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Spatial Distribution of Industrial Facilities and their Branches in Al-Qassim City

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Abstract

Industrial job is basically an urban job that requires a set of requirements for its establishment and success. It needs elements that are available in a non-urban environment, the most important of which are broad markets, labor force, infrastructure services, communications, financial services, and insurance companies. The importance of Al-Qassim city is that it is religiously significant. It contains the shrine of Imam al-Qassim, son of Imam al-Kadhim (peace be upon them), which gave this city great religious importance. The present study found several important matters, including that the distribution of industries in Al-Qassim city is unbalanced, most industries are consent percentage in the industrial zone, lack of interest in industrial services in the industrial district of Al-Qassim city, lack of interest in infrastructure services and the establishment of communication network, the provision of energy and water, as well as lack of interest in transportation. It is also notice that Al-Qassim city lacks large industries, which are necessary at the present time and evidence of the strength of the region on which they are based. It is necessary to pay attention to this vital sector because Al-Qassim city is considered a linking city between Babylon and Al-Diwaniyah. Large industrial facilities should be established in the city as this is evidence of the strength of the region in terms of industry and giving it a major center in industrial activity.

Keywords

Spatial Distribution, Al-Qassim city, Industrial Facilities, Industrial Services

JEL Classifications: J11, F43

1. Introduction

Distributing industries varies from one region to another within the city, as is the case in other uses of the land, such as residential or commercial. Industry constitutes a major share of the uses of the land in the city, that is, industrial production leads to the growth and development of the city. The nature of multiple industries is another factor that determines the spatial distribution for such industries as there are industries that need a limited area of land and consumes little energy. They are traditional industries that are based on more than one contact between the consumer and the producer. Form, type, and quantity of production are determined by taste and need. This forces such industries to be in the city center as a center for industrial activity in all its branches, such as the manufacture of ready-made clothes, furniture, jewelry making, shoe repair, and other traditional industries. Some other industries adopt the regional distribution method. Those are industries of a decentralized nature that do not require extensive and continuous contact with those who frequently visit the central areas such as the manufacture of construction materials, refreshments, and dairy.

2. The Industrial Situation in Al-Qassim City

The industrial situation in the city deals with the study and analysis of the industry, which is a group of ratio and proportion that reveals the reality of the industrial construction and what is included in the various industrial activities. The industrial facilities in Al-Qassim city are classified according to the International standard industrial classification, which is symbolized by: (I.S.I.C). It is based on the indicator of the number of facilities and the number of workers in the analysis. The number of industrial facilities in Al-Qassim city is (544) facilities. The number of workers is (1303) workers. The industrial facilities in Al-Qassim city are small facilities whose number of workers ranges between (1-9) workers. Small industries in the city represent the main pillar on which the city's residents depend. They are characterized by having a small volumetric significance in terms of workers and experience, as well as a low capital ratio. These facilities contribute to absorbing the surplus labor force and eliminating unemployment (Al-Kubaisi, 2004) as shown in Table (1).

Table 1. Number of facilities, workers in the industrial sector, and their percentage in Al-Qassim city for 2021

Rank	%	Number of workers	Rank	%	Number of facilities	Industrial branch
3	18,34	239	3	15,44	84	Food industries
5	4,83	63	5	5,33	29	Textile, clothes, and sewing
4	6,90	90	4	7,4	40	Wood products and furniture industry

6	2,30	30	6	2,75	15	Paper industry
7	3,53	46	7	2,20	12	Construction industries
2	19,10	249	2	27,0	147	Metal industries
1	45	586	1	39,88	217	Industrial services
-	%100	1303	-	%100	544	Total

Source; The researcher based on the field study on 4-3-.2022

First: Food Industries

It is known as one of the applied scientific fields that examines the processes taking place on agricultural, plant, and animal raw materials for the purpose of prolonging their storage period and preserving them from damage without significant change in their quality due to their good consumption, which tends to be simple in their production processes (Al-Shammari, 2012). Food represents basic human needs that are related to the growth of the body and helping it to move. Food industries are among the manufacturing industries that man started a long time ago and have an importance in strengthening the economies of the countryside by transforming primary agricultural raw materials into food commodities with greater economic returns, in addition to providing the necessary needs for industry. In agricultural developing countries, food industries constitute a link within the manufacturing industries (Al-Aydami, 2001) as shown in Table (2) and Map (1).

Table 2. Number of Facilities, Workers in the Food Industry, and their Percentage in Al-Qassim City 2021

%	Number of workers	%	Number of facilities	Industrial branch
50,2	120	35,7	30	Bakeries
8,36	20	23,80	20	slaughterhouses
12,55	30	11,9	10	Dairy industries
7,6	16	9,5	8	Pickles industries
5,02	12	7,1	6	pastry and cake industries
3,6	15	6	5	Soft drinks industries
5,0	12	2,4	2	Sugar industries
4,2	10	2,4	2	Ice industries
1,67	4	1,2	1	Animal food industries
-	-	-	-	Grinding industries
%100	239	%100	84	Total

Source; The researcher based on the field study on 7-3-.2022

Table (2) and Map (1) clearly reveal that food industries in the study area are divided as follows:

Bakery industries ranked first with (30) facilities with a percentage of (35.7%) and (120) workers with a percentage of (50.2%). Most of these bakeries are small-sized industries located within residential neighborhoods and markets.

They tend towards daily direct consumption in order to be delivered to the consumer as soon as possible. Most restaurants and hotels depend on bakeries spreading in the study area. In every bakery, there are (3-5) workers who receive a wage according to the worker's specialization in the bakery.

The second place is occupied by slaughterhouses. The number of these facilities is (20) facilities at a percentage of (23.80%) and (20) workers at a percentage of (8.36%). They are found only inside the big markets in the city, and there is rarely a place for slaughterhouses in residential neighborhoods. The reason is that these slaughterhouses are located inside the main market because of the waste they cause. There are containers inside the slaughterhouse market dedicated to the waste that occurs. The number of workers in each slaughterhouse shop is (1-2) workers who receive wages according to working hours.

The third place is occupied by dairy industries with (10) facilities at a percentage of (11.9%) and (30) workers at a percentage of (12.55%). This industry is considered one of the rapidly perishable industries that needs intensive care in terms of continuous cooling and air conditioning, especially in the atmosphere of Iraq, where temperatures always rise to an average of (52C). The demand for it is abundant in the blessed month of Ramadan. Its consumption is daily. It does not bear storage for long periods due to its lack of resistance to hot weather. The number of workers in the same facility is (1-3) workers with different wages according to the satisfaction of the originator regarding the wages of workers.

The fourth place is occupied by pickles industry. The number of facilities is (8) facilities with a percentage of (9.5%) and (16) workers at a percentage of (7.6%). It is one of the old industries. The availability of vegetables in the city has helped its continuity, apart from the availability of the raw material represented by dates for the manufacture of vinegar, as well as the availability of shops selling pickles in the markets and the city center. Each store needs (1-3) workers with low wages.

The fifth place is occupied by the pastry and cake industry with (6) facilities at a percentage of (7.1%) and (12) workers at a percentage of (5.02%). Most of them are spread in the city center in the main and secondary streets because most of these industries are practiced in homes and the demand for them increases on occasions and holidays. Each facility needs (1-2) workers. The wages are very low.

The sixth place is occupied by soft drink industries with (5) facilities and a percentage of (6%) and (15) workers at a percentage of (3.6%). Its spatial location is in the industrial area and the city center on the main streets and residential neighborhoods. The number of workers in each shop is (2-4) workers. It is characterized by the ease of transportation. The wages are somewhat low.

The seventh place is occupied by the manufacture of soft drinks and sugary materials with (2) facilities at a percentage of (2.4%) and (12) workers at a percentage of (5.0%). It is located in the city center on the main streets. There is

a large demand for it in the summer due to the hot weather of the city. The number of workers ranges between (3-6) workers with low wages.

The eighth place is occupied by ice industries with (2) facilities with a percentage of (2.4%) and (10) workers with a percentage of (4.2%). It is considered a small industry due to the seasonality of work, especially in the hot summer, which is used for the various food needs of the population, whether in juices or soft drinks, which are in great demand in the summer, especially in the holy month of Ramadan, as well as on holidays and occasions. Because of the interruption of electrical power supplies in the summer, demand for it increases due to the large number of needs in the requests previously mentioned. It spreads in the industrial zone. Each facility needs (1-3) workers with wages depending on the season of demand.

The ninth and last rank is occupied by animal food industries with (1) facility with a percentage of (1.2%) and (4) workers with a percentage of (1.67%). Each facility needs (2-4) workers as shown in pictures (1) and Map (1).



Pictures 1. Bakeries, Slaughterhouses, and Pickles Industries in the Study Area

Taken on 7-3-2021

Map (1) Food industries in Al-Qassim city for 2021

Source: The researcher based on Table (2)

Second: Textile, Clothing, and Sewing Industries

Textile industry is one of the major and widespread manufacturing industries in the world. They include every activity that leads to the transformation of fibers and threads into another type of fabric. They are carried out by a series of operations, starting with preparing the fibers from which the threads are made so that they become usable textiles (Al-Hamdani, 2006). They include sewing

upholstery, shirts and men’s clothing, in addition to ginning and spinning cotton and dyeing woolen fabrics as shown in Table (3), Pictures (2), and Map (2).

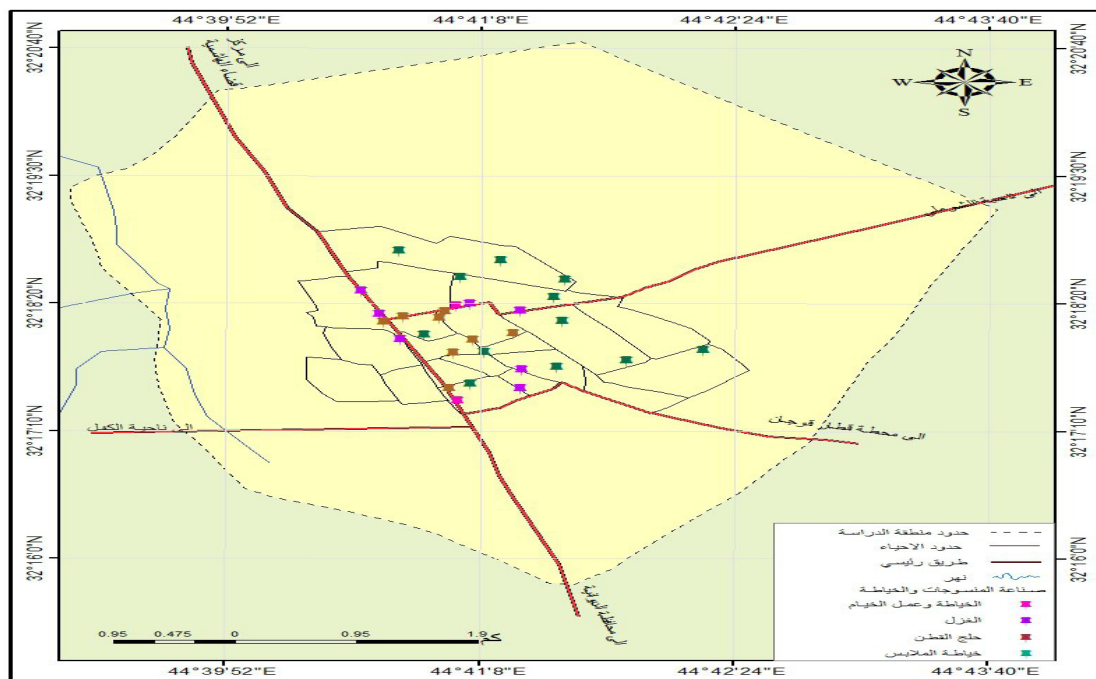
Table 3. Number of Facilities, Workers in the Textile and Sewing Industry, and their Percentage in Al-Qassim City 2021

%	Number of workers	%	Number of facilities	Industrial branch
39,7	25	41,4	12	Clothing
28,6	18	27,6	8	Textile
-	-	-	-	Carpet
23,8	15	24,1	7	Spinning
7,9	5	6,9	2	Tent sewing
%100	63	%100	29	Total

Source; The researcher based on the field study on 10-3-2022.



Picture 2. Textile and sewing industry in the study area
 Taken on 10-3-2022.



Source; The researcher Based on Table (3).

Table (3), Figure (2), and Map (2) indicate that all the facilities of this industrial branch are small in size. The first place is occupied by sewing clothes with (12) facilities and a percentage of (41.4%) and (25) workers with a percentage of (39.7%). This industry is located in the markets in order to benefit from the job attraction with the fabric stores. It fills the needs of the city's residents. It specializes in sewing all men's clothing, which includes trousers, dishdasha, pants, and jackets. Some of them specialize in selling women's aba. The second place is occupied by cotton ginning industries with (8) facilities at a percentage of (27.6%) and (18) workers at a percentage of (28.6%). The number of workers in each facility is (1-3). The third place is occupied by spinning industries with (7) facilities with a percentage of (24.1%) and (15) workers at a percentage of (23.8%). The fourth place is occupied by tent sewing industries with (2) facilities with a percentage of (6.9%) and (5) workers at a percentage of (7.9%).

Third; Wood Products and Furniture Industries

This industrial branch is limited to wood products. It includes pressed wood facilities, cutting and sawing wood, furniture manufacturing, furniture repair, and upholstery as mentioned in Table (1). All the industrial facilities in this industrial branch are small in size. The number of workers in each facility is (2-4). They are located within the industrial zone on the main streets. They are also distributed in residential neighborhoods on the streets. This industrial branch has an influence on the industrial function of the city for its performance in the production of doors and furniture, in addition to the role of carpentry laboratories with what they produce for the people of the city and its affiliated areas.

Fourth; Paper Industries

It is considered one of the important industries in the city. It includes paper products, carton industry, tissue paper, book printing, and binding. This type of industry takes central locations because it does not occupy large areas. It is also based on direct delivery between the factory owner and the buyer. This industry needs a meeting between the two parties to conclude the agreement. The number of facilities of this industrial branch is (15) at a percentage of (2.5%) and (30) workers at a percentage of (2.1%). All the facilities of this branch are small in size. These facilities are located in the city center opposite to Al-Qassim municipality and inside the markets on the main streets as shown in Map (3).

Fifth: Construction Industries

This industrial sector in the country is considered one of the sectors of an economic nature because of its direct influence on urban and economic movement, that is, it is considered one of the branches that have an influence on economic development because this branch of industry is closely linked to urban progress

and the increase in construction and building percentages. It includes block industries of all kinds. There is only block industry in Al-Qassim city.

Sixth; Metal Products Industries

It is one of the important industries in the study area, including the manufacture of metal products, plumbing, iron smelting, blacksmithing, metal furniture, manufacture and repair of machinery, equipment, cars, parts of cars, and the manufacture of false ornaments, apart from the manufacture of household utensils. It is one of the sectors that are characterized by dynamic productivity as shown in Table (3).

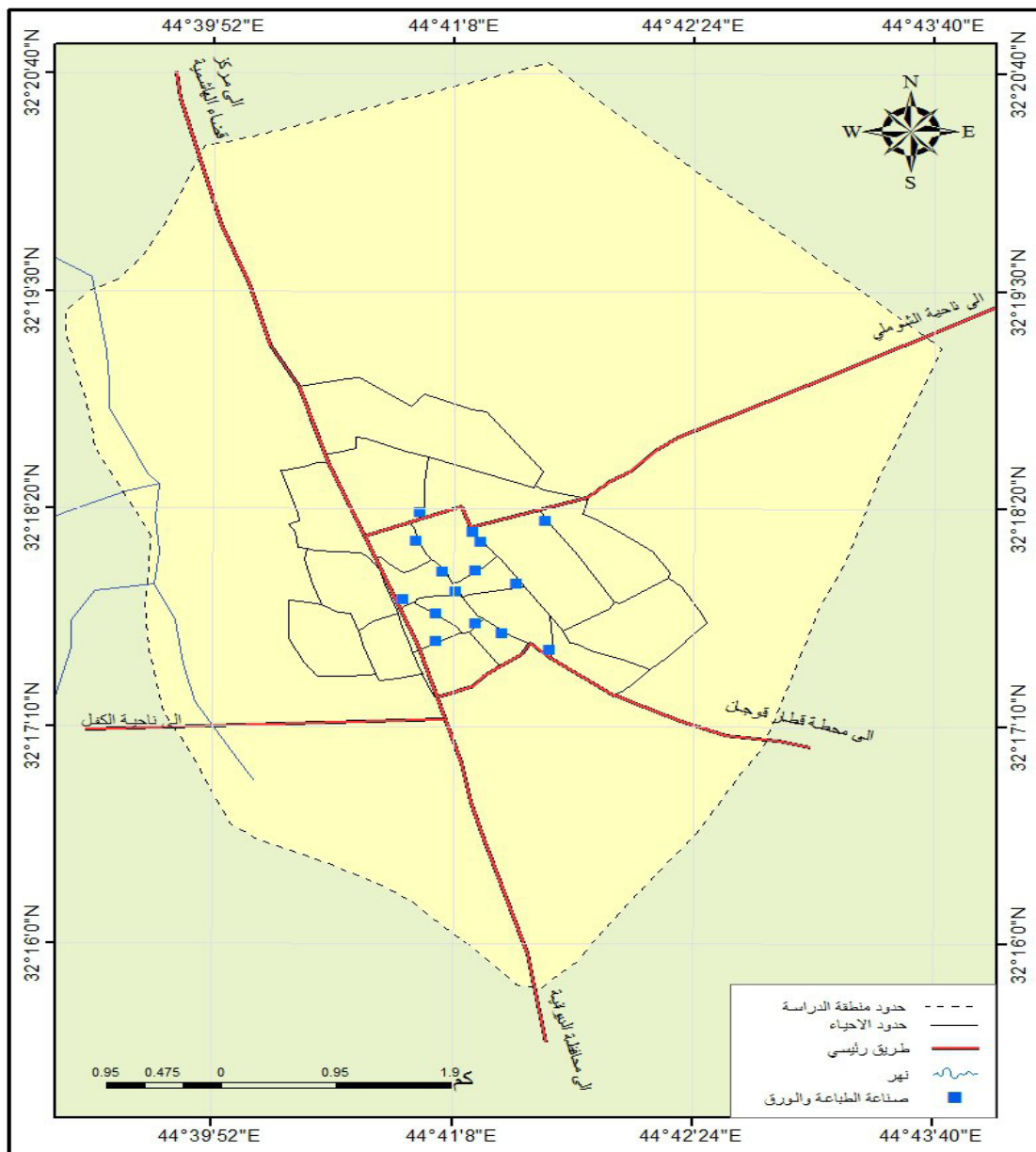


Table 3. Number of Facilities, Workers in the Metal Products Industry, and their Percentage in Al-Qassim City for 2021

%	Number of workers	%	Number of facilities	Industrial branch
32,1	80	34,0	50	False jewels industry
28,9	72	28,6	42	Plumbing
26,1	65	27,2	40	Blacksmith industries
12,9	32	10,20	15	Jewelry crafting industries
%100	249	%100	147	Total

Source; The researcher based on the field study on 25-3-2022.

Table (3), Figure (3), and Map (1) indicate that the first rank is occupied by false jewelry industry with (50) facilities with a percentage of (34.0%) and (80) workers at a percentage of (32.1%). The second place is occupied by plumbing industries with (42) facilities with a percentage of (28.6%) and (72) workers with a percentage of (28.9%). The third place is occupied by blacksmithing and metal furniture with (40) facilities and a percentage of (27.2%) and (65) workers at a percentage of (26.1%). Jewelry crafting industries occupy the fourth place with (15) facilities at a percentage of (10.20%) and (32) workers at a percentage of (12.9%).

Seventh: Industrial Services

It is one of the simple industries found in the study area as the population cannot carry out their work without it because in itself, it represents services provided to them. It is called the service industry, through which the citizen can be able to carry out his/her jobs and satisfy his/her daily consumption. It includes repair facilities Refrigerators, freezers, car seat recruitment, car denting, repair of precision devices and other services. They are among the industries that attract large numbers of manpower as shown in Table (4) and Map (2).

Table 4. Cars Manufacturing and Repairing Facilities in Al-Qassim City for 2021

%	Number of workers	%	Number of facilities	Industrial branch
51,8	250	44,3	70	Car repair
8,3	40	8,22	13	Car blacksmithing
3,10	15	4,3	7	Car plumping
1,9	9	1,89	3	Car Maintenance
1,65	8	3,79	6	Car electrician
3,10	15	5,1	8	Gear maintenance
5	24	5,1	8	Car washing and oiling
1,03	5	1,3	2	Engine oil replacement
3,10	15	3,2	5	Radiator maintenance
4,1	20	3,2	5	Car deconstruction
2,07	10	2,5	4	Car map shops

capita income, which is an increase in its regional relations, and the employment of surplus labor.

3. The present study showed that the increase in the number of workers and industrial facilities has a clear influence on the expansion and growth of the city, raising the standard of living, increasing the population's income and economic well-being.

4. Recommendations

1. A balance must be achieved in the industrial facilities according to the branches of industry and according to the places of their consumption and their proximity to the consumption centers, such as food, which requires its manufacture near the markets for its disposal.

2. Attention should be paid to the basic industries in Al-Qassim city, which helps to increase the economic income of the city, such as the construction, paper, food and consumer industries, and the mineral water industry.

3. Encouraging the establishment of industries that absorb unemployed labor and that do not need funds.

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