



INSIGHTS ON APARTMENT BUILDINGS IN LAHORE

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ABSTRACT

Vertical urban growth is considered to be sustainable over a long period of time in developing countries. Vertical development has proven to be the most practical and sensible way for cities to grow in terms of economic and other important factors. The aim of this project is to look at residential satisfaction in apartment buildings. Research on the factors that influence the sample community's satisfaction with their homes is part of this research. The case study locations are Jallo colony, Kausar Flats and Askari 11 Apartments in Lahore. Distribution of survey questionnaires to 250 randomly selected participants from three designated areas (apartments) was the main element of the research methodology. Reliability analysis was carried out to determine the elements that influence citizen satisfaction. On the other hand, the opinions of tenants of apartment buildings in different parts of Lahore were compared using the chi-square test. However, rather than stopping at this research, scientists should go further and concentrate on the bad data that highlights design flaws that planners and architects must overcome to develop environments and spaces that satisfy humans. Our research revealed results that are largely consistent with previous research. This is followed by affordability, layout, proximity, connectivity, environmental factors, location, and recreational and leisure activities. Many publications center on citizen satisfaction with the complex's facilities and service requirements.

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INTRODUCTION

Vertical urban growth is considered viable for a long time in developing countries. Vertical development has shown to be the most practical and reasonable way for cities to grow in terms of the economy and other significant factors (Wennersten, 2018; Zhang & Tang, 2023). Vertical growth obstructs horizontal expansion, which in turn prevents the use of agricultural land. The distances between sites are shortened in a vertical city since it is smaller than a horizontal one. Lahore, the second-most populous city in Pakistan, has to catch up with development (Khan, 2020). The city is growing quickly and constructing residences on farmland. The true reason for this unintentional growth is "urbanization." Urbanization is the process of making a location more urban (Zeuthen, 2018).

The fact that apartments are frequently less expensive than single-family homes is one of their key advantages. Apartments are a more cost-effective choice for tenants on a restricted budget because they are usually smaller and require less maintenance (Bright et al., 2019). Furthermore, apartments are a convenient choice for people who like to be close to their place of employment, public transportation, and other facilities because they are frequently found in more metropolitan regions (Li et al., 2019). There is a significant lack of available space in Lahore, and more individuals

are choosing to remain in high-rise structures. In Lahore, structures with twenty floors or more are becoming more prevalent. One of the main causes of Lahore's population exodus to the suburbs is the city's chronic shortage of affordable homes (Javed & Riaz, 2020). The apartment buildings are providing cheap accommodation for a considerable portion of the population. Several state-of-the-art facilities are available to residents of these high-rise structures.

The goal of the current study is to look into residential satisfaction in apartment complexes located in a popular Lahore neighborhood. The study's primary goals include examining resident satisfaction concerning complex facilities, considerations to consider when choosing a high-rise apartment, community lifestyle, social support, and resident health and happiness regarding gender and apartment occupancy status. An apartment is any building whose height significantly affects evacuations. The aforementioned term can be found in the metropolitan spatial organization common economic model (Sharafi et al., 2017).

A home is more than just a building; therefore, neighborhood contentment is also a part of residential enjoyment. The residents may be exposed to poor housing conditions and health risks as a result of experiencing flaws in the basic building materials. Outlining minimum building criteria and size limits for residential units may be essential for public housing legislation. Financial gains, lifestyle improvements, planning, and environmental concerns all have an impact on satisfaction levels. When someone says they are satisfied with their neighborhood, they feel like they belong and that the area meets their needs and wants. It is a multifaceted idea that places special emphasis on the social and physical environments, which include sentiments of acceptance and belonging, as well as the accessibility of local resources. Residential satisfaction in apartment buildings is now a crucial component of psychology, happiness in one's own life, society lifestyle, health, and general well-being. There are few studies in Pakistan on residents' satisfaction with high-rise apartment buildings (Peace, 2022).

Investigating the primary and combined effects of gender and occupancy status on the evaluation of complex amenities, high-rise apartment selection factors, neighborhood connections, social support, health, happiness, and residential satisfaction are the main objectives of the current study. Some of the worries about population increase and urbanization, such as those about infrastructure and social amenities, can be lessened with the aid of this study on apartment complexes. However, a comprehensive examination of the occupants' satisfaction in their homes has not yet been conducted for these structures.

METHOD

The study employed a comprehensive questionnaire survey of the residents in conjunction with a succinct literature evaluation. Significant factors that influence residents' contentment in apartment complexes were discovered. Stakeholders should consider these suggestions in the future when planning residential apartment complexes. This is an important phase in the research project since it will describe how to collect data and how to improve the outcomes. The architecture industry is built on dual working or doing work in both the office and the field. Since the pandemic situation makes data collection challenging, the focus of this step will be on visiting apartment buildings and utilizing internet platforms to obtain input. Quantitative research will be carried out to investigate this. The study employs a basic random sampling methodology. Various apartment buildings will be visited, and interviews about their daily lives will be conducted. Pakistan's next generation of tall residential buildings. Professionals and citizens participated in an online and offline survey for this study in order to gather data using a self-constructed research questionnaire.

RESULT AND DISCUSSION

This chapter goes into great detail on the important factors affecting residents' level of satisfaction. For this aim, these components are separated into three groups. First, residents' contentment is influenced by socio-economic level parameters such as age, income, gender, marital status, race, and education of the respondents (Sakariyau et al., 2023). A second set of criteria for measuring residential satisfaction is housing attributes, which include things like size, cost, building design, and physical conditions. Third, tenant satisfaction is influenced by the apartment's features (Sakariyau et al., 2023). This study also looks at how these factors affect resident satisfaction in Lahore. The reliability analysis and chi-square test were performed using SPSS software. The chapter is divided into two sections: the first section presents the statistical findings about respondents' satisfaction in the case study region, and the second section describes the findings regarding architects', builders', students', and potential stakeholders' perceptions.

The qualities of housing have a big impact on how content people are at home. A greater size and better set of amenities are examples of positive home attributes that have been shown in research to be important predictors of residential pleasure (Mouratidis, 2020). Even though this study found a favorable correlation between residential satisfaction and floor space, housing costs, and home ownership, these factors are not significant in Lahore (Khalid & Sunikka-Blank, 2020). Interestingly, building design is the most significant factor influencing residential satisfaction (with a Cronbach's Alpha value of less than 1%). This suggests that building design and the higher degree of construction that goes into it is critical. Locals in Lahore appear to place greater value on house quality than on location and cost.

Reliability analysis

The qualities of housing have a big impact on how content people are at home. A greater size and better set of amenities are examples of positive home attributes that have been shown in research to be important predictors of residential pleasure (Ma et al., 2018). Even though this study found a favorable correlation between residential satisfaction and floor space, housing costs, and home ownership, these factors are not significant in Lahore. Interestingly, building design is the most significant factor influencing residential satisfaction (with a Cronbach's Alpha value of less than 1%). This suggests that building design and the higher degree of construction that goes into it is critical. Locals in Lahore appear to place greater value on house quality than on location and cost.

Nevertheless, the preceding table offered some indications that Lahore's housing stock, both kinds combined, was deteriorating. However, the overall quality results from the viewpoint of the residents show that, while all 156 residents in private housing are happy with the quality of their building, over 55% of residents in public housing are not (Kshetrimayum et al., 2020). Consequently, of the 250 randomly selected people of Lahore, 248 indicated that they were either as satisfied or more satisfied with the building quality than 49.60%. In comparison, only 1.24% indicated they were in the center (between satisfied and unsatisfied). 38% of respondents to this survey said that their apartment building's quality was unsatisfactory.

Table 1 Item-Total Statistics

Variables	Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
External appearance/ building height	31.11	24.579	.427	.669	.752
Security	30.99	25.845	.337	.266	.762
Design of the entrance/lobby	30.72	24.964	.344	.505	.763

Exterior Color of the building	31.13	25.238	.626	.753	.740
Vertical circulation within the building (lifts and stairways)	30.97	25.520	.492	.600	.748
Are you satisfied with the stair-step height in your building?	31.10	24.962	.373	.767	.758
Stairway material/ lift speed	31.07	20.347	.753	.800	.701
Postal service	30.99	25.845	.337	.266	.762
Horizontal distance/material (hallway distance)	40.21	75.717	.635	.718	.860
Lighting level inside the apartment building	29.31	25.370	.318	.503	.765
Door keeping service	30.38	26.181	.310	.755	.764
maintenance and repair service	29.51	24.310	.307	.383	.773
Disposal service/ cleanliness	30.67	24.254	.500	.772	.743
Adequate number and quality of fire extinguishers/ escape routes	41.03	77.182	.609	.836	.861
The building is safe against an earthquake	41.06	73.715	.741	.748	.853
Construction stability of the apartment building	40.65	74.765	.706	.751	.856
Requests met by the Administration and Maintenance Office	39.57	85.037	.213	.570	.880

The outcomes line up with the conclusions Regarding privacy within a house. Gifford & McCunn (2018) first highlight that a house is a private space and that the walls and doors are what give privacy from various external factors like neighbors and the environment and even more from other people who share a house. In order to prevent isolation, people need to know how big the house is.

Elevators, lobbies, and other public areas were found to be more private than semi-public areas in high-rise buildings. This suggests that privacy does not equate to isolation but also does not mean an excessive number of strangers in a building's public areas. Additionally, studies have shown that having semi-public areas in apartments reduces feelings of losing control over one's surroundings and increases happiness with interpersonal relationships and a sense of community.

Accessibility and planning Satisfaction

The SPSS program was used to conduct a reliability analysis of the pertinent components of home satisfaction based on survey data. Three inferences can be drawn from the results. Firstly, residential satisfaction is influenced by personal aspects such as demographic and socio-economic features. The level of education, occupation, and household income all have a positive impact on how happy one is at home (F. Zhang et al., 2018). Family size has a negative impact on residential satisfaction. Gender and household wealth are the two factors that most influence how happy one feels at home. Second, it was found that residential satisfaction was influenced by the features of the home (Azimi & Esmaeilzadeh, 2017). While floor area, cost of living, and home ownership all affect

residential pleasure in Lahore, the most significant factors are new building levels and the architecture of the structure.

Lastly, it is critical to take the neighborhood's characteristics into account. The most important variables affecting residential happiness were determined to be the community type, population density, and proximity to the district's commercial core (Gao et al., 2022). On the other hand, it appears that residential contentment is less affected by the distance to the port working zones.

Table 2 Item-Total Statistics

Item-Total Statistics					
Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Location	41.24	77.704	.635	.673	.860
Public transport access	40.65	75.526	.682	.720	.857
Leisure facilities? (If yes, are you satisfied with them?)	41.03	77.182	.609	.836	.861
Distance of convenience stores/markets?	41.06	73.715	.741	.748	.853
automobile parking space	40.65	74.765	.706	.751	.856
Cleanliness of public areas	39.57	85.037	.213	.570	.880
Illumination in public areas	40.21	75.717	.635	.718	.860
Security in public areas	40.32	76.671	.694	.777	.857
Shopping and social places	40.76	75.451	.706	.859	.856
Culture and arts facilities (cinema, theatre, etc.)	41.26	74.169	.811	.866	.851
Children's playgrounds	41.00	79.606	.546	.701	.865
Nurseries, primary and high schools	40.74	80.535	.464	.767	.868
Religious facilities	40.67	97.380	-.360	.558	.909
sufficiency of public spaces	40.50	77.437	.613	.787	.861

Explanation

According to the statistical research, the majority of respondents express great satisfaction with the quality and helpfulness of the management and maintenance staff, as well as the service they receive from the apartment owners. The quality and circumstances of their residence, as well as the sense of safety they experience in their communities, were also highly rated by the respondents. The satisfaction levels displayed in the table indicate values for more than 0.5 of the criteria, which include location, accessibility to public transportation, recreational opportunities, distance to convenience stores and markets, and parking space for cars. The state of public spaces, lighting in public spaces, safety measures in public spaces, social and retail spaces, Playgrounds for kids, nurseries, elementary and secondary schools, theaters, and other cultural and artistic establishments. The availability of enough public areas, religious facilities, and others.

Regarding the maintenance personnel who help them with repairs as well as the repairs themselves, respondents expressed extremely high levels of satisfaction. Nearly all maintenance and repair-related features obtained average satisfaction ratings of "1" or "strongly agree," which indicates extremely high satisfaction. Another area where respondents were extremely happy was safety. Their level of satisfaction varied, encompassing both their sense of security within their homes and their

sense of safety in the community outside. With average ratings of 0.8 and 0.65, men were more likely than women to feel comfortable when school-age children strolled alone in the community during the day.

Comparison

This study aimed to ascertain how occupancy status and gender affected apartment amenities, communal lifestyle, social support, health and wellness, and residential satisfaction of residents in Lahore's apartment buildings, as well as factors that influenced residents' decisions to choose a suite in a high-rise. The findings can be interpreted in light of this. Therefore, at most, they should be regarded as suggestive rather than definitive. The study's findings indicate that a sizable portion of the population, on average, expressed a moderate level of satisfaction with the amenities included in their Jallo colony apartments. In contrast, a higher proportion of inhabitants expressed a respectable degree of contentment with the communal life at Kausar apartments. Additionally, more people in Askari 11 reported being in good health, having high levels of residential satisfaction, and being happy.

The fact that all the amenities are in excellent condition and there is no possibility of wear and tear due to the short building period is a major factor in the projected direction of the outcomes. In addition, both the Dhalla and Labor apartments are situated in close proximity to the public transport station, offering easy access to all important services. Cement, sand, brick, brick face, steel, steel windows with glass, and steel doors are the materials utilized in Kausar apartments. There is a parking problem in the Kausar apartments.

Many of the respondents said they would want to live in areas with lots of amenities either nearby or within the complex. Individuals in every case study region bemoan the absence of contemporary amenities in their residences. Developers are now responsible for providing their residents with a complete living environment instead of just building residential apartments. Facilities like a clubhouse, tennis courts, jogging paths, swimming pools, and gymnasiums are typically given by the builders in high-rise buildings. Higher levels of resident satisfaction were shown to be correlated with the availability of contemporary facilities.

Compared to houses, Askari apartments often have smaller overall floor plans with more condensed rooms. Because there are so many people living in one complex, there may be more noise and less privacy than there is in a single-family home. Unless parked in a facility with designated spaces, parking is not assured.

Table 3 Chi-Square Tests

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	23.212 ^a	18	.183
Likelihood Ratio	27.989	18	.062
Linear-by-Linear Association	.536	1	.464
N of Valid Cases	40		
a. 30 cells (100.0%) have an expected count of less than 5. The minimum expected count is .23.			

According to the results, people who live in high-rise buildings have proximity to the facilities they need in their everyday lives, such as stores, eateries, schools, public transportation, and green areas, with high marks. Numerous studies have repeatedly shown that persons' decisions to live where they did were influenced by the accessibility and placements of these urban amenities. The residents are content if there are amenities close to their homes or a short commute away. To take advantage of these amenities, people wish to cut down on commute time.

Table 4 Crosstab

Count		Crosstab			Total
		Organization Name			
		Jallo colony	Askari 11	Kausar flats	
About satisfaction of apartment	Size of your residence/ location of flat	1	0	1	2
	Residence functional/ view from a flat	2	1	3	6
	Water quality	0	2	0	2
	insulation/ electrical fixtures	1	5	3	9
	Window materials and water tightness at the windows	1	0	1	2
	Sanitary fixtures (wash basins, water closet, etc	1	0	0	1
	Quality of television transmission	0	2	3	5
	Uninterrupted hot water service/ Central heating system	1	0	4	5
	Degree of privacy	2	1	0	3
	Acoustic quality of your residential space	0	2	3	5
Total			13	18	40

The chi-square test findings, which compare the three case study locations, are displayed in the table above. The property manager's appraisal usually yields better outcomes than those of the residents residing there. This is a real situation, and it is unquestionably serious. A thorough analysis reveals that this discrepancy arises from the fact that the property managers only visit the house during their assigned hours and do not reside there. Furthermore, tenants who purchase and own their homes are not the owners of the property managers. Here are the blatant and evident distinctions.

It is clear that there is a pressing need to formulate and produce a set of practical guidelines for the management of apartment buildings in this country. It is very important to note that extensive rules, regulations, and guidelines must always go hand in hand with strict enforcement and monitoring to ensure their effectiveness in solving the problems of apartment buildings (Hackitt, 2018).

The satisfaction on the three case study areas survey of these buildings shows that some improvements still need to be considered. The actual situation brought out in this paper has the possibility of indicating some guidelines for new development. Other factors, such as surrounding development, should also be considered for future development. The most important thing is the new development needs to take into account the satisfaction of the residents when all the units have been occupied and the standards of sustainability to be followed as well (Chan & Adabre, 2019).

Table 5 Crosstab

Count		Crosstab			Total
		Organization Name			
		Jallo colony	Askari 11	Kausar flats	
Effectiveness of Apartments	Rules and regulations have some flaws	1	0	0	1
	More incentives to officers should be provided. More staff machinery is needed in the planning department	1	0	0	1

	The bylaws must be prepared to keep in view the needs of the area rather than being generic	7	1	8	16
	I do not know	0	12	10	22
Total		9	13	18	40

Explanation

The variables in the case study sections were examined using the chi-square test. Another area where respondents expressed very high satisfaction was the inspection procedure, particularly when it came to how they were handled by the staff members who conducted the inspections, which received an average rating. The respondents overwhelmingly concurred that their neighborhood is welcoming and diversified and that they would heartily suggest their rental home to friends or relatives. Furthermore, respondents express great satisfaction with the value they get from their apartment in relation to the rent they pay and the promptness with which owners communicate with them.

The longest wait times for apartments and single-family homes were reported by residents of buildings with interior hallways. Additionally, these respondents had a noticeably higher likelihood of concurring that their house was their first choice. The primary factors influencing residents' choice of location were the presence of eateries and shops serving their preferred cuisine in the area (44.4%) and the location's proximity to a bus route (6.0%). Approximately 70% of participants stated that they do not use tobacco products, and roughly 54% of participants think that their building ought to be smoke-free.

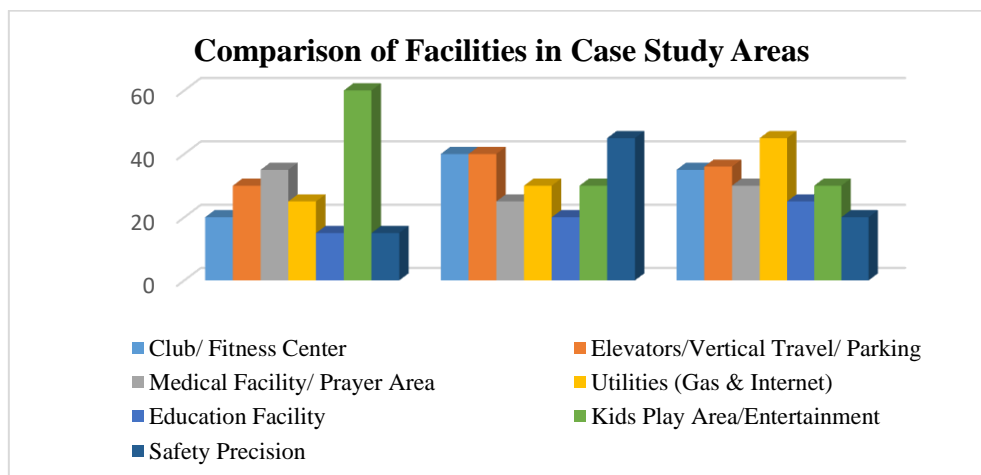


Figure 1 Comparison of Facilities in Case Study Areas

The majority of apartment buildings in Lahore are created by several firms using various standards. High levels of residential satisfaction are linked to the design and quality of housing, which are ensured by regulations and standards of housing design for new residential buildings (Hassan et al., 2019; Malik, 2023). Second, measures for enhancing community facilities and services' accessibility—particularly for medical services—are recommended at the local level. Meanwhile, there needs to be a reevaluation of Lahore's compact development promotion. A densely populated area would lead to lower levels of residential satisfaction and fewer residents wanting to move there (Wang & Wang, 2020). A suitable population density ought to be recommended, taking into account both compact development and residential contentment. Lastly, it is recommended that apartment developments with a mix of residential and business uses be encouraged (Yin et al., 2019).

To determine how individuals feel about apartment complexes generally and to what extent they are satisfied, there were four categories of occupations: college students, independent contractors, state-owned enterprises, government employees, and public institution employees (Yin et al., 2019).

The author has also looked at the building quality from the standpoint of the property manager in order to support this study. Rather than selecting satisfied or unsatisfied, the majority of them indicated in their survey response that it was the outcome of the construction quality in their place. Regrettably, the building's overall quality has led to the selection of contentment. This outcome is validated and displayed in the table.

For sustainable development to become mainstream, additional environmental protection measures must be mandated by law. Purchasing buildings is primarily driven by the bottom line, even though best practices and guidelines can assist in identifying areas for improvement (Morledge et al., 2021). Property development is a market-driven business, and apartment buildings are financial instruments to most developers and clients (Voland et al., 2022).

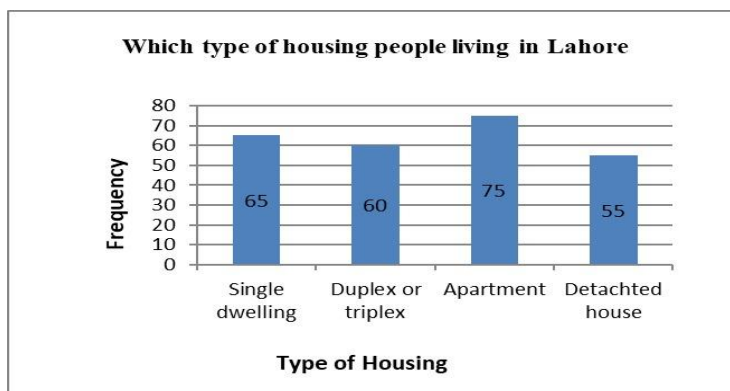


Figure 2 Type of housing people living in Lahore

In the past, people preferred to live in huge, detached homes that were specially constructed for them on either purchased or inherited land. Nonetheless, the growth in apartment complexes indicates that an increasing number of people in Lahore are opting to live in apartments. A survey indicates that 75% of respondents are likely to live in flats. In comparison, the remaining 25% want to live alone, with a partner, or in a separate home.

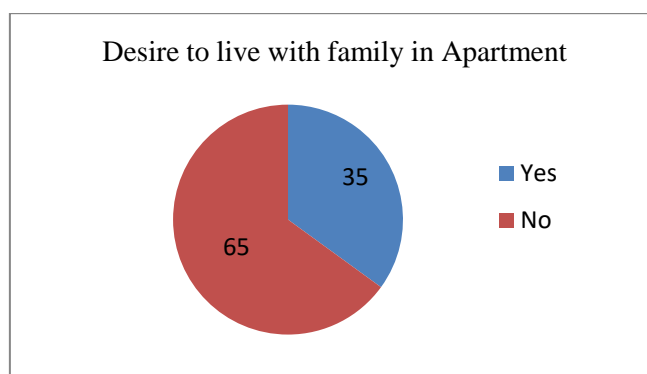


Figure 3 Desire to live with family in an apartment

A survey found that 35% of respondents agreed with living in apartment complexes with family, whereas 65% of respondents did not want to live there. Having a community surrounding oneself is a benefit of apartment living.

According to surveys, most people choose to live in apartments because they are convenient to their places of employment. Because apartments are closest to their everyday activities, 80% of people reside there. 75% of residents do so due to the affordable rent.

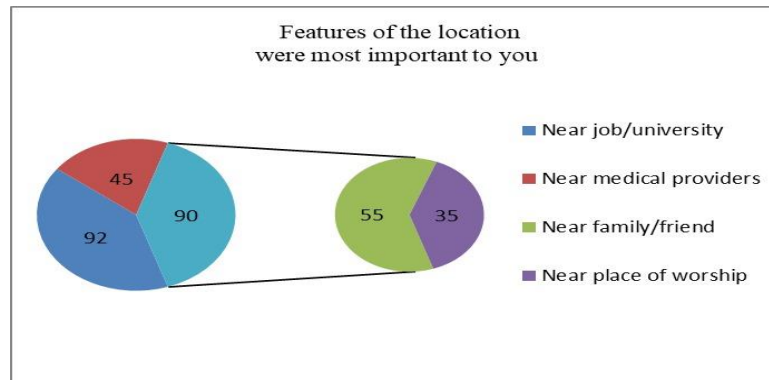


Figure 4 Features of the location were most important to you

Most individuals live in apartments because they are convenient for their jobs, universities, and other daily needs. 90% of respondents indicated that being close to their place of employment and university makes living in an apartment crucial. The remaining individuals are able to live there thanks to their friends, family, healthcare providers, places of worship, and other factors.

Table 6 Correlations

Variables	Correlations						
	Club/ Fitness Center	Elevators/V ertical Travel/ Parking	Medical Facility/ Prayer Area	Utilities (Gas & Internet)	Educati on Facility	Kids Play Area/Ente rtainment	Safety Precision
Pearson Correlation	1.000	.864	.815	.585	.764	.687	.642
	.864	1.000	.861	.815	.563	.614	.585
	.815	.861	1.000	.642	.687	.603	.574
	.815	.861	.764	.642	.585	.574	.642
	.687	.614	.603	.585	.574	1.000	.595
	.642	1.000	.595	.815	.861	1.000	.687
	.642	.585	.574	.764	.687	.595	1.000

In the table, seven variables club/fitness center, elevators/vertical travel/parking, medical facility/prayer area, utilities (gas & internet), education facility, kids play area/entertainment, safety precision are listed, with one of them being considered the dependent variable. With a correlation coefficient of .864, the relationship between the first two variables demonstrates how the public feels about it. The results of our study contribute to the body of evidence supporting the residential contentment in Lahore's port communities. This study looks into the aspects that affect residents' satisfaction and offers policy recommendations for raising residential satisfaction. First, housing renewal projects must be supported since the building's architecture and new floors are the most important elements influencing residential satisfaction. Meanwhile, regulations by the government should be promoted to provide a housing design standard for real estate companies.

CONCLUSION

The research we conducted revealed results that are largely consistent with the previous studies. According to some studies, the most important factor in deciding whether to buy or rent a residential apartment is the accessibility of essential utilities. This is followed by affordability, layout, proximity, connectivity, environmental factors, location, and leisure and recreational activities. Numerous publications center on residents' contentment with complex facilities and service requirements.

Facilities and amenities have a major role in luring or discouraging individuals to relocate to a new location (a high rise). A resident's quality of life may suffer, and their time to adjust to new surroundings may be prolonged if inadequate facilities and services are available. Amenities are a major factor when selecting a residence. They are demanded and willingly paid for by people. The development of homes with many amenities constructed in isolated areas could satisfy the needs of the local population. For example, the results of the study indicate that the presence of basic amenities in a complex was valued more by the residents than other characteristics such as location, cost, layout, and accessibility to other amenities and services. Based on observation and literature, a thorough interview with ten teenagers was conducted regarding privacy, which is one of the main issues with living in an apartment. The teens had different ideas about what privacy was, and they believed that apartments were less private than horizontal housing as they did not provide both visual and auditory solitude. Teens utilize their alone time to freely express themselves and to prepare and arrange their thoughts through self-talk. Since none of the three locations had a ramp or a lift to assist the elderly or the disabled, future research should focus on how different demographic groups, such as the elderly or people with disabilities, perceive these apartment buildings. This is because looking closely at the factors influencing Lahore's cultural perception of apartment living is critical. Unplanned vertical development usually lacks open spaces for play, just as the flat colonies selected for this study do. Thus, it is advisable to carefully evaluate the needs of different demographic groups at every stage of the planning process. Conducting a comprehensive review of apartment satisfaction across different resident categories can help to improve the sustainability of vertical growth in Lahore.

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