

Urban Polarization and Its Impact on The Urban Structure of The City of Basra

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Abstract

The city of Basra has undergone a major development in the attraction of the population to the city, increasing its population size to occupy the largest urban centre in Basra province. Its geographical location, which formed a link between it and its neighbouring districts, facilitated transport and trade by connecting it to a network of transport routes, which facilitated movement and mobility between them and their respective districts, as well as the concentration of most official services, economic activities and services of all kinds, making them an attractive centre (Polarized). Therefore, the study focused on the concept of urban polarization in the city through its various city influences, and the descriptive approach was used to describe the variables used in the study as well as the analytical approach to produce results that demonstrated that Basra has become an attractive center. (Polarized) Population, activities and various functions and their impact on the negative and positive uses of urban land, identifying the most important problems and constraints and proposing appropriate solutions to them in order to serve the needs and requirements of the population in the city.

Keywords

Polarization, urban structure, Basra

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Introduction

The city of Basra is distinguished by its geographical location, which made it a center for attracting residents and economic activities of all kinds, in addition to its regional relations with the districts of the province or with the neighboring provinces. Attracting the urban community in Basra Governorate, where the city provides the population with all administrative, health and educational services, as well as job opportunities, commercial activities and recreational services. Despite these positives, this resulted in some negatives, including the problems of overpopulation and pressure on services, in addition to the emergence of residential slums as a reality imposed on the reality of the city which made the city expand in different directions outside the limits of its basic design, and urban growth had the greatest impact on this expansion and from this point of view came the idea of research to shed light on the concept of urban polarization and its impact on the urban structure of the city of Basra.

Research Problem

- What are the factors that contributed to attracting the population to the city of Basra?
- Does urban polarization play a positive or negative role on the urban structure of the city?

Research Hypothesis

- There are natural and human factors that made the city of Basra a polarizing center, which led to the expansion of its size and the increase in its population size and expansion at the expense of agricultural lands and open spaces.
- There are a number of positive and negative effects on the urban structure of the city.

Research Importance

Expose the impact of urban polarization on the urban land uses of the city through its interactive relationships, as well as address the effects resulting from it.

Research Structure and Organization

The research followed the historical development of urban growth by tracing the stages of population growth for the years 1965- 1977-1987-1997-2009 and population estimates for the year 2021, as well as the survey method, one of the methods of descriptive methodology, library sources, official departments and topographic maps, as well as the adoption of the relevant statistical analytical method To analyze the spatial development of urban land uses for the years 1977-1987-2021, where the research took place in an introduction and two sections, the first dealt with the concept of polarization and urban growth of the city, while the second dealt with urban land uses and the effects of urban polarization on the city of Basra, as well as a set of conclusions and proposals.

Search Limits

The spatial boundaries are represented by the administrative boundaries of the city of Basra, which is located in the eastern part of Basra Governorate and in the southern part of Iraq, located between latitudes (30.27- 30.35°) north and longitudes (45.47-47.51°) east, and geographically extended From Nahr al-Siraji to the south and Shatt al-Arab to the east, Abu Sakhir area to the north and Shatt al-Basra to the south, the city includes (134,183,10) people with 55 residential neighborhoods on an area of (10,737) hectares, for the year 2021, map (1). As for the temporal boundaries, they were represented between the years 1977-2021 according to the available satellite visuals and digital maps, as well as the field study.

The First Topic

First, The Concept of Urban Polarization

morphology of the city and the urban functions in it. The role in collecting living urban systems within the city and achieving linkage with neighboring regions (Al-Shawara, 2012, p. 7). Urban growth (population size) directly affects all economic and social activities within the city. That is why we will explain the stages of urban growth in the city of Basra to reveal the role of population size in influencing urban land uses.

The study of population change in any region is one of the important issues in population geography, as it is concerned with monitoring changes in population size, characteristics and distribution format (Al-Isawy, 2001, p. 121). Regarding the area they occupy within the city's space (Abu Ayanah, 1985, p. 124), it appears from Table (1) and Figure (1) the increase in the population size that occurred in the population of the city of Basra during the years from 1965 to 2021, as we note the extent of development that has increased Population In 1965 the population was (301950) people, while in 2021 it reached (1341310) people, i.e. a population increase of (367,664) people during 55 years, and it is noted that there is a discrepancy in population growth, in the period between 1965-1977 the growth rate formed 3.5%, while the annual growth rate decreased between the 1977-1987 census to reach (-2.2%) (*), which is a low percentage compared to the following percentages.

(*) Law of Population Growth: $R = (P2/P1) e/t * 100$ Where:

- R = growth rate
- P2 = recent census
- P1 = old census

It is caused by the migration of the city's residents as a result of the Iran-Iraq war in 1980, then the percentage rose to 6.2% between the 1987-1997 census due to the return of the city's residents after the end of the war in 1988, while in the 1997-2009 census the growth rate was 4.8% to stabilize the situation in the city , As for the growth rate between 2009-2021, it amounted to 5.4%, and this is due to the increase in the natural rates of births and the decrease in deaths as a result of health development, as well as the improvement of general conditions in the city and social and economic stability, as the study area is considered an area of population polarization, due to its distinguished location and its proximity to The oil fields (North and South Rumaila), the port of Al-Faw and Basra International Airport, which requires the development of new housing stores.

Table 1

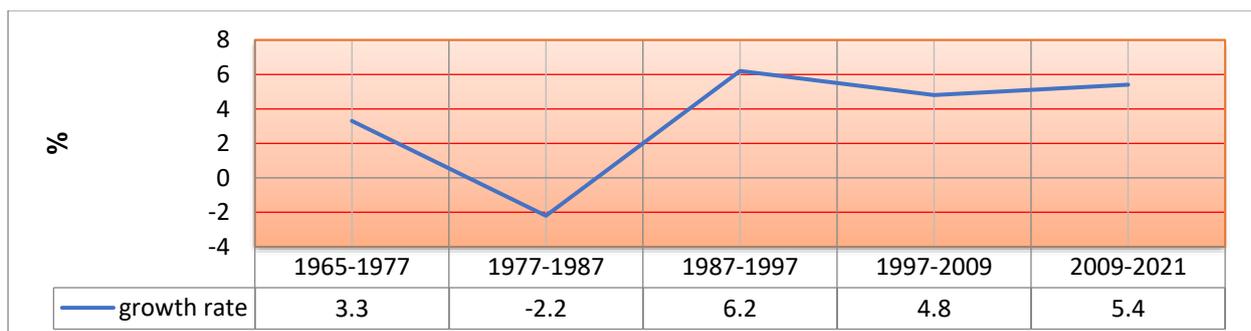
The evolution of the population size in the city of Basra for the years 1965-2021

Annual censuses	Previous census	Subsequent census	Increase between the two censuses	Growth rate %
1965- 1977	301950	452102	150152	3.5
1977- 1987	452102	362143	-89959	-2.2
1987-1997	362143	685880	323737	6.2
1997-2009	.685880	973646	287766	4.8
2009-2021	973646	1341310	367664	5.4

Source: 1- Population census for the years 1965-1977-1987-1997

2- Inventory of buildings and population 2009 3- Population projection for 2021

Figure (1) Evolution of the annual growth rate of the population of the city of Basra for the years 1977-2021



Source: Table 1

e = base of the natural logarithm which is a constant = 2.71828

T = the time interval between the two censuses.

See: Taha Hammadi Al-Hadithi, Population Geography, University of Mosul, Dar Al-Kutub for Printing and Publishing, Mosul, 1988, p. 291.

The Second Topic: The Development of Urban Land Uses in The City of Basra for The Period 1977-2021

The city of Basra has witnessed great spatial changes based on the visual interpretation of satellite visuals with high spatial accuracy (60 cm, 1 m) and satellite visuals of the Land sat satellite with spatial accuracy (30 meters) taken for the city during the seventies (Al-Kaabi, 2017, p. 2) through which it was possible to measure The spatial change for the period (1977 - 2021) (*), the area of urban land uses for the city of Basra reached 6869 hectares in 1977, but in 1987 the area formed 7628 hectares, while it amounted to (10737) hectares in 2021, and this expansion came As a result of several factors, the most important of which is the population increase, as the population size was recorded at 301950 people in 1965, while it reached 1341310 people for the year 2021, considering that the city of Basra is a (polarized) area attractive to the population, and as a result of this large change in the population size there will be negative changes in urban land uses Positively, they are as follows:

First - Urban Land Uses in The City of Basra for The Period 1965 - 1977

Agricultural use occupies the first place in land uses in the study area, as it recorded 2104) hectares, or 30.6% of the city's total area of (6869) hectares for the year 1977, Table (2) and Figure (2), while residential use ranked second, as it occupied an area estimated (1586) hectares at a rate of 23.1%, and in the third place came the area of open spaces to occupy 1448) hectares at a rate of 21.1%, and the service uses (administrative, transport, educational, health, entertainment, and religious) ranked fourth with an area of 1213) hectares, accounting for 17.6%. While industrial and commercial use ranked fifth and sixth, with an estimated area of (392 and 126) hectares, and percentages of (5.7% and 1.8%) respectively, map (2).

(*) The researcher excluded the urban land uses for the year 1997 due to the cessation of most urban growth and areal expansion due to the economic embargo imposed on Iraq from 1992-2003.

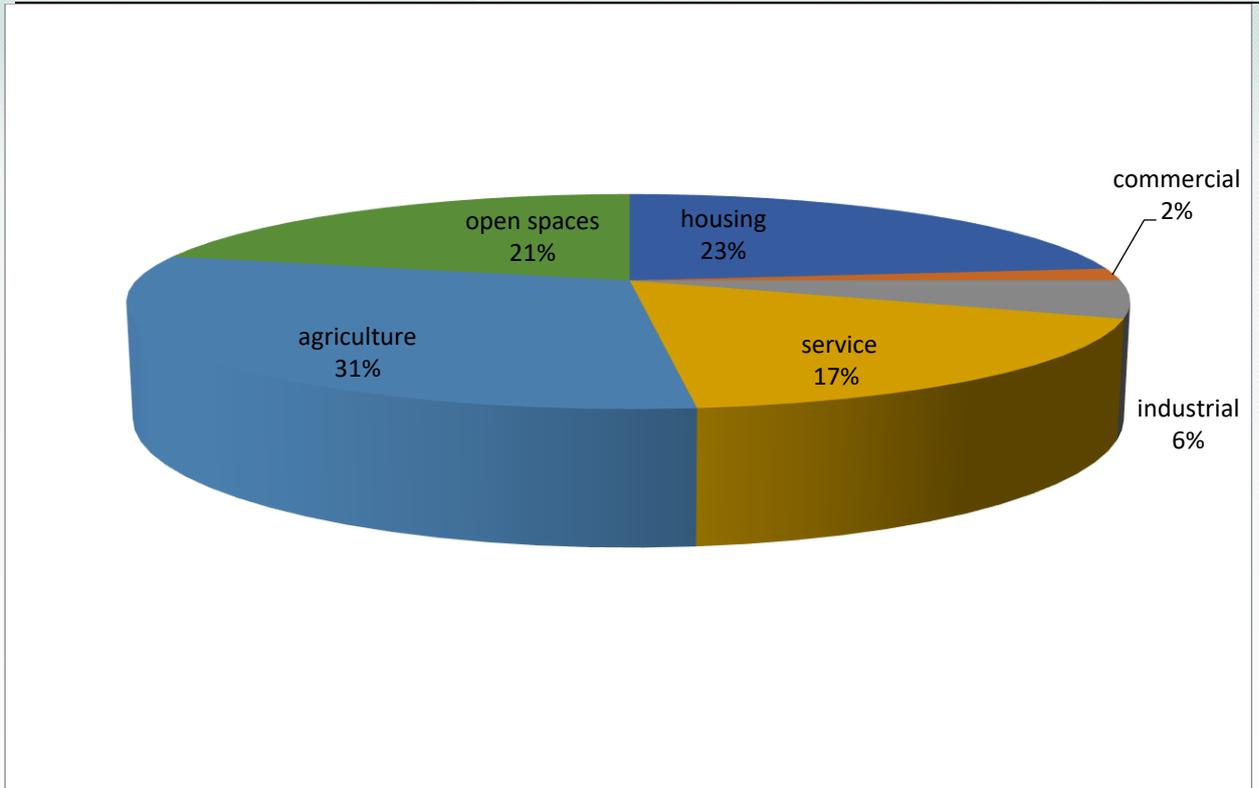
Table 2

The area of urban land uses and their percentage for the city of Basra for the year 1977

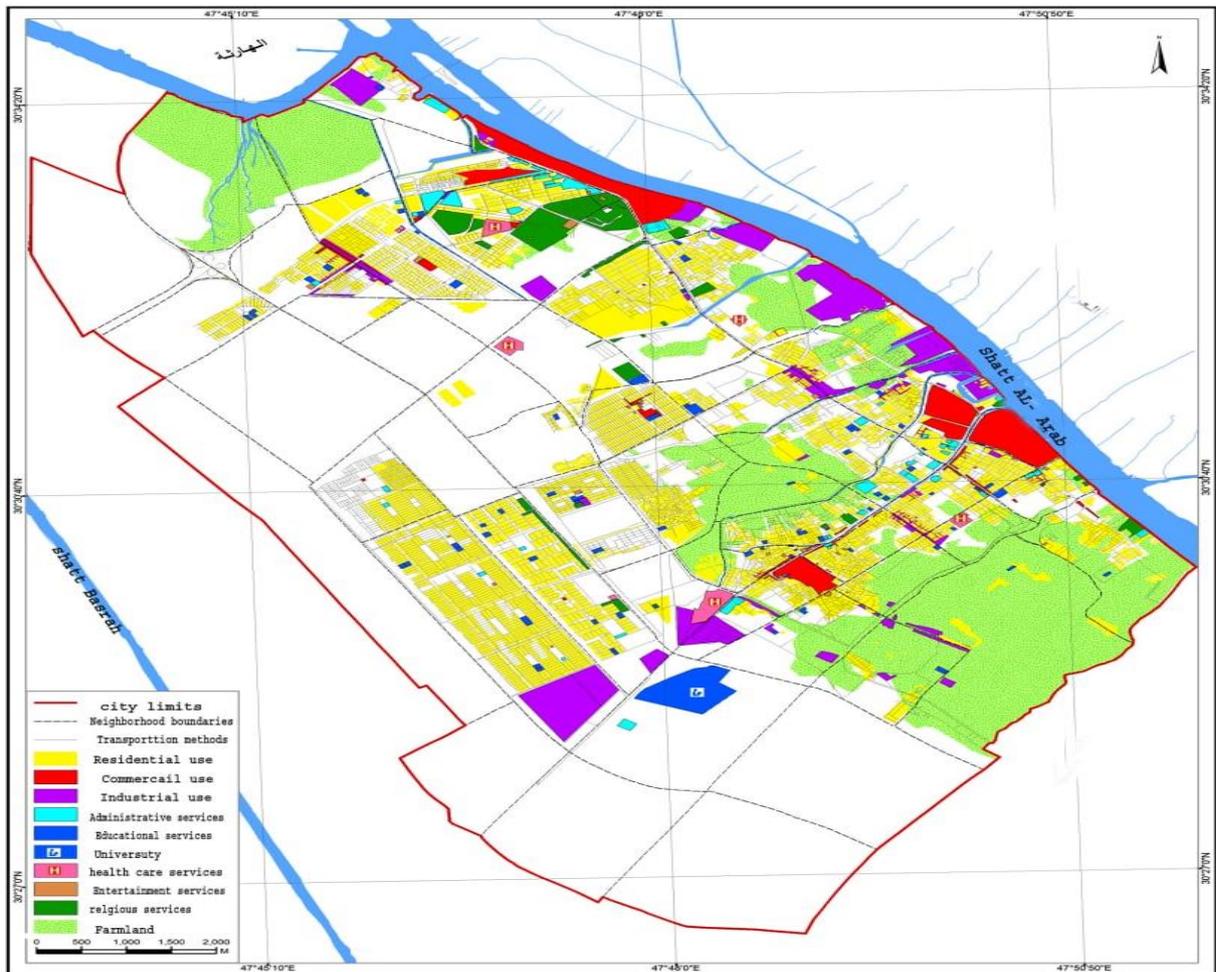
S	type of use	The area is hectares	%
1	residential	1586	23.1
2	commercial	126	1.8
3	industrial	392	5.7
4	administrative	67	1
5	Transport	857	12.5
6	educational	90	1.3
7	entertainment	125	1.8
8	healthy	62	0.9
9	religious	12	0.2
10	agricultural	2104	30.6
11	open spaces	1448	21.1
	Total	6869	100

Source: Annex 1

Figure (2) Percentages of urban land uses for the city of Basra for the year 1977



Map 2. of urban land uses in the city of Basra for the year 1977



Source: Mortada Muzaffar Sahar Al-Kaabi, Spatial Analysis of the Change of Residential Land Uses in the City of Basra, PhD Thesis, Part Two, College of Education for Human Sciences, University of Basra, 2017, p. 12.

Second-Urban Land Uses in The City of Basra for The Period 1978-1987

Table (3) and Figure (3) show that residential use in 1987 ranked in urban land uses with a rate of 30.7% of the total urban land uses in the study area, while service uses came in second place, occupying 28.7% after they were ranked Fourth in 1977, while agricultural use ranked third with a rate of 20.0% after it was ranked first in the previous stage, and open spaces ranked fourth with a rate of 10.8%, while industrial and commercial use ranked fifth and sixth by 5.7% and 4.1%, respectively. Map (3)

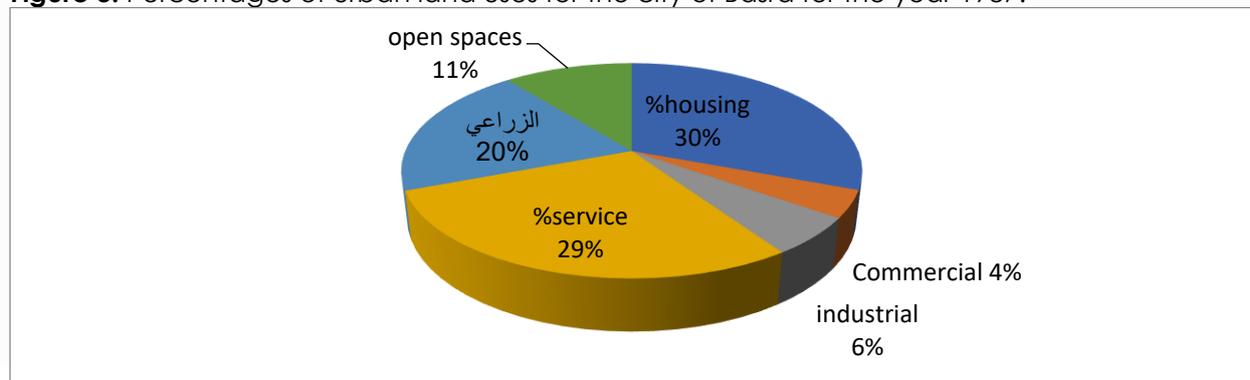
Table 3

The area of urban land uses and their percentages for the city of Basra for the year 1987.

S	type of use	The area is hectares	%
1	residential	2340	30.7
2	commercial	311	4.1
3	industrial	438	5.7
4	administrative	233	3.1
5	Transport	1316	17.3
6	educational	322	4.2
7	entertainment	212	2.8
8	healthy	91	1.2
9	religious	18	0.2
10	agricultural	1523	20
11	open spaces	824	10.8
	Total	7628	100

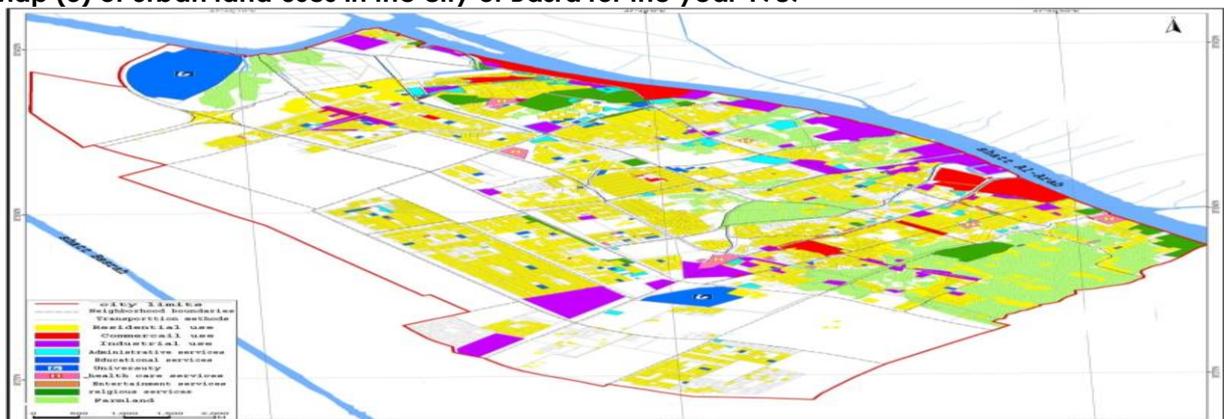
Source: Annex 1

Figure 3. Percentages of urban land uses for the city of Basra for the year 1987.



Source: Table (3)

Map (3) of urban land uses in the city of Basra for the year 1987



Source: Mortada Muzaffar Sahar Al Kaabi, Spatial Analysis of Residential Land Use Change in the City of Basra, PhD Thesis, Part Two, College of Education for Human Sciences, University of Basra,

Third - Urban Land Uses in The City of Basra for The Period 1988- 2021

The area of land uses has developed in this stage a great development in the size of the area allocated for each use, through the data of Table (4) and Figure (4), the residential use occupied the first place with an area of (5610) hectares and a percentage of 52.2% of the total urban land area, which amounted to (10737). hectares for 2021, while service uses ranked second with a rate of 34.3% in order to increase the area of these uses, especially the transport sector, which occupied an area of (2001) hectares after it was occupying an area of (857) hectares in 1977, and commercial use came in third place with a rate of 5.9%, followed by use The industrial sector ranked fourth with a rate of 3.4%, while we note the decline in agricultural use, which ranked fifth at a rate of 2.3%, and the sixth place was for the share of open spaces, map (4).

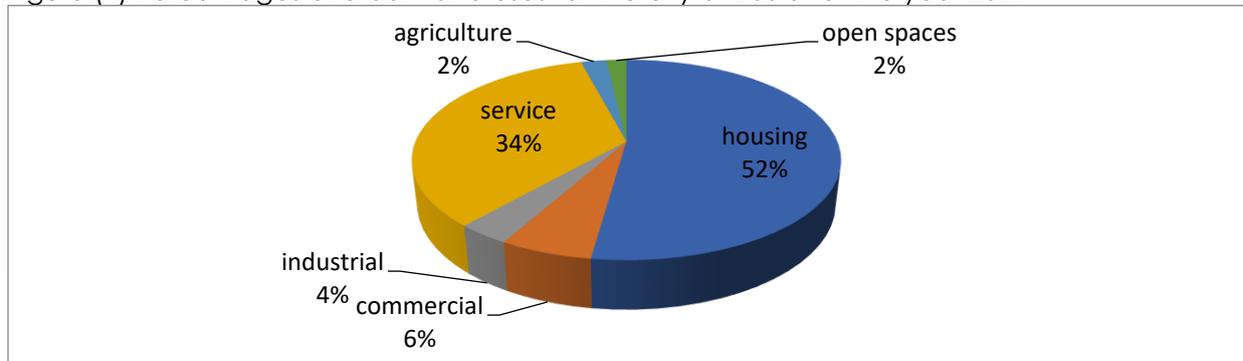
Table 4

The area of urban land use and its percentage for the city of Basra for the year 2021

S	type of use	The area is hectares	%
1	residential	5610	52.2
2	commercial	631	5.9
3	industrial	369	3.4
4	administrative	775	7.2
5	Transport	2001	18.6
6	educational	533	5
7	entertainment	194	1.8
8	healthy	151	1.4
9	religious	38	0.4
10	agricultural	245	2.3
11	open spaces	190	1.8
	Total	10737	100

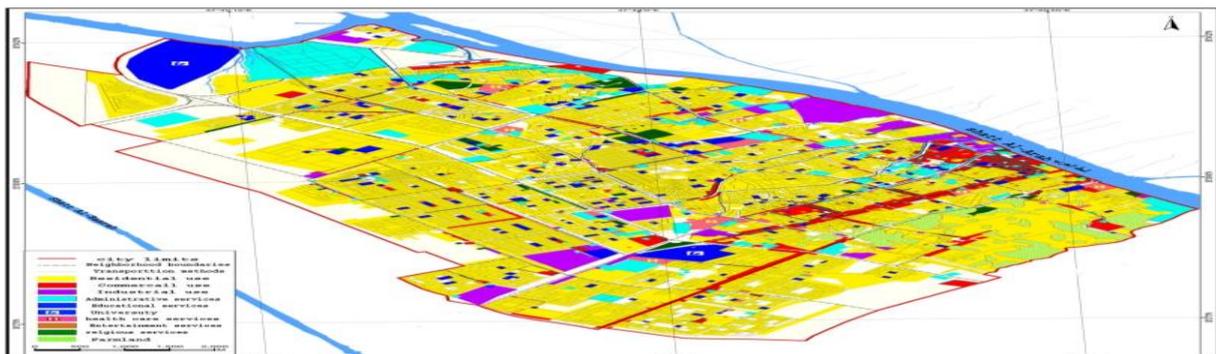
Source: Annex (1)

Figure (4) Percentages of urban land uses for the city of Basra for the year 2021



Source: Table (4)

Map (4) of urban land uses in Basra city for the year 2021



Source: Relying on Map 1 and 2 and Table 2, the area was calculated

Fourth - Detecting the Spatial Development in The Urban Land Uses of The City of Basra

Through the data of Annex (1), the spatial development taking place in the area of urban land uses appears, negatively and positively, for the city of Basra, which are as follows:

1- Residential use

The residential use witnessed a great development in the area during the period 1977- 2021, where this use recorded (1586) hectares of the total area of the city amounting to (6869) hectares for the year 1977, then the area of residential use expanded to occupy (5610) hectares for the year 2021 with an absolute positive change amounting to (4024) hectares with a change rate of 71.7%, as a result of the increase in the population size mentioned above, considering that the study area is an area of attraction for the population. Therefore, the city expanded at the expense of agricultural lands and open spaces, especially the emergence of random housing after 2003, where it reached about 25,420 housing units with a population size of 152,520 Population for the year 2017 (Basra Governorate Council, Housing Committee, unpublished data, 2017).

2- Commercial Use

The commercial use was also covered by the spatial change during the period 1977-2021, where it occupied an area estimated at (126) hectares in 1977, then soon began the positive spatial expansion for commercial use until it reached (631) hectares of the total area of the city's total area in 2021, with an amount A positive change of (505 hectares) with a change rate of 80% between 1977- 2021, and the reason for this is that the commercial use exceeded the empty and agricultural lands, as well as the change that occurred in the housing units and the change of their use to the commercial category by their owners, where the commercial area represents Central is the area of greatest attraction for commercial activities and residents (the polarization area).

3- Industrial Use

Industrial activities are spread in most cities, but the percentage of this use varies from one city to another, depending on factors related to the city's structure, location and regional relations with other regions. Industrial activities have negative effects on the life of the city, represented by the types of pollutants released from them (Al Kubaisi, 2020, pg. 474). Industrial activities vary in the city of Basra, where industrial use recorded an area of (392) hectares of the city's area of (6869) hectares in 1977, on the When the area of industrial use decreased in 2021 to (369) hectares, where the change in the area of industrial use was negative (-23) hectares with a change rate of (-0.05).

4- Service Uses

Through Appendix (1), the development of service uses (administrative, transportation, educational, health, recreational and religious) is shown in positive, as it witnessed a remarkable spatial change in increasing the area allocated to each of them. It occupied an area estimated at (1213) hectares in 1977, while its area expanded to (3692) hectares. In 2021, this expansion included all residential neighborhoods. Therefore, we find that the rate of spatial development tended towards a positive expansion. We note that the rate of change in administrative services amounted to (+91.4), transportation (+57.2) and education (+83.1), while the health, recreational and religious percentage reached (+83.1). The positive change in them (+58.9, +35.6, +68.4), respectively.

5- Agricultural Uses

Through the previous appendix, we find that the area of agricultural land in the city of Basra occupied an area of (2104) hectares of the total area of the city for 1977, but in 2021 the area of

agricultural land declined a lot to reach (245) hectares of the total area of the city, and when calculating the amount of the change is negative (-1859) hectares with a change rate of (-88.3), which means urban land uses, especially residential use, which amounted to 52.2% for the year 2021, crawling at the expense of agricultural lands, which led to a decline in its area and this can be observed in many neighborhoods Residential in the study area as a center of population attraction.

6- Open spaces

The open spaces in the study area occupied an area amounting to (1448) hectares of the total area of the city for the year 1977, it declined significantly in the year 2021 to reach (190) hectares of the total area of the city amounting to (10737) hectares, so the amount of change was recorded as negative (-1258). hectares with a change rate of (-86.8), and this is due to the encroachment on open lands by other uses due to the weakness of urban planning and government control, especially after the occupation of Iraq in 2003.

Fifth: The Effects of Urban Polarization on The Urban Structure of The City of Basra

The focus will be on the most important effects produced by the urban polarization of the city of Basra, which are as follows:

- 1- Bringing projects that led to providing job opportunities for the city's residents, and on the other hand, it affected the urban fabric, especially agricultural lands, for the construction of housing units.
- 2- The development and increase in the number of commercial centers in the study area and the increase in the supply of consumer goods, which made the city an attractive center for residents from different regions of Basra.
- 3- Traffic jams and congestion that the city suffers from, especially in peak times, as a result of the high density of the population, which is the reason for the intensity of traffic and transport.
- 4- The emergence of the problem of residential slums, which has become a problem suffered by many cities, including the city of Basra, especially after the occupation of Iraq in 2003, as it significantly affected the urban fabric of the city.
- 5- The emergence of the problem of pollution, especially pollution with household solid waste, which has become a problem that the city suffers from as a result of the emergence of unpleasant odors, in addition to its role in the emergence of the problem of visual pollution in the city.
- 6- The development of service areas in the city that keep pace with modern developments such as the establishment of modern shopping complexes (malls) and floating tourist restaurants in the Shatt al-Arab, as well as recreational areas that attract residents of the city and the surrounding areas for shopping and hiking.

We note from the foregoing that urban polarization has greatly affected the urban structure of the city of Basra as a result of the population size represented by natural increase and population migration, which has affected the pressure on services provided to the population as well as the urban growth of the city, the emergence of random housing and the emergence of environmental pollution problems and traffic jams, and this calls for Proposing some solutions that would reduce this problem by restructuring and developing the housing sector to reduce the effects of residential slums and equitably distribute investments among parts of the city in addition to exploiting the city's outskirts with productive industrial projects and focusing on the role of regional development for the city with other regions to ensure an economic basis strong for the city.

Conclusions and Suggestions

- 1- The geographical location of the city of Basra, which represented the center of population and economic attraction, contributed to the natural and human geographical characteristics of this site.
- 2- The study concluded that the residential use area is on a positive and continuous increase
- 3- The increasing population growth in the study area led to stability in it to provide most of the services needed by the population, which made the city a polarized center.
- 4 - Urban polarization led to the emergence of positive and negative effects that were reflected

on the reality of the city, which calls on the competent authorities to develop central plans to advance the city's future reality.

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