



## **Residents' assessment for vertical housing complexes in Al-Hilla**

### **Case study: Hilla/1, Hilla/2, complexes**

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#### **Abstract:**

Housing have a significant impact on both the environment and people's quality of life, it refers to the design, construction, and operation of residential buildings that minimize their environmental impact while providing healthy, comfortable, and affordable homes for people, assessing the citizens' dissatisfaction with housing in vertical residential complexes, the quality of residential complexes based on services not unit details. Two residential complexes locate, one of these complexes has a larger housing area than the other. A questionnaire of 28 questions, were collected physically from the residents in these building. The results illustrate a positive response were good by 25%, and moderate by 25%, and 30% insufficient for adequacy of social services and 34% for services provided. However, the other responses were negative with higher percentage (58%). Furthermore, these positive responses were from the residents who live in the complex, which has a large area, the resident's assessment better towards the complex offering more services although the flat area was smaller.

**Key words: complexes, vertical housing, urban standards, sufficient services.**





## تقييم رضا الساكنين في مشاريع الاسكان العمودي في الحلة: منطقة الدراسة، مجمعي الحلة 1/، والحلة 2/

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### المستخلص:

للسكن تأثيرات كبيرة على نوعية الحياة للساكنين، ويشير إلى تصميم المباني السكنية وبنائها وتشغيلها المباني التي تقلل من تأثيرها البيئي مع توفير منازل صحية ومريحة وبأسعار معقولة للناس ، ويتم تقييم رضا المواطنين عن السكن في المجمعات السكنية العمودية السكنية التي توفر الخدمات ، ونوعية المجمعين السكنيين على أسس الخدمات وليس تفاصيل الوحدة كانت المقترح، تم اختيار مجمعان سكنيان، أحد هذين المجمعين به مساحة سكنية كبيرة والآخر به مجمع أصغر، وعمل استبيان، وتم جمع استمارة من 28 سؤالا جسديا من سكان هذا المبنى ، وأظهرت النتائج أن الاستجابة الإيجابية كانت جيدة بنسبة 25٪ ، ومتوسطة بنسبة 25٪ ، و 30٪ غير كافية لكفاية الخدمات الاجتماعية و 34٪ للخدمات المقدمة. ومع ذلك، كانت الردود الأخرى سلبية بنسبة أعلى (58٪). علاوة على ذلك، جاءت هذه الردود الإيجابية من سكان المجمع الذي يحتوي على مساحة كبيرة، تم استنتاج، أن رضا السكان كان أكبر بالمنطقة التي توفر خدمات أكثر رغم ان مساحة الشقق السكنية أصغر.

الكلمات المفتاحية: مجمعات، إسكان عمودي، معايير حضرية، كفاية خدمات



## Research problem

The thought based on citizens' dissatisfaction with housing in vertical residential complexes with regard to the residential environment despite the availability of social services and easy access to them such as schools, markets and recreational areas Research aim. The research aims to illustrate the residents' opinions and satisfaction about the sustainable organizational planning from their perception within the complexes established by the Ministry of Housing.

## Research hypothesis

The research assumes that the conformity of the plans prepared for the newly established vertical housing complexes by government agencies with the standards of urban housing, will reflect positively on the provision of the necessary requirements and needs of urban life in the vertical housing that has been built.

## Literature review

Many thesis discuss housing in many points of views, on of it is Abbas' PhD thesis "The role of vertically integrated vertical residential complexes in creating a socially interactive residential environment", the thesis points to the factors that help make the residential environment have the ability to create an opportunity for social interaction among residents. (Ahmed Abbas, Mezhir, 2013) Another thesis, entitled "Comparison between vertical and horizontal residential construction economically and socially "and the he refers to an economic and social comparison between vertical construction and horizontal construction for residential purposes with regard to the effective and economic use of urban land, as well as reducing the costs of infrastructure, and services. (Hassan Madab ,2008),



Also research “critical evaluation of housing scenario in India” which about affordable housing and various initiatives for solving housing demand to improve quality of live in urban areas. (yogesh M. Keskar, 2018). the dwelling must achieve a social communication, Protection and possession (Ajam, 1986).

### **Urban area**

Urban is defined as including housing units in urban areas Urban housing in the geography of cities is a household housing unit to denote urban housing, or areas with a population of more than 2,500 people or more and has certain characteristics that are classified as urban. The area unit, such as single or multi-family housing with complementary uses (Pierre Georges, 2002, p. 461).

### **Housing market**

The flexibility of the housing market and its connection with other markets (the land market, financing, and above and below services) is an influential factor in achieving development in the housing sector (Kareem, 2020, P. 136), the common idea is citizens' is unsatisfied with housing in vertical residential complexes with regard to the residential environment despite the availability of social services and easy access to them such as schools is the common idea in Iraq.

### **Adequate housing**

Even if adequate housing can be defined as enjoying a degree of privacy, sufficient space, safety, lighting, ventilation, appropriate infrastructure at reasonable costs and an appropriate location in relation to the workplace and basic life facilities adequate housing is living somewhere that is in keeping with your culture, and having access to appropriate services, schools, and employment” ([www.ohchr.org](http://www.ohchr.org)).



## Housing need

The need to housing complexes is growing in Iraq, and government's policy is to provide units suitable for the requirements of families, as it requires great efforts to provide technical and social services in residential areas, areas, that has specialized land use such as commercial use, serves. In this study, we will talk about a homogeneous residential land use.(B. Motlak, Jamal, 2020).

### - Multi-story housing

The term vertical building or the multi-story housing is used to denote one of the residential styles, which is in the form of a residential building that includes a number of apartments in which a group of families live within the framework of a large housing unit, the lack of high density in the past doesn't require it,(Alkinany, 2006, pp 23).It has become an urgent need to absorb population increases, and the provision of adequate housing for them, countries started building residential complexes according to environmental, social and economic axis ( Alrawi, 2021,P. 34), and financing it fulfill the housing need (Motlek, 2022, P. 110), vertical housing can be in the form of apartments in a single residential community and linked to the infrastructure and service services provided by the horizontal residential neighborhood, According to the planning standards approved by the official authorities (Mahmoud, 2012, pp. 153-192), the apartments often doesn't have their own front or side ground area (except for apartments on the ground floor), nor do they have their own entrance or door and are often found above, below, next to or in front of them, an apartment adjacent to them, which does not allow future expansion when desired or needed (Witwt, 1983, pp. 3,4





## - Legal legislation for vertical housing

It is necessary to include number of laws and legislations that dealt with the organization of housing and residential vertical construction to put the largest possible population density per unit area and maintain the civilized appearance of Iraqi cities, including (Ahmed, 2013, pp. 24-26):

- The Basic Design Law for the City of Baghdad No. 165 of 1971, as it proposed the implementation of 20% of housing in Baghdad in the form of residential buildings, and the law identified five types of housing, and determined the areas of residential plots.
- Real Estate Registration Law No. 43 of 1971, to separate buildings into floors and apartments, own them and dispose of each part in them in the future, and the law has taken into account the development of provisions for the release of floors and apartments, and their registration and non-conflict with the general legal rules.
- Real Estate Registration Instructions No. 4 of 1972, to register the release of floors and apartments and unify them and under Article 12 of these instructions (the owners of floors and apartments may form a cooperative society among themselves in accordance with the provisions of the law to manage the common parts and facilities in the building, and to develop a system for them to ensure the proper use and management of the common property).
- Decision of the dissolved Revolutionary Command Council No. 1153 on 4/10/1973, regarding the construction of residential buildings by the private sector and allowed borrowing from the real estate bank for the purpose of selling apartments according to special controls (Ministry of Housing, 1978, p. 68).





- Law No. 116 of 1974, in which the Public Corporation for Housing set objectives, including developing plans for the implementation of the general policy for urban housing, and focusing on vertical housing in agreement with the concerned departments.

- Law No. 67 of 1977, which obligated cooperative housing societies to construct residential buildings for their relatives, and it became the intention of the Ministry of Housing and Construction to establish residential neighborhoods in Baghdad and in seven sites in the form of multi-story residential buildings, and to apply the residential neighborhood unit, plan those sites, develop planning details, required residential densities and the maximum height of the permitted buildings.

### **- Objectives of urban planning standards**

The main objective of setting planning standards is to guide urbanization to achieve the desired goals of planning from the social, economic and environmental aspects and to ensure the achievement of these goals in the foreseeable term for the planned period and can include a number of detailed goals that the planner seeks to obtain through the standards, including (Gonium, 2010, p. 46):

- Improving the living standards of the population in urban communities and the quality of life through the following:
- Providing various services, activities and events in an adequate quantity and quality.
- Maintaining the safety of the residential environment from activities and events caused by residents
- Optimal land use and balanced spatial distribution within the planned areas.





- Controlling the structure of urban communities in a way that ensures sustainable development
- Preserving cultural, historical and urban legacies

In modern compounds sometimes it needs the density as the super block (Martínez 2030", SPSC, 2020, P.6). nowadays the focus is to provide standard urban social services within the standards of urban housing (Shok, Mufeed Ahsan, Jasim, Ali Malik, 2022, P. 136),

#### Methodology of the research

In this research we discuss two residential complexes, the inhibitors' opinion about the complex to have an adequate housing with sufficient spaces and infrastructure and appropriate location related to facilities, according to housing standards, provided to the complexes.

#### - Study Area

Two vertical residential complexes have been built in the city of Hilla (90 km southern Iraq capital), the first is Hill/1 Complex, the second is Hilla/2 complex, both are in an area called Qas and Swailem. as a residential complex planned, established and supervised as a multi-story building, under the supervision of government agencies in the city of Hilla master plan as shown in map (1).

#### - Family size :

The average size of one family in the city of Hilla is 6 individuals (Ministry of Planning, 2018, p. 24), has been a questionnaire residents for the number of members per family and the average number of family members in the complexes.





### - the questionnaire :

Fifty questionnaire forms were distributed to the residential complexes distributed over twenty-five forms for each complex, at a rate of approximately 5% of the total number of housing units available in the two complexes, and 48 forms were obtained out of the total number of forms distributed divided into two equal halves, i.e. 24 forms for each residential complex, and the questionnaire forms were composed of two axes, the first consists of general questions about the planning organization of the complex within what is related to the services provided in them, The other is about the efficiency of the complex.

**Table (1) shows the questionnaire methodology****The questionnaire for the Hilla 1&2 residential complex**

The questionnaire was submitted for the following reasons: 1. Identifying the area in terms of architecture and basic services for families to identify and evaluate residential status .

2. The survey also aims to activate the role of community participation in defining housing policy for the area. With thanks and appreciation...

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**First: personal information**

1- gender - male - female

2- Education :

3- Status: -single - married - divorced - windowed

4- No. of individuals in the family:

5- No. of families in the residence:

6- No. of stories in the unit:

7- Area of the residence unit:

8- the residence is in which floor:

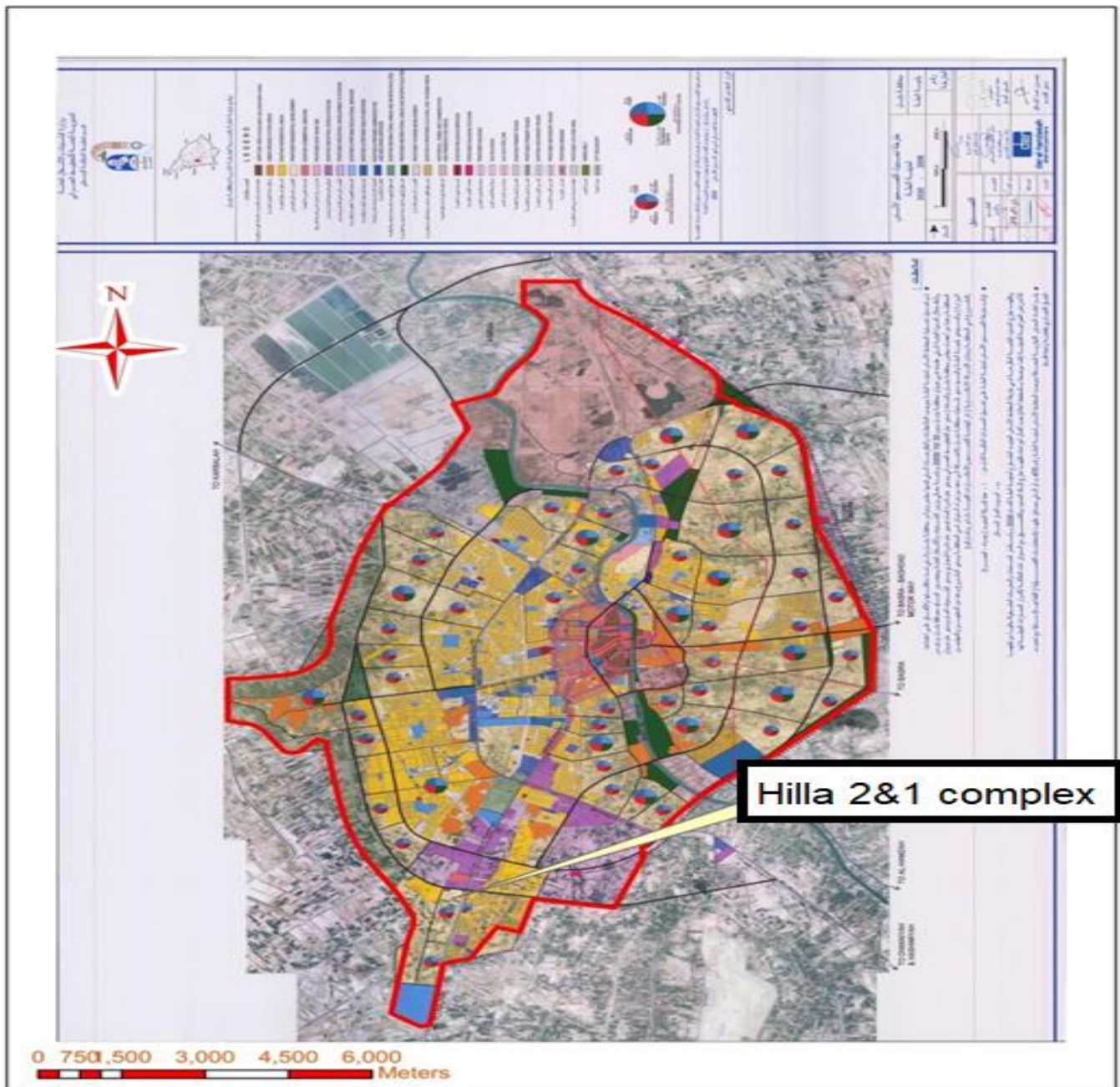
**SECOND: Assessment of the schematic organization of the complex**

	Assessment	Good	Moderate	Insufficient
1	What is your assessment of the distribution of services community in the residential complex?			
2	What is your assessment of the evaluation of the social services available in the residential complex, as they are sufficient and integrated?			
3	What is your assessment of the ease of access to the various activities in the residential complex?			
4	What is your assessment of the entertainment possibilities for the residents of the residential complex?			
5	What is your assessment of the green spaces and spatial distribution in the residential complex?			
6	How do you evaluate the desire to settle in the place?			

**THIRD: Evaluation of the efficiency of services**

	Assessment	YES	NO	NEAR	FAR
1	Does the residential complex contain a nursery or kindergarten for children?				
2	Does the residential complex contain schools of all kinds (primary - secondary)?				
3	Does the residential complex contain a health center?				
4	Does the residential complex contain a worship?				
5	Does the residential complex contain a commercial market?				
6	Does the residential complex contain a commercial market?+B9				
7	Does the apartment complex have a coffee shop?				
8	Does the residential complex contain green spaces or playgrounds?				

, source: according to the research aim



Map (1) Master plan of Hilla City

– Source: Ministry of Municipalities, Hilla Municipality, 2008

### - Number of dwellings in the study area:

During this paragraph, the two residential complexes under discussion will be identified in terms of details related to the number of apartments in the two

complexes, the types of apartments that have been built, and the areas that have been allocated in each section, as follows:

•**The first complex Hilla/1:**

The buildings for residential use are 61 three-story buildings divided into two



section, Block A consisting of 23 buildings, each building contains 12 apartments with an area of (100– 115 m<sup>2</sup>), Block B consists of 38 buildings, each containing 6 apartments with an area of (120 m<sup>2</sup>) as in image (1), the number of housing units of the first complex (Hilla/1) is (504) apartments, image (1) The first residential complex / Source: Researcher on 14/10/2014

-**The second complex Hilla/2:**





The buildings for residential use are 66 buildings with four floors, each floor contains two apartments with an area of 155 m<sup>2</sup>, and housing units number for the second complex Hilla/2, is (528) apartments, as in image (2), that shows the second complex.

Image (2) The first residential complex / Source: The researcher on 14/10/2014

### **- Estimation of the population of the two residential complexes:**

The average size of one family in the city of Hilla are 6 individuals (Ministry of Planning, 2011, p. 24), The expected design for the population of the first complex Hilla/1 is (3024 people), as well as the expected number of residents of the second complex (Hilla 2) is (3168 people).

### **Study Questionnaire Sample**

The study examined the residents' questionnaire about the extent of residents' satisfaction within the two residential complexes, and because some services are available in one of the complexes without the other, as well as the presence of services sufficient for a larger number of residents than the residential locality appear in the first complex, so the population was identified on two axes, the first axis is the population questionnaire about their assessment of the organization of



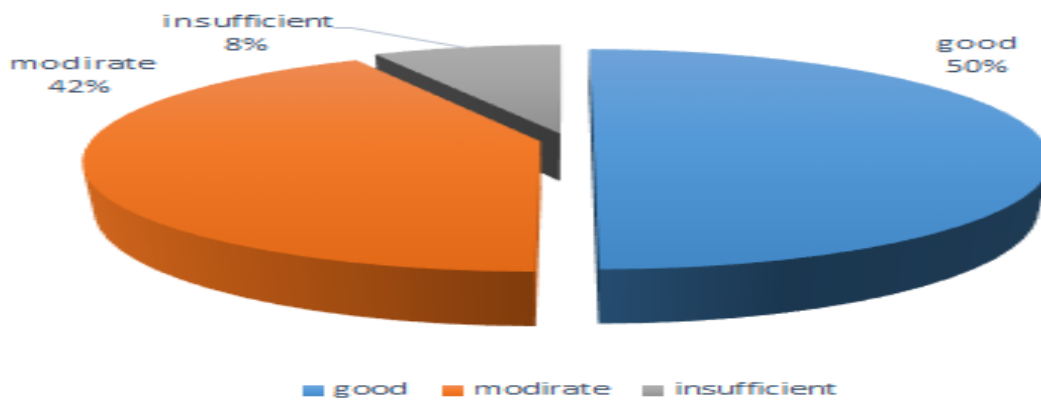
the complex in general without allocating a specific service, . Fifty questionnaire forms were distributed to the residential complexes distributed over twenty-five forms for each complex, at a rate of approximately 5% of the total number of housing units available in the two complexes, and 48 forms were obtained out of the total number of forms distributed divided into two equal halves, i.e. 24 forms for each residential complex, and the questionnaire forms were composed of two axes, the first consists of general questions about the planning organization of the complex within what is related to the services provided in them, The other is about the efficiency of the complex.

### **- Results of the questionnaire for the complex Hilla/1**

The results obtained according to the percentage system will be explained for each of the questions posed by the questionnaire

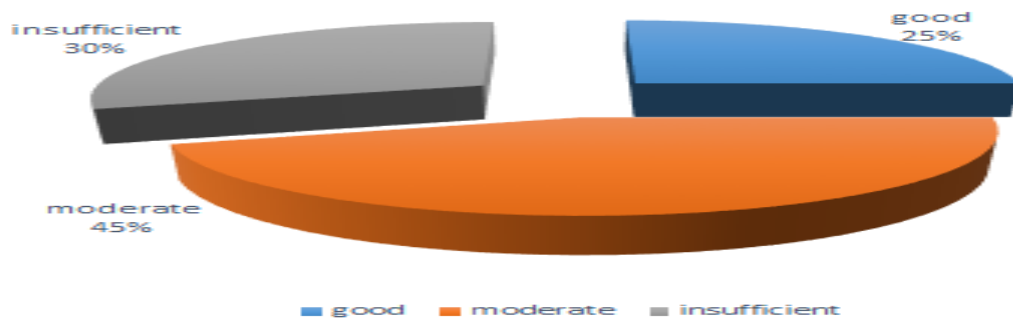
#### **A- Evaluation of the planning organization of the complex Hilla/1**

The first form posed a number of questions related to the planning organization of the residential complex in general, which are related to services, • Evaluation of the distribution of services in the residential complex: When asked about the evaluation of the distribution of services provided to them, it was good by 50% of the sample and 42% moderate, while an insufficient evaluation was only 8%, the prevailing impression in the first complex is positive and the population is satisfied with the distribution of social services, Figure (1) illustrates this.



**Figure (1) Evaluation of the distribution of services**

- Evaluation of the integration and adequacy of social services provided: When asked to the residents of the first residential complex about the evaluation of the integration and adequacy of the social services



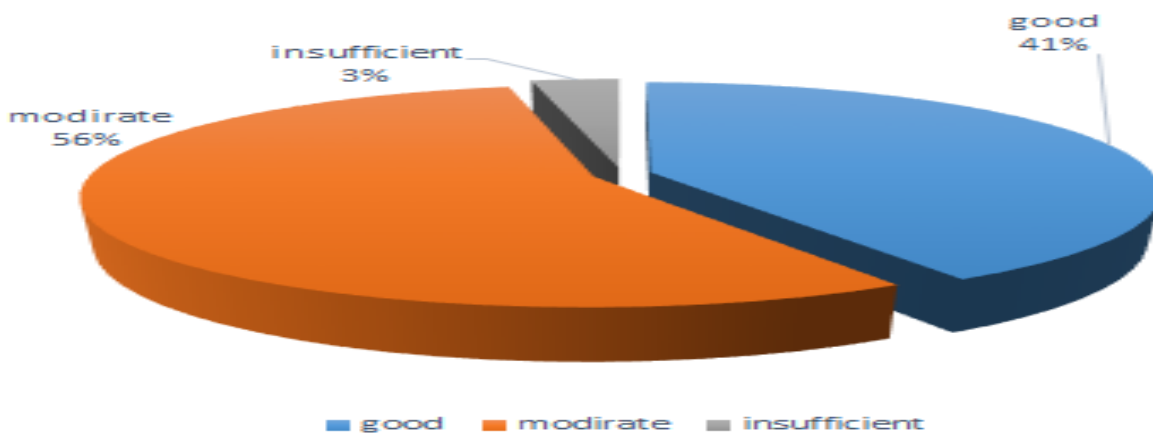
**Figure (2) Adequacy of services**

provided to them, the answers were good by 25% of the sample and 45% moderate, which means that the sample is satisfied with a good percentage of the services provided, while those who gave an insufficient evaluation were 30%, and the reason may be due to the lack of a number of social services or their availability, but in unsatisfactory proportions for them. Figure (2), illustrates this.

- Evaluation of easy access to various services: The answers were good by 67% of the sample, which is a very good percentage of people satisfied with the possibilities of accessibility, and 29% average, which means that the

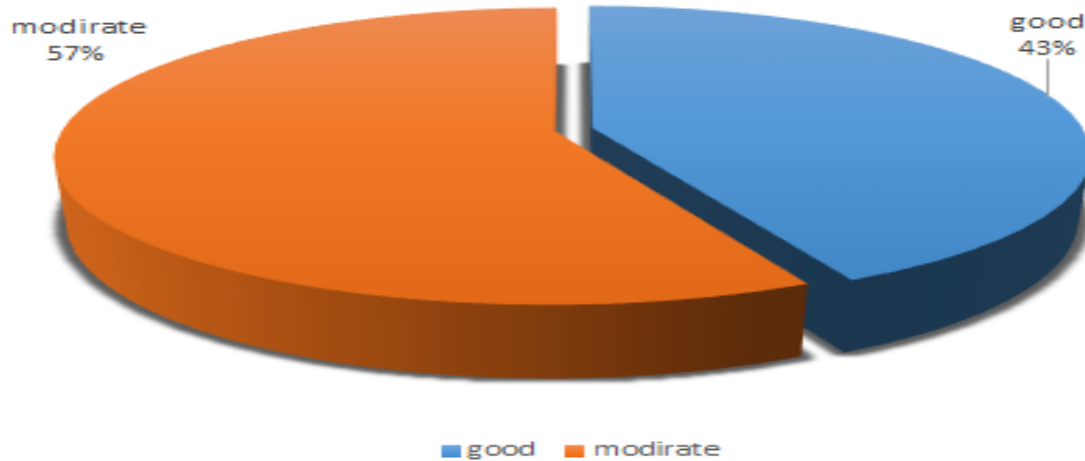


overwhelming majority of the sample is satisfied with a very good percentage of the services provided, while those who gave insufficient rating were only 4%, Figure (3) illustrates this.



**Figure (3) Accessibility of services**

- Evaluation of the recreational potential of the population and the distribution of green spaces: 100% answers The evaluation is poor, and the reason may be due to the lack of any recreational or play places for children or adults alike, and the lack of any green places or areas alike, despite the provision of places designated for that, but neglected and unsatisfactory to them.
- Evaluation of the sense of belonging and settling to the place: The answers were good by 46% of the sample and 54% average, but those who gave a weak evaluation were not present in the sample and it was by zero%, and the reason is probably due to the relative satisfaction shown by the sample about the complex, except for services related to green and recreational areas, and may be due to reasons related to the increase in housing need that puts pressure on the housing market, Figure 4 illustrates this.



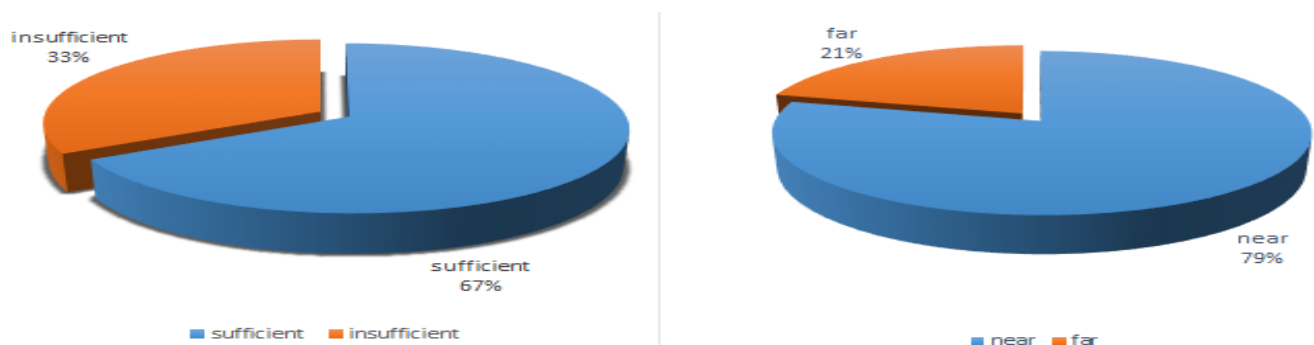
**Figure (4) Assessing the sense of belonging**

### B- Evaluation of the efficiency of services in Hilla 1 residential complex

As the services that were surveyed are those that are available in the first residential complex and the adequacy of services in terms of area and the answer was yes or no and the distance of access and the answers were near or far as shown by the following percentages:

#### - Nursery Building

The questionnaire showed that the sample believes that the areas are sufficient by

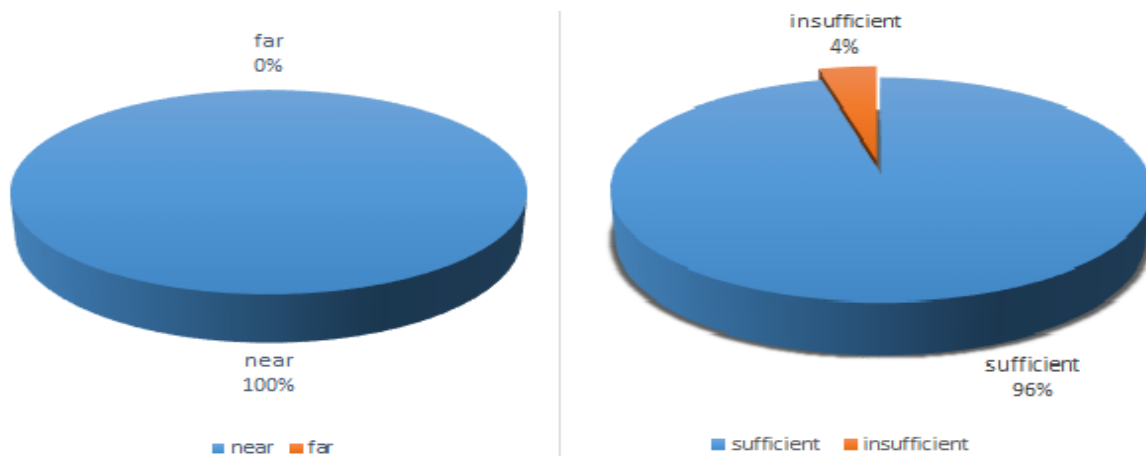


**Figure (5)**

67%, close by 79%, insufficient by 33%, and far by 21%, which are good percentages, which shows people's satisfaction with the service, and Figure (5) illustrates this.

### - Primary School

The sample sees that the spaces are sufficient by 96%, close by 100%, insufficient by 4%, and far by the center of the complex, and Figure (6) shows that zero%, which are very high percentages of population consensus, which shows people's



great satisfaction with the service.

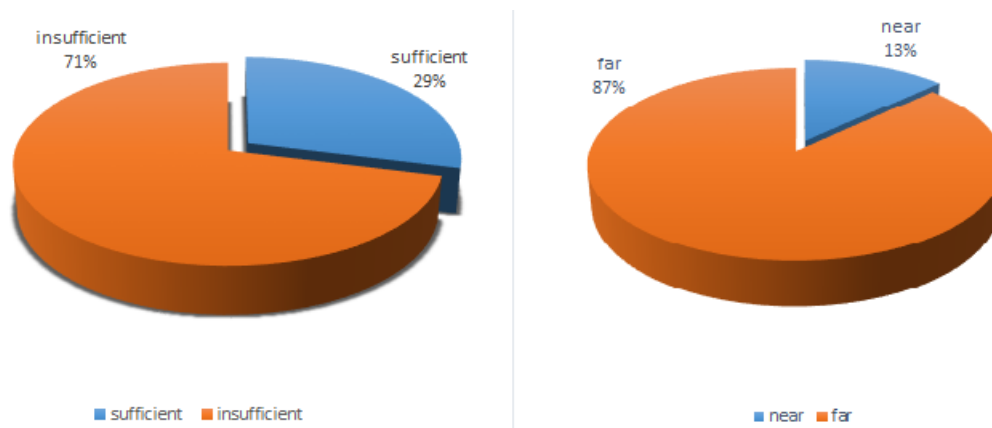
Figure (6)

### - Secondary School for Girls, Health Center and House of Worship

The questionnaire form shows that the sample believes that the three services have 100% sufficient spaces, 100% close, zero insufficient and zero percent distant as well, which are very high percentages of population compatibility, which shows the satisfaction of the great people with the service and the reason is that the educational service or school is also in the middle of the complex.

## - Commercial market or shops service

Sufficient by 29%, 13% near, insufficient by 71%, and far by 87%, which are very small percentages of population consensus, which shows people's great dissatisfaction with the service, and the reason is that the service is not available as planned so far, as the shops that were built to provide the service are not



invested until the preparation of the research and the residents rely on scattered shops inside the spaces and apartments in the complex, Figure (7) illustrates this:

Figure (7) Market Efficiency Based on Data Obtained from the Questionnaire

## - Discussing the extracted results with conformity to the first complex

By placing the results extracted from the urban housing standards with what was collected from the opinions of the residents in the first complex during the field questionnaire, the following table can be developed (as in table 2):



No.	service	availability	Conformity
1	nursery	available	Good
2	kindergarten	unavailable	----
3	Primary school for boys	available	Good
4	Primary school for females	available	Good
5	Boys Secondary school	unavailable	----
6	girls Secondary school	available	Good
7	Health care center	available	جيد
8	musk	available	Good
9	Coffee shop	unavailable	----
10	Local Admin	available	Good
11	Shopping center	available	Good
12	open areas	unavailable	----

– play grounds and open areas not available No service----Table (2), Source: Researcher based on the results of the questionnaire and matching It is noted that the general feeling of citizens tends to be satisfied with the services provided in the complex, such as educational, and the only exception was the commercial services that represented a reversed case, the questionnaire shows that the population is not inclined to be satisfied with the nature of the service provided to them.

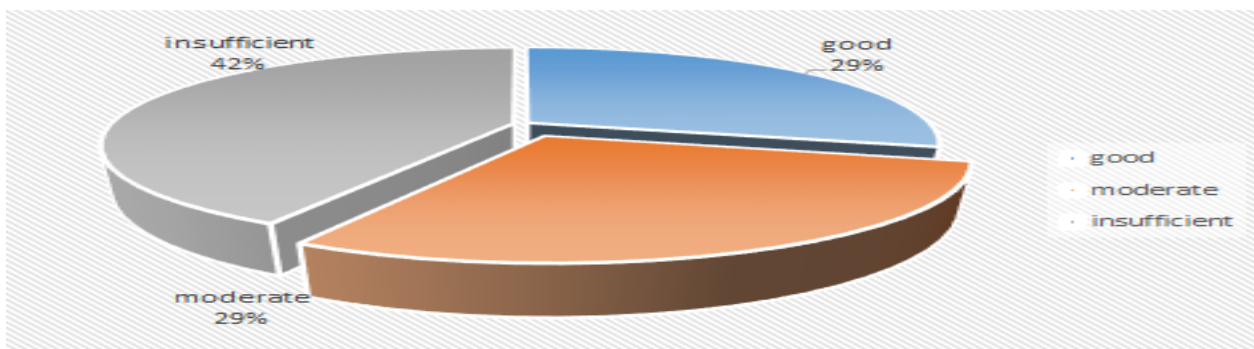
## - Results of the questionnaire Hilla 2 Complex:

In this analysis, the results obtained from the questionnaire will also be developed and the percentage system for each paragraph of the questions posed to them in the questionnaire form, and an average of approximately 10% of the total number of housing units available in the complex has been distributed 24 forms from the residential complex, and the questionnaire forms were composed of two axes, as in the first complex.

### A- Evaluation of planning organization

In the first form, a number of questions were asked related to the planning organization of the residential complex in general, which are related to social services, and they were as follows

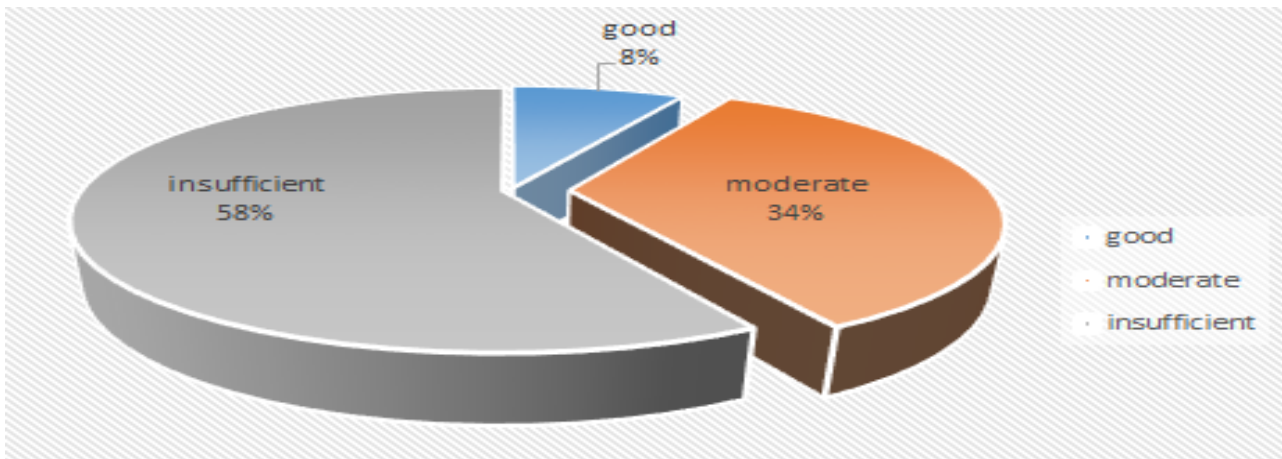
- Evaluation of services distribution in the residential complex: the answers are good by 29% of the sample moderate of 29%, while those who gave insufficient evaluation were 42%, prevailing impression in the second complex is not positive



due to the small number of service buildings, Figure (8).

Figure (8) Evaluation of services based on data obtained from the questionnaire

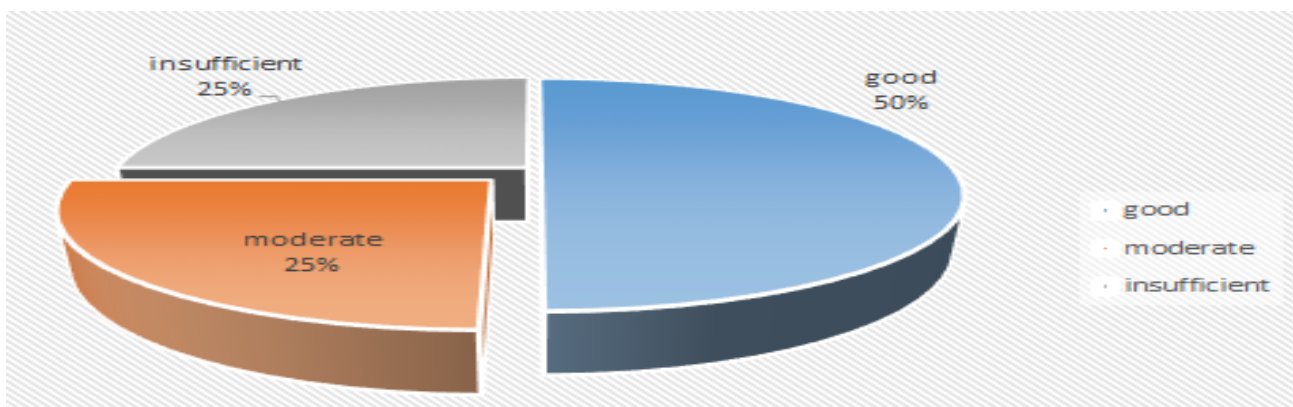
- Evaluation of the integration and adequacy of services provided: The answers are sufficient by 8% of the sample and 34% moderate on the services provided,



**Figure (9)**

while those who gave insufficient evaluation were 58%, which means that the sample is not satisfied by a large percentage and the reason may be due to the lack of a number of social services or their availability, but in numbers that are not satisfactory to them, and Figure (9) shows that.

- Evaluation for easy access to various events: The answers were sufficient by 50% of the sample who were satisfied with the possibilities of access and 25% moderate, while those who gave insufficient evaluation were only 25% and the

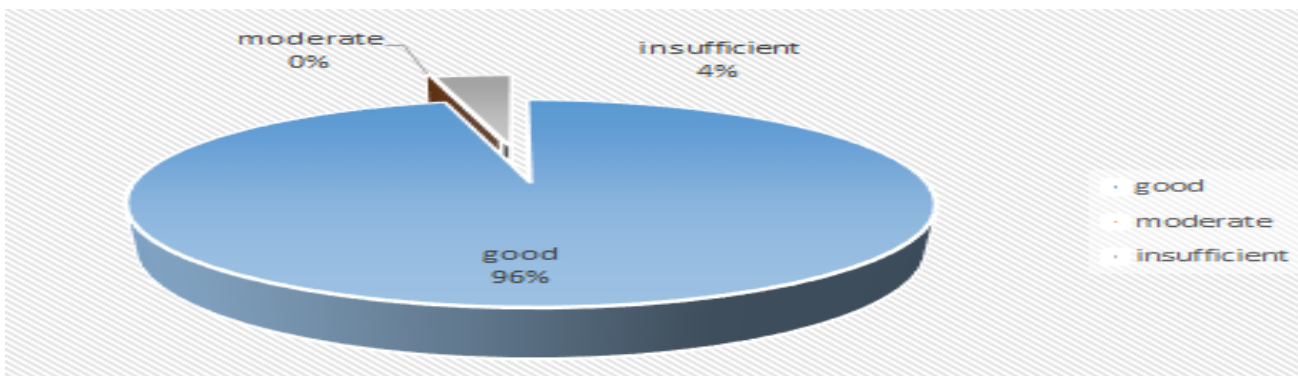




reason is that there are ways from services to housing and vice versa, and Figure (10) shows the percentage.

Figure (10) Evaluation of Accessibility of Events Based on Obtained Data

- Evaluation of the recreational potential of the population: the evaluation is 4% sufficient, zero medium and insufficient by 96%, and the reason is also due to the



lack of any recreational places or toys for children or adults alike, Figure (11).

Figure (11) Evaluation of entertainment potential based on data obtained from the questionnaire

- Green despite the provision of places designated for that, but neglected and not properly invested, which is an unsatisfactory result for them, so the result was as follows: zero percent sufficient, 8% moderate, and 92% insufficient, and Figure (12) shows the percentage.

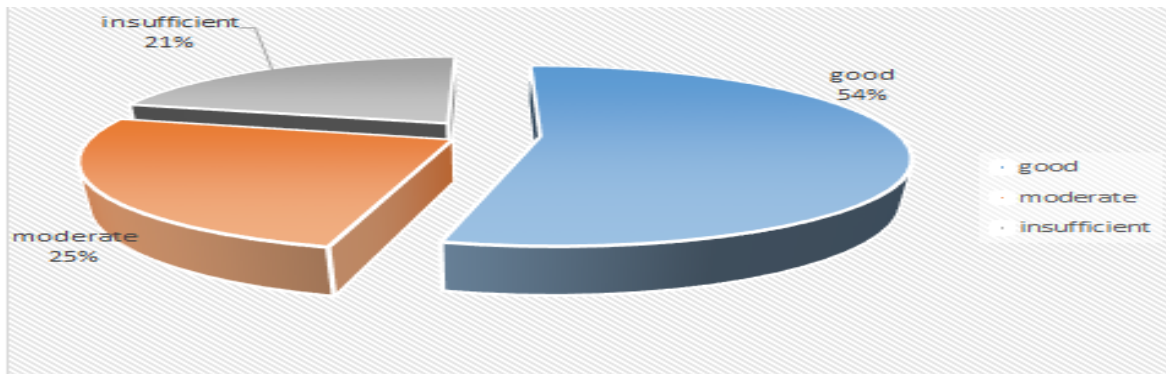


Figure (12)

### B- Evaluation of the efficiency of services in the second residential complex

The services that were surveyed are those that are available in the second residential complex and the adequacy of services in terms of area, and as in the first complex, the answer was yes and no, and the distance of access and answers were near or far as shown by the following percentages:

- kindergarten Building The questionnaire showed that the sample believes that the spaces are sufficient by 87%, near by 87%, insufficient by 13%, and far by 13%, which are good percentages, which shows

people's satisfaction with the service, and Figure (14) illustrates this.

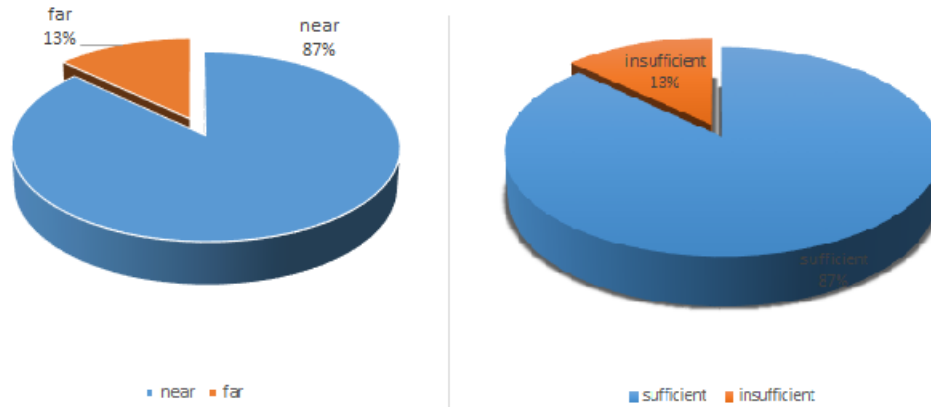
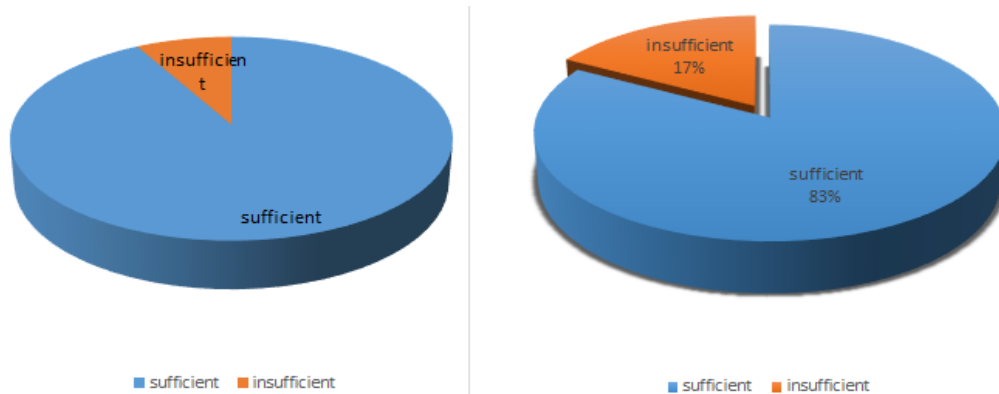


Figure (14) Kindergarten efficiency volume 2 based on data obtained from the data

### • Boys' Secondary School

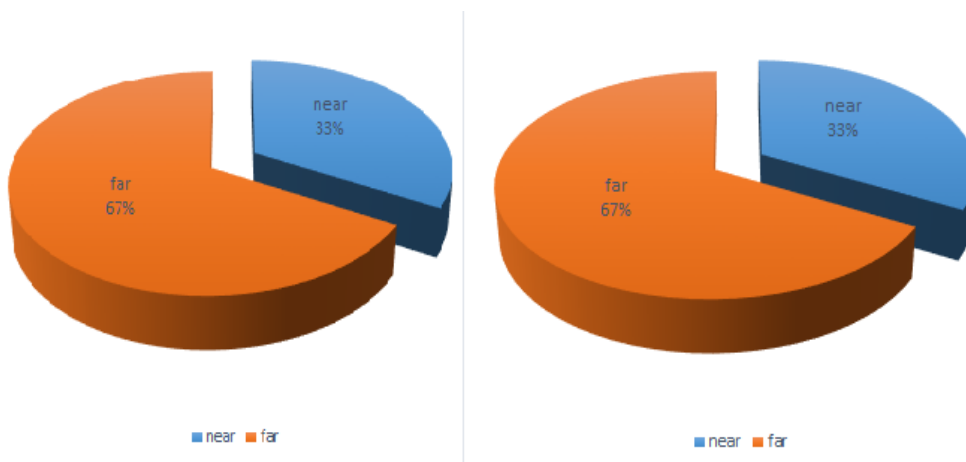
The sample believes that the service is sufficient in terms of areas by 83%, near by 92%, insufficient by 17%, and far by 8% as well, which are high percentages of population compatibility, which shows people's satisfaction with the service, and the reason is that the service is for the secondary school consisting of 18 classes, which certainly provides larger spaces and spaces, and Figure (15) illustrates this.



**Figure (15) Secondary efficiency Mg 2 based on the obtained data**

- **Commercial market or shops service**

The sample believes that the areas are sufficient by 29%, near by 33%, insufficient by 71% and far by 67%, which are small percentages of people's dissatisfaction with the service and the reason is that the service is not available as planned so far as the commercial marketing complex that was built to provide the



service is not invested and Figure (16) shows this

**Figure (16) Market Efficiency Based on Data Obtained from Data**

## - Discussion of the extracted results with conformity to the second complex

Through the results extracted for the second complex to match the urban housing standards with the opinions collected, it is noted that citizens tend to be satisfied

No	service	availability	conformity
1	nursery	unavailable	----
2	kindergarten	available	good
3	Boys Secondary school	available	good
4	Primary school for females	unavailable	----
5	Health care center	غير متوفرة	----
6	musk	unavailable	----
7	Coffee shop	unavailable	----
8	Local Admin	unavailable	----
9	Shopping center	available	not good
10	open areas	unavailable	----

services, as shown in table 3.

with the social services provided in the complex despite the services that do not conform to the approved standards, except for commercial Table (3), Source: Researcher based on the results of the questionnaire and conformity

## - Conclusions

- There are many positive aspects in vertical housing, including meeting the growing housing need or is the demand for housing units, including providing social, economic and recreational needs for the largest possible number of residents and shortening the time to provide those complexes in which appropriate environments are available to develop people's lives and improve their lives, as vertical housing has negatives as it has positives, the weakness of independence, failure to follow appropriate planning treatments, and not providing open spaces



inside the housing and other things that are considered issues that Reduce the desire to have an apartment and prefer horizontal housing. The provision of adequate housing with a degree of privacy, sufficient space, safety, lighting, ventilation, appropriate infrastructure, reasonable costs and a suitable location, as well as the workplace and the provision of basic social life facilities such as educational, health, shopping, entertainment and other elements that enter into the residential environment.

- The satisfaction scale was not related to the area of the flat, but to the social services provided, as although the housing provided in the second complex was larger, the satisfaction with the complex was lower than the first complex, complexes does not contain entertainment facilities such as children's playgrounds, sports arenas or sports halls, despite the presence of designated squares as green areas, which is one of the important issues because children need places to play that are planned scientifically and thoughtfully.

### **- Recommendations**

1- The need to provide the housing standards to inhibitors, each according to real population densities in the residential area.

3- The need to study the reasons for the residents' satisfaction with services that do not meet urban housing standards.

4- The need to pay attention ,and not to neglect entertainment facilities such as children's playgrounds, and green areas, sports arenas or sports halls, to the recreational aspects, because of the importance for the residents of those complexes.





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