

Problems Faced by Ground-Floor Residents in Vertical Housing: A Field Study in the 1500-Unit Social Housing Complex in Bouzaaroura

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Abstract :

This study is meant to diagnose the nature of the problems faced by ground-floor residents in the vertical housing complex in the 1500-unit social housing complex in Bouzaaroura. It examined the social, environmental, health, and physical dimensions of these problems to underline their impact on the residents' quality of urban life. The research employed a descriptive-analytical approach, relying on a field questionnaire intended to observe the manifestations of daily suffering and identify the contributing factors.

The results revealed that ground-floor residents suffer from a range of consistent problems, primarily limited privacy and frequent social interaction due to closeness to entrances and shared spaces. Environmental problems included waste accumulation, foul odors, and high humidity levels resulting from inadequate ventilation and sanitation. Physical difficulties were also noticed, related to the lower floor level compared to street level, leading to water leaks, cold winters, and excessive summer heat. The study concluded by stressing the need to improve the design and ground-floors arrangement and to enhance periodic maintenance programs to improve the quality of residential life.

Keywords: vertical housing complex, limited privacy, foul odors, high humidity, residential life.

Introduction

Modern cities today represent human and social development, arising in response to humanity's innate need for stability, security, and contact within organized communities. With rapid population growth and incessant urbanization, new housing patterns have emerged, most notably vertical housing, which has established itself as an essential solution to the housing crisis and a means of optimizing land use. However, in spite of being a strategic solution, this housing pattern is not without its complex urban challenges and problems, which manifest themselves clearly at diverse levels and are possibly most evident and impactful on ground-floor residents.

The problems faced by ground-floor residents in vertical housing are a phenomenon that deserves in-depth research and analysis, given their direct repercussions on quality of life, psychological well-being, and social harmony within these residential spaces. While upper floors are often perceived as sources of light, fresh air, and privacy, ground-floor residents often encounter challenges related to noise, privacy, security, and even environmental issues such as high humidity and unsatisfactory natural light. These dilemmas are not limited to

material aspects but extend to affect social interactions, the feeling of belonging, and even public health.

Housing problems are among the most high up challenges facing contemporary societies, especially in light of rapid urban revolution and unregulated urban sprawl. This is clearly evident in Algerian cities, which have adopted vertical housing as a partial solution to the housing problem. However, while this housing model has the advantages of accommodating large numbers of people in limited spaces; it has also created a range of problems for residents of ground-floor apartments. To shed light on these dimensions, this study chose the 1500-unit social housing complex in Bouzaaroura, Skikda, as the site of its field study, given its representation of vertical housing complexes experiencing these issues. This study poses the following question:

What are the problems faced by ground-floor residents in vertical housing?

Under this core question fall the following sub-questions:

- Do ground-floor residents in vertical housing suffer from social problems?
- Do ground-floor residents in vertical housing suffer from physical problems?
- Do ground-floor residents in vertical housing suffer from health and ecological problems?

1- Study Hypotheses

To answer the questions in our research topic, and based on preliminary field visits and observations, the following hypotheses were devised:

Ground-floor residents in vertical housing suffer from social problems.

Ground-floor residents in vertical housing suffer from physical problems.

Ground-floor residents in vertical housing suffer from health and ecological problems.

2- Study Objectives

This study aims to reveal the various problems faced by ground-floor residents in the 1500-unit social housing complex. It does so by diagnosing the nature of these problems, which have social, environmental, and urban aspects, and analyzing their direct impact on the daily lives of individuals and families, over and above on social interaction, feelings of security, and housing satisfaction. The study also seeks to categorize the different strategies used by residents to cope with these problems and to check the role of infrastructure and urban planning in either reinforcing or mitigating them. Ultimately, this will permit for the formulation of a set of practical recommendations aimed at improving living circumstances on the ground floor and enhancing the quality of life within social housing complexes.

4- Literature review

4-1: A study by Maansar Imad, Addad Mohamed Charif, and Bendabadj Zain (2024) entitled “*The Impact of Vertical Collective Housing on Social Transformations in Constantine City*”

This study examines the influence of vertical collective housing on social changes in Constantine City. It aimed to understand how these housing patterns affect the customs, traditions, and social relationships of the inhabitants, in addition to exploring the extent of their adaptation to this type of housing. The study targeted the residents of the August 20th, 1955

neighborhood in Constantine City, which comprises 1039 housing units and has a population of 20,125. The study adopted the descriptive analytical method, where it described and analyzed the phenomenon quantitatively and qualitatively. Data collection methods such as observation, interviews, and questionnaires were employed to explore social customs and shifts in relationships among residents. Key findings included:

Vertical housing has led to changes in social customs, with residents tending to reduce family visits owing to limited living space.

Social relationship patterns have been affected, resulting in a degree of isolation compared to traditional horizontal housing, with relationships based more on mutual assistance than traditional social bonds.

High population density in vertical residential complexes has put pressure on public facilities, influencing residents' value of life.

Some adaptations have been observed, such as the reshaping of certain customs to fit the new lifestyle, and a form of social solidarity has materialized in addressing shared problems like maintenance and facility management.

The lack of suitable public spaces has limited social interaction, increasing feelings of isolation among residents. (Imad, 2024)

4-2: Sarmad Jassim Mohamed Al-Khazraji's study (2023) entitled "*Families Living in Vertical Housing: The Nature of Social and Psychological Challenges Facing Residents in Multi-Storey Buildings*" adopted the quantitative and qualitative approach together through field interviews and questionnaires. The researcher concluded that problems such as poor privacy, high noise levels, and cramped shared spaces represent the most important obstacles that limit families' adaptation to this housing pattern. The study also highlighted that ground-floor residents suffer more than others from problems of humidity, pollution, and overcrowding, which makes them more susceptible to social tension and low housing satisfaction. (Al-Khazraji, 2023)

4-3: A study by Shahzanan Mohamed Mazhar and Djamel Bakir Al-Saadi (2024) entitled: "*Evaluating the Urban Environment in Vertical Housing Complexes: A Case Study of Al-Haydariya Complex.*" The researchers analyzed the quality of the urban environment in vertical housing complexes based on environmental and social indicators. The results showed that ground-floor residents undergo the most poor ventilation and natural lighting, high noise levels, and a lack of green spaces and social facilities. The study confirmed that the poor quality of the living environment on these floors gives rise to weak social integration and high levels of annoyance and psychological stress. (Mazhar, 2024)

4-4: Rodeh and colleagues (2016) also studied the relationship between the ground-floor and the health condition of individuals. The results showed that ground-floor residents suffer comparatively higher rates of respiratory diseases and chronic humidity, reflecting the direct environmental impact of the characteristics of these floors. The study pointed out the necessity of linking the health and social dimensions in vertical housing policies, as environmental problems interconnect with manifestations of social marginalization. (Rohde & Aamodt, 2016)

5- Commentary on Previous Studies

It is clear from previous studies tackling the problems of ground-floor residents in vertical housing that researchers have adopted numerous approaches to understanding the

phenomenon. Some studies have focused on social aspects such as neighborly relations, the level of social interaction, and the sense of isolation within the residential space. Other studies have given greater attention to environmental and physical dimensions such as poor ventilation, humidity, lack of natural light, and limited privacy due to proximity to entrances and public spaces.

It has also been examined that some research has relied on a quantitative approach, using questionnaires to measure housing satisfaction and the level of daily hardship, while other studies have relied on a qualitative approach through field interviews and direct observation. This has allowed for a deeper understanding of residents' experiences and their subjective perceptions of vertical housing.

The consistent findings prove that ground-floor residents suffer more from noise, lack of privacy, and a lower feeling of security compared to residents of upper floors, which negatively impacts their housing satisfaction and social immovability. However, some studies have noted exceptions related to cultural and spatial factors. In some cities, for example, older adults prefer ground-floor apartments owing to ease of movement and accessibility, highlighting the significance of the social and urban context in interpreting the findings.

From a critical view, it is observed that most studies have emphasized on the physical and living dimensions of the problem, with relative neglect of the symbolic and cultural dimensions related to residents' perceptions of their living space and the power dynamics within vertical housing. Furthermore, the scarcity of comparative studies between cities or between different types of vertical housing (social, subsidized, supportive, etc.) represents a research gap that could be addressed in the future.

Therefore, it can be noticed that these studies have contributed to establishing an important knowledge base for understanding the problems faced by ground-floor residents, but they still need a deeper sociological approach that connects the physical structure of vertical housing with the social patterns that appear within it, adopting field research tools that join statistical analysis with ethnographic studies of residential spaces.

6- Procedural Concepts of the Study

6-1: Problems: In this study, problems refer to the set of difficulties and impediments faced by ground-floor residents in vertical housing, which negatively affect their comfort, social and psychological stability, and quality of life within the dwelling.

These problems comprise environmental dimensions (such as humidity, poor ventilation, and inadequate lighting), social aspects (such as privacy and relationships with neighbors), security aspects (such as vulnerability to theft or harassment), and psychological aspects (such as feelings of discomfort or marginalization).

6-2: Ground-floor residents: In this study, ground-floor residents refer to all individuals or families residing in apartments located on the ground-floor of buildings or vertical housing, i.e., those residential units at the building entrance level or close up to the ground-floor without the need to climb stairs or use an elevator.

6-3: Vertical housing: In this study, this refers to all multi-story buildings or residential complexes constructed within the framework of social housing policies. These buildings

include a number of apartments assigned to house families from middle- or low-income social classes in organized or newly developed urban areas.

6-4: Social interaction: In this study, social interaction refers to the set of relationships and communications that arise among residents of vertical housing, chiefly between ground-floor residents and other residents within the building or neighborhood. Social interaction is considered a pointer of the degree of harmony and integration among individuals within the residential space. It is measured through a set of items that address the frequency of communication with neighbors, the quality of the relationship between them, the level of participation in shared activities, and the feeling of belonging to the residential community.

7- Methodological Procedures of the Study

7-1: Study Areas

- Spatial scope: The "1500 Social Housing Units" neighborhood in the new urban center of Bouzaaroura was chosen as it represents a modern model of urban growth in the Skikda province.

- Temporal scope: This study was performed in the field with the residents of the 1500 Social Housing Units neighborhood in Bouzaaroura during the period from March 2024 to May 2024.

- Human scope: The study centered on the residents of the 1500 Social Housing Units neighborhood located within the new urban center project in Bouzaaroura, Skikda, purposely those residing in 288 ground-floor housing units.

7-2: Study Methodology

In our study, we employed the descriptive method, as it is the most appropriate approach for the nature of the subject, which is meant to reveal the problems faced by ground-floor residents in vertical housing. This method relies on describing the phenomenon as it exists in reality, through the objective collection and analysis of data to understand its social, urban, and psychological dimensions. (Dalio, 2024, p. 195). The descriptive method allows for the identification of the patterns of problems faced by residents, the study of the factors influencing their appearance, and the observation of social contacts within the residential environment. This method also enables the interpretation of results in light of the sociological characteristics of the residents and their living status, thus contributing to the advance of an accurate scientific understanding of the studied reality and the proposal of appropriate realistic solutions.

7-3: The Study Sample

The sample is a part of the original study population, chosen to represent this population and enable the researcher to generalize the results. The sample is chosen according to scientific criteria that consider the size and characteristics of the population, as well as the nature and objectives of the study. The sample is introduced to make possible the research process, reduce time and cost, while maintaining the accuracy and reliability of the results. (Delio, 2024, p. 198).

In this study, we used simple random sampling, a type of statistical sampling adopted when we want to select a group of individuals or elements from the study population.

Our sample consisted of 43 families (the questionnaire was directed to the heads of households, i.e., one person responsible for each family), representing 15% of the total number of ground-floor apartments, which is 288 in the social housing complex.

8- Data Collection Tools

8-1: Observation: This is one of the oldest data collection tools and is based on the researcher's use of his senses and skills to observe things, events, and people. (Dlew, 2024, p. 289).

In our study, we relied on observation to record the daily living conditions and behaviors of the population in their natural context, focusing on environmental, social, and health issues.

8-2: Questionnaires: These are among the most prominent scientific research tools employed to collect information from individuals about a specific phenomenon or topic. They are documents including a set of specific questions posed to a group of people (the study sample) to investigate their opinions, attitudes, compartments, or demographic characteristics. (Nassar, 2024, p. 52).

Our study questionnaire consists of four key sections with a total of 20 questions. We focused on presenting the questions in a simple and clear way so that respondents could understand and answer them easily and without ambiguity. Our questionnaire included the following four axes: The first axis: This axis pertains to the personal data of the respondents and consists of five questions related to gender, age, length of residence, educational level, and residential background.

The second axis: This axis deals with questions about the social problems experienced by residents of ground-floor apartments and revolves around five questions.

The third axis is dedicated to questions about physical problems on the ground-floor that affect housing quality and consists of 5 questions.

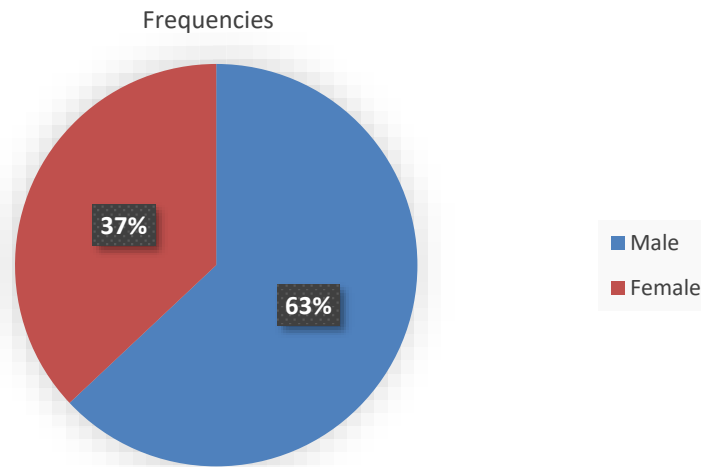
The third axis is specialized to questions about the physical problems found on the ground-floor that affect the quality of the dwelling, and it consists of 5 questions.

The fourth section tackles the questions about environmental and health problems faced by ground-floor residents and also includes 5 questions.

8-3: The Interview: Grawitz defines it as a scientific research method that uses oral communication to gather information serving a specific purpose. In scientific research, it takes place between the researcher and the research participant. (Delliu, 2024, p. 293). In our study, we conducted an unstructured interview consisting of 8 questions directed at Mr. A.A., the "Head of the Complaints Reception Office at the Housing Promotion and Management Office" in the municipality of Skikda. As the administrative agent with direct knowledge of the nature of complaints submitted by residents, their sources, and how they are treated, the responses were recorded and documented immediately after the interview, adhering to the principle of confidentiality and respecting the institution's privacy. The results achieved were used to support the analysis of field data and gain a deeper understanding of the problems raised.

9- Presentation and Discussion of Study Results

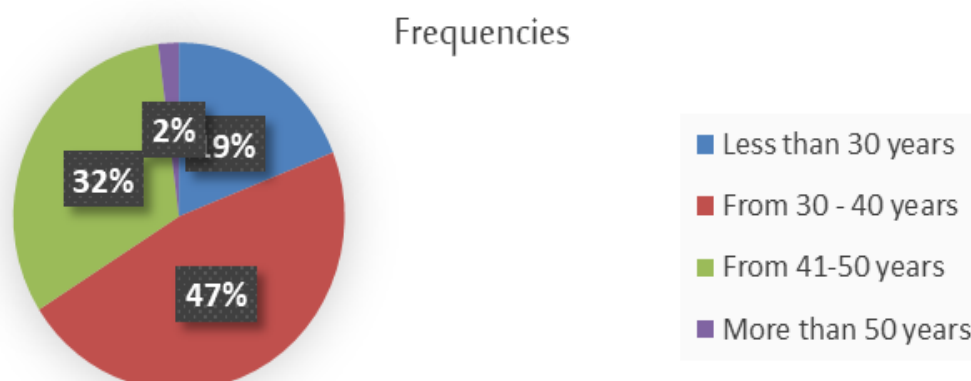
Figure 1: Graph Illustrating the Gender Variable



Source: Prepared by the researcher using SPSS version 21

Graph (1) demonstrates the distribution of the sample according to the gender variable. Our analysis of the results revealed gender differences among the sample members. Males comprised (63%), while females included (37%) of the total sample. The higher number of males is attributed to the tendency of the head of household, who is often male, to respond to housing-related questionnaires. Furthermore, the nature of the study, which often focuses on technical and service-related housing issues, makes men more interested, leading to his higher representation in the sample.

Figure 2: Graph illustrating the age variable

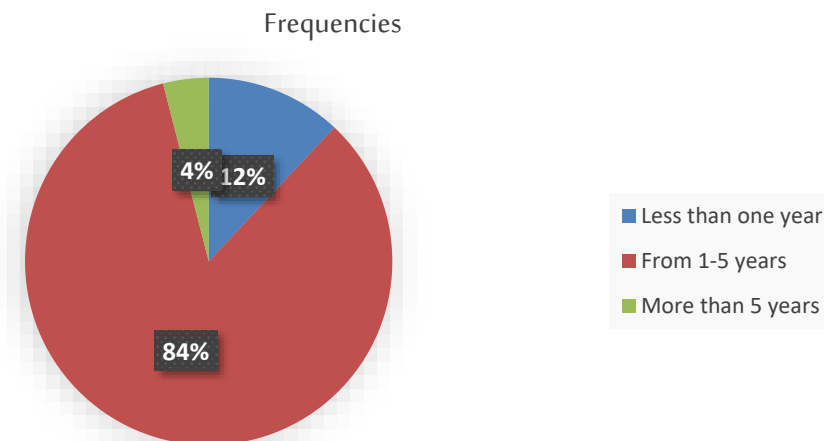


Source: Prepared by the researcher using SPSS version 21

Graph 2 addresses the age variable and shows that the "under 30 years" age group represents (19%) of the total sample, the "30 to under 40 years" age group represents (47%) the largest percentage among the groups, the "41 to 50 years" age group represents 32%, and the "over 50 years" age group represents (2%). The results indicate that the most representative group is the (30 to under 40 years) age group, which explains why they are the most socially stable group

and are often in the process of forming a family and acquiring housing, making them more present and interested in housing issues and problems.

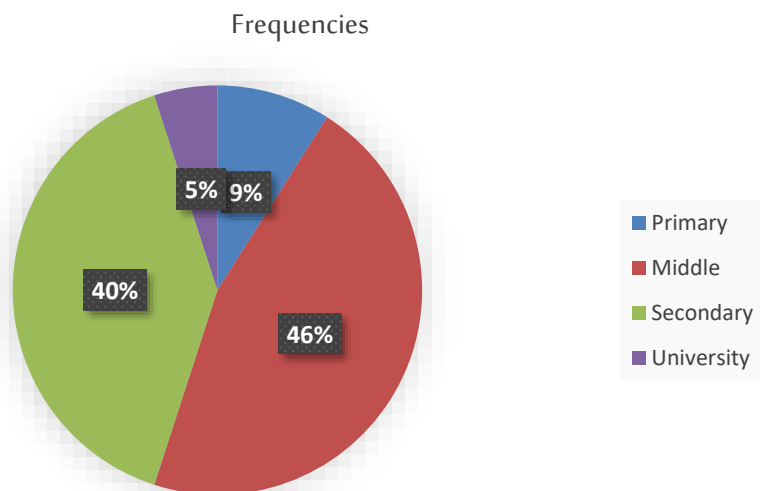
Figure 3: Graph illustrating the residence variable



Source: Prepared by the researcher using SPSS version 21

Graph (3) shows the distribution of the sample according to its length of stay. The results are as follows: (84%) of the sample resided in the area for 1 to 5 years, while(12%) resided for less than one year.(4%) resided for more than 5 years. It is obvious that the preponderance of the sample (84%) have resided in the area for a period ranging from one to five years. This may mirror the nature of the studied community as a newly formed community with active residential movement resulting from the purchase of new housing. It also shows that this group is still in the process of adapting to the residential environment and discovering its problems, making them more willing to express their opinions regarding living circumstances on the ground-floors.

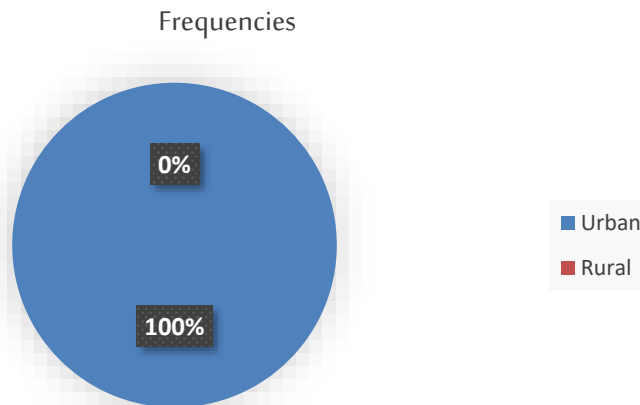
Figure 4: Graph illustrating the educational level variable



Source: Prepared by the researcher using SPSS version 21

Figure (4) illustrates the educational level of the sample members. The results point out that most ground-floor residents belong to the intermediate (46%) and secondary (40%) educational levels, while the percentage of those with a primary (9%) and university (5%) level education was limited. This can be explained by the fact that vertical housing, especially on the ground floor, is often occupied by middle-class social groups, representing the most prevalent segment of society, while those with university degrees, who prefer more autonomous and comfortable living arrangements, are less common.

Figure 5: Graph showing previous residence

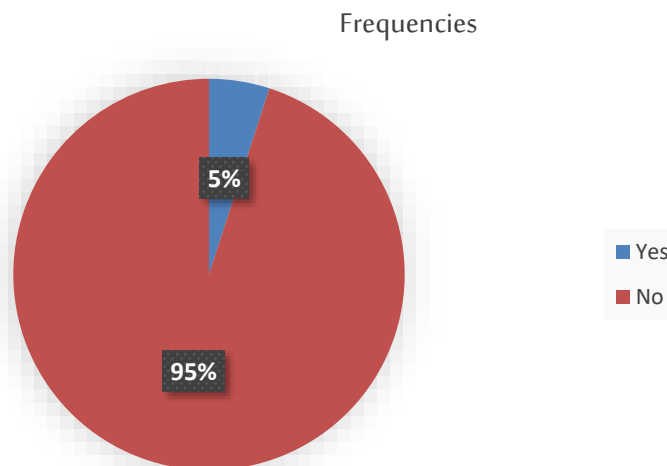


Source: Prepared by the researcher using SPSS version 21

Graph (5) demonstrates that all residents (100%) come from an urban background, indicating that the area under study is solely urban and does not attract residents from rural areas.

Second Axis: Social Problems

Figure 6: Graph showing the feeling of negative perceptions from the other floors

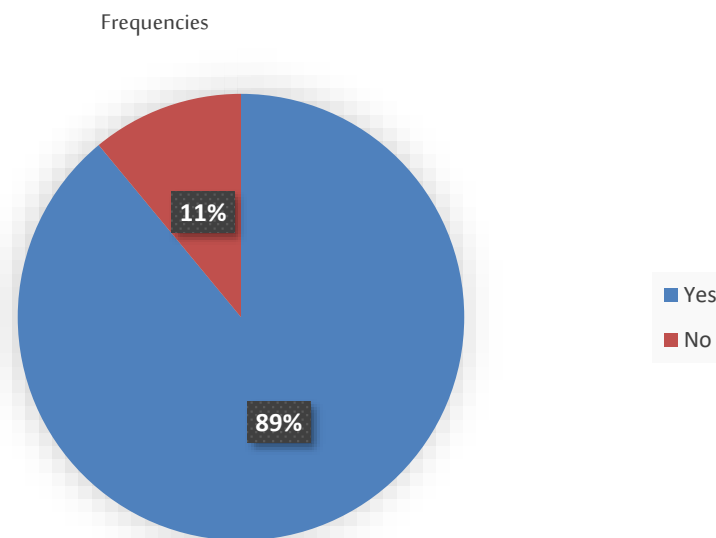


Source: Prepared by the researcher using SPSS version 21

Figure (6) shows that (95%) of ground-floor residents reported without experiencing any discrimination or negative attitude from other residents, demonstrating a good level of social incorporation and equal treatment within the residential complex. This can be explained by the

presence of positive social relationships distinguished by mutual respect among neighbors, in addition to the similarity of residents' social and cultural backgrounds, which reduces manifestations of discrimination or feelings of inferiority among ground-floor residents.

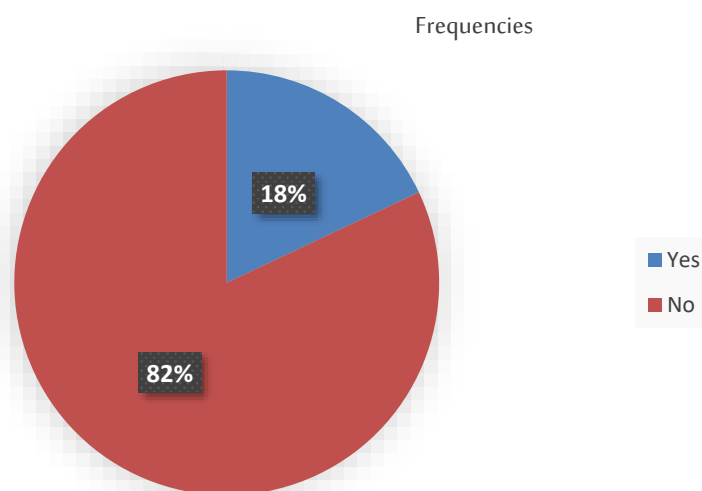
Figure 7: Graph illustrating ground-floor residents' feeling of lack of privacy compared to other floors



Source: Prepared by the researcher based on SPSS Version 21

Figure (7) shows that (89%) of ground-floor residents feel a lack of privacy, a high percentage reflecting one of the social problems linked to the nature of ground-floor housing. This can be understood by the proximity of these apartments to entrances and common areas, making them more exposed to the gazes of passersby and neighbors, as well as the noise of daily life, which negatively has an effect on the sense of comfort and privacy within the apartment housing.

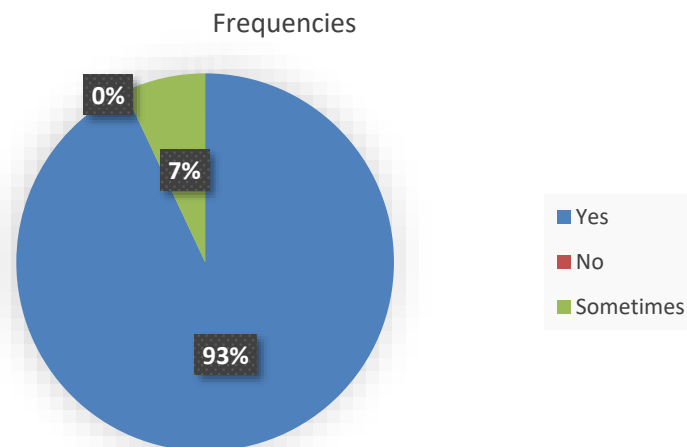
Figure 8: A graph illustrating the respondents' exposure to security problems.



Source: Prepared by the researcher using SPSS version 21.

The graph illustrates that (82%) of ground-floor residents reported experiencing security problems, compared to (18%) who did not. This result reflects the susceptibility of the security situation at this level of housing, given the easy access of ground-floor apartments to strangers and their proximity to entrances and common areas. This situation is likely to lead to a growing sense of insecurity and constant anxiety among residents, negatively influencing their psychological well-being and quality of life. It may also quick some to take self-protective measures such as installing additional security measures or reducing social interaction with neighbors.

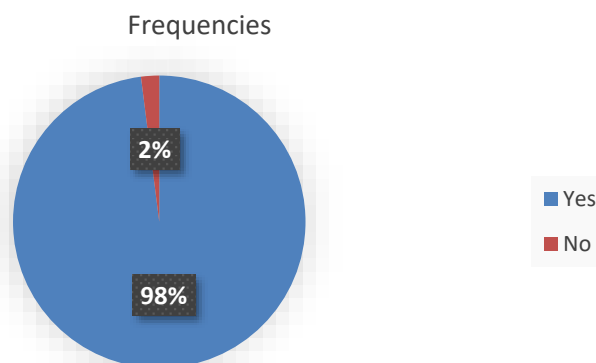
Figure 9: Graph illustrating the difficulties faced by ground-floor residents in using shared building facilities



Source: Prepared by the researcher using SPSS version 21

The graph shows that (93%) of ground-floor residents find it hard to use the building's shared facilities, while (7%) only experience difficulty infrequently. This explains the consensus among the sample regarding their difficulties using shared facilities. Most responses hearted on the building entrance, which serves as a transit point but often becomes a gathering point. During our fieldwork, we observed many young people congregating in front of the building entrance, causing infuriation to ground-floor residents who also consider it a violation of their privacy.

Figure 10: Graph illustrating problems encountered during events (weddings, funerals, visits)

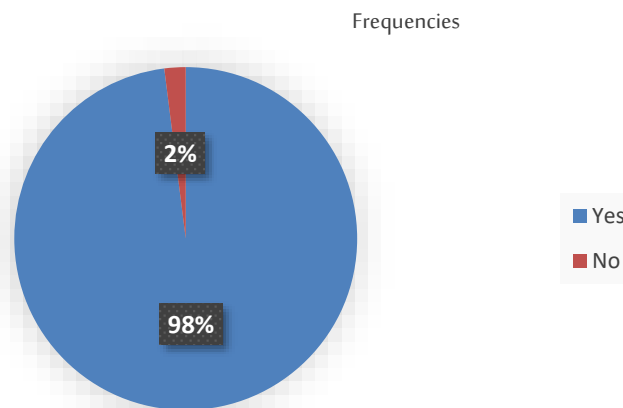


Source: Prepared by the researcher using SPSS version 21

The graph illustrates that (98%) of ground-floor residents experience significant annoyance during events and celebrations such as weddings due to troublemaking behavior from those hosting the events. These events are often held in courtyards or entrances close to their apartments, resulting in loud noise that continues late into the night. Their privacy is sometimes violated by people using their walkways or standing in front of their windows. Furthermore, waste is often left behind, and the area is left in a state of disrepair after the event. These compartments create a feeling of exclusion and disrespect for the privacy of the residents of this floor, exacerbating their daily living difficulties.

Third Axis: Physical Problems

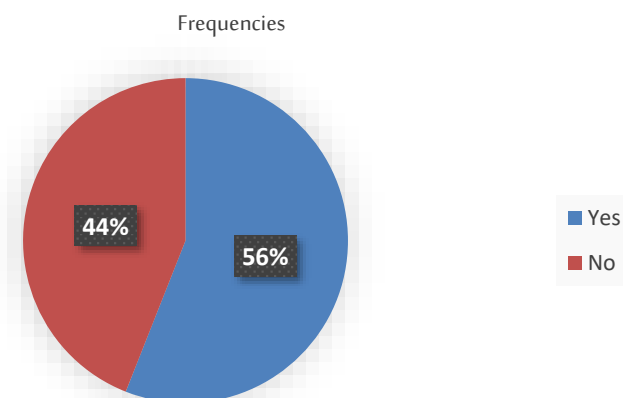
Figure 11: Graph illustrating the infrastructure problems faced by ground-floor residents



Source: Prepared by the researcher using SPSS version 21

The graph demonstrates that (98%) of ground-floor residents reported infrastructure problems in their homes, while only (2%) reported no problems. These problems are mainly due to inadequate drainage systems and high humidity. The state is exacerbated by noise and vibrations from the proximity of technical facilities such as pump rooms, in addition to the lack of regular maintenance. This generates a huge problem combining technical deficiencies in design and construction, highlighting the pressing need to reconsider the planning standards for vertical housing to ensure balanced living circumstances for all residents.

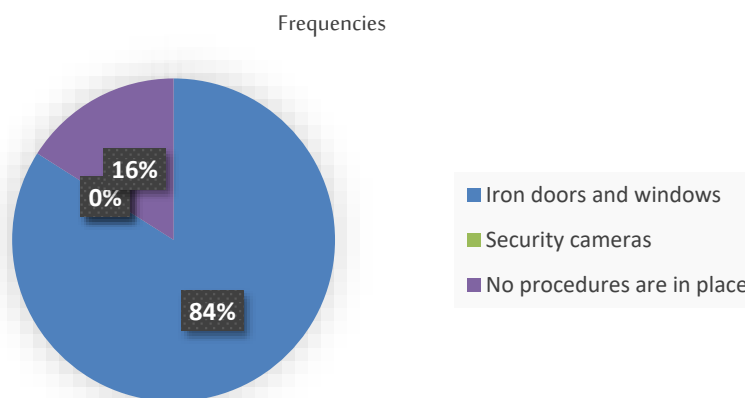
Figure 12: Graph illustrating problems caused by the low ground level of homes compared to the street.



Source: Prepared by the researcher using SPSS version 21.

The graph indicates that (56%) of residents consider the low ground level of their homes compared to the street a problem, while (44%) do not. This gives rise to to a range of daily difficulties, such as rainwater leaks, poor ventilation and natural lighting, high humidity, and a feeling of isolation from the outside world. This situation reflects shortcomings in urban planning and infrastructure design, as the alignment between street and building levels was not taken into consideration. This requires a review of building standards to avoid these problems and enhance the quality of life for ground-floor residents.

Figure 13: Diagram illustrating the security measures available on the ground floor

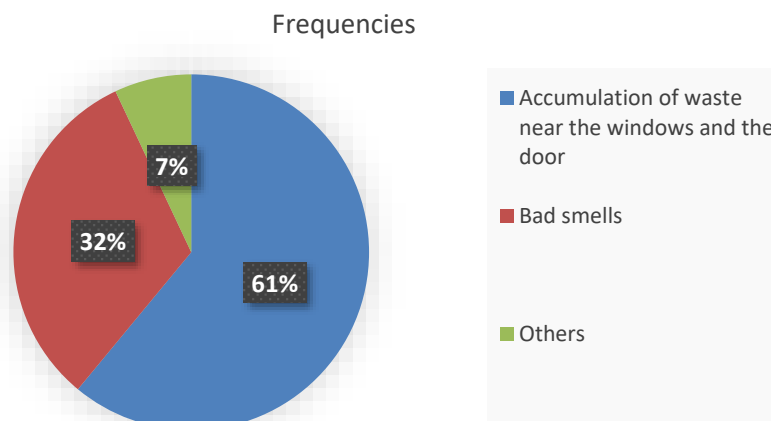


Source: Prepared by the researcher using SPSS version 21

The graph's results show that security is a real concern for residents, with (84%) reporting the absence of any security procedures in their homes. This reflects a lack of attention to security aspects in the design and management of these residences. The (16%) who personally installed iron doors and windows demonstrate residents' dependence on individual solutions to compensate for the lack of official measures. The absence of surveillance cameras (0%) suggests a lack of awareness or technological capabilities among residents, reinforcing the need for intervention from relevant authorities to offer a collective security system that improves their sense of safety within their homes.

Fourth Axis: Environmental and Health Problems

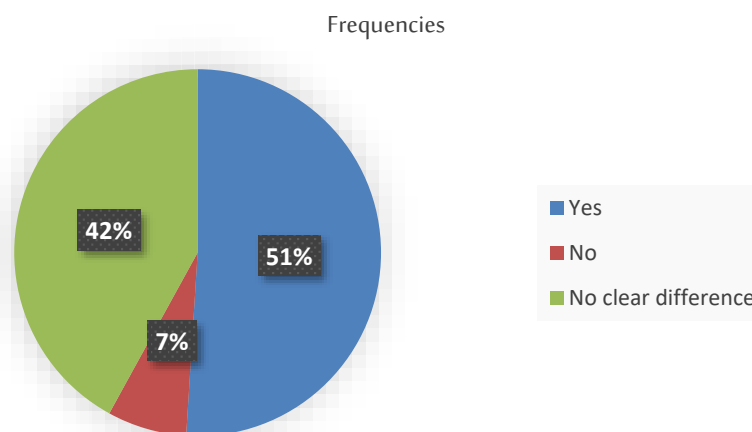
Figure 14: Graph illustrating hygiene problems in ground-floor apartments



Source: Prepared by the researcher using SPSS version 21

The graph's results show a clear environmental and health problem in vertical residential environments. (61%) of respondents stated that they suffer from waste accumulation around their homes, which negatively affects general hygiene and quality of life. (32%) reported the expansion of unpleasant odors resulting from this waste, raising health concerns and affecting the physical and psychological well-being of residents. (7%) mentioned other reasons related to the same problem. These results highlight that ground-floor residents are the most affected by this phenomenon, given the proximity of their windows and doors to waste sources and their direct exposure to its environmental consequences.

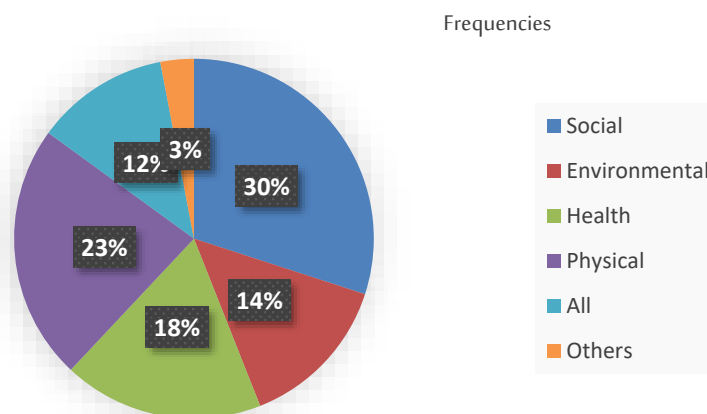
Figure 15: Graph illustrating the impact of weather factors on respondents compared to those on other floors.



Source: Prepared by the researcher using SPSS version 21.

The graph results point to significant differences. (51%) of respondents reported experiencing remarkable cold in winter and high temperatures in summer compared to other floors, reflecting poor thermal insulation in these residential units. Conversely, (42%) stated they did not notice a significant difference in temperature, which may be associated with different construction or location factors. Meanwhile, (7%) showed no significant difference, reflecting a relative dissimilarity in residents' experiences. These results confirm that ground-floors remain more vulnerable to climatic fluctuations, requiring improved thermal insulation standards during their design to ensure the comfort of their occupants.

Figure 16: Graph illustrating the most common problems faced by ground-floor residents

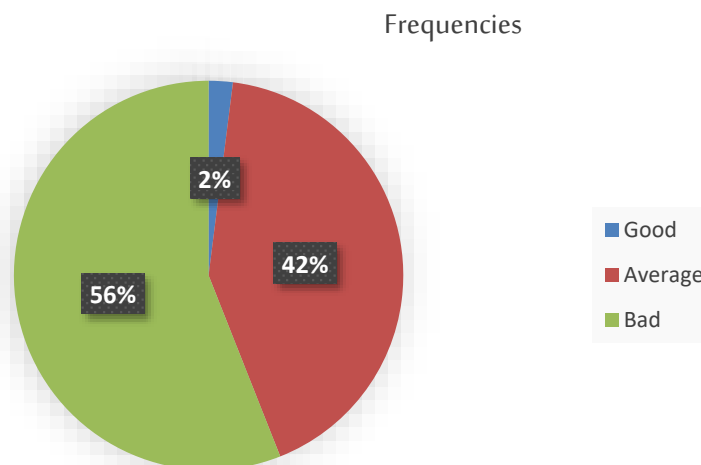


Source: Prepared by the researcher using SPSS version 21

Social problems represent the highest percentage (30%) of the total problems. This points out that ground-floor residents suffer from disruptions in social relationships within the building. These problems reflect weak social consistency in vertical living surroundings, especially on ground floors with open access to public spaces. Physical problems ranked second (23%), reflecting planning neglect in the design of ground-floors to meet environmental comfort standards, giving rise to a decline in residents' quality of life.

(18%) of participants reported a hardship of health problems resulting from their living circumstances. This percentage supports the hypothesis that living on the ground-floor may be linked to increased exposure to humidity, insects, or environmental pollutants, negatively affecting public health. The (14%) who reported experiencing these issues indicated that the ground-floor is more vulnerable to environmental impacts because of its nearness to entrances and public areas. Furthermore, (12%) of residents reported facing all forms of problems simultaneously, showing the interplay of contributing factors and enhancing the notion that the ground-floor is a convergence point for social, environmental, and physical problems.

Figure 17: Graph illustrating the overall assessment of ground-floor housing



Source: Prepared by the researcher using SPSS version 21

The overall assessment of the housing environment disclosed that (56%) of residents considered their housing to be in poor condition, (42%) in average state, and (2%) in good condition. It can be said that a huge number of ground-floor residents are dissatisfied with their housing. The woman who answered "yes" was elderly, which suggests she doesn't need many improvements. Ground-floor apartments are also easily accessible for the elderly. The preponderance opinion was logical and complemented the other responses, which highlighted the various problems faced by residents of this floor.

Question 18: Respondents' Suggestions for Improving Ground-Floor Housing Conditions

The responses varied, but they can be summarized as follows:

Improving the building's design, addressing residents' complaints, enhancing the surrounding environment by adding trees and green spaces, and ameliorating the quality of building materials. Other responses differed, including: changing the function of the ground floor to shops, for example or eliminating the ground floor altogether. These propositions cooperatively emphasize the need for intervention from responsible authorities and urban planners to review the design and maintenance norms for ground-floor apartments to ensure a more comfortable and safe living environment.

Study Results

After data collection, statistical processing, and analysis, the study resulted in several key findings, which we will explain as follows:

- Residents of ground-floors in vertical housing suffer from social problems, including relative social isolation compared to other floors. Many residents expressed weak social interaction with neighbors and a reduced sense of privacy due to constant passage by other residents and visitors. Frequent complaints were also recorded regarding disturbances from events outside the building, such as weddings, visits, children playing, or nighttime gatherings, which negatively influenced their sense of psychological well-being and social belonging.
- Residents of ground-floors in vertical housing suffer from physical problems, most notably poor ventilation and natural lighting because of the floor's closeness to ground level. They are also exposed to dampness and water leaks. Some residents complained about the absence of inadequacy of sound insulation, which made them susceptible to constant external noise that affected their daily quality of life. The results also showed residents' dissatisfaction with the building's infrastructure, which led many of them to make modifications to their apartments.
- The study demonstrated that proximity to sources of pollution, such as accumulated dirt and mud, and neglect of the neighborhood's external environment, increased residents' exposure to environmental problems, such as insect infestations and bad odors. These conditions, together with high humidity levels in many apartments, can create respiratory or skin diseases among some residents, chiefly children and the elderly.
- The analysis of the field study results and data discloses that ground-floor residents in vertical housing suffer from a complicated interplay of social, physical, health, and environmental problems. This makes their living surroundings less comfortable and safe compared to other floors. The root of these problems lies in the uncivilized attitudes of some neighbors and residents, which directly impacts the residents' suffering. This behavior includes neglecting hygiene, gatherings in front of the building and at the entrance, noise pollution, and the lack of

use of shared facilities. The study also unveiled problems in the architectural design, which fails to consider the privacy and needs of ground-floor residents, in addition to neglecting technical aspects related to insulation, ventilation, and moisture control. These living conditions negatively influence the quality of life, limit residents' integration into their social environment, and expose them to increasing health and environmental risks. This necessitates a review of high-rise building planning methods and the development of new urban policies that guarantee improved living circumstances on the ground floor, whether through architectural intervention or through administrative and regulatory measures that contain maintenance and environmental monitoring.

Suggestions for Reducing Ground Floor Problems

The following suggestions can be taken into account to reduce problems related to the ground floor, based on a study and analysis of the existing challenges as follows:

- If the ground-floor remains for residents:

- The ground-floor can be designated for the elderly or people with disabilities due to its accessibility.
- Landscaping: Creating small gardens or planters reduces dust and improves the environment.
- Improving the quality of building materials, modifying the architectural design of the building and its entrances to suit the specific needs of the ground-floor, installing moisture-proofing materials under the floors and walls, providing sound insulation to reduce noise exposure for residents, and improving natural lighting and ventilation, such as by enlarging windows or ventilation openings.
- Controlling insects and rodents and enhancing cleanliness around the building, particularly around waste containers and waste disposal areas. Waste and sewage management should be improved, and waste bins should not be placed close to the ground-floor.

- Functional change of the ground floor:

Instead of dedicating the ground-floor to housing, its function can be changed in the future and made as an additional facility in buildings, such as rehabilitating the ground floor (as service offices, storage, garage...) if housing problems cannot be easily solved, its function can be changed.

Conclusion

In conclusion, this article, entitled " Problems Faced by Ground-Floor Residents in Vertical Housing: A Field Study in the 1500-Unit Social Housing Complex in Bouzaaroura," can be summarized as follows: In light of the rapid urban transformations underway in Algeria, vertical housing have become a chief solution to address the increasing pressure on housing. This pressure stems from demographic growth and unregulated urban sprawl in many cities. The state has adopted a policy of vertical expansion within its urban development plans to accommodate the high demand for housing units, while simultaneously keeping agricultural land and curbing haphazard horizontal expansion. This is mainly relevant in light of the scarcity of land appropriate for construction in northern Algerian cities. Indeed, these projects have contributed to alleviating the housing crisis to a certain extent, especially in chief cities such as Algiers, Oran, and Constantine. However, this urban development model has brought with

it a number of new challenges that now require a methodical review of urban planning, design, and organization.

Among these problems is the fact that the ground-floor in vertical housing stand out as a complex architectural and functional issue, where social, economic, environmental, and health dimensions meet. Despite the importance of this floor as a link between the building's private and public spaces, it is often marginalized or misused, leading to a large number of problems. The study revealed that the ground-floor in the Algerian context suffers from a lack of clear visualization, negatively impacting the quality of life for its residents and sometimes even affecting the building's overall performance, potentially becoming a source of conflict between neighbors. The study also highlighted the social problems faced by residents of this floor, which could lead to further issues within the cultural, educational, and moral fabric of Algerian society. The absence of appropriate design standards that are considered as the specific characteristics of this floor is also taken into consideration, whether in terms of the facade, its interaction with the urban environment, or its integration with the other floors. Addressing these problems necessitates adopting a comprehensive approach that takes into account its specific challenges. In the local context, and integrating architectural, social, environmental, and health aspects within an integrated vision, it is necessary to reconsider the ground-floor as a space that can be utilized to serve the inhabitants and the community, whether by allocating it to well-planned commercial activities, as a shared space, or by improving its physical and architectural characteristics. Therefore, improving the performance of the ground-floor in vertical buildings cannot be done in isolation from reforming urban policies and updating design standards according to the specificities of housing and Algerian society. It also requires involving architects, urban planners, sociologists, and the residents of the buildings themselves in making decisions related to the design and use of this sensitive space. In light of the findings of this study, we propose including detailed instructions in the specifications for vertical housing projects, ensuring that these problems are addressed at both the planning and implementation levels. Achieving sustainable vertical architecture in Algeria will only be possible by recognizing that the ground-floor is not just the entrance to the building, but a gateway to a more integrated, efficient, and comfortable city for its residents.

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