scale with each other unlike the houses of the original Newar towns. Reinforced concrete was introduced during 1950s which was the reason in changing the traditional brick-walled residential houses into contemporary type of structures. After which, it changed as a single storeyed residence with successive addition of floors as the family grew in size and the needs expanded (Shah, 2010). Recently, families' lives in different storeys in the same house with multiple storeys as the floors are rented out by the owners. Due to these reasons, the price of land is increasing continuously and with the rise in price of land, housing plots are becoming smaller in size resulting in addition of floor into residences by disregarding the bye-laws in order to accommodate the need of living spaces. The new evolving landscape was marked by the reinforcement steel bars protruding from the top slab of buildings, in anticipation of future additions' (Shah, 2010).

### **Housing scenario of Kathmandu**

The privately planned residential areas in the city appeared around 2000, with the representation of apartment act and deregulation of housing finance. During 2000, the Indian real estate Ansal Group partnered with Chaudhary Group and introduced the first apartment based housing project in Nepal 'Kathmandu Residency' at Lalitpur followed by Mount View Residency in Hattiban at Lalitpur. Since then, 100s of private

companies are registered with Nepal Land and Housing Developers' Association. At the same time, as the majority are one-off developers, more than 10 have built a successful real estate developer's business model. As of now, the supply of housing estates is mainly geared towards the upper middle class. Private developers in Kathmandu Valley planned modern districts in a grid iron pattern, to mimic classic Western suburban neighborhood designs. One of the first housing companies to start planned housing colonies is the Civil Homes Pvt. Ltd. It has also successfully constructed projects in outskirts of Kathmandu valley as well. The past developments have been hugely successful as well.

The increasing demand of housing projects are growing daily at a very high rate. This may be because of claims that real estate developers claim i.e. these kind of developments are marketed as a place with good views, a peaceful and healthy environment, tree lined boulevards leading to a dominant open space for community uses; full security with boundary walls, gates, and security guards; an onsite private school, clinic and postal services; as well as a reliable water supply and drainage systems. Another housing project was marketed as a gated community. It had well designed landscaped gardens, well planned walking and jogging paths, along with wide open roads, open spaces, a soon to open community club with all the modern facilities. Most of such projects are influenced by western communities be it in context of exterior architecture or floor planning, or even neighborhood planning and lack traditional identity of the valley. Talking about financial value, these houses are mostly targeted to upper class people or we can say elite group of people. Despite of such reasons, many people are attracted towards mass housing.

The reason of peoples' attraction towards housing project more than individual built and owned houses can be due to different reasons like:

- The continuous rise in construction cost and poor infrastructure in its surrounding
- High price of land
- Lack of security
- Lack of safe, friendly and good neighborhood
- Proper drainage, waste management, water supply, pedestrian friendly roads
- Children safe neighborhood
- Lack of open space and recreation areas
- Tedious job to build and supervise designing and construction of houses

Lack of those amenities and services are provided by real estate to some extent. That can be one of the encouraging point that people are opting for mass housing rather than individual built houses. In today's time, secure and safe environment, good facility, proper infrastructure are some factors that influence the house owners to choose housing. From the literature it is seen that quality of life and comfort are main factors that influence people to choose housing over individual built houses. According to some literature, important measures to affect the quality of life and comfort in the housing are physical, social, visual, economic, and technologic values. These values are considered important in housings that are mass produced. These can, as well as being able to affect each other favorably or adversely, can also determine the quality indicators undertakings in the country, it sets new standards of living, amenities and aesthetics' (Nilufer Tas, 2007).

## **1.2 Statement of the Problem**

According to (Halberg, 2001), the primary reason why a person moves into a housing community is the perception of higher security and well equipped infrastructure. Till now, not much research have been done in this field. Civil Homes that once claimed to one of the largest and successful housing Company of Nepal. In today's time many there are still many vacant houses that are still to be sold from its earlier projects. The failure of such company has opened a ground for researcher to study and find out what was the shortcomings that lead to it.

But in contrast to it, Chaudhary Group being pioneer of introducing modern housing concept in Nepal is trying to provide housing that is targeted to certain population only. It started its first project in 2000AD when CG partnered with Ansal Group of India to introduce first ever apartment based housing in Lalitpur. The housing units of CG groups market their projects as vibrant projects that are keen to developing "environmentally sustainable", "strategically located" and "economically viable" property in Nepal. Known as CG Realty, this company has many ongoing as well as completed projects.

Though there are some researches being held on emerging pattern of residences and some gated communities, however, previous research has not addressed one important point in their studies. Researchers have not examined the relationships between people's satisfaction and the physical features of their gated homes and neighborhoods. Nor have they accounted for people's current experience in housings. In other words,

researchers have failed to reflect the features of the complete surrounding created by gates and boundaries and its relationship to people's overall satisfaction level. Furthermore, previous work failed to consider the economic aspects of families living behind gates.

Also, gated societies have lately been researched by many scholars from the United States, Europe, South Africa, and Asia. There was an international conference with the topic of gated communities in 2003 and in present day, we have an international organization to study gated communities and related research issues in the world. The increasing number of gated communities is a social phenomenon in many other countries.

To summarize, previous research studies have focused mainly on the sociological issues of gated communities and no study exists regarding physical concerns in gated communities, despite the fact that gated communities provide very unique architectural settings such as controlled entrances, fenced territory, and privatized community roads. Thus, researching gated communities and discussing the related issues should also be done in the architectural domain.

Based on the above, this study will focus on some physical characteristics of housing communities and their effects on residents' perceptions. The condition of gating and fencing is considered as the most important characteristic of housing communities. In this study, two communities of Civil Homes as well as CG homes were taken for case study.

### **1.3 Research Gap**

Although there is enough research done in the field of residential satisfaction, but they are mainly done in West and in developed countries. With respect to Nepali context, study of residential satisfaction with their dwellings is negligible. It is found out that, in recent times, housing community is fast growing sector, but nobody has considered about the residents views after they have shifted to these kind of gated communities.

Gated communities have drawn attention because of their part in the segregation of urban form, but little attention has been paid to the design characteristics of this type of housing. In a Nepali environment, fence is a component of all urban dwelling typologies. Gated communities are thus distinguished by their facilities and services rather than their walls. This emphasizes the need of comprehending how the gated community's design aspects affect its end customers.

In this context, the research is done by taking two cases to understand the Residential Satisfaction in these two communities and compare between them.

#### **1.4 Research Objectives**

- To identify the reason behind the selection of housing community over self-built houses,
- To know the level of satisfaction among the residents of housing community with their houses and neighborhood
- To identify key components about Respondents' housing preferences
- To identify ways so that housing and its environment can be changed in order to make them more desirable place to live with improved quality of life

#### **1.5 Rationale of the Research**

Main objective of the houses is to satisfy its occupants. The evaluation of the satisfaction with respect to a house, is an indirect approach to the problem of residence (Francescato & Widemann, 1987). The main purpose of the study is to explore the satisfaction level of occupants of housing community and identify the different parameters due to which they select their housing unit. This study will also explore about the perception of people about the existence of gates and fences in housing communities of urban areas. Considering the rapid urban growth of Nepal, which is now not only constricted to Kathmandu valley, this study provide great help to Real Estate developers that are planning to construct new projects in emerging cities like Pokhara, Butwal, Chitwan etc. An increase in satisfaction with dwelling and environmental quality improves people's quality of life, thus directly affecting people's satisfaction in their lives. This study will establish the necessity that the factors affecting dwelling and environmental quality satisfaction should be taken into account during the planning process in order to increase user satisfaction.

For most people, a home is more than just accommodation only, it is rather a subjective and personal space that relates to social, psychological and cultural dimensions of life and most importantly, it is a space that affects the general satisfaction of the residents. When studies on residential satisfaction are made appropriately, detailed analysis of the elements of residences and the characteristics that create conditions that fulfill the wishes of dwellers should be studied. These analysis help us to decide about the performance of houses in the environment in relation to its physical, social, institutional

and psychological components. This is done because this reveal the different expectation of different group. The outcome of this study will help to develop a better design program for the development of future housing projects and also to assist the various stake holders during their choice making. The feedback information will play the role of “feed forward” in the design of future buildings, working towards creating a more humane and pleasurable residential environment. It will also serve to develop a benchmark in building a generic body of knowledge.

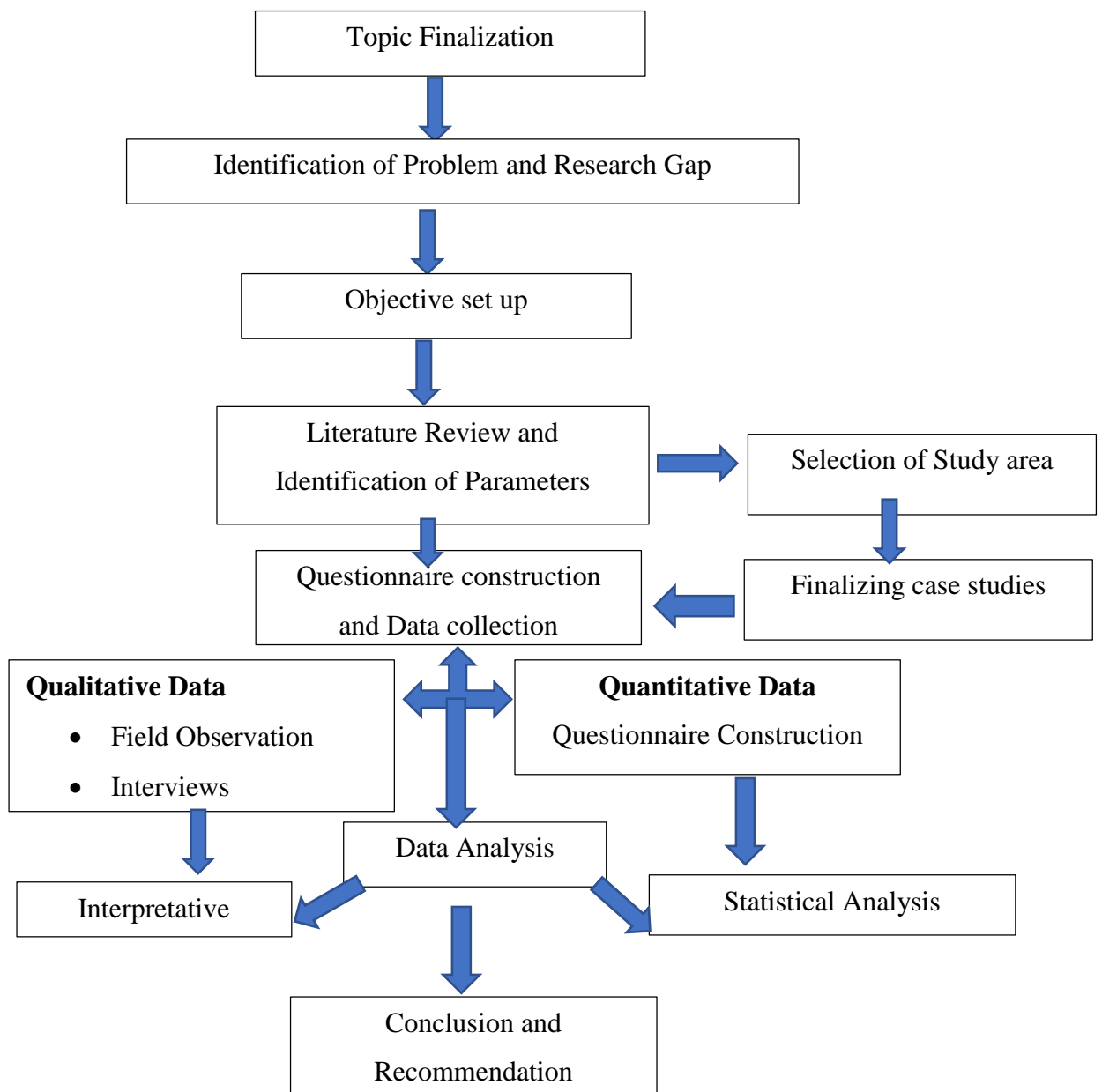
Residential environments are fundamental for people, and safe homes and communities have received significant attention from architectural researchers. The measurement of satisfaction of houses from the housing environment is important because, individuals may reside in any given residential unit for a long time. If the residential area is not designed suitably for its user, the users of that area may be negatively affected and that kind of dissatisfaction may lead to change of houses or residential area.

Within this context, this study will investigate whether housing communities affect people’s perceptions on choosing their homes. The results of this study thus will also be helpful to propose guidelines in community programming for planning better housing communities. In addition, the results of this study will encourage the developers to plan the housing units in such a way that they are safer, more desirable and inclusive for all people. From this study, the Real estate developers will get idea of the people’s level of satisfaction on different parameters that they claim to provide during the marketing period and they will also know about the shortcoming in present housing community. So, while planning other projects, the results from this study could be focused and managed properly in order to make the residences more desirable with increased satisfaction level of the residents.

The results of this study will likewise attract the attention of the National concerned authorities. As the study will try to find out answers like “why do people move into their current homes?”, “what are the factors that they consider while choosing their homes”. Based on the results from this study, it is suggestible that they do so “because they believe their current home and neighborhood to be safer, accessible, and beautiful than the previous one.”

## 1.6 Research Methodology

### 1.6.1 Conceptual Framework



**Figure 1.1 Conceptual Framework of Research**

The study was based on conceptual explanation and field work. The stages of the research was selecting the areas in which survey will be conducted, preparing the survey questions and conducting the evaluation of the survey. Within the conceptual research, factors that affect the housing quality was extracted and examined by literature review. At first, the topic was finalized with proper objectives and then from the literature review, different variables that are associated to measure the satisfaction level was studied.

### 1.6.2 Methodology

This research focuses on exploring residents' satisfaction level in housing communities of two different leading companies. To measure residents' satisfaction level, both subjective and objective information on satisfaction level will be considered. Residents' subjective perceptions of ideal House were investigated by individual surveys. The objective information regarding residents' satisfaction on available facilities in communities and physical aspect of the building as well as community was obtained by asking them questions regarding their perception of satisfaction on different facilities and infrastructures provided to them by housing communities. Architectural characteristics of communities were considered. Hence, the nature of the research theme relates to peoples satisfaction level with their housing.

The theme of the research which is examining the satisfaction level of the people living in housing communities could not be approached from the positivist paradigm. As the positivist paradigm requires the understanding based on causal relationships and this situation largely depends upon the inter-subjective opinion of the people, so it could not be researched from the positivist paradigm. As the perception of satisfaction of housing varies from person to person, the generalization of such thoughts is not possible. In addition, the quantification of the requirement of criteria for making that place fully satisfactory is not possible by interpretation only. Therefore, the research paradigm could not satisfactorily define by a subjective approach.

The nature of the research topic is inductive approach as the research is observation based where the level of satisfaction and demand for facilities largely depends on people to people due to the socio-cultural dynamics among the community. Therefore, a framework that combines the individual perspective to give a common idea about the requirement needed in any housing community to increase the satisfaction level for generalization is needed. This system of thought clarifies the interpretation of different variables that are obtained from literature. This study is learned to effectively quantify those societal and individual needs and direct further research for the alternatives of housing communities to make it an ideal place to live in with higher satisfaction level. However, the main agenda required a quantitative and qualitative evaluation for statistical comparison on why residents choose to live in housing and what are the parameters that derive their level of satisfaction.

Therefore, quantitative analysis with a field survey was done using a questionnaire as a guideline for fulfilling the research purpose. As qualitative analysis deals with the subjectivity of humans which cannot be converted into numbers such as interviews, notes, video and audio recording, images, and text documents is also needed for this research because to know the preferences of people on how their homes can be made more desirable and according to them what are the elements that lacks and should be added in the housing community in order to increase the quality of life are subjective topics to discuss. These kind of things largely depends upon people to people. So for this research both qualitative and quantitative methods were adopted.

This research lies under non-exact science as it studies human behavior, space, and social relations. The experiences of the residents were collected in-situ. This research is based on the pragmatic paradigm which most likely gives the research a proper feasible direction as a conceptual idea. Since people's level of satisfaction varies according to the people. This research takes the probabilistic nature where the truth is aimed to be extracted in its probable form. Since each household could have different criteria that derive their level of satisfaction from their dwellings, this research could not be understood as a 100% truth from an objective viewpoint. It can be considered as mixed method research; therefore, a pragmatic paradigm is considered.

Ontology and the ontological assumptions describe the nature of reality, its existence, and the way they are related (Blaikie & Priest, 2018). The ontological claim of the research is people feel safe, secured, and convenient to live in housing communities rather than self-built or houses outside of any gated community.

Epistemological assumptions are based on the adequacy and legitimacy of different kinds of knowledge that are possible (Blaikie & Priest, 2018). This research intends to produce knowledge about the factors that influence people to choose housing communities over self-built houses and seeks to identify the valid reason for choosing their homes in housing community's rather than self-built as epistemology deals with valid source of knowledge. Accordingly, this research has proposed to look into people's minds since it is the ultimate source of knowledge about why they chose that community. Since their adaptive strategies are largely dependent upon the physical design of building, availability of open spaces, plot sizes, and street design this research has also investigated in these areas for a valid source of knowledge.

### 1.6.3 Method

Research methods are the approaches, procedures or methods applied in the collection of data or evidence for study in order to uncover new information or create better understanding of a topic (The University of Newcastle, 2020). This study falls under case study research design which focuses on understanding cases taken for study and comparing the satisfaction level of people of both cases. For the study, two variables, dependent variable and independent are considered. The dependent variable will be



**Figure 1.2 Flowchart of research methodology**

level of satisfaction of residents and independent variables will be the parameters that are obtained from literature review.

This research was done on the housing community and questionnaire survey was used for data collection. Structured close ended and unstructured open ended and questions was provided to the respondents as the satisfaction level depends upon the person to person. Questionnaire is used to collect information for knowing the satisfaction level of residents, what are the factors that influence them to choose their current housing units. Then the results obtained from questionnaire survey were analyzed into SPSS. Cross tabulation was done among different dependent and independent variables to find the relation between the variables. Descriptive analysis was done to analyze the satisfaction level on residents and then the mean score was of each variable was compared to find the satisfaction and analyze in which category the satisfaction was highest and which housing community has satisfied residents.

In order to know about the perception of people about their ideal home and the factors that they think should be included in the housing community to make it more desirable for increasing quality of life, qualitative data was taken. For qualitative data, interview was taken where structured open ended questions was asked.

### **1.6.3.1 Sample Framing and Sampling**

A sample can be defined as a group with a relatively smaller number of people selected from a population for investigation purposes. The members of the sample are called as participants or respondents. A sample is a limited part of a statistical population whose characteristics are studied to increase information about the whole. The sampling frame is the foundation material or device from which a sample is drawn. The process through which a sample is extracted from a population is called sampling. Systematic sampling was done where population was selected equally from both housing communities. In this population systematic sampling was done where houses were every alternate house was selected by the researcher from both the community.

### **1.6.3.2 Data Collection**

For data collection, questionnaire survey was used. A questionnaire is a research tool containing a series of questions used to collect useful information from respondents (Lucid, 2022). Questionnaire for this research was designed to obtain and collect information in order to measure the satisfaction level of the residents of both housing community. Background information and literature study was done to identify the variables used in the questionnaire according to the research objective. For this research, in order to fulfill the objectives, data was collected related to;

- **Social demographic characteristics**

This topic covers the information about the residents' features such as age, income, duration of stay, ownership of the house, household type.

- **Previous and Present Housing characteristics**

This topic covers attributes that determine the physical feature of housing such as

- ✓ Spatial features of house like shape of housing, features of the spaces in the housing, type of housing, location, size and exposure of the housing, number of rooms in the housing, design criteria like size, usage and number of rooms, flexibility of spaces and their response to the user needs
- ✓ Interior spatial features of housing like size of interior spaces, storage areas,
- ✓ Usages of spaces in the housing unit
- ✓ Comfort features of housing
- ✓ Aesthetics of housing unit

- **Information about the residing building and its physical features**

This topic covers attributes to determine neighborhood characteristics of the housing community. It covers areas like safety from crimes, accessibility to different spaces quality of streets and roads, homogeneity regarding social class, race and ethnic group etc.

- **Satisfaction on different factors related to housing community and its neighborhood**

This topic incorporates features like residential satisfaction on 3 categories as neighborhood environment, comfort and facilities and characteristics of individual housing unit. Likert scale was used to examine the satisfaction level on these factors. 5 point likert scale is used. And at the end of the questionnaire, some open ended and multiple choice questions are proposed to incorporate the remaining factors to be included in the questionnaire.

### **1.6.3.3 Data Analysis**

Questionnaire survey was used for data collection. For the preparation of questionnaire, KOBO toolbox will be used. Questionnaire was prepared incorporating all the parameters that will be identified by literature review to know measure the satisfaction level. Then the questionnaire was deployed and data will be collected using KOBO collect. For data analysis, the answers obtained from questionnaire survey was transferred to SPSS. Then correlation and regression was done for data analysis for quantitative data whereas cross tabulation will be done for the qualitative data in order to check the relations among the different variables.

## **1.7 Scope and Limitations**

The result from this research will identify different factors that influence people to choose housing over self-built houses. This research will also examine about the difference in satisfaction level of residents living in different community. Likewise this study will be helpful to know the overall satisfaction and dissatisfaction of the residents who are living there. And highlighting the factors that are important for housing so that it will guide while planning for future housing projects. In this study, houses are selected for surveying as both cases have similar number of individual houses. Considering the whole aspects of the research results, this study additionally will suggest design and managerial considerations needed to improve residents' perceptions

in their residential environments. Thus, the proposed study should be understood as a process for creating safe, more desirable, functional and beautiful urban center.

Considering the scope and relevance of this research, however, this research also has some limitations in order to finish the research in assigned time as this research was done to fulfill the academic requirement of Masters. Some of other limitations of this study are:

- For this study, two housing community that is near to main highway is selected.
- Housing community is selected in the basis of their number of houses, cost of housing unit during the time of construction and year of construction.
- These community were selected because they both belong to the developers that are known as one of the most successful companies in developing housing communities.
- In this research, satisfaction level is analyzed mainly in the basis of satisfaction on physical features of housing unit, satisfaction on planning of housing community and satisfaction with the neighborhood of housing community.

## **CHAPTER 2. LITERATURE REVIEW**

Instead of using Residential Satisfaction, researchers generally use the term Housing and satisfaction so before explaining about Residential Satisfaction, the terms “Housing” “Satisfaction”, should be understood.

### **2.1 Housing**

According to Raven (1967) housing is a composite of the technical and structural elements of the home as well as the social, cultural, and personal traits of the residents. The main forces behind the evolution of housing are the physical and socio-cultural necessities. The term "housing" is used at a variety of levels, from individual residences, settlements, neighborhoods, cities, regions, and nations at the international level, according to the Global Housing Strategy Framework Document (UN-HABITAT, 2012). Housing is a multifaceted term that encompasses not only the supply of shelter but also the provision of privacy, adequate space, structural stability, lighting and ventilation, sanitation, waste management facilities, etc.

### **2.2 Gated Communities**

After the Industrial Revolution, the idea of multifamily (apartment) dwelling first came into existence. The goal of this housing solution was to create a substantial housing stock that would primarily serve the demands of the low- and middle-income group in society. Gated communities are the form of multifamily housing. One of the first publications about gated communities was "Fortress America," authored by (Blakely & Snyder, 1997). It has defined gated communities as residential zones with walls encircling them, preventing visitors from entering. Based on security, exclusivity, and the scope of lifestyle facilities, Blakely and Snyder divided gated communities into three groups. The history of gated communities is a subject of many hypotheses. The primary drivers for the construction of gated communities are said to be the demand for safety and protection from crime. Another explanation for the growth of this house type is the privileged class's tendency to isolate themselves. (Roitman, 2010).

The emergence of gated communities in developing nations is attributed, according to (Cséfalvay, 2012), to globalization and a lack of essential government services. The end customers are looking for social uniformity and a better way of life. Additionally, the emergence of gated communities has been influenced by people's desire for a feeling of community and ambitions for social differentiation and greater social status.

According to (Grant & Mittelsteadt, 2004) a gated community is a particular style of housing development that is divided from the neighborhood around it by the presence of barrier features and has access limitations for non-residents. Kovács & Hegedűs, (2014) acknowledged Grant and Mittelsteadt's description of a gated community.

The leisure time has been sucked up by the hectic work routine. As a result, individuals want to stay in areas where they can easily access recreational activities from within their residential complex. Due to the fact that this reduced travel time and gave the end user flexibility to use the amenities whenever it was convenient for them. Communities with gates add to the feeling of security by controlling guest access. Meanwhile, real estate market, gated communities are often taken into consideration by developers as a marketing tactic. The primary drivers for these gated communities are the sense of security, the sense of community, and the ease of access to both recreational and basic facilities. These gated communities draw a modest but wealthy portion of the population (Tan, 2016).

A gated community's physical purpose is to protect the inhabitants and to offer facilities to guarantee the residents' standard of living. Socially, it fosters community life and spatial seclusion, and symbolically, it is seen as a prestige symbol. The addition of numerous facilities raises the property value and benefits the economy. Many sociological studies have focused on gated communities in an effort to comprehend the effects of physical and social fragmentation on the urban fabric (Blakely & Snyder, 1997)

According to (W Ginting & Sakinah, 2018) study on Indonesia, gated communities are liberated from the bonds of socioeconomic and racial segregation, and the fence element's sole purpose was to provide security. Additionally, gated communities exhibit evidence of transitioning from traditional housing for homogenous socioeconomic groups to mixed-income living (Olivia, Adianto, & Gabe, 2019)

The typical features of gated communities are displayed in Table 2.1 below;

**Table 2.1 Typical characteristics of Gated Community**

Security Features	24 X 7 guards Card/ code entry Surveillance cameras Vetting of visitors
Amenities	Recreational facilities Landscape

	Meeting place Activity center Maintenance of facilities
Type of Residents	Homogenous in social class Heterogeneous in age, ethnicity and race
Tenure	Principal residence Simple fee ownership
Location	Suburban areas
Size	Tens to hundreds of units

Hence, evolution of gated communities is the result of residents need for better facilities and security which are also characteristics of gated community.

### **2.3 Satisfaction**

Word satisfaction was first used in Latin language. A Latin word for "enough," is "satis," and faction is derived from the word "facere," which means "to do or make." According (Kotler, 2015) a "marketing guru" of the contemporary day, satisfaction is "a person's sentiments of joy or disappointment arising from assessing a product's perceived performance (outcome) in comparison to his or her expectations." Fundamentally, customer contentment is a marketing idea. According to this definition, customer satisfaction refers to how they feel about the product, how they judge it, and how likely they are to purchase it.

Product characteristics and services supplied are concrete aspects that affect satisfaction, as are intangible factors like consumer needs and emotions. There are several theories of satisfaction, including the negative theory, assimilation theory, contrast theory, and discrepancy theory. The focus of all theories, according to (Eke, Aigbavboa, & Thwala, 2013) has been on the user's post-experience evaluation and their pleasure with the product experience. The client will feel some level of disappointment when their expectations and the actual function of the product don't match.

### **2.4 Residential Satisfaction**

Understanding the theoretical basis of satisfaction and Residential satisfaction is a complicated and ever-changing topic. As a result, various ideas such as life satisfaction, job satisfaction, customer satisfaction, residential satisfaction, and the like (Aigbavboa

& and Thwala, 2018) have emerged in a variety of disciplines, including psychology and its subfields, management, marketing, architecture, and urban studies. These fields create happiness in an interdisciplinary relationship, and some of them even go further. The purposive method to addressing satisfaction is based on Maslow's "Theory of Human Motivation" (Maslow, 1943), which states that the environment either inhibits or promotes the users' goals (Jansen, 2014). The aspiration-gap approach examines satisfaction as a measure of the gap between people' actual and desired demands (Galster G. , 1987). However, (Francescato, Weidemann, Anderson, & Chenoweth, 1974) established a more comprehensive perspective, conceptualizing satisfaction as an attitude having cognitive, emotional, and conative elements (Amole, 2009). They claimed that this definition of RS is more thorough since it shows how, when taken as a behavior component, RS transforms from a criterion to an external variable. It also offers an explanation for the nonproductive nature of interactions between the environment, environmental satisfaction, and behavior (Francescato & Widemann, 1987). Although (Campbell, Converse, & Rodgers., 1977) stated that RS, compared to other dimensions of life such as marriage, work, health and friendship, is relatively unimportant and may not contribute to the overall quality of life, most studies have concluded that it is an important component of quality of life and will become even more critical in the future, especially in metropolitan areas (Marans, 1981). Also, the lack of RS leads to stress and mental tension, and thus, residents will have more probability to move (Speare, 1974). The field of RS is comprehensive due to its inevitable consequences and is linked to disciplines like sociology, psychology, urban planning, urban design and architecture (Amerigo M. &., 1997).

## **2.5 Satisfaction and Dissatisfaction: Theoretical Backgrounds**

Frederick Herzberg, a clinical psychologist, was the first to demonstrate that job satisfaction and discontent almost invariably stem from different signs, rather than being opposite reactions to the same variables, as had previously been assumed. Herzberg's "Hygiene-Motivation Theory," also known as "The Two Factor Theory," proved that certain variables (motivators) actually motivate, while others (hygiene factors) tend to cause unhappiness (Herzberg, Mausner, & Snyderman, 1959). It suggests that, contrary to popular belief and reasoning, removing dissatisfaction sources does not imply satisfaction. Many earlier underlying notions of job satisfaction were put into question by Herzberg's evidence, which revealed that the satisfaction vs.

displeasure pendulum is not always set on a single scale. Adams, a workplace psychologist, also established the "Equity" theory of job happiness, arguing that employees desire fairness between the inputs they spend and the outputs they obtain at work (Adams, 1963). The above-mentioned explanations resemble the concept of discrepancy (Porter, 1961), which describes the gap between expectations and results. Small differences lead to absorption, but large differences lead to contrast. (Oliver, 1980) Proposed the "Theory of Disconfirmation Expectation", which express residential satisfaction is considered to be important for the functioning of the housing market since it is generally accepted that higher levels of satisfaction among residents are good for both the residents and for the property-owners and owners of the dwellings and estates.

## **2.6 Theories on Residential Satisfaction**

According to all theories, customer satisfaction refers to the user's responding response to a product experience. The empirical research on residential satisfaction mostly draw on three ideas. They are Housing Needs theory, Housing Deficit theory and Psychological Construct theory.

### **2.6.1 Housing Needs Theory**

Rossi (1955) used the concept of "housing needs" to hypothesize residential satisfaction. He stated that because a family's demands change as it moves through different life phases, there is sometimes a "lack of fit" between intended and actual housing needs. A situation like this causes households' home satisfaction to decline over time. The household's reaction to this sort of stress will then manifest itself through migration or residential mobility.

### **2.6.2 Housing Deficit Theory**

According to the theory put out by (Morris & Winter, 1978), families evaluate the qualities of their homes using criteria that they have established. Both societal norms and familial or personal norms have an impact on these standards. When there is a discrepancy between the norms and the existing housing circumstances, there is a housing deficit. Dissatisfaction is the outcome of this lack. The household will often adjust its demands and goals or redesign its home in some way to make up for this loss.

### **2.6.3 Psychological Construct Theory**

Galaster (1987) proposed that people may create a mental "reference" state for every element of their living circumstances. Congruence between the existing housing circumstances and the reference conditions results in satisfaction. Households have a tendency to adjust to the existing situation when they are unhappy in order to feel less unhappy. However, the household lessens the impact by relocating to a more congruent home environment after the "threshold insufficiency" is reached.

### **2.7 Residential Environment Satisfaction**

Satisfaction in the residential environment reflects people's responses to the area in which they live in. The term 'environment' is associated not only to the physical components consisting of the housing and neighborhood, but also to social and economic conditions. (Francescato G. , 1997) In his study says if appropriate techniques are used in data collection and analyses, it is possible to measure physical, social and administrative factors that determine the level of residents' satisfaction in the housing area. According to him, these information can be used not only for establishing ways in which improvements could be made.

According to behavioral sense, dwellers' satisfaction in housing should be defined as a dependent approach toward a residential environment. Rosenberg and Hovland, in their studies have suggested that when different components of attitude (informational, emotional and behavioral) are considered, some academics prefer a description of emotional mechanisms for defining user satisfaction in housing, while others prefer perception-based descriptions (Amerigo M. , 2002). When emotional component is major, user satisfaction in housing means imitating the sentiments of satisfaction and contentment to the housing place which also creates these feelings (Gold, 1980). When informational factor is significant, residents' satisfaction in housing is constituted by the parallel factors between the current conditions of the residents' and the standards they expect and demand (Wiesenfeld, 1992). (Bardo, 1984), in his study recommended that if the gap between demands and needs reduces, satisfaction of residents of housing area increases.

Speare (1974) in his study clarifies that satisfaction creates solidity in the neighborhood, because satisfaction is a significant predictor of immobility. Dissatisfied people may have a tendency to move out, especially when they know that opportunities are available and affordable. Feijtan (2009) clarifies an understanding of the factors that

result in satisfied residents ‘can play a serious part in making effective housing policies’ (Lu, 1999). Satisfaction can be described as a state in which a resident’s expectations are fulfilled. Satisfaction with a residence means that the occupant considers the accommodation large enough or feels that it has enough services. Satisfaction with the estate shows that the occupant likes the neighbors, the physical state of the area or the location relative to the city center

The literature tells us that there may be some very direct relationships between satisfaction, on the one hand, and individual and household characteristics, as well as dwelling and estate (or residential environment) characteristics on the other hand (Amerigo M. , 2002). These relationships are largely based on the expectations people have in their various life stages and the possibilities they have (or experience) on the housing market (Feijten, 2009). Demographic and socio-economic position on the demand side have to fit certain characteristics of the dwellings and estates on the supply side, including maintenance. This accounts for satisfaction with the land as well as with the residence. Some of the literature clearly states that there is a close relationship between housing satisfaction and estate satisfaction (Parkes, 2002).

The evolution of the aforementioned theories reflects advancements in the realm of satisfaction. There have been advancements in the areas of minimizing personal distress, enhancing employee productivity, and increasing consumer satisfaction. They all treat the gap between an individual's external environment (objective aspect) and their inner world (subjective aspect) as a process rather than a product. Both the objective and subjective variables are constantly changing and influencing each other in this process. The subjective aspect of an individual is now being researched until researchers can determine which part of it has been activated and under what conditions satisfaction can be obtained. Concepts such as need, want, preference, and expectancy are being separated and explored in this regard. The desire rhetoric is more tied to pleasure-seeking than the need rhetoric, which has its roots in a utilitarian philosophy of contentment (Campbell, Converse, & Rodgers., 1977). Preferences, which are based on subjective tastes, are also about making decisions and taking action: they are more about the present. Expectations, on the other hand, are assertions or forecasts of preferences about things that are driven by needs: they are more about the future (Juster, 1964). The above notions and theories have only been used in a few RS investigations. For example, several RS research have found that needs and expectations, rather than socio-demographic characteristics, are better predictors of RS (Clark, 2006)'s study is

one of the few on expectations that takes into account younger age groups and the impact of environmental variables on RS. Based on Oliver's expectation-disconfirmation performance model, (Jansen, 2014) conducted an in-depth investigation on what one wants and what one has. Participants were split into three groups: match, mismatch (prefers greater space), and mismatch (prefers less space). Surprisingly, the third group had the highest mean RS; as a result, she concluded that a mismatch does not always lead to lower RS: it can also lead to higher RS (Jansen, 2014). For the house, the neighbors, and the neighborhood, (Amerigo M. , 2002) described a study in which actual and ideal living situations were compared. Despite a considerable disparity between the real and ideal living surroundings, one group of respondents in a low-quality domestic environment exhibited rather high RS. The aforesaid observation was attributed by (Amerigo M. , 2002) to an adaptive cognitive adjustment mechanism (Jansen, 2014) argues in another study that low-quality housing can be suitable in some cases, especially when the gap between what people want and what they have is minimal, and that the role of experience in reducing mismatch is critical.

As one of the first examples, (Francescato, Weidemann, Anderson, & Chenoweth, 1974) model verified that residents' satisfaction in housing is composed of objective-individual and objective physical features as well as user opportunities from the housing environment. Later (Galster & Hesser, 1981) developed their own idea of housing user satisfaction by using path analysis. Their model has been defined by summarizing the relationship between objective-independent and subjective-interventional variables. In (Marans, 1981) theoretical model the objective features of the physical setting are used to classify the correlation between housing residents' satisfaction and their behavior. Their study not only shows that overall housing satisfaction is influenced by perceptions and evaluations of objective environmental features, but also that user behavior is affected by environmental satisfaction.

Weidemann (1985) have developed a more comprehensive model, which is based on the relation between the emotional responses of people and their behavior. Their aim is to compensate for the lack of sufficient evidence of the direct relation between emotional responses and behavior. They have used the behavior model that combines both parts. In this way, they have been able to create a comprehensive model of housing satisfaction. In their model, housing user satisfaction is conceived in terms of users' emotional responses to the physical and social environment of the housing. These

responses reflect positive or negative user attitudes toward the environment in which they live. Another result of (Weidemann, 1985) study suggests that user satisfaction in a housing area does not trigger people's decision to move from that place. Rather, moving between housing areas is directly related to people's intention to do so. This result proposes that people continue to live in the same housing area even though they are not satisfied with it. The physical and social components have clearly been presented in their model.

Moore (1997) in his study has proposed four levels of hypothetical construction for beginning and assimilating studies of the residential environment: conceptual orientations, frameworks, models and theories. Amerigo (1997) presented a hypothetical and organizational method to the study of residential satisfaction, and gave a general view of the relationships established between people and their residential environment. Amerigo M. (2002) offered a framework for a psychological approach to the study of residential satisfaction. Amerigo's model is grounded on the subjective user assessments about the objective housing area environment defined in terms of its physical and social features. Characteristics of residents portray every residents' precisely in their housing area, thus making them take satisfaction in the housing area on separate levels. As a result of this emotional condition, individuals contribute to the equilibrium in their environment through some spontaneous behavior.

Also, Garling (2002) in his study noted that residential satisfaction is a natural standard by which they judge the success of residential choice. Significant reason for moving out of a specific area may be residential dissatisfaction. They presented a psychological conceptualization of residential choice. A multidisciplinary conceptual framework of environment quality and quality of life for the advancement of urban development, environment quality and human well-being was shown by Kamp (2003) in his study.

## **2.8 Determinants of Residential Environment**

Some RS studies have used questionnaires or checklists with several items based on RS literature or previous works (Fornara, Bonaiuto, & Bonnes, 2010). Systematic and broad information on how residents position themselves on the array of variable (Bonaiuto & Fornara, 2017) is offered by such an approach. However, most studies have utilized preliminary, exploratory interviews in order to create new indicators and modify old ones, solve methodological flaws, increase content validity and design their own RS questionnaires. Utilizing the emic approach of interviews, thematic categories

analysis (content analysis) and sometimes factor loadings (e.g. (Weidemann, 1985) have helped researchers in improving their questionnaires' items. Although RS can be context-specific and its predictors can play different roles in various situations, cross-cultural studies in this area are scarce. The cross-cultural generalizability of the effect of subjective and objective features in predicting environmental quality through three measures: satisfaction with health services, satisfaction with housing and satisfaction with neighborhood, as well as in predicting the global measure of life satisfaction was examined by the study of Fine-Davis and Davis done in 1982 using smallest space analysis (SSA). They concluded that a high extent of consistency existed across eight member countries of the European Economic Community despite interesting national differences.

Having said that, outlining RS determinants and indicators based on existing literature is crucial. Therefore, an evaluation method that incorporates the determinants of RS was used. Also, the determinants are believed to present indicators that finally affect the nature or outcome of RS. Indeed, a single determinant contributes to calculate the level of RS by indicators that are observed values and signs of presence or absence of variables (Babbie, 2012). Accordingly, the obtained classification certainly represents a simplification of the concepts and predictors and helps make clear distinctions, as well as a better outline of RS. In order to classify DRS, a couple of strategies were utilized. The first was utilizing RS existing theories which emphasized different RS aspects. For instance, physical aspects and the role of designers were emphasized in the "Theory of Home Adjustment" (Riemer, 1943). Also, social rules together with family norms were raised in the "Housing Deficit Theory" (Morris & Winter, 1975), and the psychological aspect, as well as the role of the individual, were highlighted in the "Psychological Construct Theory" (Galster & Hesser, 1981). It should also be mentioned that a lot of concepts related to the psychological aspect of RS cannot be considered as DRS. For instance, notions like cognition, perception, evaluation, decision-making, and the like, can be measured as individuals' psychological processes because they cannot directly increase or decrease the level of RS. The second approach was considering existing DRS in selected studies. Scale, as a standard, is of importance in the classifications of DRS in the existing literature. Dwelling, micro and macro neighborhood, town and city, more or less in various contexts, play their roles in changing the level of RS. For a complete understanding of RS, all of them should be thoroughly studied. (Marans, 1981) Found systematic variation in satisfaction levels in

their nationwide research in the US. The residents of rural areas showed more satisfaction with their communities, compared to residents in central cities. The difference seemed to be systematic, with large cities, suburbs, towns, and small cities on a field. However, they concluded that this difference was not due to the size of the living places and was related to the ways in which residents examined their community that contributed to overall satisfaction (Marans, 1981). Based on the idea of hierarchy of place, Canter and Rees (1982) argued that different levels of the residential environment should be measured. Using Smallest Space Analysis (SSA) and considering in-between scales, they analyzed different physical levels of the residential environment in relation to social contacts, spatial provision and services. Studies that has explored the relationship between scale and RS are rare, with the few above studies being exceptions. Also, there is a scarcity of research on the analysis of in-between scales in RS area.

Nevertheless, different DRS exist mostly based on RS aspects, scale and demographic variables. For example, the DRS based on neighborhood satisfaction, individuals' perceptions, and the length of residence while not addressing the house itself was classified by Hur and Morrow-Jones in 2008. Further, physical environment, the social milieu, and the environment's functionality as the DRS was considered by Rioux and Werner in 2011. Furthermore, Buys and Miller (2012) categorized DRS into dwelling characteristics and neighborhood, whereas they considered no residents' attributes. Riazi and Emami (2018) introduced a three-level classification of DRS, including planning policies, design principles and interaction with neighbors while considering the residents only in descriptive statistics rather than DRS.

## **2.9 Indicators of Residential Satisfaction**

Ibem, Adeboye, & Alagbe (2015) concur with (Preiser, Rabinowitz, & White, 1988) viewpoint about the identification of the BPIs (BPI). They believe that these cues ought to be picked up based on how the user feels about their building. Based on the issues faced by the residents, significance is assigned to the residential environmental characteristic. The metrics used to assess the performance of the building are chosen based on the values held by the various stakeholders. In their (2016) study, Aulia and Ismail concentrated on the housing typology based on middle-class residents in gated communities in Medan City, Indonesia. They noticed that the design elements, housing location, and offered public amenities make up the indications for physical pleasure of

housing qualities. Social connection between neighbors, security, and tenure of dwelling are the non-physical satisfaction markers.

Ogunbayo et al. (2018) investigated the Residential Satisfaction of housing complexes in Nigeria's Ogun state. They determined that household size, geographical features, and accessibility to the workplace, together with housing tenure, amenities, and space availability, are important satisfaction markers. The objective part of research on residential satisfaction is made up of these technical performance measures. Age, gender, ownership, length of residence, and social conventions all have an impact on the subjective elements. The objectives of the evaluation have an impact on the indicators chosen to gauge residential satisfaction. The choice of indicators is also influenced by the researcher's position in these investigations.

### **2.10 Perceived Residential Environment Quality Indicators (PREQIs)**

According to Marino, Anto, & Marco (1999) PREQIs are a set of indicators, measuring how people observe the quality of their residential environment, particularly the neighborhood. This tool was formed starting from the relevant literature and from in-depth semi-structured interviews that generated a large set of items, whose refinement, through analysis of extensive empirical data, resulted in the definition of 11 scales. The scales are organized in four dimensions of residential quality: architectural and planning features, socio-relational features, functional features and contextual features. More specifically, the scales Architectural and Urban Planning Space, Organization of Accessibility and Roads, and Green Areas; the dimension of socio-relational features is covered by one scale (named exactly Socio-relational Features) is covered by the dimension of architectural/ urban planning features; the dimension of functional features is covered by the scales of Welfare Services, Recreational Services, Commercial Services, and Transport Services; the scales of Pace of Life, Environmental Health, and Upkeep and Care covers the dimension of context features.

### **2.11 Satisfaction in residential environment**

Residential satisfaction is a multifaceted notion that has been articulated in a variety of ideas and frameworks (e.g., (Amerigo M. &, 1997), (Parkes, 2002)). It is most generally conceived as an individual's perception of how the actual residential environment fits their residential ambitions (Lu, 1999), therefore capturing their cognitive responses to the residential environment. Residential satisfaction can be

divided into three categories: satisfaction with one's home (housing satisfaction), satisfaction with one's neighborhood (neighborhood satisfaction), and general satisfaction with the area (community satisfaction; (Pinquart, 2013). These three categories are usually considered separate components of residential satisfaction (Dekker, 2011) and are thus assessed and analyzed separately (Aigbavboa C. &, 2016). The research on residential satisfaction has a major focus on only one of these three levels of the residential environment, with satisfaction at the level of neighborhoods being most focused on, whereas much less is known about satisfaction at the level of dwellings (Aigbavboa & Thwala, 2018). Studies at the same time evaluating more than one of these domains are rare, regardless of the rising recognition that these areas of residential satisfaction are organized and share a connection of predictors (Parkes, 2002). When residential satisfaction is being evaluated, individuals indirectly evaluate their current housing condition with regard to more than one level (Galster & Hesser, 1981); specifically, interrelatedness is clear in the assessment of one's housing, which is likely to include its instant surroundings and even relationships with neighbors (Lu, 1999); (Aigbavboa C. &, 2016).

There is a large quantity of research on the definition, measurement, and factors that influence residential satisfaction (Lu, 1999); (Dekker, 2011). Parkes (2002) are particularly interested in whatever features of the residential environment predict inhabitants' (global) residential happiness. Housing conditions, neighborhood characteristics, and household economics (e.g., proximity of neighborhoods to employment and recreation opportunities, general appearance of a neighborhood, socioeconomic composition of residents, availability of services, etc.; e.g., Wang (2016) have identified all as important determinants. This is a tough subject to answer because residential satisfaction studies vary widely in many ways, such as the sample characteristics (from nationwide surveys to surveys of local neighborhoods) and the range of variables considered.

Many inconsistencies in experimental findings on residential satisfaction exist, and as Lu (1999) points out, at least some of them may be due to frequently different meanings of a residential satisfaction variable among studies – which, combined with modifications in model description and the type of data collected, prevent a straight evaluation of conclusions. As a result, "the method by which residential satisfaction is measured is critical in empirical analysis since it has a direct impact on the findings" (Lu, 1999). The assessment of overall satisfaction and the assessment of satisfaction

with particular characteristics of the living environment are the two basic ways to measuring residential satisfaction (Lu, 1999); (Dekker, 2011); (Wang, 2016).

Although the approach of single-item indicators (115 studies versus forty-seven studies that employed sum-scales, as reported in a meta-analysis by (Pinquart, 2013) is used in the majority of studies on residential satisfaction, measuring residential satisfaction might not be as simple as enquiring respondents whether or not they like their apartment or neighborhood. It is known that the satisfaction of a resident can vary depending on many factors; for instance, the comparison of individuals have in mind when responding to questions on residential satisfaction and various aspects of the environment. Why residential satisfaction typically high across various conditions is a topic for a discussion on. Therefore, it is not likely that a single question about satisfaction with the residential environment could be an accurate measure of what residents really think about their environment (Parkes, 2002)

For measuring the items that address the various components of environment, most commonly involves the preparation of list of attributes of the residential environment that are potentially needed or believed important for residents and residential satisfaction, and asking the respondents to express their satisfaction or dissatisfaction with statements reflecting attitudes towards these attributes using likert scale in general. Residents' feelings about the specific aspects of their environment might offer important perceptions; for example, they have the potential to expose which neighborhood characteristics have a positive/ negative and greater/lesser impact on overall residential satisfaction (Adriaanse, 2007). Therefore, it depends upon the limitation of a study if residential satisfaction is assessed only through a general question without also focusing on specific attributes of the residential environment (Buys, 2012), all of the research is based not only on mere lists of physical and social characteristics arbitrarily defined by the researcher is under the assumption. This is often the case because there is an absence of selection criteria for the attributes included because only a minority of studies have explored the relationship between satisfaction with specific characteristics and overall evaluation of residential satisfaction (Adriaanse, 2007).

## **2.12 The Parameters affecting user satisfaction**

Reviewing the literature, it was seen that the parameters affecting the user satisfaction are cited often but also they were in the form of small and separated lists. Following

are the parameters that are used to forecast the satisfaction of the residents from their dwellings in various studies: Parameters related to the user are: family type (with children/without children/crowded), socio-economic structure/social status, profession, previous environment (appropriateness of dwelling to housing stereotype), sex, age, education, income, and period of stay. Parameters related to the environment are: physical comfort, overall appearance and physical condition, accessibility/services, development scale, organization (planning), rise in value and level of security. Parameters related to the building are: management, location, value and physical concept. Parameters related to the dwelling and spaces in the dwelling are: quality of spaces, physical comfort, spatial organization (design quality + functional relations between spaces and location of spaces in respect to each other), size of house, location of the house and dwelling aesthetics. Parameters related to human needs are: convenience, safety, need for social contact, freedom, activity, work and presence, beauty, meaning, value and social approval (need for social status).

### **2.13 Sense of place in the housing area**

Place is defined by Norberg-Schulz as a "focus where we experience the meaningful events of our existence". It is an active setting which is inextricably linked to the lives and activities of its inhabitants. As such, places are not concepts but are directly experienced occurrences of the lived world. Places are full with meanings, with real objects, and with ongoing activities. Being so, a sense of place becomes an important source of individual and community identity and provides a profound center of human existence to which people have deep emotional and psychological ties. Geographers of the humanistic tradition favor this personalization of space and distinguish depths of human experiences which may range from a visual experience (termed a public symbol) to an experience which requires close contact and long association (a field of care).

Public symbols are recognized as places simply based on their visual prominence. Because of their visual/aesthetic quality, they have high imageability and can command attention. Public buildings, monuments, sacred places and gardens are some examples. These public symbols are distinctive enough to give a locale an identity. Fields of care refer to places which may not be distinctive, for example, a park, a wet market or a shop in a town centre, but which evoke meaning for the inhabitants. There is affection and attachment to these places because of the time spent, repeated experiences, or meaningful interaction that took place there. Both public symbols and fields of care,

which need not be mutually exclusive, underlie the importance of the experiences felt by the people living in a locality which, when consolidated together, help to create a sense of belonging and rootedness for the place.

The notions of "insiderness" and "outsiderness" are also vital to understanding place identity. Being 'inside' helps to reinforce a sense of identity and belonging to a place because of involvement in it. The existential "insiderness" occurs when there is a subconscious association with a place at the deepest level, for example, in a field of care such as one's own home to which one has roots. But contrast to it, "outsiderness" appeals nothing more than a view of places as sources for functional activities. Objective outsiderness needs a self-conscious departure between people and places, such that places are examined according to principles of logic, reason and efficiency, an approach often adopted by planners. In this instance, the place can become mundane and insignificant because of other directedness and it becomes placeless. Manifestations of placelessness include uniformity and standardization in the landscape, for example, instant new towns and suburbs and the adoption of international styles of design and architecture; formlessness and a lack of human scale, exemplified by tall skyscrapers or megalopolis; impermanence and place destruction; and the creation of synthetic or pseudo landscapes specifically for tourists or for entertainment (referred to as other-directedness).

The meaning of place or a sense of place is therefore closely linked to character and identity of a place. Lynch describes individuality as that which enables a person to "recognize and recall a place as being distinct from other places -- as having a vivid, or unique, or at least, a particular character of its own". In this definition, the assemblage of physical features and the meanings derived from the interaction of people with a locality are equally important components of a sense of place. While these concepts illustrate the importance of a sense of place to individuals and to a community, they fail to take into account the influence of the role of the state or of the dominant group in shaping communities. The work of Gramsci is relevant. Hegemony, in Gramsci's definition, is the power of the dominant class to persuade subordinate classes to accept its moral, political and cultural values as the 'natural' order, without the use of coercion. In capitalist societies, supremacy is never fully achieved because it is always contested in active/open ways, and also in latent/symbolic ways by subordinate groups.

## **2.14 Measuring Residential Satisfaction**

In order to examine the customer input for high rise residential buildings in Toronto, Canada, Brown (2016) used a qualitative technique. According to the study, such an approach may be used in conjunction with a quantitative technique to better understand user behavior and experience. By conducting in-depth interviews, Hay et al. (2017) attempted to comprehend the viewpoints of British architects who practice POE. They noticed that there is a tendency for building evaluation to include all performance-related factors rather than just technical performance. There is a need for evaluation to take a more all-encompassing perspective. The most common method used to gauge resident satisfaction is a post-occupancy evaluation.

International literature review of empirical studies on residential satisfaction was done to establish the research gaps and identify the research indicators for the current study.

### **2.14.1 Demographic Attributes**

According to Waziri et al. (2014), adults 61 years of age and older have greater levels of satisfaction. Grum (2019) also noted that there are generational differences in how satisfied people are with their living conditions. His research supports Waziri's observation that elder respondents (those over 65) report higher levels of satisfaction. Both Waziri et al. (2014) and Grum (2019) emphasized that the user's demographic characteristics have an impact on residential satisfaction.

### **2.14.2 Housing Tenure**

Elsinga and Hoekstra (2005) examined the connection between homeownership and housing satisfaction in the United Kingdom, Ireland, Netherlands, Denmark, Austria, Greece, Italy, and Spain, as well as in other eight European nations. With the exception of Austria, where both target groups display comparable levels of residential happiness, they found that homeowners in the seven nations exhibit higher levels of satisfaction than tenants. Additionally, Teck-Hong (2012) discovered that Kuala Lumpur, Malaysia, had greater homeowner satisfaction levels. But according to Erdugdu (2015), the residents of a housing estate are more tolerant of the problems than the proprietors. He also noted that the tenant's lack of commitment to the property is the cause of their acceptance of the problems. The result is a higher degree of contentment.

### **2.14.3 Location and Typology**

According to Lara and Bekker's (2012) study of government housing in Angola, independent home tenants are more satisfied than apartment occupants. This might be linked to the fact that there is little room for living space customization in flats. According to Mohit and Raja (2014), there are many different factors that affect residential satisfaction. They thus recognized the necessity of carrying out Residential Satisfaction assessments that are context-specific. Johnson (2014) studied how conventional and green structures affected Swedish residents' satisfaction with their homes. According to the study, there is no statistically significant relationship between the parameters. For the purposes of determining the level of residential satisfaction, Huang and Du (2015) also looked at public housing developments in Hangzhou, China. According to the study, the importance of a specific home environmental element varies depending on the kind of public housing. By implication, they claimed that Residential Satisfaction is dependent on the house prototype. After observing four distinct communities in China, Yin et al. (2019) concluded that the Residential Satisfaction is influenced by gender, socioeconomic status, dwelling design elements, and community typology. Residential satisfaction inter-regional disparities were explored by Ren and Folmer (2016), who came to the conclusion that there are regional variances in the indices. Therefore, it is impossible to design a collection of indicators that is standardized to quantify residential satisfaction.

### **2.14.4 Housing Feature**

According to Buys and Miller (2012) in the context of high density residential construction in Brisbane, Australia, private outdoor space has a considerable influence on residential satisfaction. The subtropical climate makes sure that visitors may take advantage of the outdoors all year round. The private outdoor area, such as a balcony, acts as a bridge between the user and nature, especially in high density dwellings.

In high density homes, Kennedy and Buys (2015) noted that balcony space is highly sought by residents. Additionally, they indicated that in order to increase balcony space pleasure, the area should be made larger in order to enable several uses while maintaining seclusion. In a research of high-rise government apartments in Putrajaya, Malaysia, Ismail et al. (2015) found that respondents were pleased with the facilities' general layout and level of service. However, many voice their displeasure with the veranda spaces and places designated for drying clothing.

The goal of Woo's (2017) investigation on a multi-family housing development in Melbourne, Australia, was to comprehend how people interact with the built environment. The research analyzes the overall building design, user management of the inside environment, as well as environmental elements including lighting, thermal comfort, and noise using the standardized BUS (Building Use Survey) questionnaire. He saw that the consumers are quite happy with the functionality and general look of the building.

### **2.15 Inferences from Literature Review**

Housing is a complex notion that encompasses more than simply physical structures. In addition to meeting the man's physical need for shelter, it should also take into account his social, cultural, and psychological needs. Gated communities are a kind of multifamily housing where the emphasis is on the facilities offered to foster a sense of community. The barrier separating it from the urban neighborhood is the primary distinguishing feature. Researchers have focused a lot of their emphasis on the segregation of the urban form brought on by the growth of these gated communities.

Residential satisfaction changes with time and is quite unstable. Both objective and subjective elements of residential satisfaction exist, and they are frequently connected. Aside from the demographic features of the users, the housing environment, the neighborhood environment, and the social environment are the three key factors that affect residential satisfaction. The most popular strategy used to assess residential satisfaction is a post-occupancy evaluation approach. A rating scale is used to evaluate the indicators. Regarding the objective, the setting for the residential satisfaction research, and the opinions of the experts doing the evaluation, several signs are seen.

Residential satisfaction has been studied by multiple researchers. Some research have just focused on overall satisfaction while others have considered residential satisfaction through different aspects in terms of satisfaction with the housing itself and with the neighborhood environment or the community. Findings of previous studies have indicated that these different factors are interdependent. In other words, housing condition, neighborhood or facilities and services or community issues affect each other (Campbell, Converse, & Rodgers., 1977). So it is important to consider different satisfaction of residents about different aspects of residential units. Although these aspects are accounted for overall satisfaction, some studies consider total satisfaction of residents is only important.

Research on RS has diverse aims, comprising improvement of occupants' quality of life, evaluation of the current situation of their houses, assessment of the contribution of residents' participation in development process of their housing units to their level of satisfaction, their needs and priorities and even residents' mobility patterns (Galster & Hesser, 1981). Galster (1987) explains about the two main approaches in which residential satisfaction are based on. First one being purposive approach where people consider their home as a property which facilitates their achievements to reach their goals. Hence, the degree to which their housing meets the mentioned role is known as a measure of residential satisfaction. Another one is the actual-aspiration gap approach that, regarding the housing conditions, refers to a gap between what people have and what they desire to have. This gap is considered as a measure of residential satisfaction (Ibem & Aduwo, 2013). Regardless of their research objective, most of the studies consider these two approaches to improve the understanding of factors that influence satisfaction level. Based on these approaches, there are several studies related to residential satisfaction in terms of different dimensions such as housing units, neighborhood environment in terms of social, economic and Facility and convenience features and other aspects of housing in different countries. Other studies focus on Facility and convenience attributes of housing units as the main influential factors of overall residential satisfaction and its results have indicated that satisfaction with residence unit features (e.g. level of thermal and visual comfort and security; size of living and sleeping areas) are among the main determinants of overall residential satisfaction in public housing (Ibem & Aduwo, 2013).

Some other studies have indicated that provided services and public facilities have higher influences on overall satisfaction compared with Facility and convenience attributes of the units and the social relationship in the housing areas for example- (Mohit & Azim, 2012). Other attributes that are found significant determinants of residential satisfaction are Maintenance, keeping and cleaning of the common spaces, proximity to public transit (Liu, 1999) and availability of health care and shopping-service providers (Ha, 2008). Similarly, Davis and Fine-Davis (1981) discovered that social ties and neighbors are the strong predictors of residential satisfaction. Also, Sirgy and Cornwell (2002) found that satisfaction with the social features of the neighborhood (e.g. satisfaction with social interactions with neighbors, social ties in the community, crime level, race relations, outdoor play space and sense of privacy at home) play an important role in the satisfaction with the community. Findings from some studies have

revealed that dissatisfaction along with crime and social problems not only impact on residential satisfaction, but could be the most important reasons for moving from deprived neighborhoods (Andersen, 2008). On the other hand, strong social relations among the neighbors significantly reduce intentions to move.

From literature review, it is clear that various categories of factors varying from inner and outer features of housing units, access to public facilities and services, social environment can influence residential satisfaction. While these studies have been conducted in different countries by different housing strategies, little is known about how satisfaction differs among the residents of housing in context of Nepal using different strategies. For this research, factors that are responsible for residential satisfaction are categorized into three major groups of indicators: social, physical features and Facility and convenience factors. Social factors mostly refer to relationships and ties between residents in the social environment and characteristics of their neighborhood, physical features deals with residents' personal evaluation of the adequacy of the characteristics of the dwelling units while Facility and convenience indicators are related to services, facilities and the and Facility and convenience of spaces and units.

### CHAPTER 3. METHODOLOGY

The study was based on conceptual explanation and field works. Conceptual framework for this study is shown in figure 1. For Facility and convenience attributes of housing community, built environment is considered. Services, facilities and social environment factors are determined by the relationship of residents with their neighbors, satisfaction with open spaces, availability and quality of recreational facilities among the neighbors. Within the conceptual research, factors that affect the residential satisfaction was extracted and examined by literature review and then those variables were pre tested by pilot survey.

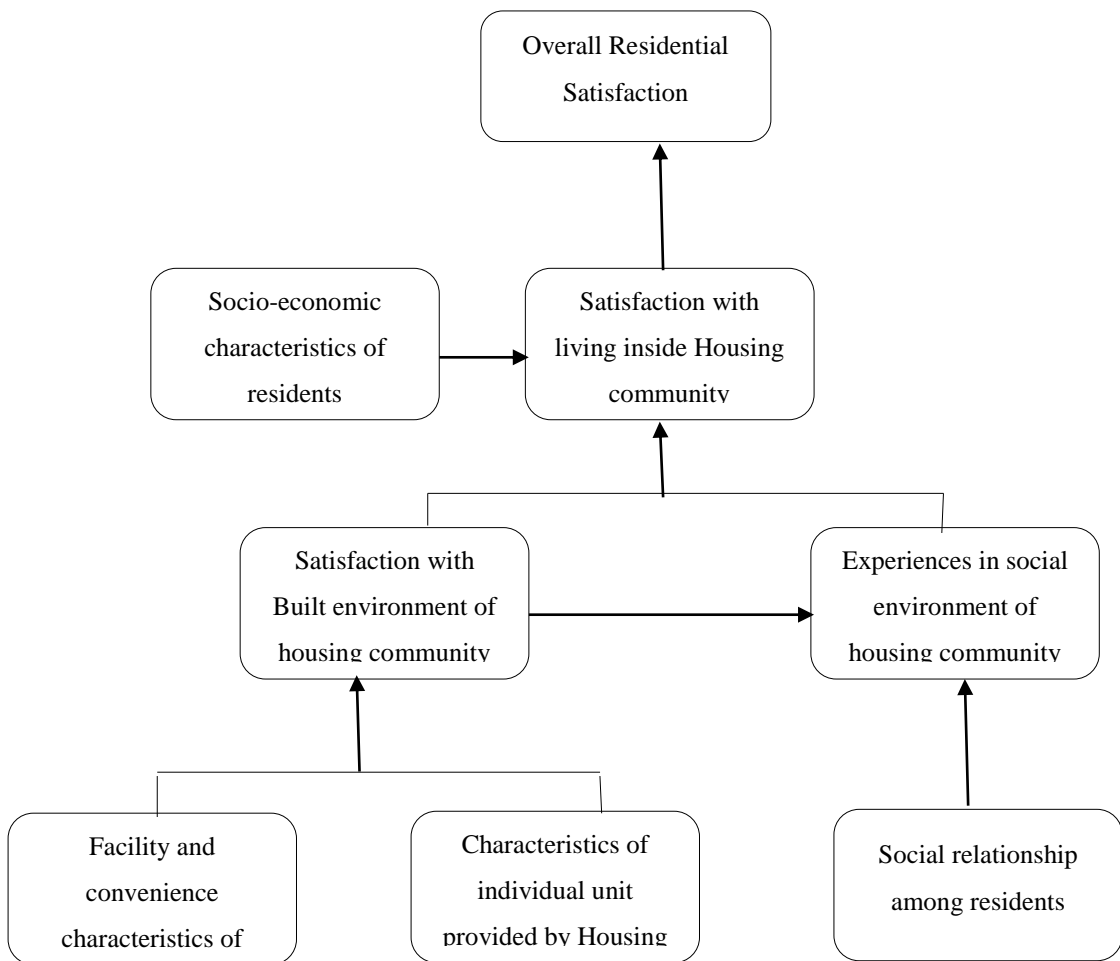


Figure 3.1 Conceptual framework of the study

### 3.1 Study area

For the research, two cases will be taken located at Satdobato, Lalitpur. Lalitpur is located in Bagmati Zone of Bagmati province. It is one of the 6 metropolitan cities of Nepal. Lalitpur has one of the highest growing urban population resulting in deficiency of providing quality housing to its residents. So for the research, two cases located at Lalitpur were considered. These two housing communities were located near Satdobato.

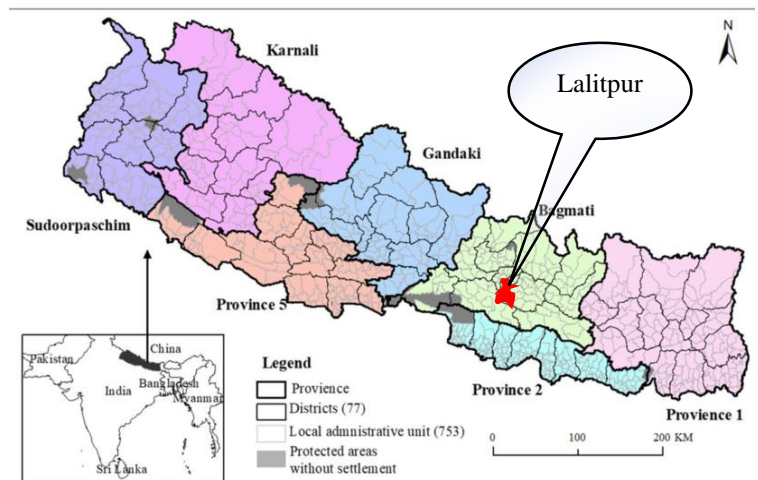


Figure 3.2 Map of Nepal, Source: shutter stock

#### 3.1.1 Case 1- Civil Homes, Phase VI

The case for study was selected as civil homes. Civil Homes is one of the leading housing developers in Nepal that is working in this field since 15 years. It has started and completed many projects since 15 years. Civil Homes is a leading real estate developer in Nepal. Its first housing project in Bhainsepati known as Phase I, Civil Homes, at present is successful in providing its ever-growing clientele base with many housing projects. Complete with aesthetic appeal, modern amenities, state-of- the-art architecture, and desired living standards, their building were sold out very fast at first. And while the company continues the legacy with other colony projects, Civil homes is often credited with introducing and pioneering



Figure 3.3 Civil homes phase 6

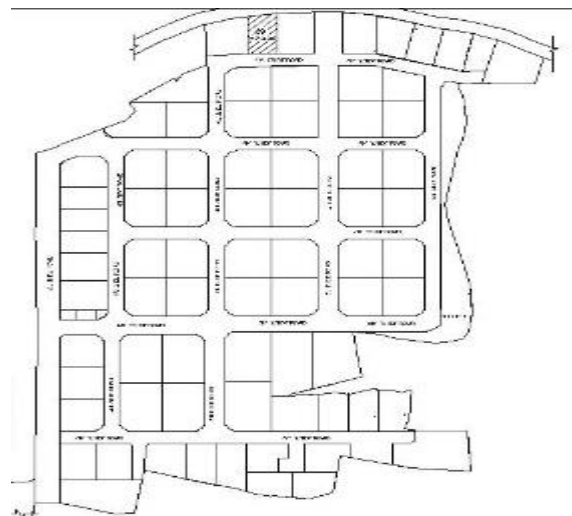


Figure 3.4 Master plan of Civil Homes Phase VI

the concept of housing in Nepalese Community. This company is currently doing its 11th phase of housing project at Arubari, Boudha. Since the projects were achieving great success at first, but in recent time, many of the houses, new or once sold are still vacant from its earlier projects as well as houses of new projects are still to be sold.

Civil homes Phase VI is the sixth project of Civil Homes Company. Civil Homes is considered as one of the oldest and most successful company since its all housing and apartment projects are successfully handed over and the company is running its 11<sup>th</sup> project at Bouddha, Jorpati, Nepal. The Civil homes phase VI is located at distance of 2 kms from Satdobato Chowk. This housing community has 74 housing units in total with 20 row houses and 54 individual houses whose area ranges from 4 anas to 6 anaas. This project was started in June, 2013 AD and completed and handed over in December, 2014 AD. This housing is spread over 29 ropanies of land. The housing is bounded by a secondary road (8m wide) on the north side. The site slopes down towards this secondary road with fair amount of flat land next to the main access road. This housing community lies in Satdobato which is a prime location for residential purpose, with services like B&B hospital and the national sports complex nearby. Institutions like the NARC, NAST and the White House College are in the neighborhood that increases the development density and connectivity of the site. These houses are painted in Civil Homes' signature color combination of crimson and white, all units in this colony take architectural influences from Newari traditional house. The developers claim that "the airy houses look after the preceding Civil Homes' housing complexes and reflect the philosophy of Comfortable, Affordable and Manageable".

### **3.1.2 Case 2- Cityscape, Hattiban**

Cityscape villas is a housing project from CG group. It is located at 2.5 kms from Satdobato chowk. It is spread over 45 ropanies of prime hillside land of Hattiban overlooking the evergreen enclave of lush forest reserves, Cityscape Villa is private luxury individual home setting limited to 60 villas of 6 types of designs. The developers claim that "design of villas are designed to satisfy every practical need with all modern comforts, offering spaces that are both functional and inspired". The housing is surrounded with services like Little Angels School, Nepal Cancer Hospital, etc. These houses have unique design with modern Façade treatment unlike Civil homes that were influenced from Newari Architecture.

The reason to choose these cases for research is because both the communities are located at 2 kilometer distance from Satdobato chowk. The number of housing units in both community are comparable and they both are surrounded with similar kind of facilities near them as they both are located near to each other. Civil homes, as claimed by the developer is influenced by Newari Architecture whereas Cityscape Villas have modern design that according to the developer is practical need and have all modern comfort offering spaces that are functional as well as comforting. Another criteria to select these two communities was the economic factor. The



**Figure 3.6 Cityscape**



**Figure 3.5 Masterplan of Cityscapae**

present price range of these communities starts from 2.5 crores. The units of these houses are basically targeted to upper middle class group of people.

### **3.2 Data Collection**

Data collection was done at two housing community of Lalitpur District of Kathmandu valley. The main reason for choosing the housing estates in these areas was that there is no previous feedback done from the users in any of these houses built in this region. In the study method, a face-to-face questionnaire technique was used to evaluate the housing spaces' quality following the purpose of the project and to measure the participants' satisfaction levels about their houses. The questionnaire leaflet content, which was planned to be applied in the field, has been designed using the literature. In the first stage, before the survey was conducted, the interview questions were tested by conducting a pilot survey, and some additions or deletions were made. The survey was

tested with the pilot survey method. Final Data was collected among 72 residents, 35 from cityscape and 37 from civil homes.

The research was done in housing community of 2 companies naming CG homes and Civil homes. Cityscape, with is a completed project of CG homes has 60 homes where as Civil homes phase 6 has total of 74 houses. For this research, these two housing are taken as population. So total population becomes (56+72) =128 houses. From total population of 128 houses, only 110 houses were occupied. So total population was considered as 110 and sample size was calculated taking confidence level of 90% and error margin of 5% using given formula;

Using the formula, the sample size came to be 72.

$$n = \frac{Nz^2P(1 - P)}{(N - 1) * e^2 + z^2 * P(1 - P)}$$

Questionnaire consisted of 3 major portions and it consisted of different parts and included 96 questions in total. To measure user perceptions, the participant was enabled to answer the scaled questions with semantic differences. With this the satisfaction on different factors were measured as, satisfaction level in safety, satisfaction level in neighborhoods relationship, satisfaction level in location and condition, satisfaction level in comfortability in building, satisfaction level in quality of building, and satisfaction level in accessibility or location of housing community. Besides these, some semi-open questions were included in the survey, such as the reason they left previous house, reason to choose this particular housing as their homes, what were the problems they faced or the setbacks they felt this their present housing from their perception of ideal homes. The criteria were formed in a 5-point Likert type. The criteria prepared in degrees from 1 to 5; 1 = Extremely Dissatisfied, 2 = Dissatisfied, 3: Average, 4: Satisfied, 5: Extremely Satisfied.

Below table shows the analysis of mean value that will be obtained from likert scale.

**Table 3.1 Showing mean vale of Likert scale**

<b>Mean score</b>	<b>Interpretation</b>
1.00-1.80	Extremely Dissatisfied
1.81-2.60	Dissatisfied
2.61-3.20	Average
3.21-4.20	Satisfied
4.21-5	Extremely Satisfied

First of all, there were questions about the demographic characteristics of the participants. To determine the evaluations about the respondents' name, age, education and profession, questions were asked. In this section there 4 questions altogether.

The second part consisted of questions directed to the participant's household information under two main headings, information about present housing and information about previous housing. Participants were required to specify a maximum options out of different options. Some other questions were open ended where they were asked why they leaved their previous home and chose this particular house. Other questions in this categories were information about the building, community vitality and their intention to continue residing in present house.

In the third part, the participants were asked to evaluate the environment of the house and quality of site and services provided by the housing. This section consisted of 50 questions in total that examined features such as the regularity and quality of the site and services provided by community, the suitability of the environment for children, and parking facilities in different scales. The other question focused on what facilities were lacking in the environment. In the questions, similar to those in other sections, response was measured on different scales using single choice or multiple choice.

In the 4th part, which included perception of safety, social relations, neighborhood relations, accessibility to market center, work place, public transport were examined. In this section, the participants were asked to evaluate the issues of neighborly relations, solidarity, facility convenience, comfortability in the building, quality of buildings, receiving help from neighbors and privacy from neighbors. The questions were asked in the form of a 5-point Likert type where 1 indicated extreme dissatisfaction, 2 indicated dissatisfaction, 3 indicated average response, 4 indicated fair satisfaction and 5 indicated extreme satisfaction.

In the last part of the questionnaire, an open ended question was put in order to ask the respondents about their perception of ideal home and what was lacking in that particular home, features that they will prefer while searching for new home, recommendations and suggestions according to them for any housing community. The question also included answer of the factor that influenced the resident to choose their home in that certain place and what was their perception of an ideal housing community that they liked or disliked in that particular community.

In the field studies to be conducted within the research scope, a total of 72 participants will be interviewed, Lalitpur district. The fieldwork and discussion of the questionnaires with the participants were carried out by researcher herself. The resulting data was then transferred to the computer environment for analysis, evaluation, and comparison and analyzed quantitatively. Basic and cross-table queries was analyzed for the results. The objectives that were set during the starting of the project and projects' scope were tested with the results of statistical evaluation and analysis made on the computer. SPSS 25 was used to analyze the data that was obtained from questionnaire.

## CHAPTER 4. DATA ANALYSIS AND DISCUSSION

Analysis and interpretation are the essential steps in a research process. The objective of analysis is to classify, organize and summarize the data collected. This is undertaken with the aim of better comprehension and interpretation of the data in order to get the answers to the questions that triggered the research.

This chapter contains analysis of the data with respect to various indicators of residential satisfaction and presents detailed results in a graphic format. The feedbacks obtained from the qualitative study are segregated and presented under issues pertaining to design and social concerns. For quantitative analysis, raw data were collected with respect to demographic characteristics of the respondents and their answers to different indicators were collected. Then descriptive analysis were done to the obtained data using SPSS 25. In descriptive analysis, percentage analysis is often adopted to describe the characteristics of sample or population in totality. Percentage analysis involves in computing measures of indicators selected for the study so as to make the interpretation easier.

### 4.1 Demographic Data

In demographic data, questions related to age of respondents, their ethnicity, religion, family size, financial status are included. These kind of data are required in any kind of research as demographic data of the respondents gives knowledge about the background and nature of the respondent. Among total data collected, 37 was collected from Civil Homes and 35 from Cityscape housing community as shown in figure below;

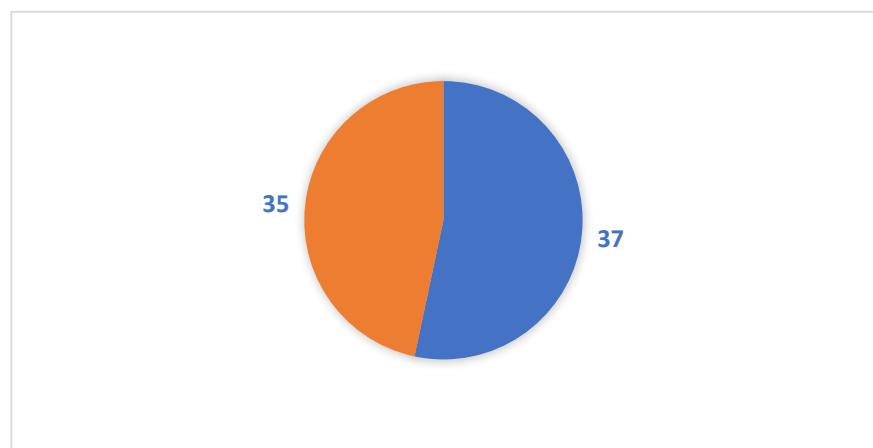


Figure 4.1 Data distribution among two housing groups

#### 4.1.1 Age of Respondent

Among 72 respondents, to know about the age group of respondents, it was categorized in 3 groups as less than 18 years of age, people aging between 18 years to 40 years and people aging more than 40 years of age. Among total data, there were no respondents

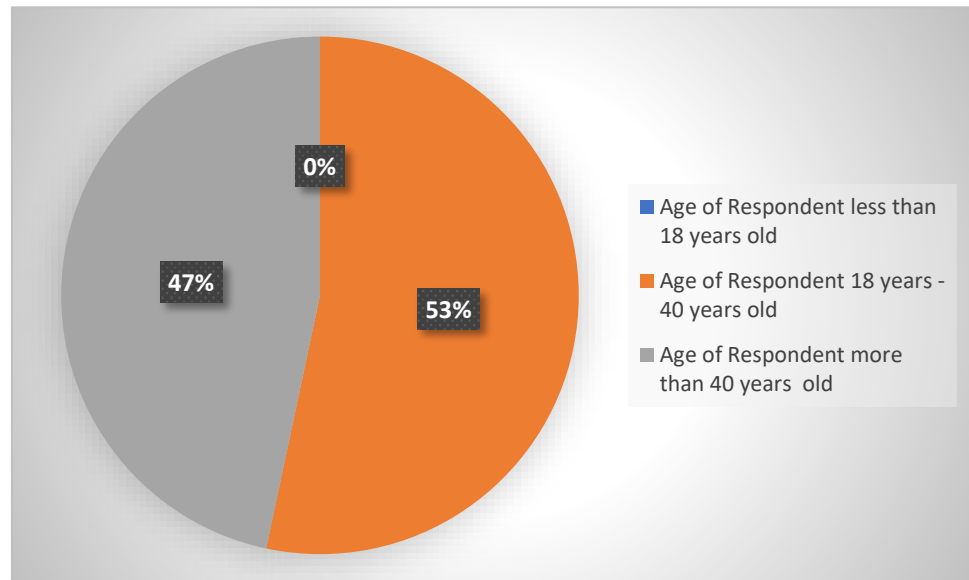


Figure 4.2 Age of respondents

that belong to age group less than 18 years. Around 53% people were aging between 18 years to 40 years and 46% of respondents were people aged above 40 years.

Among the respondents, majority of them were residents of Kathmandu valley, either living in their own self built house or living in rent so respondents were acclimatized to both climate and local culture.

#### 4.1.2 Ethnicity and Religion

Talking about the ethnicity of the respondents, majority of them i.e. 34% belong to Brahmin community. Other ethnic group of respondents were Chhetri 21%, Newar 16%. Also 28% of residents were from other community except above mentioned.

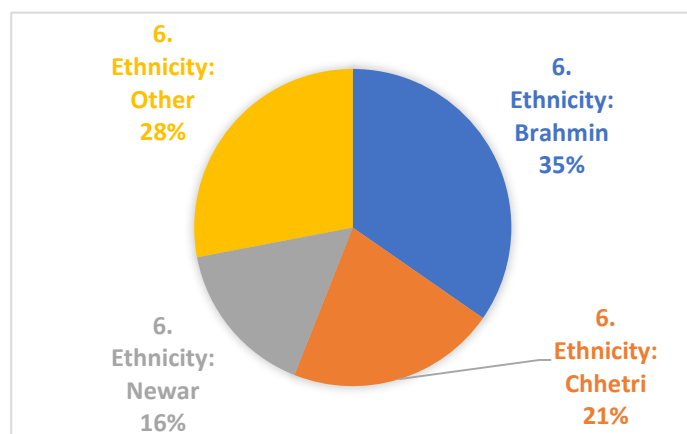


Figure 4.3 Ethnicity of respondents

These data explain that housing community has mix ethnic group of people living in that community. Though, Kathmandu is mainly dominated by Newars, but these kind

of community houses people of mix ethnic group. When asked to the residents about their feeling and experience in living in mix community, some of the respondents said that it is easier to live in such communities that outside of gated where settlement is mostly dominated by Newari people. In contrast to it, some of the respondents thought that living in such communities is hard as groupism of living of similar ethnic group is commonly seen and it becomes hard for people with less number of population.

Majority of the people that belong to 28% other ethnic group belong to Marwadi community and they prefer using their mother tongue as local language. So some of the residents said that sometimes, the neighborhood felt like they were living in India as many people talked Hindi instead of Nepali. This response from residents shows that some people may feel less sense of belonging due to these reasons.

Talking about religion followed by residents, majority of people living in housing community followed Hinduism i.e 83% of the respondents are Hindu, 6% belong to Muslim, 4% belong to Buddhist community and there were 7% population that followed other religion living in this community. People that followed other religion were Christians mostly.

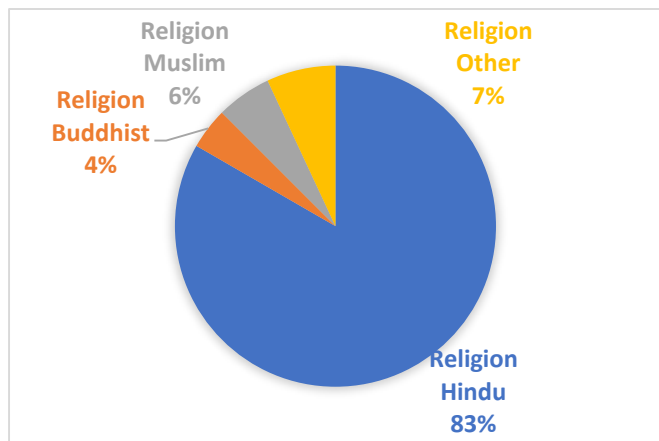
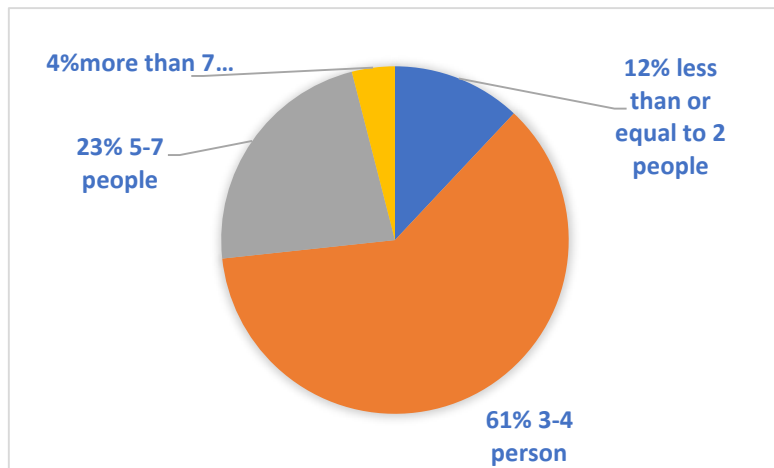


Figure 4.4 Religion of respondents

#### 4.1.3 Size of family

Among 72 families where survey was done in both housing community, 61% of families had 3 to 4 person, 23% had 5 to 7 members in their family, 12% families had less than or equal to 2 people in their family and 4% family had more than 7 person living in their house.

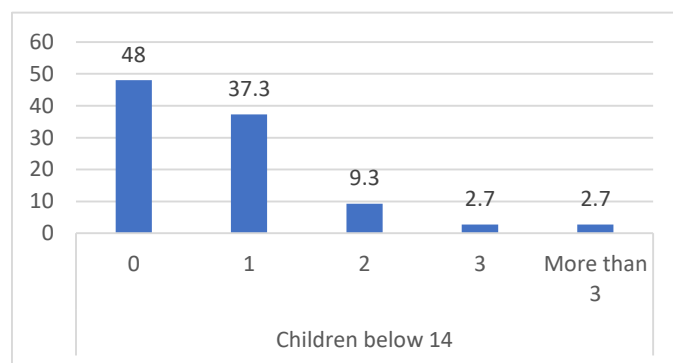
Nepali family is known to live in joint families traditionally, but from the data, decrease in household size is the consequence of ageing population and urbanization where the young adults set off in search of careers opportunities in other cities/countries. The 2011 Census shows that Nepal has



**Figure 4.5 Size of family**

2,154,003 persons above the age group of 60 years (Chalise, 2020). The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) have identified that existence of more than 10% of the older-age persons in the total population means that the population started ageing. According to Nepal Ageing Report 2011 Census report, Lalitpur has 7.8% of aged people population, particularly, above 60 years of age. The scenario of the younger generation of the households moving away from their families either for employment or education purposes is quite common. In such cases, the senior members find difficulties in the maintenance of independent houses and they consequently tend to move to multifamily dwellings. Highlighting the population characteristic of ageing has also been factor which favors this housing typology.

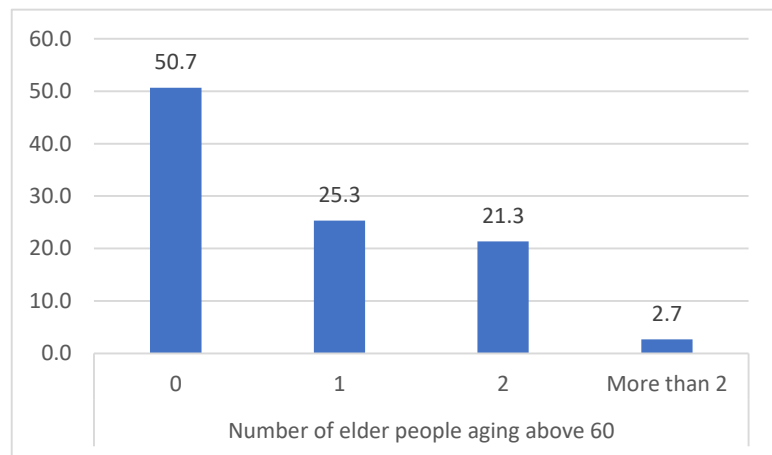
Among the family members, 48% has no children below 14 years of age. 37.3% of families had single child who is below 14 years of age. Similarly 9.3% of families had 2 children and 2.7% of families had 3 children and 2.7% of families had more than 3 children within their family.



**Figure 4.6 Number of children below 14 years**

Also, talking about the family members aging above 60 years of age, almost 50% of families had no family members aging above 60 years, 25.3% of families had single family members aging above 60 years, 21.3% of families had 2 members aging above 60 years and 2.7% of families had more than 2 family members aging above 60 years of age.

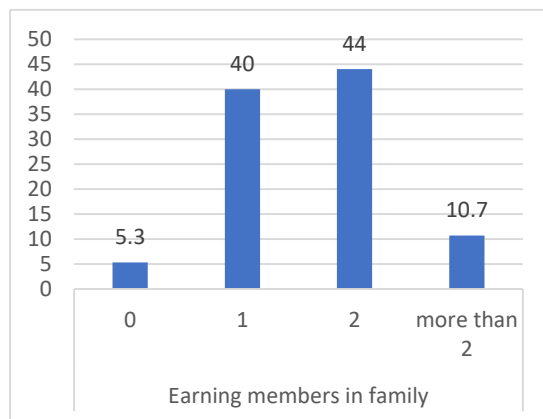
From the data collected, it was seen that families that had children or members aging above 60 years preferred to live in housing community because of its more favorable security, neighborhood and open spaces provided within the society.



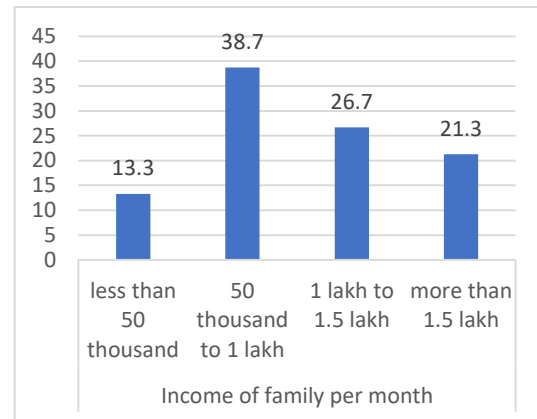
**Figure 4.7 Number of people aging above 60 years**

#### 4.1.4 Financial status of family

Among 72 respondents, 40% families have one earning member within their family,



**Figure 4.8 earning member in family**



**Figure 4.9 income of family per month**

44% have 2 earning member within their family, 10.7% have more than 2 earning members in their family and finally 5.3% family have no earning members in their family. Families with no earning members depended on as mentioned by them, depended on remittance mostly. Similarly, 38.7% of families had monthly income between 50 thousand to one lakh, 26.7% of families had monthly income ranging between 1 lakh

to 1.5 lakh where as 21.3% families had monthly income of more than 1.5 lakh and 13.3 families had monthly income of less than 50 thousand.

## 4.2 Housing Information

### 4.2.1 Information of Previous Housing

This section covers the questions related to their previous house details. This section was designed in order to make clear perception about the respondents' previous house, housing preferences and what made them leave that previous house and shift to housing community.

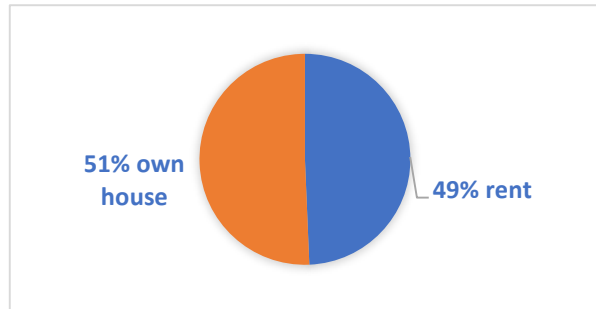


Figure 4.10 information about previous house

Among 72 respondents in total, 51% were living in their own house previously and 49% were living in rent. In case of Cityscape, where survey was taken among 35 families, 12% were living in their own house and 88% were living in rent. Likewise in case of civil homes, 40% lived in rent that shifted to civil homes where as 60% lived in rented house.

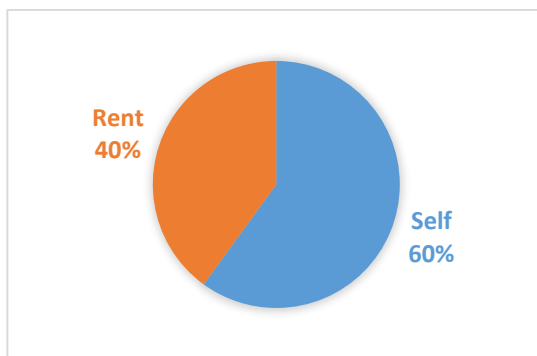


Figure 4.12 Ownership of previous house in Civil Homes

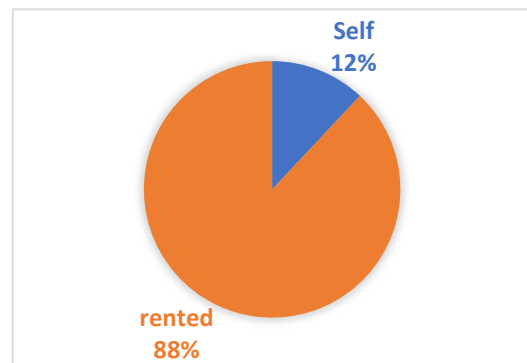


Figure 4.11 Ownership of previous house in Cityscape

Among total of 72 respondents, that were either living in rent or self-built house, 65% lived in self-built house where as 20% lived in apartment and 14% lived in housing community previously.

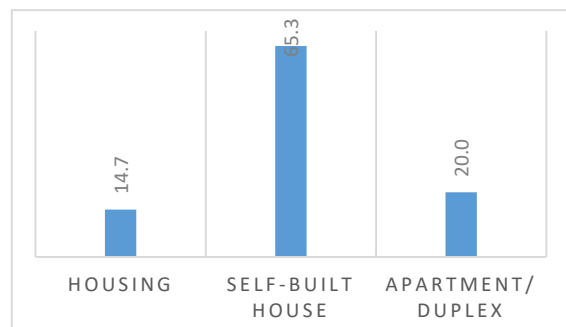


Figure 4.13 type of previous housing

Talking about the relation between ownership of previous house and type of

house they lived in, total of 11 residents lived in housing previously among them, 4 had their ownership of house where as 7 were living in rent inside housing. Total of 47 families were living in self-built houses that shifted to now housing. Among them 20 were living in their own house and 27 living in rent. And 11 were living in their own apartment where as 3 were living in rented apartment that now are shifted to housing community as shown in table 4.1 below

**Table 4.1 Cross tabulation among type of previous house and ownership of previous house**

		Type of previous housing			Total
		Housing	Self-Built House	Apartment/ Duplex	
Ownership of previous house	Self	4	20	11	35
	Rented	7	27	3	37
Total		11	47	14	72

**Table 4.2 Chi- Square test among relationship between Ownership of previous house and Type of house they lived in**

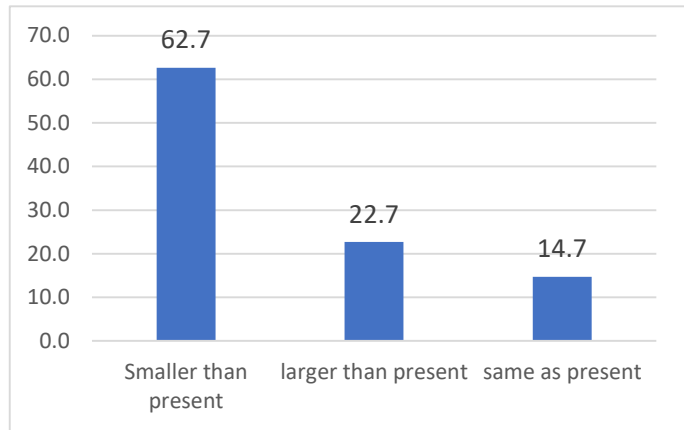
	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2	0.10
Likelihood Ratio	2	0.09

Chi square test was done to test the relation among the two variable. P value came to be 0.101 which is more than 0.05 showing that there is no significant relation between type of ownership of previous house and their ownership of that house.

#### **4.2.1.1 Size of Previous Housing**

Next question was asked about the size of previous housing as compared to present. Response to this answer was varied in both the housing community. In average of both community, almost 63% of respondents were living in smaller spaces than present, 23% were living in larger than present spaces and 14% were living in same as present housing. When asked about their reason to shift from larger living area to present smaller homes, some of the respondents said that it was because of their decrease in family size. At past, they were living with their children so needed larger space to live in. But after their children were grownups, they either shifted abroad for studies or better employment opportunities or moved in new homes with their extended families.

Families that shifted to larger living space that previous gave reasons like they needed larger space because their families became larger hence they needed more space for living. Reasons for respondents that shifted to same housing size as previous was because they had enough living space in their



**Figure 4.14 Size of previous Housing as compared to present**

previous homes but living condition, site and services, facilities was better in housing community than outside of housing community.

Statistically, residents of Cityscape moved into smaller spaces as compared to their previous homes as shown in table 4.3.

**Table 4.3 Table showing size of previous housing of respondents of two different community**

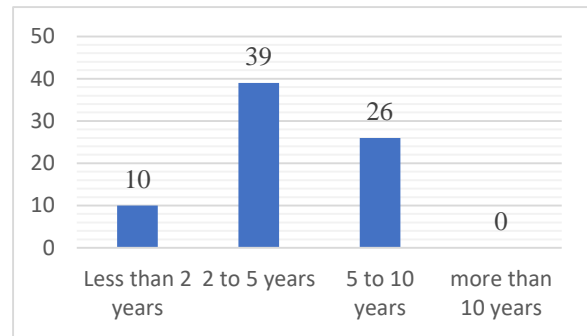
Size of Previous Housing	Cityscape Response in Percent	Civil homes response in Percent
Smaller than present	62.7	60.0
larger than present	22.7	25.0
same as present	14.7	15.0

When asked about their reasons to shift form their previous house majority of the respondents mentioned about their concern of security in their previous house so they shifted to this present housing. Also other reason for shifting was lack of space and congested in previous house and location of these housing.

#### **4.2.1.2 Duration of stay in previous housing**

Maximum duration of stay in previous house of residents of both housing community, is 2 to 5 years meaning that more than 50% of residents lived for less than 5 years in their previous homes and shifted to their present house.

From table 5.4 below, it can be seen that residents of cityscape has more number of residents living in previous home for 2 to 5 years that is 13 numbers. Also, residents of cityscape has more number of families that lived for more than 10 years in their previous homes as compared to civil homes which has only 6 families that stayed for more than 10 years in their previous home. From table 5.4, it can be concluded that residents of Cityscape has more families that lived longer in their previous homes than in civil homes



**Figure 4.15 Duration of stay in housing community in general**

**Table 4.4 Duration of stay in two different housing community**

Duration of stay	Cityscape in numbers	Civil Homes in numbers
Less than 2 years	2	3
2 to 5 years	13	19
5 to 10 years	9	9
more than 10 years	11	6
Total	35	37

**Table 4.5 Relationship between duration of stay and size of previous housing**

Size of previous housing * Duration of stay in previous house						
Cross tabulation						
		21. Duration of stay in previous house				Total
		Less than 2 years	2 to 5 years	5 to 10 years	more than 10 years	
Size of previous housing	Smaller than present	3	26	11	6	47
	larger than present	1	3	4	7	17
	same as present	1	5	2	3	11
Total		5	34	17	16	72

**Table 4.6 Chi-Square test result of Relationship between duration of stay and size of previous housing**

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.959 <sup>a</sup>	6	0.09
a. 8 cells (66.7%) have expected count less than 5. The minimum expected count is .72.			

Cross tabulation was done among duration of stay in previous house and size of previous housing to find the relationship between these two variables. It was seen that 26 families that lived in smaller area in previous house lived for 2 to 5 years and 11 families lived for 5 to 10 years in smaller spaces than present in their past homes have now shifted to housing area which is larger than their previous areas. This data shows that reason why people shift from their previous homes is because lack of proper living space in their previous homes.

Also, Chi-square test was done to test the relation between these two variable. P-value came to be 0.090 which is more than 0.05 meaning that there is no significant relationship between duration of stay and size of their previous housing.

#### **4.2.1.3 Reason to shift from previous housing**

The reason to shift from their previous homes was asked as open ended question. This question was asked in order to know about the perception of residents about their expectation from the present home that lacked in their previous homes. According to some of the respondents, they shifted to their present homes because previous home was not safe structurally as it was their old ancestral home, so they wanted to shift to more safer, clean, proper managed infrastructure neighborhood so they chose that particular neighborhood to live in. another reason of residents to choose to live in housing community was because of its location, accessibility to their daily needs destinations, housing location was near to hospitals and public transport facility.

The responses from the people that have children in their family said that they felt that with child in their family, they needed more safer neighborhood than their previous homes so shifted to their present home. Another for shifting to gated communities was because it was convenient for retired professionals to live in this neighborhood than outside the community. Also, some respondents said that previously they were living in rent and when they wanted to buy their own house, they choose to shift into housing community.

Proximity to employment, proper health services and schools are the general market drivers that are responsible for the housing demand in an area. The same pattern is observed with respect to the study area. The provision of lifestyle amenities is a characteristic feature of gated communities in India. The developers use this as a unique selling proposition to promote their gated communities. Tan (2016) has also suggested

that the end user's quest for a better lifestyle is one of the factors that lead to the development of this housing typology.

#### 4.2.2 Information of Present Housing

In this section, respondents were asked about the details of their present house. This section of questionnaire was designed in such a way that it gives answers to questions like their reason to choose that particular housing, or why they opted to live in housing community at all, how do they know about the housing and whether they bought their house from real estate developer or former house owner.

##### 4.2.2.1 Ownership

16% of respondents were living in rent in their present house whereas 84% were living in their own house. The reason to choose to live in housing varied according to the respondents. But majority of them said they chose this particular housing because of security reasons and its location near city and also accessibility to their daily work place and market place.

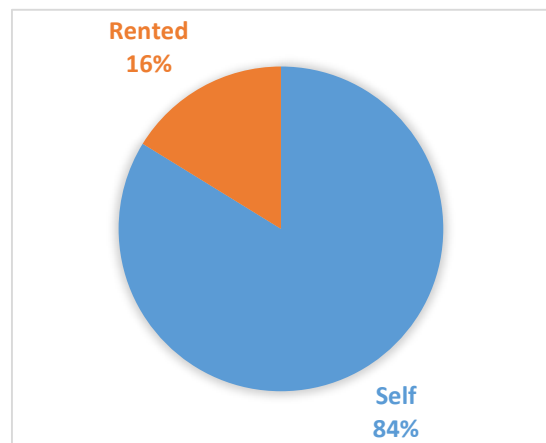


Figure 4.16 Ownership of Respondents'

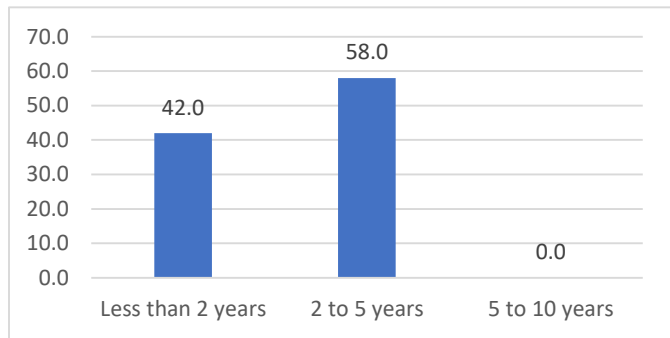
80 % of respondents of both housing were living in their own house. From table below, it can be seen that there were more respondents living in rent in civil homes than in Cityscape.

Table 4.7 Type of ownership in present home

Type of ownership	Cityscape	Civil Homes
<b>Self</b>	93.0	75.0
<b>Rented</b>	7.0	25.0

#### 4.2.2.2 Duration of stay

Duration of stay in average in both of the housing company is 2 to 5 years. 58% of respondents have been living in that particular housing community for 2 to 5 years and 42% have been living for less than 2 years. Since there is not much difference between people



**Figure 4.17 Graph showing duration of stay of respondents'**

living for less than 2 years and people living for 2 to 5 years, we can say that with change in time, more people are preferring to live in gated communities as compared to past days. This data also shows that people living in housing community have more tendency to shift to other places than people living outside of community.

From table below, it can be concluded that 65% of resident of civil homes were living for less than 5 years as compared to 53% of residents of cityscape. This data shows that resident of cityscape have tendency to stay longer in their homes as compared to residents of civil homes.

**Table 4.8 Comparison of duration of stay in both housing community**

<b>Duration of stay</b>	<b>Cityscape (in %)</b>	<b>Civil Homes (in %)</b>
Less than 2 years	45.7	34.5
2 to 5 years	53.3	65.5
5 to 10 years	0	0
Total	100.0	100.0

In average, duration of stay in both housing community is more than 50% of residents were living between 2 to 5 years. 45% of residents were living in Cityscape for less than 2 years.

From table 5.8, it can be seen that residents of Civil homes has more number of residents living for more than 2 years that is 65% as compared to Cityscape which has only 53% of families living for more than 2 years. From this data it can be concluded that dwellers living in cityscape has more tendency to shift to newer place as compared to civil homes. As mentioned in literature review, Speare (1974) in his study explains that satisfaction creates stability in the neighborhood, because satisfaction is a significant predictor of immobility. Dissatisfied people may have a tendency to move out,

especially when they know that opportunities are available and affordable. Hence, residents of Cityscape have more tendency to move in order to find more favorable and better place as compared to residents of civil homes.

#### 4.2.2.3 Knowledge of Housing

When asked about how they knew about the housing, 45% said they knew about the housing community being developed through internet. Advertisement strategy of housing companies has great influence on people to buy homes in gated community. Housing company advertise their projects as being full of modern infrastructure, community with gate to make it safe and secured place, community with proper landscape and open areas, place having

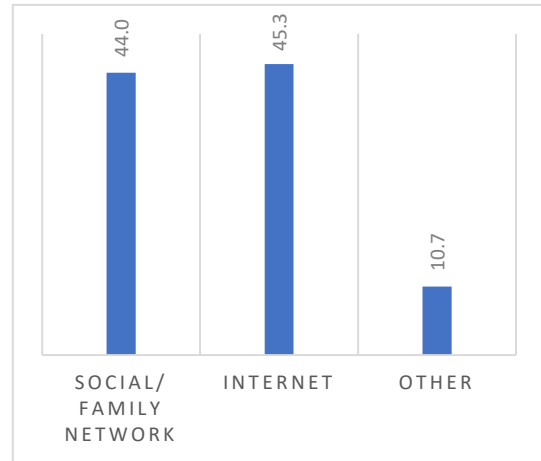


Figure 4.18 How did you come to know about this housing?

enough recreation facilities for all age group. These kind of statements from housing companies influence people to buy house inside community rather than building their own house in other place. Also another major factor that cause people to buy house in gated community is through their social or family network. People tend to attract their other friends and family to same neighborhood.

When asked about from whom did they buy their present home to home owners, 54% of respondents said that they bought house from real estate company and 36% bought from previous house owners, other 10% said that they bought from other source like brokers.

Table 4.9 From whom did you buy this house

From whom did you buy this house	Total	Cityscape	Civil Homes
Real estate company	54.1	82.9	28.2
previous house owner	36.5	11.4	59.0
Other	9.5	5.7	12.8

From above table, it is seen that more than 80% of residents of Cityscape were living in their house that they bought directly from Real Estate Company whereas only 28% of original residents were living in Civil homes. This above table shows that reselling

buildings in Civil Homes is much common trend as compared to Cityscape. People of civil homes said that they did not find favorable environment as promised by Housing company at time of construction so they were not satisfied and preferred to move out from that housing community. But in case of Cityscape, the case was opposite and residents were satisfied to live there and wished to continue living there.

#### 4.2.2.4 Reason to choose that particular housing

Since there are plenty of housing community in that neighborhood, respondents were asked for reason to choose that particular community to live in. according to the responses given by them, it was clear that main reasons to shift in that community was relative influence with 85.1% responses, properly managed infrastructure was second with 67.6% and other reasons. On further inquiry, the other reason to select housing community was like some of the families had shifted to Kathmandu valley and wanted their own house in peaceful environment, so according to them, buying house in gated community was safer, easier and much more convenient than any other options.

**Table 4.10 Frequency and percentage of responses for reason to choose housing community**

Reason for choosing housing	N	Percent of Cases (%)
Site and services	42	56.8%
accessibility	24	32.4%
infrastructure	50	67.6%
security	22	29.7%
neighborhood	42	56.8%
relative influence	63	85.1%
Location	13	17.6%
Other	67	90.5%

#### 4.2.2.5 Availability of Open Space and Recreation Facility

Provision of recreational amenities is a typical feature of housing community. There is no scientific basis for the location and provision of the number and type of amenities in the gated communities. Their provision is based on the space available and the developers' on the end user's expectations. These facilities are often provided so that they can be used as marketing strategy to increase the saleability of the gated community. When the number of amenities is more or larger in size, the saleability is

greater, there is also a practice to fit the amenities inside the gated community in a forceful manner without proper feasibility study. Upon using such facilities, users only then tend to realize the drawbacks of such facilities. Ismail et al. (2015) have perceived that the users are dissatisfied with the recreational amenities provided in the case of low cost housing in Kula Lumpur. He concluded that the placement of such facilities in terms of accessibility and usability need to be considered.

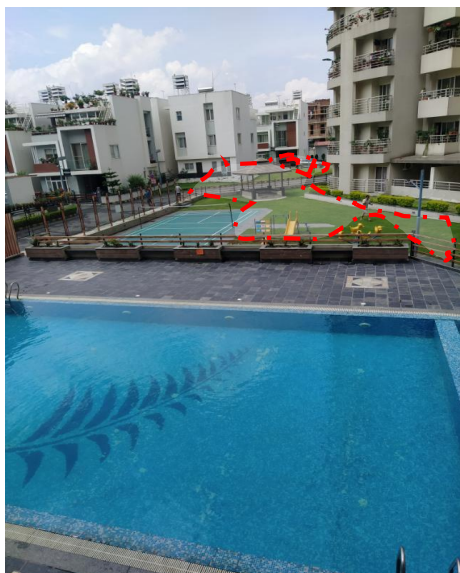
Respondents were asked about their perception of availability of open spaces and recreational facilities inside their community. Responses from residents of Cityscape were 100% positive but majority of responses from residents of Civil homes were negative.

**Table 4.11 responses about availability of open space and recreational facility**

<b>Availability of Open Space and recreational area</b>	<b>Overall (in %)</b>	<b>Cityscape (in %)</b>	<b>Civil Homes (in %)</b>
Yes	66.7	100	37.5
No	33.3	0	62.5

When asked about open spaces and recreational space, according to respondents of civil homes there was no open space or recreational spaces inside the housing community and no space allocated to children. But there was plenty of open space recreation areas and play area allocated to residents of all age group in context of Cityscape.

Cityscape as (shown in figure 4.19 and figure 4.21) has centrally located recreation



**Figure 4.19 Centrally located recreational area of Cityscape**



**Figure 4.20 Open Space at Civil Homes**

area, park, swimming pool that is targeted to people of all age group. But in case of



**Figure 4.21 Master plan of Cityscape**



**Figure 4.22 Master plan of Civil Homes**

civil home, this facility is completely lacking. There is one small open area (As shown in photo 4.20 and 4.22) in southeast corner of the site which can be categorized as unusable area rather than garden or play area. Facilities like gym, sauna, swimming pool is vividly present in context of cityscape but in case of civil homes, it is completely lacking. Cityscape also has a centrally located grocery store, community building inside their gates. But in contrast to it, Civil homes has no grocery store. Though it has community building, but according to residents, it is so congested that, that place is rarely used.

#### 4.2.2.6 Plot size and parking facility



**Figure 4.24 Community Parking of Civil Homes**



**Figure 4.23 Community parking of Cityscape**

Talking about size of plot, Cityscape has 6 type of residential plots available according to requirements of the families where as civil homes has only 4 type of plots available. The minimum plot area of Cityscape starts from 4 aana whereas minimum plot size of Civil Homes starts from 3 aana. Due to small plot size and not enough parking space available, some of residents of Civil Homes uses community parking space. But in case of Cityscape, there is enough parking space inside their own plot.

### 4.3 Satisfaction with size of house

To determine the satisfaction with size of housing, questions like total number of family members, total number of bedrooms, toilets, living area, usable space, kitchen and dining area were asked (table to show the responses of these questions is presented in annex2, table 1). According to the respondents, overall 82% of the respondents were satisfied with standard size of housing unit as provided by the company and 18% were dissatisfied with the space. When compared between two companies, residents of Cityscape were more satisfied with their dwelling rather than residents of civil homes. Unsatisfied respondents with their housing units complained about the strict rules of housing company that does not allow any kind of modifications that may affect the exterior of standard design of Housing Company. Also most of the families among those 82% of satisfied respondents also had done some kind of modifications according to their need in interior of their house.

**Table 4.12 Satisfaction with size of house**

Satisfaction with size of house	Overall	Cityscape	Civil homes
Yes	82.7	88.6	77.5
No	17.3	11.4	22.5

In these kind of housing units, any kind of changes that affect the exterior of housing unit are strictly prohibited by any of the owners. But one can change interior of the house without affecting exterior. So many house owners tend to change the interiors of their homes. Changes vary according to the need of house owner that ranges from structural changes like increasing size of bedroom by combining two bedrooms or eliminating attached toilet bathroom, removing bedroom to enlarge the size of living area or kitchen or dining to some minor changes in interior like changing standard



**Figure 4.25 Civil Homes Dwelling Units**



**Figure 4.26 Cityscape Dwelling Units**

flooring material according to their wish or need, changing the direction of kitchen or



**Figure 4.27 Interior floor finish material changed to parquetting from ceramic tiles**

bedroom or toilet in case they feel discomfort. So modification in standard housing is very commonly seen in case of both housing community.



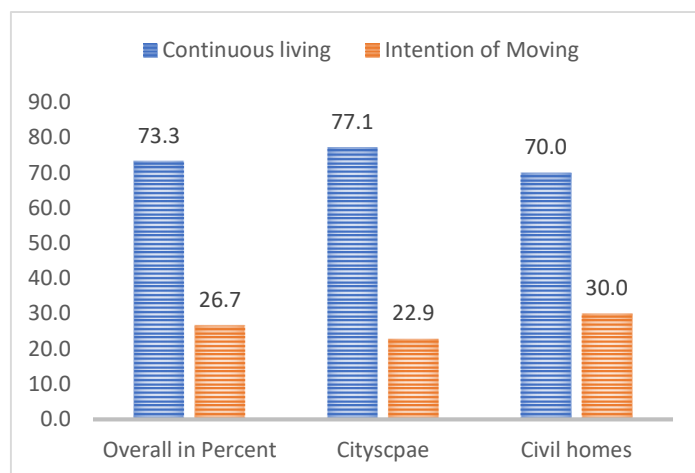
**Figure 4.28** Parking tiles changed from cement blocks to Vitrified Tiles

#### 4.4 Intention of Continue residence

Next question was asked about their intention of continue residency in that particular housing or that they plan to move into new place. The responses this question was different according to the respondents.

From the 72 respondents, 73% of respondents were planning to continue living in their present home but 27% had intention of moving out as soon as possible.

Among the respondents who had intention of moving, when asked about their dissatisfaction that led to their



**Figure 4.29** Intention of continuous residency of Residents

intention of moving, they said that it was because of lack of proper living condition, lack of properly planned outdoor spaces and due to managerial issues. In comparison, residents of cityscape were more satisfied with their present homes and wish to continue living in their present homes where as 30% of respondents of Civil homes were dissatisfied and wish to move out of their present home in search of better place.

#### 4.5 Analysis of Satisfaction level on different context

For the analysis of residential satisfaction level, it was measured in 3 categories as Facility and convenience of housing community, characteristics of individual housing unit and social relationship among residents used were asked in both communities among 72 respondents.

##### 4.5.1 Satisfaction with Facility and convenience of Housing Community

The attributes that define satisfaction level of residents in context of Facility and convenience are

- ✓ Accessibility
- ✓ Facilities provided by Housing community
- ✓ Convenience to live inside the community

##### 4.5.1.1 Accessibility

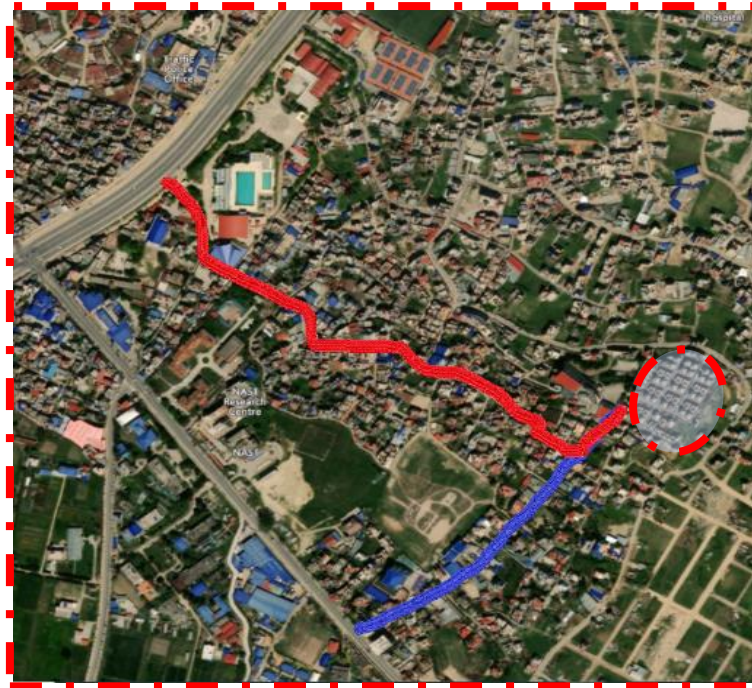
To calculate safety on accessibility, access to building from main gate, proximity to shops outside housing gate, public service offices, access to public transport, access to health facilities were asked.

**Table 4.13 Overall responses for different questions related to accessibility inside housing**

Accessibility Satisfaction criteria	Overall		Cityscape		Civil Homes	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Access to your building from main gate	4.13	0.89	4.31	0.79	3.98	0.94
Proximity to shops and public services	3.75	0.98	4.09	0.95	3.45	0.93
Transport in the neighborhood that allows to get to the city	3.43	1.25	4.06	0.93	2.88	1.24
Ease of getting health facilities in case of emergency	4.01	1.08	4.49	0.74	3.60	1.17

<b>Overall satisfaction with accessibility</b>	<b>3.83</b>		<b>4.24</b>		<b>3.47</b>	
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From the table above, it can be concluded that highest level of overall satisfaction is found in access to building from main gate and least can be found in ease of getting public transport and then proximity to shops and public services. Least variance is also found in access to building from main gate i.e. 89%. Among civil homes and cityscape, Cityscape has 4.31 mean score in context of access to building from main gate whereas civil homes has only 3.98 which is among one of the least mean score. Another criteria that has great difference in both housing community is access to public transport. Cityscape has 4.06 mean score in this criteria which means they are satisfied whereas civil homes has only 2.88 mean score which means their response is average. The reason for this is because cityscape is located very near to Satdobato - Godawari road where as Civil home is located 500m away from Satdobato - Godawari road. Though average distance of civil homes is much less related to cityscape, access to public transport. Satisfaction with proximity to public transport was less because nearest public transport bus stop was a bit far and according to residents, they did not use much of a public transport as they have their own vehicle when needed. The red line shows the distance of housing from Ringroad bus stop which is about 900 meters and blue line shows distance of bus stop from Satodato-Godawari road to housing community which is about 500 meters from main gate. According to residents, they preferred using private vehicle or other ride sharing apps rather than public transport.



**Figure 4.30 Distance of Housing community from Public bus stop**



**Figure 4.31 Location of Cityscape at Satdobato-Godawari highway**

Mean value for accessibility was found to be 3.83 and its variance is 0.593 meaning in average people were satisfied with accessibility and location of their housing community. Also, almost 59% of responses varied according to the responses. The mean value shows that residents were fairly satisfied with the accessibility feature.

#### 4.5.1.2 Satisfaction with Facilities provided and convenience of the housing community

To access the satisfaction on Facilities provided and convenience of the housing community satisfaction on cost of acquiring or renting the house, satisfaction on plotting size, ;landscaping around the plot, cost of living in housing, car parking number, garbage disposal, water facility, electricity were asked in both the community.

**Table 4.14 Satisfaction on facilities provided and convenience of housing community**

Satisfaction on facilities provided and convenience of housing community	Overall		Cityscape		Civil homes	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Cost of acquiring or renting the house?	3.31	1.32	4.11	0.79	2.60	1.29
Plotting sizes?	3.56	1.08	3.97	0.92	3.20	1.09
Landscaping around the plot	3.56	1.29	4.23	0.91	2.98	1.31
Cost of living in this housing?	3.20	1.31	3.86	1.08	2.63	1.23
Car parking number?	3.35	1.21	3.77	1.19	2.98	1.12
Garbage disposal	3.54	1.55	3.89	1.40	3.23	1.63
Water facility	3.04	1.45	3.94	1.16	2.25	1.21
Electricity facility	4.28	0.76	4.63	0.59	3.98	0.76
<b>Overall satisfaction with accessibility</b>	<b>3.48</b>		<b>4.05</b>		<b>2.98</b>	

From table above, it is clear that mean value of both communities combined is highest in electricity facility as compared to other criteria and answer is least deviated is also of electricity facility which is only 0.76 meaning only 76% answers were varied. Availability of water facility in case of civil homes has least mean value i.e. 2.25 meaning respondents were dissatisfied with water facility provided by housing community of civil homes where as in case of cityscape the value is 3.94 meaning residents of Cityscape are fairly satisfied with water facility provided by housing community.

Overall mean value of average satisfaction on facility and convenience is 3.51 meaning respondents of both communities are fairly satisfied with their facilities and convenience provided by both of housing company and variance is 0.687 meaning the



**Figure 4.32 Community parking at Cityscape**

responses from all the respondents varied 68%.

#### **4.5.1.3 Overall satisfaction with Facility and convenience**

<b>Satisfaction with Facility and convenience</b>	<b>Overall</b>	<b>Cityscape</b>	<b>Civil homes</b>
	Mean	Mean	Mean
Overall satisfaction	3.53	4.08	3.04

Overall satisfaction with Facility and convenience among residents was found to be 3.53 meaning residents were slightly satisfied with this feature. Comparing the mean value of both housing community, mean value of Civil homes was much lower than cityscape implying that residents of Civil homes were slightly satisfied whereas residents of Cityscape were satisfied with this feature.

#### **4.5.2 Satisfaction with Neighborhood environment**

This section includes the questions related to neighborhood and its characteristics. This section was designed in order to know about the perception of neighborhood and their views regarding the present condition of neighborhood among residents of housing community. To calculate the satisfaction for neighborhood environment inside housing complex questions like satisfaction with safety feature, satisfaction with condition of neighborhood to raise children, satisfaction with neighborhood relationship, satisfaction with sense of community inside housing community, satisfaction with park/ open space, satisfaction with density of houses, satisfaction with availability of sports

or recreational facilities provided in the neighborhood were asked in both of the communities. The attributes of neighborhood environment that are included in this research are:

- ✓ Safety
- ✓ Condition of neighborhood

#### 4.5.2.1 Safety

To calculate the satisfaction on safety, different questions were asked that determine the satisfaction of residents in context of security and safety inside housing community.

**Table 4.15 Table to show overall responses for different questions related to safety and security inside housing**

Safety satisfaction questions	Overall		Cityscape		Civil Homes	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Pedestrian safety	4.05	0.86	4.03	0.92	4.08	0.82
Crime prevention and safety inside housing community	4.07	0.93	4.00	1.02	4.13	0.85
Sound barrier	3.95	1.12	4.06	1.11	3.85	1.14
<b>Overall satisfaction with safety</b>	<b>4.02</b>		<b>4.03</b>		<b>4.02</b>	

From the above table, it is clear that respondents were most satisfied with crime prevention and safety inside housing community, the mean of which is 4.07 which according to table 4.10 of data collection is satisfied and least satisfied with sound barrier in the housing community. The problem of noise was mainly because both the housing community were located in route of airplane which caused much disturbance every time the plane takes off or lands. The responses on other safety and security criteria was satisfactory according to the respondents. The standard deviation of pedestrian safety is minimum among all of three criteria implying that responses were least different according to respondents in comparison to other criteria.

As famous by its name, gated communities have heavy security at their gates that prevent nonresidents to enter inside the community boundary so residents feel safe and secure inside the community. Also talking about the pedestrian safety, though the inner roads of these communities' lacks footpaths, the speed limits inside the gates in both the communities is 10km/hr making roads safer for pedestrian. Also presence of these security guards and prohibiting the nonresidents inside community without permission makes the community free from crime.



**Figure 4.34 Inner roads of Cityscape Housing community**



**Figure 4.33 Inner roads of Civil Homes Housing community**



**Figure 4.35 Heavy security at the main gate of housing community**

Overall mean value of safety was found to be 4.08 and its variance is 0.448 meaning respondents were fairly satisfied with safety issues and responses varies almost 44% among all of the responses. Satisfaction on safety was found fairly strong in both community among all other criteria. When asked about their negative responses about the safety issues, responses of civil homes was found to be safer for residents than from the residents of cityscape. The cause for lack of safety in cityscape is because of some

theft case in recent days. According to one of the resident, cause of theft within their community was due to carelessness of management community and nonfunctioning CCTV cameras. Also, the presence of Kirat Temple, a famous religious place has great influence on theft inside he community. During many religious rituals, many people gather within that temple causing the guards of housing community hard to manage.

#### **4.5.2.2 Satisfaction with condition of neighborhood inside housing community**

From the table below, overall mean value of condition of neighborhood to raise children is highest as compared to other criteria and least mean value is of availability of sports or recreational facilities in the neighborhood. The mean value of available of open space and availability of recreational area and sports facility in the neighborhood has the least mean value i.e. availability of open space/park has mean value of 2.38 and availability of sports and recreational facility in the neighborhood has mean value of 2.43 both meaning that the respondents of Civil homes are dissatisfied with availability of those services as compared to residents of Cityscape which has mean value of 4.06 and 3.88 respectively.

The reason of dissatisfaction of residents of civil homes is because there absence of any sports facility or recreational area present in the neighborhood. There is small open space located at far corner which is of no use either for recreational facilities or any park area. So residents are very much dissatisfied with these facilities in case of civil homes. Whereas Cityscape has centrally located swimming pool, playing area, park and recreational area for young people. It also has a separate play area specially targeted to children. Talking about other recreational facilities like sauna, gym, cityscape has all those facilities with fully equipped infrastructure but due to lack of proper maintenance and management, residents have complains regarding it.

When asked further about their views regarding the neighborhood in which they live, most of the respondents were satisfied because the surround neighbors belong to same financial background, most of the children goes to same school making it easier for their children to have same company at home as they have at school as well. The reason for dissatisfaction related to sense of community in the neighborhood was because, as one of the respondents said, his neighbors did not belong to same ethnic group as his so it was difficult for him to cope with them specially during festive season because they hardly consider that there are other people living inside the community that does not have same religious beliefs as them which caused disturbance to them.

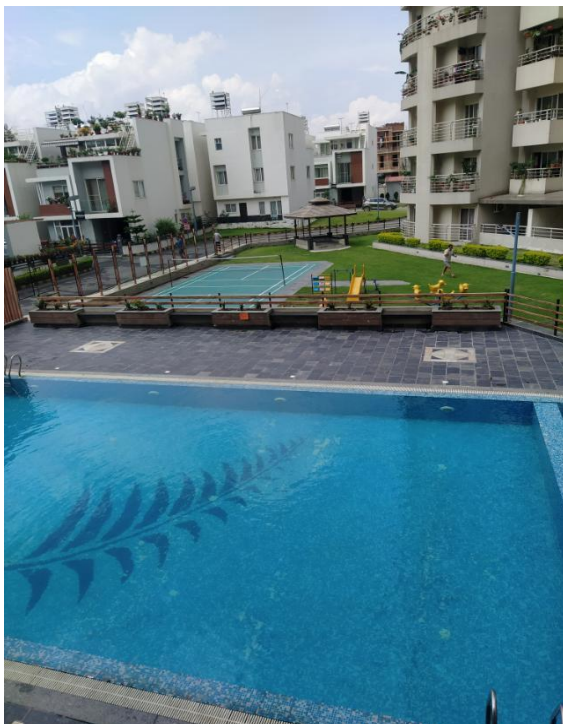
**Table 4.16 Satisfaction with condition of neighborhood inside housing complex**

Satisfaction criteria for condition of neighborhood inside housing complex	Overall		Cityscape		Civil Homes	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Condition of neighborhood to raise children	4.24	0.750	4.37	0.690	4.13	0.791
Neighborhood Relationship	3.95	0.884	4.17	0.785	3.75	0.927
Sense of community inside housing community	3.65	1.103	3.97	1.098	3.36	1.038
Park/ open spaces	3.15	1.496	4.06	1.013	2.38	1.409
Density of houses	3.95	0.970	4.38	0.817	3.56	0.940
Sports or recreational facilities provided in the dissatisfaction in neighborhood	3.09	1.406	3.88	0.913	2.43	1.412
To live in this Neighborhood	3.78	1.057	4.30	0.847	3.35	1.027
<b>Overall satisfaction with condition of neighborhood</b>	<b>3.70</b>		<b>4.15</b>		<b>3.31</b>	

Neighborhood satisfaction was less as compared to other factors. Mean value of satisfaction on condition of neighborhood was found to be 3.7 and its variance was found to be 0.655 meaning that the replies from responses varied 65% of all respondents and residents of both communities were fairly satisfied with condition of neighborhood. The reason for this was that though housing community has abundant road network that allows easy accessibility and avoids any long corridor of roads, but, some of the residents believed that the reason of lack of open space and recreational facility was due to it resulting in dissatisfaction in density of houses. When they roam around the

community, people get to see houses everywhere and no open space resulting in people thinking that houses are planned compactly.

Talking about the location of swimming pool and outdoor playing spaces in cityscape, they are located centrally, just beside the open space. In cases where the swimming pool is secluded with controlled visibility, the residents' do not express dissatisfaction. But, this was not the case with pools of cityscape that has high visibility. The concerns related to the location of the swimming pool which also acts as a part of the open landscape was a concern expressed mostly by the female respondents and parents of teenage children.



**Figure 4.36 Open space/ public space located beside Swimming pool**



**Figure 4.37 Gazebo as public rest house located near badminton court**

When non users but commonly visiting peoples like vendors, drivers, visitors and housing layout maintenance staff of the facilities like swimming pool, gym gets high visibility, it becomes the reasons for dissatisfaction. The reason for this kind of dissatisfaction is due to the socio-cultural behavior of the residents of that area, Nepalese are more concerned of their body unlike the Western people. Becker (2018) has suggested to narrow down the gap between the design that is constructed and environmental behavior in order to minimize the gap between design solutions and residents' expectations. Thus, providing services at any point or p lce is not sufficient, the psychological requirements of the users also needs to be met in order to increase the satisfaction levels among the users as well as all residents.

Residents of houses near to this recreation area complain about being disturb due to noise from people using this area and children playing nearby. Due to this problem, the residents are not satisfied from the location of these services and wished housing company would have planned it in better way and created some kind of buffer zone between residential area and playing space.



**Figure 4.38 Seating space located in between dwelling unit**

Generally in communities, location of children play area is preferred at position which is easily visible by all the users. But, in gated communities like Cityscape where the play area is isolated and located adjacent to the site boundaries and far from the visibility of residents house, the parents of the young children using these facilities are dissatisfied with the location. The reason of location of such amenities at corner is site is due to the government rules about community recreational space for such purposes. According to the bye-laws for housing development, 5% of the land is preserved as open community recreational space. So to fulfill this criteria, generally planners proposes such play areas and recreational facilities to site boundaries or to the corners where it is impossible to plan building plot.

Spaces provided by the housing community should be flexible, as the needs and expectations of the users are constantly evolving and changing due to the influence of factors like globalization, urbanization and advancement in science and technology.

The ability of a space to functionally adapt to the dynamic needs of the user will ensure in longevity of the space.

#### 4.5.2.3 Overall satisfaction with neighborhood environment

None of the respondents has mentioned their neighborhood as unsafe/very unsafe. On questioning about the connectivity among neighbors as compared to previous residence, most of the users feel that their present neighborhood offers better connectivity than their previous one.

**Table 4.17 overall neighborhood satisfaction**

<b>Satisfaction with Neighborhood Environment</b>	<b>Overall</b>	<b>Cityscape</b>	<b>Civil homes</b>
	Mean	Mean	Mean
Overall satisfaction	3.86	4.09	3.66

When asked about the provision of green space and recreational areas, one of the residents of Cityscape said that

*“I was worried how my in-laws would adapt to living inside gated community..... the senior citizens meet up in the evenings at the park and in fact I would say that they (in-laws) know more resident members than us, as we are working and have time constraints”*

But in case of cityscape with sufficient outdoor interactive spaces, a sense of community and unity is felt by its residents as showed by the feedback given above’ Thus, the consideration of the possible residents’ behavior patterns and their needs in determining the location of the seating there is a need for. Arnberger and Eder (2012) suggest that the degree of physical and social success of a space impact the community attachment. Such interactive spaces plays an important role in providing feeling of sense of community among the residents so it should not be ignored.

#### 4.5.3 Satisfaction with characteristics of individual housing units

This section covers satisfaction of residents with characteristics of their individual units, quality of construction and materials used, this section was design such that researchers could get idea about the perception of residents about their homes, what were their expectations and what was the reality after shifting into the house. The attributes to measure characteristics of individual housing units are;

- ✓ Comfort ability of building

- ✓ Quality of construction and materials used

#### 4.5.3.1 Comfortability of the building

Satisfaction on comfort in building is calculated with the help of questions like day lighting inside building, natural ventilation, planning for green space, orientation of building, surrounding environment and outdoor space of the housing were asked.

**Table 4.18 Satisfaction on Comfort ability of the building**

Satisfaction on Comfort ability of the building	Overall		Cityscape		Civil Homes	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Day lighting inside building	4.61	0.69	4.71	0.57	4.53	0.78
Ventilation	4.49	0.68	4.49	0.56	4.50	0.78
Privacy	4.07	1.28	4.66	0.63	3.55	1.48
Orientation of your building	4.09	0.90	4.47	0.56	3.78	1.02
Distance between building	3.89	1.21	4.51	0.78	3.35	1.27
Surrounding environment	4.05	0.99	4.49	0.70	3.68	1.07

Satisfaction on Comfortability of the building	Overall		Cityscape		Civil Homes	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Outdoor space of the housing	3.72	1.24	4.37	0.84	3.15	1.27
<b>Overall satisfaction with comfortability of building</b>	<b>4.13</b>		<b>4.52</b>		<b>3.79</b>	

From table above, we can see that outdoor space of housing has least average mean that is 3.72 in average of both community meaning respondents were fairly satisfied and day lighting has highest mean value that is 4.61 meaning respondents were satisfied highest with this criteria. Civil homes has only 3.15 mean value in outdoor space rating making it least mean value among other criteria resulting respondents were dissatisfied with their outdoor space where as in case of Cityscape, the mean value is 4.37 making the respondents extremely satisfied.

The nature of residents of most gated communities is that they use these outdoor facilities in the evenings due to the favorable weather in Kathmandu Valley. The issue related to outdoor seating is raised mainly by senior citizens of residents and adults who accompany children during their outdoor playtime. Complains raised by the residents, especially users are suitability of seating and their location. In cityscape, a small outdoor seating space is provided in each housing unit as shown in figure 4.39.



**Figure 4.39 Small outdoor space provided in each housing unit of cityscape**

In gated communities with minimal outdoor seating or unfavorable outdoor interactive spaces as in case of Civil Homes, community interaction is reduced and lack of cooperation among the residents is practiced by the residents'. These kind of situations are basically observed during the decision making regarding community functioning. In such gated communities, clubhouse, gymnasiums, acts as social interaction spaces. However, they are all indoors, but these facilities are also lacking in case of civil homes. Similarly talking about visual privacy, it is one of the fundamental requirements of housing. As climate of Kathmandu is favorable for using natural ventilation, it is often adopted as a means of achieving thermal comfort. But, the qualitative feedback obtained from the respondents indicates that when the position of the doors and windows affect their privacy then the users compromise on natural ventilation in order to maintain privacy. The solution adopted by the respondents to the problem of lack of privacy is to keep their doors/ windows closed and have the blinds drawn. Privacy with regard to the position of the main door of the dwelling unit is considered, but compromised with regard to the bathroom ventilators as well as bedroom windows. Though the window is provided with frosted glasses that ensure the privacy to a certain degree, yet the users feel uncomfortable in using these spaces. The respondent feedback indicates that the lack of privacy is experienced more acutely at night, when the bathroom lights are on.

This topic also highlights the requirement for research on the effects of placement of door and window in relation to that of a neighboring housing unit while taking the user's psychological demands into consideration. Therefore, amount of visual privacy



**Figure 4.40 Day light in a typical south-west faced house at late afternoon**

required in any space is determined by the activity carried out within the space, the time and frequency of usage, the user's control over the screening devices to ensure various degrees of privacy and the user's psychological perception. Again talking about orientation of buildings, in



**Figure 4.41 Sun path diagram according to planning of Civil Homes**



**Figure 4.42 Sun path diagram according to planning of Cityscape**

case of both communities, the planning is done in such a way that buildings could use maximum daylight and natural lights. But according to the residents of civil homes, they were dissatisfied with the orientation of buildings. Though every building faced street or road, the reason for low mean score was because respondents whose orientation was on north side had many complains related to their house. They complained about deficiency of day lighting, sunlight inside their home. Due to the

orientation of building, there was lack of day lighting and residents have to use mechanical means in order to maintain thermal comfort inside their building. The buildings that faced south also faced excessive heating problem and it becomes hard to maintain thermal comfort during summer time. Overall satisfaction of residents with respect to ventilation was found high with overall mean score implying that residents were extremely satisfied with provision of ventilation inside their homes.

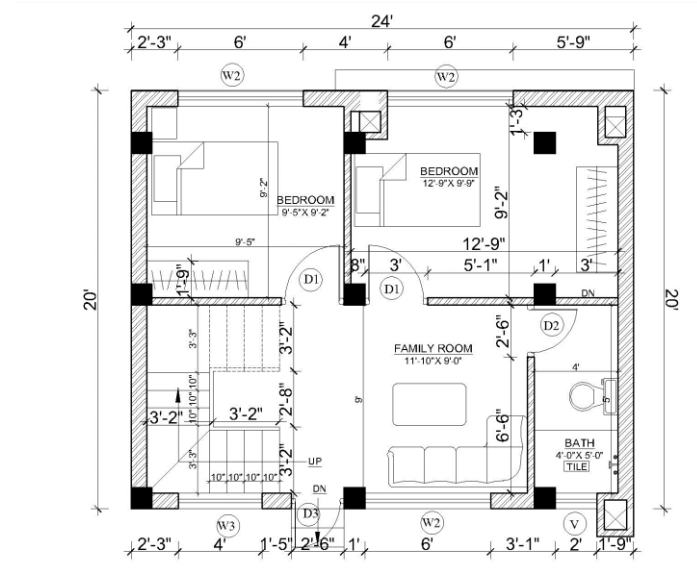
#### **4.5.3.2 Satisfaction on Quality of building material and construction**

To calculate the satisfaction on Quality of building material and construction questions like satisfaction on size of bedroom, usable area of the building, size of kitchen area, planning of the building, quality of construction, natural light in bedroom, soundproofing from surrounding environment, satisfaction with living area, private outdoor space, type of building material, architecture of building were asked.

From table below, size of bedroom has lowest mean value that is 3.05 implying residents were dissatisfied with their bedroom size same goes with size of kitchen room. Residents were not satisfied with size of kitchen area as well as bedroom size in overall result.

Talking about residents of civil homes, residents were not satisfied with kitchen area, quality of building construction material, private outdoor space, and type of building material whereas responses from cityscape were fairly satisfied.

Satisfaction of residents of Civil homes with size of bedroom also has less than average mean score ( $M=2.25$ ) and satisfaction with size of kitchen has mean score of 2.85 meaning residents were dissatisfied with size of bedrooms and with size of kitchen. When asked about their reason of dissatisfaction on size of bedroom, residents responded that bedroom size was very small for them as compared to other areas. The size of bedroom does not allow other furniture to fit in except double sized bed and a wardrobe.



**Figure 4.43 Typical floor plan of dwelling unit of Civil Homes**

But the responses from residents of Cityscape were slight different as they were slightly dissatisfied with the size of bedroom as well as kitchen.

**Table 4.19 Satisfaction on Quality of building material and construction**

Satisfaction on Quality of building material and construction	Overall		Cityscape		Civil Homes	
	Me an	Std. Deviation	Me an	Std. Deviation	Me an	Std. Deviation
Sizes of Bed room	3.05	1.46	3.97	1.07	2.25	1.27
Usable area of the Building	3.77	1.03	4.06	0.90	3.53	1.08
Kitchen area of the Building	3.27	1.17	3.74	1.19	2.85	1.00
Convenient planning of your Building	3.74	1.07	4.23	1.03	3.31	0.92
Quality of construction of building	3.07	1.41	3.69	1.25	2.51	1.33
Natural lighting in bed room	4.13	0.92	4.63	0.54	3.70	0.96

Satisfaction on Quality of building material and construction	Overall		Cityscape		Civil Homes	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Soundproofing	3.83	1.17	4.29	0.95	3.43	1.21
Living areas	3.85	1.04	4.51	0.61	3.28	1.01
Private outdoor spaces	3.49	1.29	4.20	0.96	2.85	1.22
Type of building material	3.44	1.49	4.37	1.14	2.63	1.25
Façade of building	3.84	1.13	4.18	0.93	3.55	1.21
<b>Overall satisfaction with quality of materials and construction</b>	<b>3.61</b>		<b>4.18</b>		<b>3.55</b>	



**Figure 4.44 Interior building material changes into parquetting for their convenience**

Mean value of quality of building and material construction was 3.61 and its variance was found to be 0.74 meaning most of the answers were varied according to the responses.

One of the feedbacks obtained from the resident of Cityscape is;

*“The designer has focused only on the appearance of the building and has not taken into consideration how we will maintain the building.”- Overall satisfaction with characteristics of individual housing unit”.*



**Figure 4.46 Facades of building units of Cityscape having same architecture regardless of their orientation**



**Figure 4.45 Facades of building units of Civil Homes having same architecture regardless of their orientation**

Above feedback shows that though mean score of cityscape is higher than civil homes, residents of both communities were not fully satisfied. Apart from it, openings of same size is provided in all rooms regardless of their orientation. Vijayalaxmi and Sekar’s (2013) study shows that for the same opening size in different room orientations a 4 degree Celsius difference is achievable at particular times of the day for Chennai’s climatic conditions. A gap is observed in the translation of academic research into industry practice.

#### **4.5.3.3 Overall satisfaction with Individual Housing Unit**

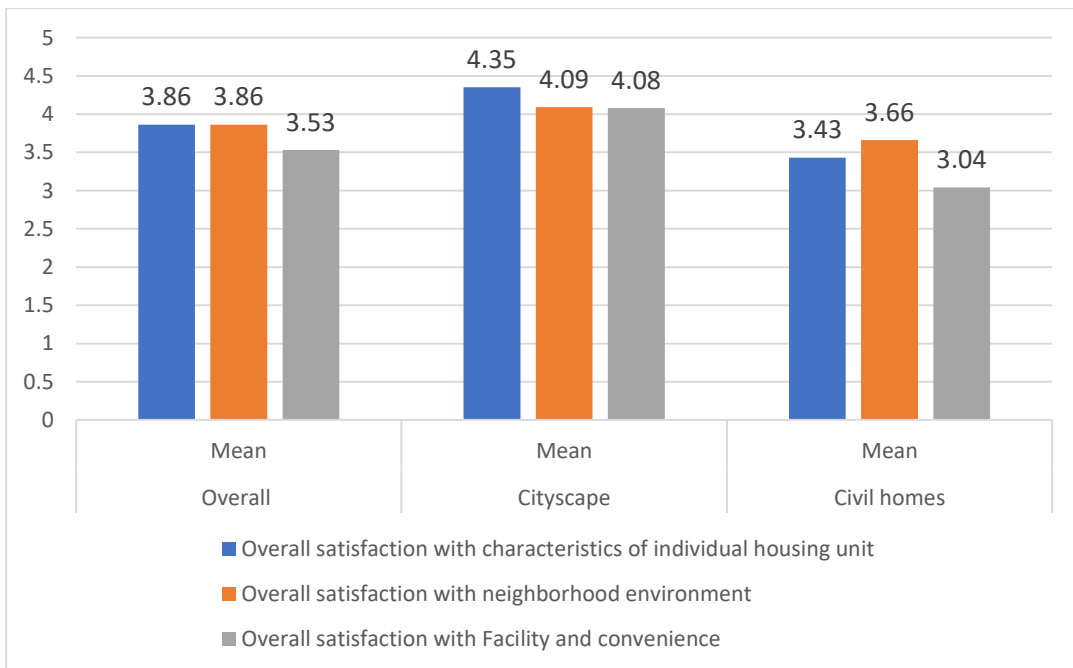
The calculation of overall satisfaction was done by analyzing the mean score of both satisfaction with quality of construction and material used and comfort ability of the building. The average mean of both housing community was found to be 3.86 implying that residents of housing community are satisfied with their individual housing unit. Whereas, when comparing the mean score of two housing community, the mean score of Cityscape was higher than City Paradise, implying that residents of Cityscape were more satisfied with their dwelling as compared to residents of City Paradise. The above results shows that the quality, comfort ability of Cityscape was higher as compared to City Paradise meaning the quality of construction, quality of materials used and comfort feature of Cityscape were much better according to the residents.

**Table 4.20 Overall satisfaction with Individual Housing unit**

Satisfaction with characteristics of individual housing unit	Overall	Cityscape	Civil homes
	Mean	Mean	Mean
Overall satisfaction	3.86	4.35	3.43

**4.6 Comparison of determinants of Satisfaction of residents**

Comparing different satisfaction criteria done among residents to analyze their satisfaction with their housing community. Among all, highest satisfaction was found on comfort with building that is 4.13 implying residents of both housing company where as safety satisfaction also has one of the highest mean value which is 4.08 meaning residents are highly satisfied as well. Facility and convenience provided by housing community has least mean value which is 3.51 among other criteria. Also, quality of building has less mean value that is 3.61 implying that residents are not satisfied with their housing company.



**Figure 4.47 Comparison of determinants of Satisfaction of residents**

**4.7 Overall residential satisfaction**

Mean of overall residential satisfaction is 3.88 implying residents are fairly satisfied with their residences. Residents of civil homes are less satisfied with their residences as compared to residences of Cityscape.

**Table 4.21 Overall Residential Satisfaction**

	Overall		Cityscape		Civil Homes	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Overall Residential satisfaction	3.88	1.02	4.38	0.85	3.45	0.95

#### 4.8 Type and size of ideal Residence

Table below shows the responses of all 72 respondents about their idea of ideal residence. Respondents of cityscape preferred living in housing as their ideal house where as residents of civil homes preferred living in apartment as their future ideal residence.

**Table 4.22 Response another table shows se of type of ideal residence**

Type of ideal residence	Overall in Percent	Cityscape in Percent	Civil Homes in Percent
Housing	58.7	71.4	47.5
Self-Built	13.3	17.1	10.0
Apartment	1.3	2.9	57.5

Table 4.22 shows the preference of respondents about their size of home in future. In average, 45% of respondents from Civil Homes wished to shift into larger living spaces than present. When asked in detail, the respondents needed larger interior living space rather than large bungalows. According to one of the respondents, he has turned his whole first floor into master bedroom with walk-in closet and attach bathroom. Same response was from people of cityscape. They too wished their bedroom sizes were a bit larger, kitchen and dining area more spacious and larger living area.

**Table 4.23 Size of ideal residence**

Size of ideal residence	Overall in Percent	Cityscape in Percent	Civil Homes in Percent
Larger than present	41.3	37.1	45.0
Same as present	32.0	54.3	12.5
Smaller than present	26.7	8.6	42.5

## 4.9 Qualitative analysis

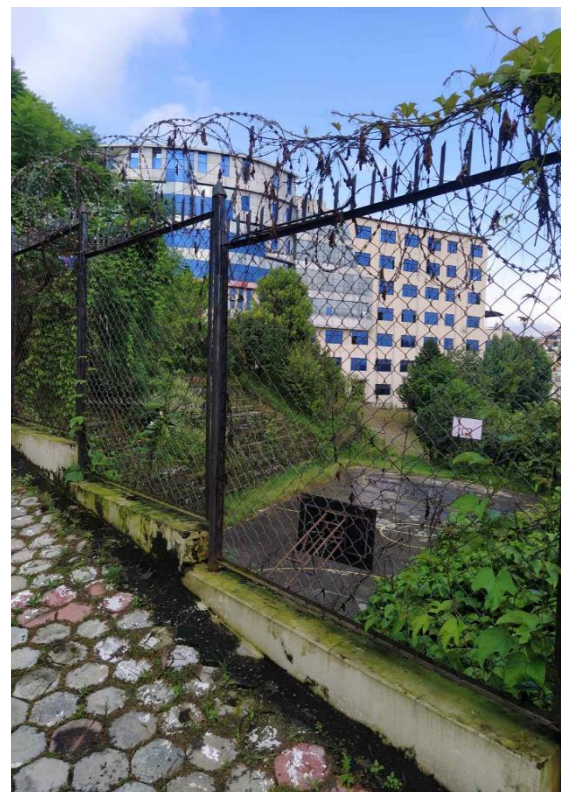
The feedbacks collected from the qualitative interview are categorized based on the concerns such as design concerns and social concerns.

### 4.9.1 Design concerns

The responses from the interviewees disclose a number of design challenges, concerns and drawbacks including issues with barrier-free environments, privacy, safety, and temperature discomfort caused by a lack of exterior sun shade devices. The issues mentioned by the respondents' were not experienced or felt during the purchase of building. The residents realized about it only after residing in those buildings.



**Figure 4.49 External fences at Cityscape to maintain controlled environment inside community**



**Figure 4.48 External fences at Civil Homes to maintain controlled environment inside community**

### 4.9.2 Housing Modifications

During detailed interview, residents were asked about their satisfaction with the design and satisfaction with the dwelling they are living in. Most of them said that, most of the time, housing companies failed to fulfil the expectations of dwellers that were promised during marketing phase. Also, many of the residents found the standard design of housing units insufficient and incapable to fulfill their needs, so they have done modification in interior as well as exterior of their dwellings.

The modifications were mostly interior because management community did not allow any kind of modifications that can affect the standard exterior look of the housing community. Despite the rules, many dwellers still did some modifications at their exterior of building because it was very hard to perform daily activities. Exterior modifications varied from temporary to permanent features like addition of shading roof at the main entrance to avoid rainfall inside the main door, addition of shades at different openings, addition of sunroom at the terrace, etc. similarly, interior modifications varied from large modifications to small that includes addition of attached toilet bathroom, enlarging room by combining attached toilets, combining two bedrooms into one to change floor finish material, interior paints etc.



**Figure 4.50** Temporary shading at the front of house



**Figure 4.51** Addition of sun shading at the porch being newly constructed



**Figure 4.52** Addition of shading for south west faced window



**Figure 4.53** Addition of shading to fulfill need of extra space



**Figure 4.54 Addition of temporary structure at terrace**

### 4.9.3 Lack of Privacy

The residents also pointed out the concerns that they have with the design of the facade. This is further explained by the resident feedback -

*“Focus of the builder/designer has been on the appearance rather than thinking further about maintenance, sunlight glare etc.”*



**Figure 4.55 Sunlight entering inside building till late afternoon**



**Figure 4.56 No particular treatment done in faces where glare is problem**

Residents thought that the developers has only focused on the facade design because they are mainly used for marketing and saleability viewpoint. It is witnessed from the resident's feedbacks.

*“They (builders/designers) are more bothered about how the front of the building looks that they ignore the rear view.”*



**Figure 4.57 Ignored elevation treatment except front elevation**



**Figure 4.58 Ignored side elevation though facing streets**

It is also observed that the design treatment and architecture of the facade remains the same irrespective of the orientation as seen in the Cityscape gated community where there is a lack of any form of sun shading device in other elevations. The feedback below highlights the strategy adopted by the end users to mitigate thermal discomfort.

*“I use the AC (air conditioner) so I don't realize the heat but if there was some sun shading device may be I wouldn't have to use the AC that much.”*



**Figure 4.59 Same facade treatment irrespective of orientation direction**

Some of the residents also complained about the dissatisfaction of the residents due to



**Figure 4.61 later added tap outside the building**



**Figure 4.60 Modifications done within dwelling to accommodate requirements**

lack of detailing. The concerns ranged from lack of proper protection of doors due to which rain enters inside homes during rainy season and to safety issues regarding choice of building materials. The problem of adequate protection of doors is seen in semidetached houses of Civil homes. Due to design concerns, they have failed to consider such minor things. Most of the respondents have made modifications within their dwelling unit to accommodate this requirement either in the balcony or just outside an existing bathroom.

Summarized the analyzed data have aided in identifying the demographic attributes of the respondents and their household. The qualitative analysis reveals concerns raised by the users from their experience. A lack of facilities that promote social interaction and community belonging is also highlighted by the user.

## 4.10 Cross tabulation

### 4.10.1 Relationship between satisfaction in accessibility and income group of residents

Below table shows the relationship between accessibility and income group of residents of housing community. According to this table, most of the people responded that they were fairly satisfied with the accessibility. But according to their income group, 5 residents earning above 1.5 lakh were extremely satisfied with the accessibility to different places.

**Table 4.24 satisfaction in accessibility and income group of residents**

Accessibility satisfaction * Income of family per month Cross tabulation						
		Income of family per month				Total
		less than 50 thousand	50 thousand to 1 lakh	1 lakh to 1.5 lakh	more than 1.5 lakh	
accessibility satisfaction	2.00	1	1	1	0	3
	2.25	0	1	0	2	3
	2.50	0	0	1	0	1
	2.75	0	2	0	1	3
	3.00	0	1	0	1	2
	3.25	2	1	1	0	4
	3.50	0	5	3	0	8
	3.75	3	4	4	2	13
	4.00	1	4	4	2	11
	4.25	0	1	3	2	6
	4.50	1	4	1	1	7
	4.75	1	4	2	5	12
	5.00	1	1	0	0	2

However, when chi-square test was done, the p value was 0.562 implying that there is no any significant relationship between these two variables.

**Table 4.25 Chi square test to test the significance of relationship between accessibility and income group**

<b>Chi-Square Tests</b>			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	34.04 <sup>a</sup>	36	0.56
Likelihood Ratio	38.12	36	0.37

#### 4.10.2 Relationship between satisfaction in safety and age group

Table 4.25 shows the responses of people about the number of children in their family with respect to their perception of satisfaction with respect to safety. From this table, we can conclude that highest number of responses that is 8 responded that they were extremely satisfied with the safety within housing community had no children in their home,

**Table 4.26 Satisfaction in safety and number of children below age 14**

		Children below 14					Total
		0	1	2	3	More than 3	
Safety satisfaction	1.75	1	0	0	0	0	1
	2.25	1	0	0	0	0	1
	2.50	1	0	0	0	0	1
	2.75	0	1	0	1	0	2
	3.25	2	3	0	0	0	5
	3.50	2	2	1	0	0	5
	3.75	6	1	1	0	0	8
	4.00	5	3	3	0	0	11
	4.25	6	6	0	0	1	13
	4.50	8	6	0	0	0	14
	4.75	2	3	1	0	0	6
5.00	2	3	1	1	1	8	

When chi-square test was done to test the significance of relationship, the result showed that there is no significant relationship about perception of people about safety and number of children present in their home.

**Table 4.27 Chi-Square test Safety satisfaction and number of children below age 14**

<b>Chi-Square Tests</b>			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	44.96 <sup>a</sup>	44	0.43
Likelihood Ratio	36.06	44	0.79
Linear-by-Linear Association	1.42	1	0.23
a. 56 cells (93.3%) have expected count less than 5. The minimum expected count is .03.			

Also the table below shows the relationship of safety satisfaction with respect to number of people aging above 60 years in a family. Majority of the response was that the respondents were extremely satisfied having no family member aging above 60 years. Hence the chi-square test also showed that there is no significant relationship between these two variables.

**Table 4.28 Satisfaction in safety and number of people aging above 60 years**

		Number of elder people aging above 60				Total
		0	1	2	More than 2	
Safety satisfaction	1.75	0	1	0	0	1
	2.25	1	0	0	0	1
	2.50	0	0	1	0	1
	2.75	1	0	1	0	2
	3.25	1	2	2	0	5
	3.50	4	0	1	0	5
	3.75	5	1	2	0	8
	4.00	5	4	2	0	11
	4.25	7	5	0	1	13
	4.50	7	4	3	0	14
	4.75	3	1	2	0	6
5.00	4	1	2	1	8	

**Table 4.29 Chi-Square test Satisfaction in safety and number of people aging above 60 years**

<b>Chi-Square Tests</b>			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	24.99 <sup>a</sup>	33	0.84
Likelihood Ratio	28.39	33	0.69
Linear-by-Linear Association	0.01	1	0.89

## **CHAPTER 5. CONCLUSION**

Beginning in the second part of the 20th century, the phenomenon of urbanization and globalization are extensively accepted regarding the economic individuals, and societal development. They already had a changing influence on peoples' expectations and needs. It is discovered that expectations are time-sensitive. Users are integrated into their actual and social and cultural setting, and their needs, which are expressed as a function of their actions, which cannot be understood outside of this context. It is important for designers and design academics, in addition to the dwelling providers to concentrate on design features of a space which has harmony with the resident and their expectations.

Objective 1- To identify the reason behind the selection of housing community over self-built houses

To fulfill first objective, open ended questions were asked about their reason and views regarding gated communities. According to the study, safety, security, neighborhood, relative influence were among the major reasons behind people selecting housing community over self-built houses. Provision of controlled environment, properly designed site and services were among other reasons of people selecting housing community.

Also, people that migrates to Kathmandu valley in search of better opportunity of education, jobs also prefers to settle into housing community rather than buying house outside of housing community because, Kathmandu valley is dominated by Newari people in most of the areas as they are the indigenous tribes of valley. So people migrating inside valley feels comfortable to settle into new neighborhood than outside the gates of housing community.

Objective 2- To know the level of satisfaction among the residents of housing community with their houses and neighborhood

According to the results of the current study, residential satisfaction in gated communities is influenced by the user's demographic characteristics, the characteristics of their individual home, Facility and convenience of housing community and their social environment. The average satisfaction of residents with the residential environment's indicators is shown by the overall mean score of 3.88. Satisfaction with the residential environment is further separated into three areas as Facility and

convenience of housing community, characteristics of individual housing unit and social relationship among residents.

Among the three determinants of residential satisfaction, mean score of characteristics of individual housing unit has highest mean score of overall mean score 3.86 implying residents of both communities are satisfied with present features of individual housing units and satisfaction with neighborhood environment which has same mean score. Similarly mean score of satisfaction with provision of facility and convenience is least with mean score of 3.53 implying residents are slightly satisfied with it.

When compared between the two communities about these features, cityscape has highest mean score of 4.35 in satisfaction of characteristics of individual housing unit and mean score of other attributes also indicated residents are extremely satisfied with them. Where as in case of civil homes, satisfaction with provision of facility and convenience has lowest mean score of 3.04 implying residents are least satisfied and this community needs severe changes with respect to facilities it is providing or had promised to provide at the time of selling. The mean score of other attributes of civil homes is also low as compared to mean score of cityscape with mean score of 3.43 in satisfaction with characteristics of individual unit and mean score of 3.66 in satisfaction with neighborhood environment.

Objective 3- To identify key components about Respondents' housing preferences

To fulfill this objective, the intention of continuous residency, and type of ideal residence were asked to the respondents in order to know about their housing preferences. From the responses, it was clear that majority of residents were satisfied to live inside housing communities, of course with some modifications in present context would be better, but majority of them preferred living in housing community that outside of community. 73% of the respondents had no intention of moving into any new community of home. When asked about their type of ideal residences, majority of them wanted to shift into apartment or individual housing. One of the main reason to shift into housing was because of presence of staircases in multi storey individual units. Using stairs was not convenient for elderly people so they would rather prefer living in luxurious apartment where they don't have to use any stairs.

Objective 4- To know how housing and its environment can be changed in a way to become a desirable place to live in and to improve quality of life.

According to the study, it is more fruitful to use a combined strategy for data gathering and analysis in order to figure the root causes of dissatisfaction. When the socio-cultural

and psychological demands of the residents are not met, dissatisfaction is seen. The expectations of the users within these domains must be realized, as residential satisfaction cannot be guaranteed by only enabling the physical fulfilment of the users' needs. In order to make housing communities more desirable, post occupancy evaluation of present cases should be made mandatory. And the problems that are identified from present scenario should be addressed as much as possible in coming projects.

## CHAPTER 6. RECOMMENDATION

This chapter provides the design guidelines and policy recommendations with respect to Residential satisfaction to enhance the future gated communities making it more user focused design. Some of the recommendations are:

- i. During site planning, physical, social and psychological needs of users are to be considered.  
Residential environment is not restricted to just the activities inside the built environment. The unbuilt environment also plays important role in user's satisfaction. Therefore, site planning needs to be focused which developing any gated communities.
- ii. Post occupancy evaluation of residents should be done  
Post occupancy evaluation is an important method to understand the daily activities and behavior pattern of residents. Doing post occupancy evaluation will facilitate in planning outdoor locations.
- iii. Provision of spaces for all kind of social activities and interaction  
Planning of spaces that is conducive for social gatherings, social interactions among the residents us very important for social cohesion.
- iv. Properties that are provided for free should be located in proper manner  
Locating public and recreational amenities where every residents can reach easily and have easy accessibility will make residents of all age group to come closer, interact with each other which promotes community belongingness.
- v. Quality of material and construction should be properly monitored during construction phase  
After handling over the housing units to the clients, developers should still feel sense of responsibility whenever problems related to structure, construction, and material arises. They should be accountable and try that such problems does not arise in future.
- vi. Provision of proper and accessible open space as mentioned in Bye-laws  
The main focus of developers of housing community has been to focus on the private built space, or space that are saleable and generate money. There is need to acknowledge the role of open, easily accessible open space which are not treated as leftover spaces after planning buildings or between buildings. A well designed outdoor space will raise its positivity and use by the residents.
- vii. Use of Post occupancy evaluation as a tool in design process of housing communities should be made compulsory

- viii. External sun shading device along with thermal comfort justification should be incorporated in building construction approval documentation so as building could be sustainable and uses less mechanical source of energy to obtain thermal comfort as well as for lighting
- ix. The study recommends that it is critical for designers and housing providers to develop design solutions which take into account the socio-cultural context of the end users and not based solely on user activities.

## **CHAPTER 7. FURTHER RESEARCH SCOPE**

This research was done by taking only 2 case studies of Lalitpur. As there are number of housing community nearby, further study can be done by taking larger number of case studies. Another point to consider is that the overall residential satisfaction with housing community may change with other housing communities or when increases number of case studies. Also in this study, only 3 attributes of residential satisfaction are considered and are studies, however, further research can be done in detail among these three attributes. Also, other attributes like details study of design and planning of gated communities, satisfaction on physical features of dwelling units, etc. can be added as explained in literature review.

The conduction of similar studies in other locations would help to develop a more comprehensive understanding on the user requirements and expectations and also to identify whether there is a pattern developed with regard to gated communities. It is also suggested that a replication of this study can be extended to other housing typologies with the intention of enhancing the future design program of generic projects.

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# ANNEX

## ANNEX 1: SAMPLE OF QUESTIONNAIRE

### Satisfaction Level of Occupants of Housing Community in Lalitpur

I am conducting this household assignment for my academic thesis propose. The interview will take around 20 minutes. I assure you that all information will be kept confidential and will be used for academic purpose only. I hope you will co-operate us by giving genuine answers to these questions.

- Agree  
 Disagree

#### A. Demographic Data

##### 1. Name of Housing

- Civil Homes Phase VI  
 Cityscape

##### 2. House Number

---

##### 3. Name of respondent

---

##### 4. Age of Respondent

- less than 18 years old  
 18 years - 40 years old  
 more than 40 years old

##### 5. Ethnicity:

- Brahmin  
 Chhetri  
 Newar  
 Other

##### 6. Religion

- Hindu  
 Buddhist  
 Muslim  
 Other

**7. Size of family**

Q7

- less than 2 person
- 3 to 4 person
- 5 to 7 person
- more than 7 person

**8. Children below 14**

- 0
- 1
- 2
- 3
- More than 3

**9. Number of elder people aging above 60**

- 0
- 1
- 2
- More than 2

**10. Earning members in family**

- 0
- 1
- 2
- more than 2

**11. Income of family per month**

- less than 50 thousand
- 50 thousand to 1 lakh
- 1 lakh to 1.5 lakh
- more than 1.5 lakh

**12. Number of two wheelers owned**

- 0
- 1
- 2
- more than 2

**13. Number of 4 wheelers owned**

- 0
- 1
- 2
- more than 2

**C. Housing information**

**» a. Previous Housing Information**

**14. Ownership of previous house**

- Self
- rented

**15. Type of previous housing**

- Housing
- Self-Built House
- Apartment/ Duplex
- Other

**16. Storey**

- Single
- Two
- Three
- more than 3

**17. Number of bed rooms in previous house**

- 1
- 2
- 3
- more than 3

**18. Number of toilets in previous house**

- 1
- 2
- 3
- more than 3

**19. Size of previous housing**

- Smaller than present
- larger than present
- same as present

**20. Duration of stay in previous house**

- Less than 2 years
- 2 to 5 years
- 5 to 10 years
- more than 10 years

**21. Reason to shift from previous housing?**

---

**» b. Present Housing Information**

**22. Type of ownership**

- Self
- Rented

**23. Reason to choose this particular housing**

- Site and services
- accessibility
- infrastructure
- security
- neighborhood
- relative influence
- Location
- Other

**24. Duration of stay in this housing**

- Less than 2 years
- 2 to 5 years
- 5 to 10 years
- more than 10 years

**25. How did you come to know about this housing?**

- Social/ family network
- Internet
- Other

If other, Please specify

---

**26. Parking facility**

- Inside own plot
- Community parking of housing

**27. Are there any open spaces/ recreational area inside the housing area?**

- Yes
- No

**28. Are there any spaces allocated for children to play?**

- Yes
- No

**D. Information about the Building**

**29. From whom did you buy this house?**

- Real estate company
- previous house owner
- Other

If other, please specify

---

**30. Size of plot**

- Less than 3 ana
- 3 to 5 ana
- 5 to 7 ana
- more than 7 ana

**31. Storey**

- 1
- 2
- 3
- more than 3

**32. Ground coverage of housing unit**

- Less than 500 sq.ft
- 500-800 sq. ft
- 800 - 1000 sq. ft
- more than 1000 sq ft

**33. Age of building**

- Less than 5 years
- 5 to 10 years
- more than 10 years

**34. Number of bedrooms**

- 1
- 2
- 3
- 4
- more than 4

**35. Number of toilets**

- 1
- 2
- 3
- 4
- more than 4

**36. Number of living room**

- 1
- 2
- 3
- 4
- more than 4

**37. Are you satisfied with the size of house?**

- Yes
- No

**38. Reason?**

---

**E. Community Vitality**

**39. Neighborhood Community meeting in a month**

- 1 time
- 2 time
- 3 time
- 4 time
- None

**41. Meeting Participation**

- Participation
- No Participation
- Sometimes

**F. Intention of continuous residency**

**42. Future residence**

- Continuous living
- Intention of Moving

**43. Reason for moving**

- Indoor Living Condition problem
- Noise, Parking, Transportation problem
- Educational Environment Problem
- Lack of outdoor spaces
- Lack of services and managerial issues
- Financial reason
- Other

**G. Analysis of Satisfaction level where 1 indicates extreme dissatisfaction, 2 indicates dissatisfaction, 3 indicates neutral response, 4 indicates satisfaction and 5 denotes extreme satisfaction**

<b>Safety</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>47. How satisfied are you with Pedestrian safety</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>48. How satisfied are you with Crime prevention and safety inside housing community</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>50. How satisfied are you with Sound barrier</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>51. How satisfied are you with Privacy</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Accessibility</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>52. How satisfied are you with Access to the building from main gate</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>53. How satisfied are you with Proximity to shops and public services</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>54. How satisfied are you with Transport in the neighborhood that allows to get to the city</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

55. How satisfied are you with Ease of getting health facilities in case of emergency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Neighborhood inside housing Complex	1	2	3	4	5
56. How satisfied are you with Condition of neighborhood to raise children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. How satisfied are you with Condition of neighborhood to send children to school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. How satisfied are you with Crowd in neighborhood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59. How satisfied are you with Neighborhood Relationship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60. How satisfied are you with Sense of community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61. How satisfied are you with Maintenance of park/ open spaces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62. How satisfied are you with Density of houses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63. How satisfied are you with Lighting in the neighborhood at night	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64. How satisfied are you with Sports or recreational facilities provided in the neighborhood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
67. How satisfied are you to live in this Neighborhood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Location and condition	1	2	3	4	5
69. How satisfied are you with Distance to work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

71. How satisfied are you with Cultural facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
72. How satisfied are you with Educational environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facility convenience	1	2	3	4	5
73. How satisfied are you with cost of acquiring or renting the house?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
74. How satisfied are you with plotting sizes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
75. How satisfied are you with landscaping around the plot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
76. How satisfied are you with cost of living in this hosuing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
77. How satisfied are you with Car parking number?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
78. How satisfied are you with Car access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
79. How satisfied are you with Garbage disposal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
80. How satisfied are you with Water facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
81. How satisfied are you with Electricity facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comfortability in Building	1	2	3	4	5
82. How satisfied are you with Day lighting inside building	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
83. How satisfied are you with Ventilation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

85. How satisfied are you with planning for Green space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
86. How satisfied are you with Orientation/ view	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
87. How satisfied are you with Distance between building	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
88. How satisfied are you with surrounding environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
89. How satisfied are you with Outdoor lighting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
90. How satisfied are you with Outdoor space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
91. How satisfied are you with Corridor space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
92. How satisfied are you with Hall/ lobby	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of Building	1	2	3	4	5
93. How satisfied are you with Sizes of Bed room	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
94. How satisfied are you with Size of bathroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
95. How satisfied are you with Usable area of the Building	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
96. How satisfied are you with Kitchen area of the Building	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
97. How convenient is the planning of your Building	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
98. How comfortable is your Building	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

99. Satisfaction of quality of construction
100. How satisfied are you with Natural lighting in bed room
101. How satisfied are you with Soundproofing
102. How satisfied are you with Living areas
103. How satisfied are you with sleeping areas
104. How satisfied are you with Service areas
105. How satisfied are you with Private outdoor spaces
106. How satisfied are you with type of building material
107. How satisfied are you with Aesthetic of the building
108. Overall Residential satisfaction

**109. Need of Improvement**

- Parking Spaces
- Green spaces
- Crime prevention
- Outdoor spaces
- Noise
- Lighting
- Road/foothpath
- Services like water, electricity, garbage
- Community activities
- Facilities like swimming pool, gym, etc
- Other

110. What are the main features you will look into while searching for new home?

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111. Are there any other satisfaction criteria that is missing in this questionnaire?

---

112. Are there any recommendations you suggest that should be taken care of while designing any housing community?

---

113. What are the main drawbacks of this particular housing?

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## ANNEX 2: TABLE OF ANALYSIS AND DISCUSSION

**Table: Attributes of satisfaction with size of House**

Criteria to analyze the satisfaction with dwelling		Overall	Cityscape	Civil home
		n	n	n
Storey	1	0	0	0
	2	5	2	3
	3	64	33	31
	more than 3	6	0	6
Ground coverage of housing unit	Less than 500 sq.ft	3	0	3
	500-800 sq. ft	39	18	21
	800 – 1000 sq. ft	32	16	16
	more than 1000 sq ft	1	1	0
Number of bedrooms	1	0	0	0
	2	0	0	0
	3	26	14	12
	4	42	19	23
	more than 4	7	2	5
Number of toilets	1	0	0	0
	2	2	0	2
	3	29	8	21
	4	33	20	13
	more than 4	11	7	4
Number of living room	1	44	12	32
	2	27	20	7
	3	4	3	1
	4	0	0	0
	more than 4	0	0	0

## ANNEX 3: ACCEPTANCE LETTER FOR JOURNAL



Date: August 27, 2022

To,  
**Nistha Pathak** (Corresponding Author)

*Subject: Acceptance of paper for publication in JOETP, Vol.3*

Dear Author,

Thank you for submitting the paper entitled "Assessment of Satisfaction level of Residents in a Housing Community, A Case of City Paradise, Lalitpur " to the Journal of Engineering, Technology and Planning (JOETP), Vol. 3 (2022). After reviewing the paper, it is decided to consider your paper for publication in the JOETP, Vol.3 (2022) with minor corrections as attached with the paper.

Congratulations!

Kishan Datta Bhatta, PhD  
(Editor-in-Chief)  
Journal of Engineering Technology and Planning  
Faculty of Engineering  
Far Western University, Nepal

## ANNEX 4: ACCEPTED PAPER FOR PUBLICATION IN JOETP, VOL.3

### Assessment of Satisfaction level of Residents in a Housing Community, A Case of City Paradise, Lalitpur

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#### Abstract

This paper aims to add to theory and practice concerning residential satisfaction in gated community of Lalitpur known as City Paradise which is a significant project of Civil Homes Housing Company. This study is based in household survey conducted in City Paradise Housing community. Data were collected through a sample of residents explore their satisfaction with Design and planning characteristics of housing units, public facilities and services, and neighborhood. To analyze the relation between the variables of satisfaction level, descriptive analysis was done. The results of analysis shows that determinants of neighborhood satisfaction had highest mean value than Design and planning features of housing and provision of public facility and convenience.

**Keywords:** *Residential Satisfaction, Design and planning characteristic, public facilities and services, neighborhood, City Paradise*

#### Introduction

Nepal like many developing countries struggles with several issues in order to provide proper housing. Urban population in Nepal in recent decades has been increasing rapidly. According to recent data, present urban population of Nepal is more than 60%. Although overall population growth has slowed since 2001, and since recently a preliminary report says that has again decreased by 0.93% urban population growth has been growing 3.4% per year from 2001 to 2011, compared with 3.6% per year from 1991 to 2001 (these data's are referred as latest since recent data about urban population growth has not been published). According to Timsina, (2020) Kathmandu Metropolitan City is the only urban center in Nepal with a population above 1 million which is growing at 4.0% per year, similarly population of medium cities (100,000– 300,000) is growing at 3.5% per year and population of small cities (50,000– 100,000) at 3.6%. As per Shrestha, (2022) recently published data of Census 2021 shows the population growth rate of two provinces, Madhes and Lumbini is the highest by 722,143 and 624,953 respectively. Now, Madhesh Province has replaced Bagmati Province which has capital city Kathmandu as the province having highest population accommodating 20.99% of country's total population. Recently published preliminary census report shows that the Nepal's 66 percent population lives in urban areas while the rest live in rural municipalities implying the need of well planned, well designed urban centers having proper infrastructure and sites and services.

Not only in context of Nepal, the Kathmandu Valley is the most populated urban region and one of the fastest-growing urban agglomerations in South Asia (Muzzini & Aparicio, 2013). Kathmandu Valley accounts for 24% of the total urban population, with Kathmandu Metropolitan City alone accounting for 9.7 per cent (MoUD, 2015). Such rapid population growth in Kathmandu Valley, has resulted in haphazard growth of settlements which has resulted in rapid urbanization, growing poverty, high cost of land and construction and dependence on the traditional practice of owner built houses. These situations has resulted in rise of need of housings. Land owners were benefitted from the government's implementation of the site and services program as well as land-pooling projects in the 1970s and 1980s, but private-sector developments in the 1990s and 2000s were only accessible to upper-middle and high income groups (Shrestha B. K., 2010). The city has been expanding rapidly since the 1950s due to rural-urban migration. A number of problems have accompanied this growth, including an infrastructure lag, the expansion of squatter settlements, an acute shortage of housing and a low level of services. The rapid expansion has affected the quality of life in different districts of the city.

The contemporary urban environment of Kathmandu is dominated by individual haphazard housing developments. Unlike the houses of the original Newar towns, these houses are usually very different in color, design and in scale to each other. Introduction of reinforced concrete in the 1950s was instrumental in changing the traditional brick-walled residential houses into bungalow type structures which would start as a single storeyed residence with subsequent addition of floors as the family grew in size and the needs expanded (Shah, 2010). Recent multiple storeyed houses had different families living in each floor rented out by the owners. With residential land becoming more expensive to purchase, housing plots are becoming smaller so the residences rose in height disregarding the bye-laws. The new evolving landscape was marked by the reinforcement steel bars protruding from the top slab of buildings, in anticipation of future additions' (Shah, 2010). To overcome such depletion of urban architecture and fulfill the demands of proper residential areas, Government of Nepal has started to provide planned plots to the residents of valley. After that, the private companies also started to provide plots or ready to move in housing stock.

The privately planned residential areas in in cities of Nepal emerged around 2000 with the representation of apartment act and deregulation of housing finance. During 2000, the Indian real estate Ansal Group partnered with Chaudhary Group and introduced the first apartment based housing project in Nepal 'Kathmandu Residency' at Lalitpur followed by Mount View Residency in Hattiban at Lalitpur. Since then, 100s of private companies are registered with Nepal Land and Housing Developers' Association. At the same time, as the majority are one-off developers, more than 10 have built a successful real estate developer's business model. The supply of housing estates is mainly geared towards the upper middle class. Private developers in Kathmandu Valley planned modern districts in a grid iron pattern, to mimic classic Western suburban neighborhood designs.

But contrast to it, one of the first housing companies to start planned housing colonies is the Civil Homes Pvt. Ltd. It has also successfully constructed projects in outskirts of Kathmandu valley as well. The past developments have been hugely successful as well. It is currently undertaking phase eleventh of housing development on the outskirts of the Kathmandu Metropolitan City. It was at one period of time 'one of the largest planned housing company undertaking in the country'. According to the developers, it is a

project undertaken by the Nepalese for the Nepalese people, with conscious efforts made to provide for local conditions, tastes and habits. The beautifully designed buildings fit in the Nepalese landscape (Homes, civil homes, 2022). They market their projects as a place with good views, a peaceful and healthy environment, tree lined boulevards leading to a central open space for community uses; full security with boundary walls, gates, and security guards; an onsite private school, clinic and postal services; as well as a reliable water supply and drainage systems (Homes, Civil Homes, undated). Civil homes tries to provide variety of houses within their project to encourage mix community and provide housing that can be afforded by middle class people as well.

Civil Homes is undertaking its 11<sup>th</sup> project in Kathmandu valley. It has successfully completed its previous projects and most of the housing units are sold in initial phase only. The residents of these homes are either home owners themselves or tenants living there. However, the research regarding the satisfaction of these residents have not done yet. The study related to the factors that attract people to privately planned housing community is a major topic to study in order to know the post occupancy situation of these type of community. Also, it is important so that the shortcomings of such communities can be identified and improved in future projects. It is also important to study the post occupancy residential satisfaction in such communities in order to know the reality of the services and facilities they the residents get after the shift into the community. According to some literature, important measures to affect the quality of life and comfort in the housing are Design and planning, social, visual, economic, and technologic values. These values are considered important in housings that are mass produced. These can, as well as being able to affect each other favorably or adversely, can also determine the quality indicators undertakings in the country, it sets new standards of living, amenities and aesthetics' (Nilufer Tas, 2007).

Residential satisfaction in planned housing is much researched topic, however, in case of Nepal, there severe lack of research in this topic. Canter and Rees (1982) in their study mentioned that residential satisfaction is the degree to which the residential environment benefits dwellers to achieve their goals, and it assesses the extent to which the present housing environment is meeting dwellers' needs, expectations and motivations (Ibem & Aduwo, 2013). Hence, multiple studies are based on the factors which determine overall residential satisfaction of housing units (Galster G. C., 1987). Results of these studies show the significance of housing characteristics, infrastructures, services and facilities in residential neighborhood and social environment as well as socio-economic attributes of residents. Ibem and Aduwo (2012)'s actual-aspirational gap theory, which is dominant theory for explaining residential satisfaction says that the rate of residential satisfaction depends on the degree of the gap between the perceived actual environment and the aspired-to environment of inhabitants. While the City Paradise project aims to provide housing to all economic group of people by providing variety in housing units according to size of plots, dwelling units etc. this suggests that, level of aspired residential environment of this community may be different from other residential areas as residents of this community belong from different financial, economic and cultural background and the effects of different factors on residential satisfaction may be different for this group of users.

Although there are a lot of empirical data and literature on the differences in residential satisfaction between dwellers of housing projects that have been erected based on different policies and strategies,

especially in the context of developing countries, Nepal lacks empirical research overall and particularly for Gated community. As civil homes was once recognized as the most successful real estate company, various views exist about the outcomes of this project. Despite the fact that residential satisfaction is a critical indicator of life quality, no statistical analysis has been conducted to examine the residential satisfaction of Housing community in Nepal.

### **Objective of the study**

This study aims to increase knowledge about the residential satisfaction with respect to design and planning of Housing Community by taking case of sixth housing project of Civil Homes popularly known as City Paradise by investigating various factors that influence residential satisfaction and the relationship between these factors.

### **Literature Review**

Residential satisfaction is a complicated and ever-changing topic. Various concepts such as life satisfaction, job satisfaction, customer satisfaction, residential satisfaction (Aigbavboa & and Thwala, 2018) have appeared in a variety of disciplines, including psychology and its subfields, management, marketing, architecture, and urban studies. The purposive method to addressing satisfaction is based on Maslow's "Theory of Human Motivation" (Maslow, 1943), which states that the environment either inhibits or promotes the users' goals (Jansen, 2014). Although (Campbell, Converse, & Rodgers., 1977) stated that RS, compared to other dimensions of life such as marriage, work, health and friendship, is relatively unimportant and may not contribute to the overall quality of life, most studies have concluded that it is an important component of quality of life and will become even more critical in the future, especially in metropolitan areas (Marans, 1981). Besides, the lack of RS leads to stress and mental tension, and accordingly, residents will have more tendency to move (Speare, 1974). The field of RS is comprehensive due to its inevitable consequences and is linked to disciplines like sociology, psychology, urban planning, urban design and architecture (Amerigo M. &., 1997).

Residential satisfaction has been studied by multiple researchers. Some study have just focused on overall satisfaction while others have measured residential satisfaction through different aspects in terms of satisfaction with the housing itself and with the neighborhood environment or the community. Findings of previous studies have indicated that these different factors are interdependent. In other words, housing condition, neighborhood or facilities and services or community issues affect each other (Campbell, Converse, & Rodgers., 1977). So it is important to consider different satisfaction of residents about different aspects of residential units. Although these aspects are accounted for overall satisfaction, some studies consider total satisfaction of residents is only important.

Study on residential satisfaction has different goals, including improvement of residents' quality of life, evaluation of the current situation of their houses, assessment of the contribution of residents' participation in development process of their housing units to their level of satisfaction, their needs and priorities and even residents' mobility patterns (Galster & Hesser, 1981). Galster (1987) explains about the two main approaches in which residential satisfaction are based on. First one being purposive approach where people consider their home as a property which facilitates their achievements to reach their goals. Hence, the extent to which their housing meets the mentioned role is known as a measure of residential satisfaction. Another one is the actual-aspiration gap approach that, regarding the housing conditions, refers to a gap between what people have and what they desire to have. This gap is considered as a measure of residential satisfaction (Ibem & Aduwo, 2013). Regardless of their research objective, most of the studies consider these two approaches to improve the understanding of factors that influence satisfaction level. Based on these methods, there are several studies associated to residential satisfaction in terms of different scopes such as housing units, neighborhood environment in terms of social, economic and Design and planning features and other aspects of housing in different countries. Other

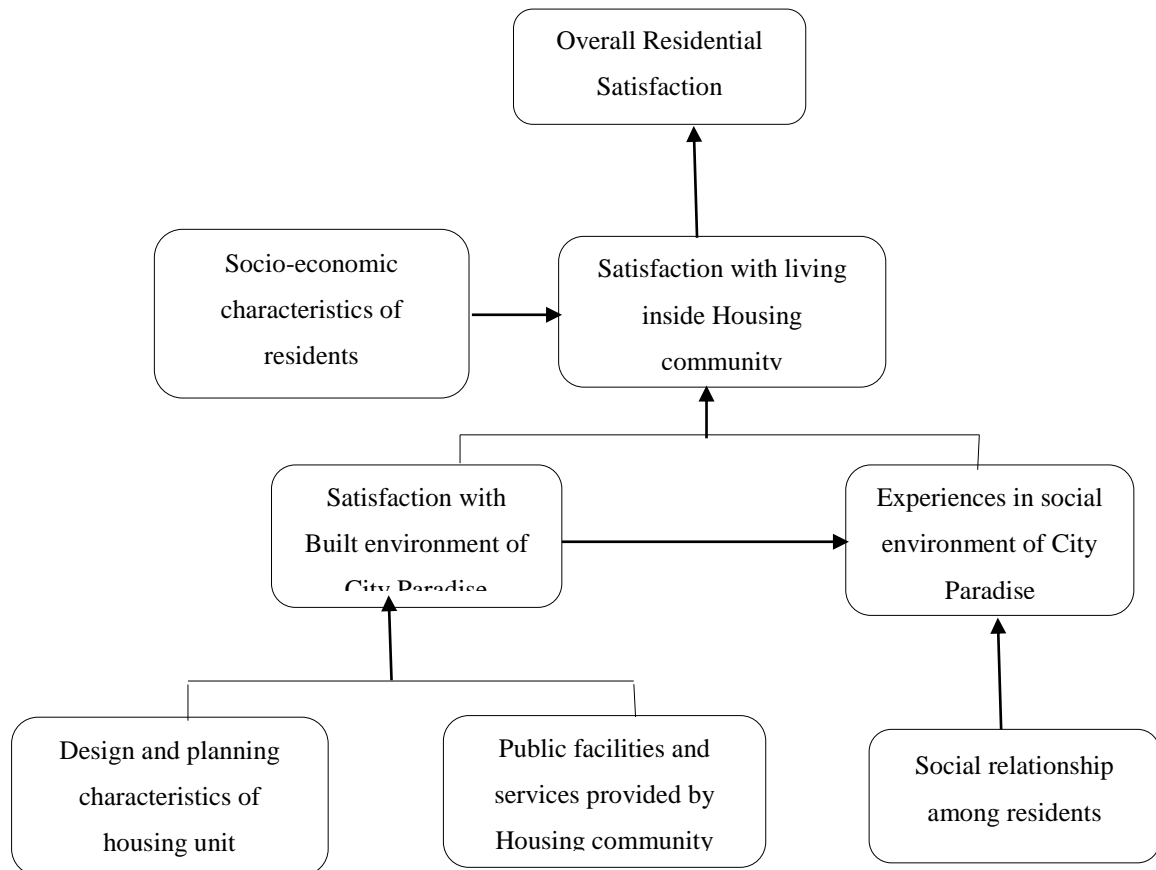
studies focus on Design and planning attributes of housing units as the main influential factors of overall residential satisfaction and its results have indicated that satisfaction with residence unit features (e.g. level of thermal and visual comfort and security; size of living and sleeping areas) are among the main determinants of overall residential satisfaction in public housing (Ibem & Aduwo, 2013).

Some other studies have indicated that provided services and public facilities have higher influences on overall satisfaction compared with Design and planning attributes of the units and the social relationship in the housing areas for example- (Mohit & Azim, 2012). Other attributes that are found significant determinants of residential satisfaction are Maintenance, keeping and cleaning of the common spaces, proximity to public transit (Liu, 1999) and availability of health care and shopping-service providers (Ha, 2008). Similarly, Davis and Fine-Davis (1981) discovered that social ties and neighbors are the strong predictors of residential satisfaction and Gruber and Shelton (1987) indicated that attractiveness of neighborhood were the most important determinants of residents' overall satisfaction with their neighborhoods. Also, Sirgy and Cornwell (2002) found that satisfaction with the social features of the neighborhood (e.g. satisfaction with social interactions with neighbors, social ties in the community, crime level, race relations, outdoor play space and sense of privacy at home) play an important role in the satisfaction with the community. Results from some studies have discovered that dissatisfaction along with crime and social problems not only influence residential satisfaction, but could be the most important reasons for moving from deprived neighborhoods (Andersen, 2008). On the other hand, strong social relations among the neighbors significantly reduce intentions to move.

From literature review, it is clear that various categories of factors varying from inner and outer features of housing units, access to public facilities and services, social environment can influence residential satisfaction. While these studies have been conducted in different countries by different housing strategies, little is known about how satisfaction differs among the residents of housing in context of Nepal using different strategies. For this research, factors that are responsible for residential satisfaction are categorized into two major groups of indicators: social and Design and planning factors. Social factors mostly refer to relationships and ties between residents in the social environment, while Design and planning indicators are defined as residents' personal evaluation of the adequacy of the characteristics of the dwelling units, services, the neighborhood and Design and planning space.

## Conceptual Framework

The study was based on conceptual explanation and field works. Conceptual framework for this study is shown in figure 1. For Design and planning attributes of housing community, built environment is considered. Services, facilities and social environment factors are determined by the relationship of residents with their neighbors, satisfaction with open spaces, availability and quality of recreational facilities among the neighbors. Within the conceptual research, factors that affect the residential satisfaction was extracted and examined by literature review and then those variables were pre tested by



**Figure: Conceptual framework of the study**

conducting pilot survey.

## Research Methods

A sample of 40 households (n=40) was selected from a total of 72 housing units (N=72). The study adopted simple random sampling strategy. The sample was taken with 92% confidence level and 7% margin of error. The primary source of data for this study was collected through self-administered questionnaire which contained 34 questions in total with 4 sections – section 1: resident's social and demographic background; section 2: information about resident's present and past housing information; section 3: respondents satisfaction with neighborhood, Design and planning features of the building, and satisfaction on facility and convenience and finally overall satisfaction with the housing unit and section 4: decision to stay/move from existing housing unit. The field survey was carried out for a period of 3 weeks commencing from 19th July 2022 to 11th June 2022. In order to confirm maximum responses to the questionnaires, respondents were informed concerning the purpose of the survey and reassured that the information provided will be kept confidential and will be used for research purposes only.

The questionnaire to analyze satisfaction level were formed in a 5-point Likert type. The criteria prepared in degrees from 1 to 5; 1 = Extremely Dissatisfied, 2 = Dissatisfied, 3: Average, 4: Satisfied, 5: Extremely

Satisfied. The overall satisfaction for each attribute of residential satisfaction was analyzed based on a mean score. The data collected was analyzed using Statistical Package for Social Sciences (SPSS version 25.0), for frequency distribution of the variables under study, including mean, standard deviation and percentage scores of satisfaction. Descriptive analysis was done for data analysis.

### Description of study area and sample

The study area is located near Satdobato, Lalitpur, and an urban center whose number of population is increasing very rapidly and have high number of immigrants from outside of valley. Satdobato has one of the highest numbers of housing real estate inside it to fulfill the housing needs of immigrants from outside of valley. This research is done in one of those housing community of Civil Homes popularly known as City Paradise. City Paradise is 6th housing project of Civil Homes. Housing units of civil homes has more range of housing units. Civil Homes is considered as one of the oldest and most successful company since its all housing and apartment projects are successfully handed over and the company is running its 11th project at Bouddha, Jorpati, Nepal. The Civil homes phase VI is located at distance of 2 kms from Satdobato Chowk. This housing community has 72 housing units in total with 20 row houses and 54 individual houses whose area ranges from 3 anas to 8 anaas. This project was started in June, 2013 AD and completed and handed over in December, 2015 AD. This housing is spread over 29 ropanies of land. The housing is bounded by a secondary road (8m wide) on the north side. The site slopes down towards this secondary road with fair amount of flat land next to the main access road. This housing community lies in Satdobato which is a prime location for residential purpose, with services like B&B hospital and the national sports complex nearby. Institutions like the NARC, NAST and the White House College are in the neighborhood that increases the development density and connectivity of the site. These houses are painted in Civil Homes' signature color combination of crimson and white, all units in this colony take architectural influences from Newari traditional house. The designers claim that the dwelling units look after the previous Civil Homes' housing complexes and reflect the philosophy of Comfortable, Affordable and Manageable.



Figure Location Plan of study area in Nepal



Figure Location of Study area at Satdobato, Lalitpur

The housing is bounded by a secondary road (8m wide) on the north side. The site slopes down towards this secondary road with fair amount of flat land next to the main access road. This housing community lies in Satdobato which is a prime location for residential purpose, with services like B&B hospital and the national sports complex nearby. Institutions like the NARC, NAST and the White House College are in the neighborhood that increases the development density and connectivity of the site. These houses are painted in Civil Homes' signature color combination of crimson and white, all units in this colony take architectural influences from Newari traditional house. The designers claim that the dwelling units look after the previous Civil Homes' housing complexes and reflect the philosophy of Comfortable, Affordable and Manageable.

### Result and Discussion

#### Socio- Economic and Demographic Profile

From the table 1, 52.5% of respondents were aged between 18 years to 40 years, 47.5% were aged above 40 years where as there were no respondents of aged below 18 years. With regards to Ethnicity, 45%

were from Brahmin community, 22.5 from Chhertri and Newar community each where as 10% were from other ethnic group. Talking about religion, 95% were Hindu. The most common household size was 3 to 4 person (57.5%), 5 to 7 member (27.5%) and 7.5% of household size was 2 or less than 2 and more than 7. Families having income ranging between 50 thousand to 1 lakh were 37.5% per month, 35% of families had income between 1 lakh to 1.5 lakh, 12.5 had more than 1.5 lakh monthly income and 7.5% had less than 50 thousand income with earning at least earning member in each families except in case of 2 families. 55% of respondents had 1 four wheeler, 10% had 2 two wheelers and 35% had no four wheelers owned.

**Table: Frequency distribution of Demographic attributes**

Socio- Economic and Demographic Information			
		No. of Samples	Percentage
<b>Age of Respondent</b>	less than 18 years old	0	0.0
	18 years - 40 years old	21	52.5
	more than 40 years old	19	47.5
	Total	40	100.0
<b>Ethnicity:</b>	Brahmin	18	45.0
	Chhetri	9	22.5
	Newar	9	22.5
	Other	4	10.0
	Total	40	100.0
<b>Religion</b>	Hindu	38	95.0
	Buddhist	2	5.0
	Muslim	0	0.0
	Other	0	0.0
	Total	40	100.0
<b>Size of family</b>	less than 2 people	3	7.5
	3 to 4 person	23	57.5
	5 to 7 person	11	27.5
	more than 7 person	3	7.5
	Total	40	100.0
<b>Income of family per month</b>	less than 50 thousand	6	15.0
	50 thousand to 1 lakh	15	37.5
	1 lakh to 1.5 lakh	14	35.0
	more than 1.5 lakh	5	12.5
	Total	40	100.0
<b>Earning members in family</b>	0	2	5.9
	1	17	50.0
	2	15	44.1

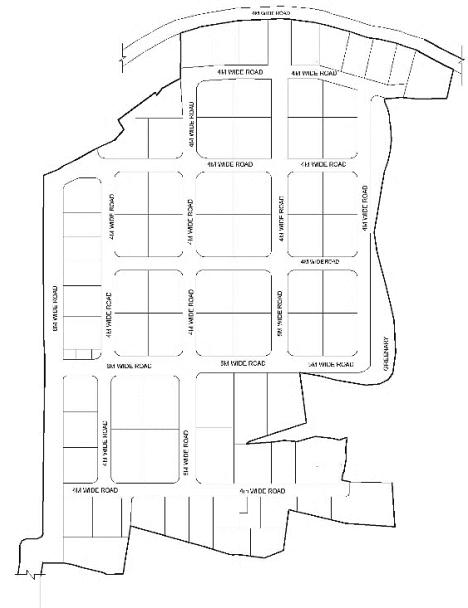
Socio- Economic and Demographic Information			
	more than 2	0	0.0
	Total	34	100.0
<b>Number of 4 wheelers owned</b>	0	14	35.0
	1	22	55.0
	2	4	10.0
	Total	40	100.0

### Residential satisfaction determinants

#### Satisfaction with Design and Planning aspects of housing

To calculate satisfaction on design and planning features, a total of 11 design and planning feature satisfaction determinants were observed with respect to housing environment as seen in table below 2. With regard to determinants of design and planning features of housing unit, on the basis of mean score, planning of building has highest mean score (M= 4.53), façade of building has M= 4.50, whereas distance between has lowest mean score M= 2.25.

From further discussion and observation in site for detail information about the reason of respondents' extreme satisfaction towards planning of building, the reason was found out that the planning of this housing community was done in very convenient way as per the residents. There were no dead ends in road network, proper grid iron pattern was followed while planning the community and distance of every building from entrance gate was very convenient to walk as well. The planning was done in such a way that every group of 4 houses was surrounded by access roads.



**Figure: Master plan of Housing community**

Talking about façade of building, as said by developers, the design is inspired from traditional Newari architecture. Like traditional dwellings of Newari Architecture, dwellings of Community are simple in

forms that reflect simplicity from outside. The design of dwellings have contemporary approach with a touch of slope roofs and use of colors that gives traditional look in exterior.

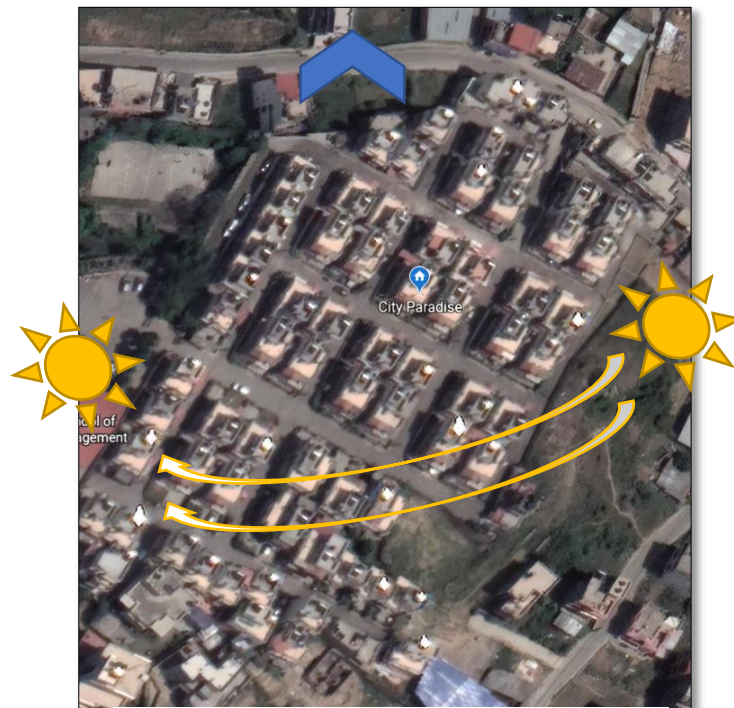


**Figure: Use of crimson and off white paint in exterior for traditional look**



**Figure: Use of slope roof for facade treatment**

Also, talking about the orientation of building which has rather low mean score of 2.63 meaning residents were dissatisfied with the planning of orientation of their building. Though every building faced street or road, the reason for low mean score was because respondents whose orientation was on north side had many complains related to their house. They complained about deficiency of day lighting, sunlight inside their home. Due to the orientation of building, there was lack of day lighting and residents have to use mechanical means in order to maintain thermal comfort inside their building. The buildings that faced south also faced excessive heating problem and it becomes hard to maintain thermal comfort during summer time.



**Figure: Sun path diagram**

Also, the mean value in plot size was found to be 3.2 meaning the residents were slightly satisfied with plot sizes inside the housing community. The less value of mean value was from residents who were

living in row housing. According to then, the size of plots were so less that it did not have any space to have any outdoor space besides parking.

Similarly, mean score in natural ventilation inside building, day lighting inside building and distance between the buildings have mean score of 2.51, 3.35 and 2.25 respectively. The reason for slight satisfaction in day lighting was because the planning allowed the orientation of most of the building into south-west direction due to which maximum day light entered inside the building as shown in figure below.

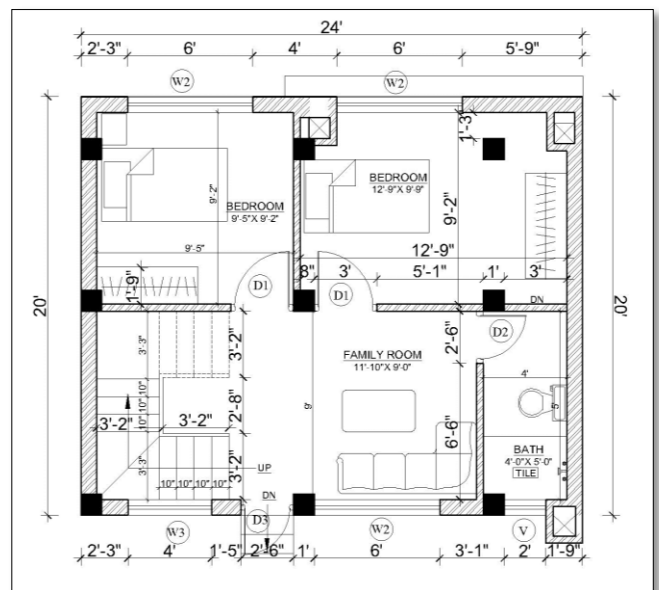


**Figure: Day light in a typical south-west faced house at late afternoon**

Moreover, mean score in ventilation and distance between buildings was comparatively low and showed that residents were dissatisfied with these factors. As the planning of this housing was done in slope land,



**Figure: Height difference in two buildings due to terrain**



**Figure: Typical floor plan of dwelling unit**

from observation, it was seen that the distance between two buildings was maintained according to the by-law, but due to slope land and construction done in slope terrain, there was not proper flow of air resulting to dissatisfaction in ventilation. Also, residents thought that the problem of day lighting and improper natural ventilation was due to less distance between buildings. The residents whose units were

facing directions other than south-west, also complained about the provision of enough natural lighting during day

Satisfaction with size of bedroom also has less mean score ( $M=2.85$ ) and satisfaction with size of kitchen has mean score of 3.78 meaning residents were dissatisfied with size of bedrooms but slightly satisfied with size of kitchen. When asked about their reason of dissatisfaction on size of bedroom, residents responded that bedroom size was very small for them as compared to other areas. The size of bedroom does not allow other furniture to fit in except double sized bed and a wardrobe.

Average size of rooms in this housing was 9'-0" \* 10'-0" which was enough area according to bylaw for any habitable room but actual recommended size for master bedroom is 14'-0" \* 16'-0" for primary bedroom and 12'-0" \* 14'-0" for standard bedroom according American standard (Leslie, 2021). The size of bedrooms in these housing units are comparatively small compared to standard room that caused the dissatisfaction in size of their bedrooms. As compared to size of bedrooms, the size of kitchen was found high. The typical kitchen cum dining area size inside housing was 17'-0" \* 9'-0" which was found to be more than standard size as set by Nepal Standard.

Again, talking about day lighting in these rooms, the window wall ratio was 0.29 which is less than recommended window wall ratio. Recommended percentage of window wall ratio is 30% to 45% meaning there is slight lack of provision of day lighting in bedrooms and needed other mechanical means for thermal comfort.

After that, the satisfaction level in quality of construction and type of building material used inside the building has average mean score and residents showed slight satisfaction with these. According to residents, the quality of construction was compromised and builders were more focused in money making rather than providing quality housing units to the clients. Respondents said they face problems like seepage, lack of provision of potable drinking water, problem with materials used for openings, flooring tiles etc. many residents have changed their building materials after they were handed their homes.



**Figure: Seepage inside rooms due to poor construction quality**



**Figure: flooring material changed from tiles to parquet**



**Figure: concrete block parking tiles changes into vitrified parking tiles**

For the analysis part, finally overall satisfaction was calculated in each category to know about the resident's satisfaction in each of determinants of design and planning. In this context, from table 2, mean value was found to be equal in both the factors ( $M=3.3$ ) implying that mean value for both factor was similar for the residents hence mean of overall satisfaction in design and planning of housing is  $M=3.3$

**Table: Mean and Standard Deviation of Satisfaction levels of determinants of design and planning features**

Determinants of design and planning features of housing	Very Dissatisfied	Dissatisfied	Slightly Satisfied	Satisfied	Very Satisfied	Mean	Std. Deviation
<b>Site features</b>							
Plotting sizes?	7.5	15.0	40.0	25.0	12.5	3.2	1.1

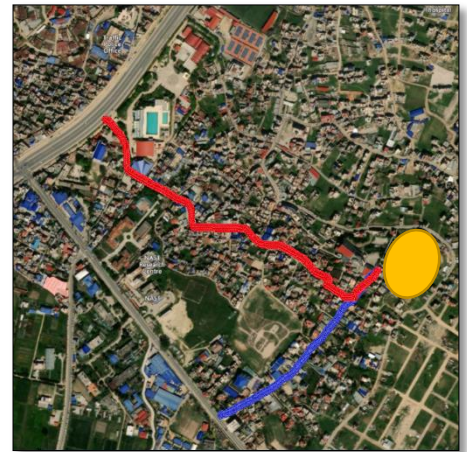
Determinants of design and planning features of housing	Very Dissatisfied	Dissatisfied	Slightly Satisfied	Satisfied	Very Satisfied	Mean	Std. Deviation
Distance between building	7.5	17.5	35.0	12.5	27.5	2.2	1.2
Convenient in planning of your Building	2.5	15.0	37.5	35.0	7.5	4.5	0.7
Overall Satisfaction in site features						3.3	0.9
<b>Building Features</b>							
Sizes of Bed room	35.0	32.5	12.5	12.5	7.5	2.8	1.0
Day lighting inside building	0.0	5.0	2.5	27.5	65.0	3.3	1.2
Ventilation	0.0	5.0	2.5	30.0	62.5	2.5	1.3
Orientation of your building	2.5	7.5	27.5	35.0	27.5	2.6	1.2
Kitchen area of the Building	7.5	30.0	37.5	20.0	5.0	3.7	1.0
Facade of the building	10.0	5.0	30.0	30.0	25.0	4.5	0.7
Type of building material	25.0	25.0	17.5	27.5	5.0	3.3	0.9
Quality of construction of your building	30.0	22.5	17.5	20.0	7.5	3.5	1.2
Overall Satisfaction in Building Features						3.3	0.7
<b>Overall satisfaction in Design and planning of Community</b>						<b>3.3</b>	<b>0.8</b>

**Satisfaction with provision of Public Facility and Convenience**

Residents of City Paradise were very satisfied with pedestrian safety, crime prevention, privacy and access to building from main gate with average mean score 4 or above it in all of them. Satisfaction with proximity to public transport was less because nearest public transport bus stop was a bit far and according to residents, they did not use much of a public transport as they have their own vehicle when needed. The red line shows the distance of housing from Ringroad bus stop which is about 900 meters and blue line shows distance of bus stop from Satodato-Godawari road to housing community which is about 500 meters from main gate. According to residents, they preferred using private vehicle or other ride sharing apps rather than public transport.

Another determinant of satisfaction on public facility and convenience was provision of open space and recreational facilities by the housing community which has mean score of 2.4 each implying the residents were not satisfied with provision of availability of these facilities.

After more discussion, it was known that there wasn't any provision of sports or recreational facilities provided by the community so was the reason of dissatisfaction. Talking about provision of park, open spaces, place to play for children, there was one open space located in North West corner of the site. There was no specified place for children to play. Park was also located in secluded place and residents rarely used this space for any kind of activity. Though the mean of pedestrian safety was 4.1 which showed that they were extremely satisfied, the negative responses were from the residents that complained about lack of play area for children and they have to play in road in front of their homes which may compromise their safety from vehicles as well.

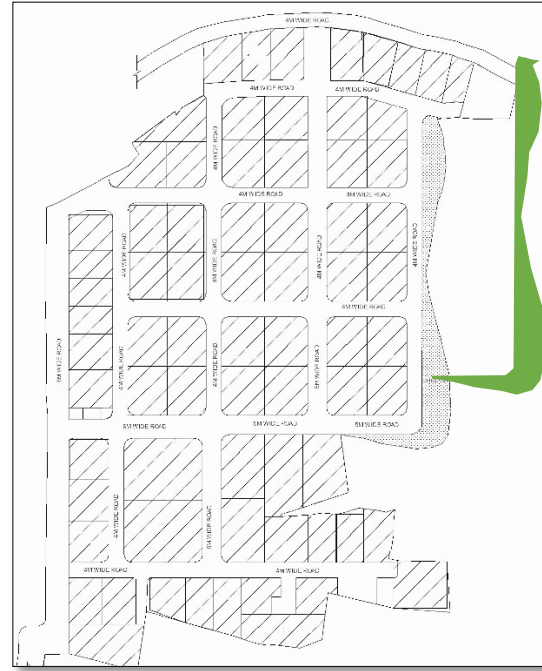


**Figure: Distance of Housing community from Public bus stop**



**Figure: Open space in North West corner of housing community**

Similarly, overall satisfaction of each category responsible for satisfaction on facilities and convenience was calculated. Among three categories, safety, accessibility and facilities, satisfaction in safety was highest with mean score of 4.1 and satisfaction in facilities was least with mean score 2.4 meaning that residents were extremely satisfied with safety provision inside the housing community and dissatisfied with facilities provided by housing community. The reason for dissatisfaction in facilities was because, to calculate satisfaction in facilities, two questions were asked related to satisfaction in provision of open area or park inside the community and satisfaction in provision of facilities like swimming pool, gymnasium, and play area. The mean score in each question was 2.4 implying residents were dissatisfied with both the determinants equally. Upon further discussion regarding these factor, respondents expressed their dissatisfaction because both the facilities were absent inside it. There was very little open space provided but due to its location and built in terrain land, residents used it very rarely. Also, the total area of open space did not fulfill the requirements of bylaws for building Housing community. Due to this reason, many of the residents were still facing legal issues to get their building permits.



**Figure: Location of green space in master plan**

**Table: Mean and Standard Deviation of Satisfaction levels of determinants of Facilities and Convenience in the community**

Determinants of Facilities and Convenience features of housing	Very Dissatisfied	Dissatisfied	Slightly Satisfied	Satisfied	Very Satisfied	Mean	Std. Deviation
<b>Safety</b>							
Pedestrian safety	0.0	7.5	7.5	55.0	30.0	4.1	0.8
Crime prevention and safety inside housing community	0.0	5.0	15.0	42.5	37.5	4.1	0.9
Privacy	0.0	5.0	12.5	45.0	37.5	4.2	0.8
Overall Satisfaction in Safety						4.1	0.6
<b>Accessibility</b>							
Access to your building from main gate	0.0	10.0	15.0	42.5	32.5	4.0	0.9
Proximity to shops and public services	5.0	7.5	32.5	47.5	7.5	3.5	0.9
Transport in the neighborhood that allows to get to the city	15.0	25.0	30.0	17.5	12.5	2.9	1.2
Distance to work	40.0	12.5	22.5	15.0	10.0	3.5	1.2
Ease of getting health facilities in case of emergency	10.0	7.5	12.5	52.5	17.5	3.6	1.2
Overall Satisfaction in Accessibility						3.5	0.69
<b>Facility</b>							
Park/ open spaces	40.0	17.5	17.5	15.0	10.0	2.4	1.4
Sports or recreational facilities provided in the neighborhood	7.5	12.5	20.0	40.0	20.0	2.4	1.4
Overall Satisfaction in Facility provided by Community						2.4	1.2
<b>Overall Satisfaction in facility and convenience provided by community</b>						<b>3.4</b>	<b>0.6</b>

### Satisfaction with Neighborhood

Next category to measure satisfaction level of residents was satisfaction with neighborhood in which they live. This satisfaction criteria was measure in 5 determinants. Among these determinants, satisfaction to raise children in the neighborhood was most high with mean score of 4.1 implying residents were most satisfied with it. Whereas least satisfaction was in sense of community inside housing with mean score 3.3 implying resident were only slightly satisfied with it. When asked further about their views regarding the neighborhood in which they live, most of the respondents were satisfied because the surround neighbors belong to same financial background, most of the children goes to same school making it easier for their children to have same company at home as they have at school as well. The reason for dissatisfaction related to sense of community in the neighborhood was because, as one of the respondents said, his neighbors did not belong to same ethnic group as his so it was difficult for him to cope with them specially during festive season because they hardly consider that there are other people living inside the community that does not have same religious beliefs as them which caused disturbance to them.

Mean score of satisfaction level in density of houses was also comparatively low (M=3.5) implying residents were slightly satisfied with it. The reason for this was that though housing community has abundant road network that allows easy accessibility and avoids any long corridor of roads, but, some of the residents believed that the reason of lack of open space and recreational facility was due to it resulting in dissatisfaction in density of houses. When they roam around the community, people get to see houses everywhere and no open space resulting in people thinking that houses are planned compactly.

**Table: Mean and Standard Deviation of Satisfaction levels of determinants of Neighborhood satisfaction**

Determinants of Neighborhood satisfaction features of housing	Very Dissatisfied	Dissatisfied	Slightly Satisfied	Satisfied	Very Satisfied	Mean	Std. Deviation
Condition of neighborhood to raise children	0.0	5.0	10.0	52.5	32.5	4.1	0.8
Neighborhood Relationship	0.0	12.5	20.0	47.5	20.0	3.7	0.9
Sense of community inside housing community	5.1	12.8	35.9	33.3	12.8	3.3	1.0
Density of houses	2.6	5.1	43.6	30.8	17.9	3.5	0.9
Surrounding environment	0.0	17.5	25.0	30.0	27.5	3.6	1.0

<b>Overall Satisfaction with Neighborhood</b>		<b>3.7</b>	<b>0.7</b>
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### Overall residential satisfaction

From above determinants, the mean score for average satisfaction in each factor and finally overall satisfaction of residents was obtained. According to below table 5, residents were slightly satisfied with all three factors. Among them, neighborhood satisfaction has highest mean of 3.7 and satisfaction with design and planning features has least mean score of 3.3 meaning that residents were satisfied with their neighborhood and least satisfied with the design and planning features of housing community. The mean of these three were calculated in order to obtain overall satisfaction. The mean score of overall satisfaction was found to be 3.5 meaning residents were slightly satisfied with their housing communities in which they live.

**Table: Mean of Overall Satisfaction**

	<b>Design and planning characteristics</b>	<b>Public facility convenience</b>	<b>neighborhood</b>	<b>Overall satisfaction</b>
Mean	3.3	3.4	3.7	3.5
Std. Deviation	0.7	0.6	0.7	0.53

### Conclusion

In Nepal, private housing communities have emerged as a solution to high density housing strategy with properly planned infrastructures, public spaces and recreational areas. The challenges faced by the designers/developers of these projects lie recognizing the needs and expectations of the users as they are often unidentified during the design stage. The study was set out to evaluate the residential satisfaction of the users of these private gated communities in Lalitpur, Nepal. And identify areas that need focus in order to upgrade the quality of housing communities and its neighborhood in the upcoming projects for better quality of life.

As a study area, a case of Civil Homes's sixth project was selected popularly known as City Paradise located in Khumaltar, Lalitpur. The determinants of satisfaction were identified under both housing environment and its neighborhood. For satisfaction in housing environment, it was divided into two categories as satisfaction with design and planning features of housing and satisfaction with public facilities and convenience of housing environment. A structured questionnaire was prepared and deployed to gather the data during field survey. Total of 40 samples were taken that fulfilled the required sample size. Study revealed that family who have young children and they have to go for work during day time preferred living inside gated communities for safety and security reasons majorly. Also people that have migrated to Kathmandu valley recently preferred living inside these communities rather than self-own buildings outside community.

The respondents comparatively had higher satisfaction levels with satisfaction determinants of neighborhood than design and planning features of housing and provision of public facility and convenience. Within neighborhood satisfaction, condition of neighborhood to raise children has highest mean score whereas among all determinants, highest mean score was of satisfaction with planning of building and façade treatment of building. Determinants in which low mean score was seen in planning of building, ventilation, size of bedrooms. These features need more focus during the planning and designing of the housing communities. Only when these amenities meet the expectations of the end users, there will be more usage and thus people start to prefer housing over self-built houses. Designer/developers apart from focusing on the private space need also to focus on the public space and create an environment that is more compatible with the residents' needs.

## **Further Studies**

This research was done only in single housing community of Lalitpur. There are many housing communities in its surrounding constructed by different developers. Further research could be done by taking more than one case study in order to compare the satisfaction level with respect to each other. Another point to consider is that the overall residential satisfaction with housing community may change with other housing communities or when increases number of case studies. Finally, future studies could also investigate more on theoretical explanation raised in this research regarding the contribution of design and planning features in detail. Also, further research could be conducted primarily based in architectural aspects of the gated community and how does it effect on satisfaction level. There is also scope

## **Acknowledgement**

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## ANNEX 5: PLAGIARISM REPORTS

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ORIGINALITY REPORT

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SIMILARITY INDEX

PRIMARY SOURCES

1	Ali Emami, Sheyda Sadeghlou. "Residential Satisfaction: A Narrative Literature Review Towards Identification of Core Determinants and Indicators", <i>Housing, Theory and Society</i> , 2020 Crossref	1049 words — 3%
2	<a href="http://www.tandfonline.com">www.tandfonline.com</a> Internet	932 words — 3%
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