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Food Oils Manufacture Spatial Factors in Babylon Governorate

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Abstract

The food oil industry is represented by the extraction and refining of raw oil from plant origins such as sesame, sunflower, soybeans, cotton, field pistachios, etc., and other animal sources such as milk fat. This industry represents a branch of the food industries affiliated with the manufacturing industries that produce oil. Oil is known as a carbohydrate-rich foodstuff that, when consumed, gives great energy to humans. The number of establishments in Babylon governorate is (62) industrial establishments for food oils, but their production of food oils is concentrated in the Hashemite district of the study area due to the presence of large scale industries such as (Al-Ittihad Oil Refining Factory, Al-Rayyan Food Oil Extraction Factory), which has a production quantity of (1,168,000) tons of oil in 2022, while the number of workers in this industry is (1,854) workers, and 89.3% of them are concentrated in the Hashemite district due to the presence of large scale industries. Thus, the food oil industry has achieved great economic progress in terms of production and the number of workers is not at the level of Babylon governorate but covering the entire cities of Iraq.

Keywords: *spatial factors, food oil industry, Babylon Governorate.*

Introduction

Research problem:

What is the importance of the food oil industry to achieve economic development in Babylon Governorate?

Research Hypothesis:

The food oil industry has achieved great economic development in the province of Babylon by providing oil in sufficient quantities to meet the needs of the population and employing large numbers of labor in the study area.

Limits of the Study Area

The borders of the study are spatially represented by the borders of Babylon Governorate, which is located in central Iraq. It represents the northern region of the central Euphrates. It is bordered to the north by Baghdad Governorate and to the east by Wasit Governorate. To the south, it is bordered by the governorates of Qadisiyah and Najaf Ashraf, while to the west it is bordered by the governorates of Karbala and Anbar, as shown in Map (1)o. It is astronomically determined between the latitudes (737-, 838o)

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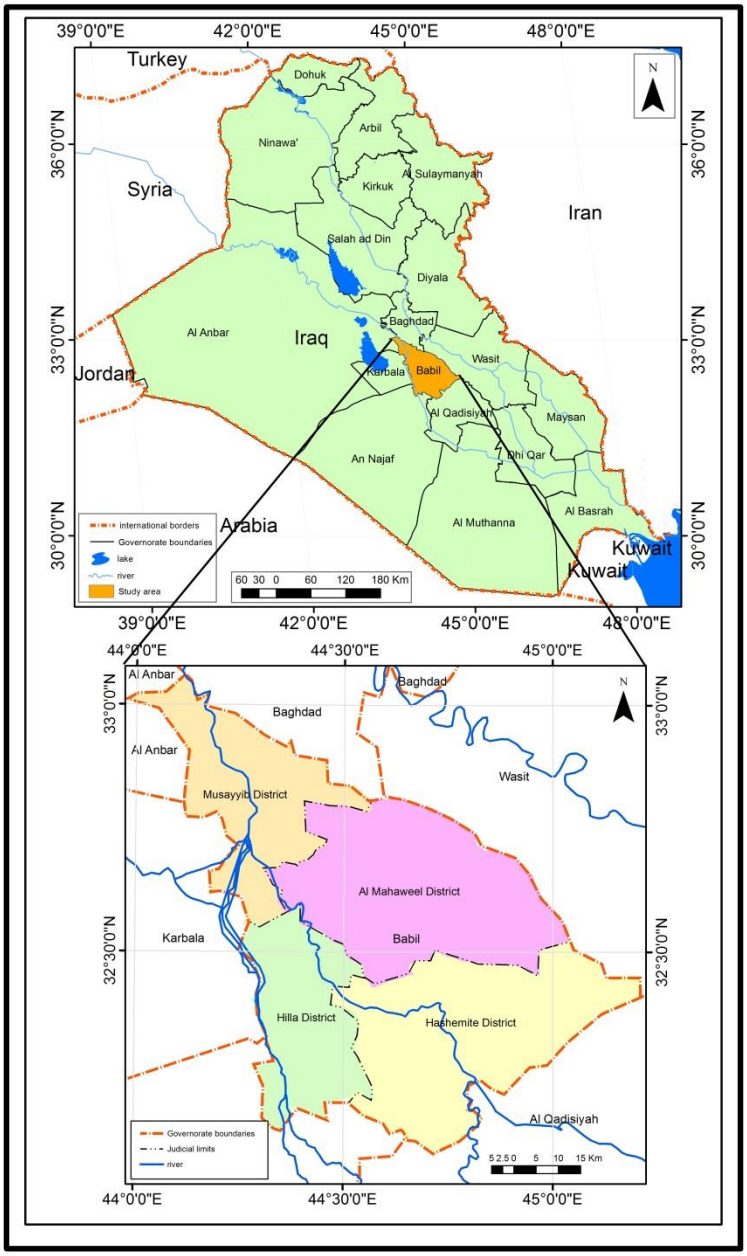
north and betweeno the longitudes (43,42-45,50o) east. With this extension, it occupies an area of (5,119) km ^{2}

Map (1) Location of Babylon Governorate from Iraq



Source: Ministry of Water Resources, Survey Authority, Iraq Administrative Map, 1000000 scale:1 , 2018.

Raw materials

The vegetable oil industry in Babylon Governorate depends mainly on raw materials extracted from the seeds of some oil industrial crops, including sunflower seeds, soybean seeds, palm oil and coconut oil. All these crops represent the basic inputs in the production processes of Al itihad oils, and they are not available locally enough for the food oil industry. Therefore, the departments of food oil factories have adopted to import them in the form of semi-finished liquid raw materials from other countries, including Argentina, the United States, Ukraine and Russia. As for palm oil and coconut oil, they are imported from Southeast Asian countries such as Indonesia and Malaysia, Table (1)

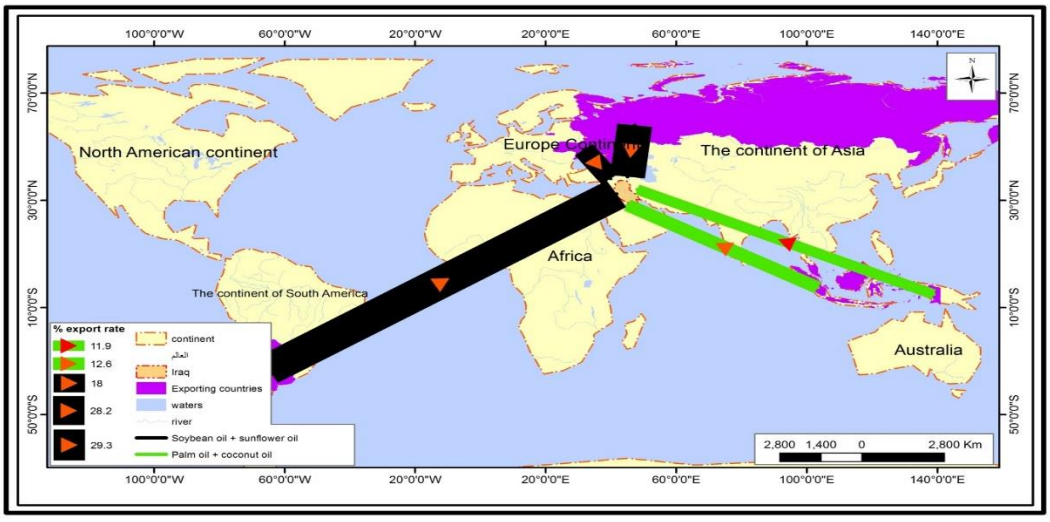
andMap (2) shows the import of raw materials. We conclude from the above that the localization of the food vegetable oil industry in Babylon Governorate is not affected by the raw materials factor due to the economic advantages of imported raw materials.

Table (1) Orientations in the import of raw materials for the manufacture of food oils in Babylon Governorate in 2022.

Source		Percentage %	Quantity of oils ton/ year	Raw materiel	Raw materiel	Country of Origin
Local	Imported					
0	100%	28 February	337,000	Semi-manufactured Liquid	Sunflower Oil + Soya Oil	Russia
0	100%	18	215, 000	Semi-manufactured Liquid	Soybean oil	Ukraine
0	100%	29 March	350,000	Semi-manufactured semi-rigid	Sun Flower Oil	Argentina
0	100%	12.6	15,000	Semi-manufactured semi-rigid	Coconut Oil + Palm Oil	Malaysia
0	100%	11.9	142,000	Semi-manufactured semi-rigid	Coconut Oil + Palm Oil	Indonesia
0	100%	100%	1,194,000			Total

Source: Al-Ittihad Factory, Production Department, unpublished data, 2022.

Map (2): Orientations in the import of raw materials for Al itihad Oil Refinery Factory in 2022.



Source: Calculated from table 1 data

Workforce

The food vegetable oil industry attracted a large workforce of (1,350) workers and constituted (72.8%) of the number of workers in the food oil industry in the province of Babylon, amounting to (1,854) workers , as it is considered one of the large establishments that contain multiple and diverse fields of work, so it required large numbers of workers at different levels and specialties, including experts, engineers, skilled people and administrators, including simple workers. The work element has contributed a large and influential role in the success and settlement of the food vegetable oil industry in Babylon Governorate, where large numbers are available to cover the needs of the oil industry from the necessary expertise and skills in production, see Table (2) .

Table (2) Employees in the manufacture of food oils for refining aunts in Babylon Governorate for the year 2022.

Percentage %	Number	Staff
0.5	7	Experts
4-8	65	Engineers
23.7	320	Technicians
3.7	50	laboratories.
63	850	Unskilled
4.3	58	Administrators
100%	1,350	Total

Source: Al itihad Oil Refining Establishment, Information Department, unpublished data, 2022.

It is clear from the observation of map (3) that Al itihad Oil Extraction and Refining Facility has contributed to achieving significant economic development at the level of Iraq in general and at the level of the province of Babylon in particular through the employment of manpower and reducing the severity of unemployment , as it attracted the unemployed and graduates from institutes and colleges and holders of various scientific specialties at the level of the Middle Euphrates governorates. Table (3) is seen.

Table (3) Work orientation in the food oil industry in Babylon Governorate for the year 2022 .

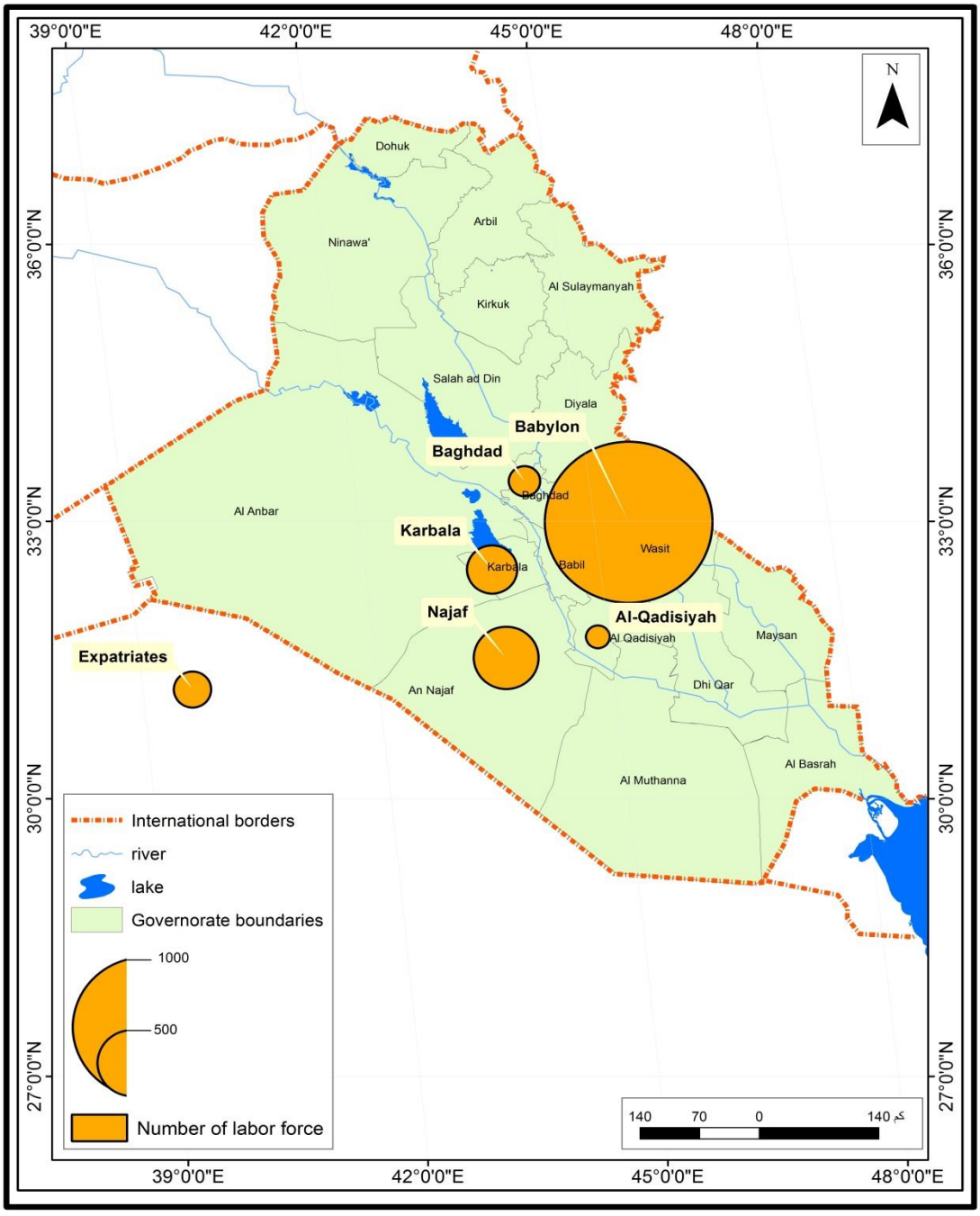
Percentage %	Number of Employees	Governorates
74.3	1,005	Babylon
11.1	150	Najaf Al Ashraf
6, 7	90	Karbala
2.7	35	Baghdad
1.5	20	Al-Qadisiyah
3.7	50	Expatriates
100%	1,350	Total

Source: Al itihad Oil Refining Establishment, Information Section, unpublished data, 2022.

It is observed from Table (3) that the Governorate of Babylon came in first place in the number of workers in Al itihad Oil Refining Factory of (1005) workers, and they

accounted for (74.3%) of the total work in this facility. This is due to the location of Al itihad facility within the administrative borders of the Governorate of Babylon in the Hashemite District, in addition to the proximity of the distance to the employees, which favors the employment of workers who inhabit the Governorate of Babylon. The Governorate of Najaf comes in second place at a rate of (11.1%) due to the availability of skilled and technical workers in this governorate , while the other ranks are occupied by each of the governorates of Karbala, Baghdad and Qadisiyah. There is also a percentage of (3.7%) of expatriate workers, all of whom are experienced and experienced in the field of food industries.

Map (3) Attitudes to work at Al itihad Oil Refining Facility for the year 2022 .



Source: Table (3) data.

Market :

Economists define the market as a group of people associated with shops. The strength of the market depends on the rank of industrial progress, the population and their purchasing power. The market for Al itihad 's oils and fats products expands to include all governorates of Iraq in addition to exporting a specific percentage of the product abroad. The market element is the most prominent factor in the localization of the food vegetable oil industry in the province of Babylon. The market is the basic idea in the establishment of Al itihad 's project to refine vegetable oils to ensure the discharge of its products as it is not limited to the province of Babylon only, but it expands to all governorates of Iraq and there is a percentage of surplus that is exported. Through the map, the market for Al itihad 's food oils and fats can be divided into four sections:

1- The government contract, which is represented by the contract between the Iraqi Ministry of Commerce with the management of Al itihad Oil Refining Factory in order to prepare the requirements of the ration card of edible oil for all governorates of Iraq. This section is marketed only (Aldar oil) product and represents the largest percentage of the local market for Al itihad products as the quantity marketed to the Ministry of Commerce (459,093) tons and accounted for (42.6%) of the market size in 2022 . See Table (4).

Table (4) Marketing the two products of the food oil industry in Babylon Governorate for government contracting in 2022.

Percentage %	Quantity of marketed tons / year	Governorates
9.5	43,704	Nineveh
4.1	18,816	Kirkuk
4	18,396	Salah Al-Din
4.3	19,932	Diyala.
4.6	20,904	Anbar
21 Jan.	97,116	Baghdad
5.3	24,516	Babylon
3.4	15,756	Karbala
4	18,567	Najaf Al Ashraf
3.3	15,066	Al-Qadisiyah
2,3	10,536	Muthanna
3.6	16,512	Wasit
5,7	25,848	Dhi Qar
3.2	14,736	Maysan
8,4	37,884	Basra
3.6	16,632	Duhok
4.7	21,492	Erbil
4.9	22,680	Sulaymaniya
100%	459,093	Total

Source: Al itihad Oil Refinery Factory, Quality Control, Sales Department, unpublished data, 2022.

2- Local sale by contracting with agents, which depends on the size of the population centers in the centers of cities and regions in the governorates of Iraq. In this section of the market, the product is marketed of oils and fats (obesity) of all kinds. The quantity marketed to local agents amounted to (378,450) tons, which accounted for (34.1%) of the sales volume of Al itihad 's products in 2022. 3 Direct sales to consumers and factory owners, especially food industries such as the pastry and confectionery industry, the concentrated animal food industry and restaurant owners. In this section, oils and fats are marketed. The amount of sales in this section amounted to (224,542) tons, or (18.6%) of the market size.

4- The external market represented by the export of some of Al itihad 's products (oils and fats) through some neighboring countries. The amount of export in 2022 amounted to (105,915) tons, and a percentage of (4.7%) of the sales volume was formed. Table (5) on the division of the fields of disposal of industrial products of oils and fats for Al itihad Oil Refining Factory.

Table 5. Market orientation of food oils and fats products in Babylon Governorate in 2022.

Percentage %	Marketed Quantities Ton / Year	Discharge Market Orientation
42,6	459,093	Comey Contracting (Ministry of Commerce)
34,1	378,450	Local sale by agents system
18.6	224,542	Direct Store Delivery (DSD)
4.7	105,915	Exportation
100%	1,168,000	Total

Source: Etihad Oil Refinery, Quality Control, Sales Department, unpublished data for 2022.

Transportation:

The transport worker plays a major role in the localization of industries and through which we obtain the necessary raw materials and energy sources with economic advantages on the one hand and on the other hand plays a role in facilitating the marketing of the industrial product of those industrial projects to its consumption areas. With the technical progress of industries and the increase in production quantities and the need of the market, whether regional or international, the availability and efficiency of transport networks has become necessary for the disposal of industrial products. The tendency of industries has also become clear to concentrate in areas where good transport advantages are available, so it is imperative that The industrial site has economic transport advantages that contribute to reducing production costs and increasing VAT. This factor has contributed to the establishment and settlement of the food oil industry represented by Al itihad Factory in Babylon Governorate, which was established on the highway linking western Iraq with Jordan towards the capital Baghdad heading south to Basra, penetrating the governorates of Babylon , Qadisiyah, Muthanna and Dhi Qar. This road represents the link between the industrial project in Babylon Governorate and the port of Umm Qasr in Basra to transport raw materials (crude oil) imported from European, Asian and American countries by a fleet of pelvic cars. The oil refinery factory has (200) basin cars, and through the map (), which shows the location of Al itihad factory in the center of Iraq and on the highway, it has made it use the main roads connecting the governorates of Iraq to market industrial products of food oils and fats,

which are transported by trucks belonging to the Iraqi Ministry of Commerce. Other transport companies have also been contracted in addition to Al itihad Land Transport Fleet.

Industrial links:

It means the mutual interest between different factories and is based on the nature of raw materials or products or both , and that the diversity of industrial links and their strength generates a sense of security for the interconnected industrial group [3] , and industrial links are the main engine for industrial products and thus affect decisions related to the selection and determination of appropriate sites for those industries[4] , so this factor has become one of the important factors that contribute to the localization and concentration of industries of all kinds because of the mutual interest s and effects of industrial attraction [5] , for example, the localization of the plastic and glass cans industry near the manufacture of soft drinks, juices and oils , so Al itihad Oil Refining Facility has various industrial links with other industries and the most important of those links are :

A- Forward Links:

Al-Ittihad Oil Refining Factory is associated with the vegetable oil preparation and extraction factories that we mentioned earlier. These factories grind and crush oil seeds and extract oil from shells, proteins and starches in the form of a dense liquid material that is unfit for human consumption called (crude oil), which is a semi-manufactured material that represents the primary and main material in Al-Ittihad Vegetable Oil Refining Factory. In early 2020, Al-Rayyan Factory (for extraction and preparation), which was established near Al-Ittihad Oil Refining to produce crude oil extracted from soy seeds and yellow corn, was attracted. Al-Rayyan Factory contributed to saving (30%) of the amount of crude oils required by Al-Ittihad Refining Factory, after it was (100%) dependent on crude oils imported from the factories of Ukraine, Russia and Argentina , while the percentage of crude oils currently imported is (70%) of the amount of the main raw materials, which are sunflower oil and coconut oil.

B Backlinks :

It means when industries produce commodities that represent a raw material for other industries concentrated near them , as Al itihad Vegetable Oil Refining Facility has attracted the concentrated feed industry (Al-Rayyan Animal Food Company), which uses vegetable oils as a raw material in addition to the extraction waste of soy seeds and yellow corn in the concentrated feed industry, and the waste of oil refining (kimz)* in the manufacture of window paste and soap industry.

C-side links:

Al itihad Oil Refining Establishment has existing necessary industrial links with the sheet metal industry and the manufacture of plastic cans, bags and cardboard (cartons) that are used for the purposes of packaging and preserving industrial products of food oils and fats.

([3])Abdul Zahra Ali Al-Janabi , Firas Nazim Ahmed, Industrial Integration: Its Benefits and Applications , previous source, p. 130.

([4])Zainab Mahmoud Abdel Khader Al-Aboudi , Geographical Analysis of Mineral Industries in Basra Governorate, Master Thesis , n.a., Faculty of Arts, University of Basra , 2022 , p . 84 .

[5]Hoover, the location of economic Activity , Mccraw Hill Book co., New york, 1948 , p 40

Service links:

Al-Ittihad Oil Refining Factory is located within the industrial complex, which consists of a group of factories affiliated with Al-Ittihad Food Industries Limited. Among these factories are the sugar factory, the oil preparation and extraction factory, the fodder factory, the carrot factories, the meat conservation, the mineral water industry and the production of electrical energy in addition to the oil refining factory. These factories have produced large joint services, including administrative and security services, electrical energy services, and the provision of water suitable for industrial and human use, as well as services for exchanging experiences for workers between those factories, maintenance and repair workshop services, internal transport, housing, restaurants, and others .

The second topic: Economic efficiency of the food vegetable oil industry in Babylon Governorate for the years (2017 , 2019 , 2022) :

First: The value of production :

It is useful in knowing and determining the economic mutual interest between the quantity and value of production and the productive users that contribute to its production, which includes many elements and inputs such as the value of raw materials, the value of transport costs, taxes, workers' wages, maintenance, energy costs, etc., and is expressed in the amount of production / ton or the value of production/ dinar. The amount of production of food vegetable oils amounted to (438,000) tons in 2017 , or the value of production amounted to (569,400) milliyar. In 2001, the amount of production increased by opening another production line due to the expansion of the local market. Commercial contracts were concluded with the Ministry of Commerce to fill the ration card requirements of the oil material, as the amount of production amounted to (949,000) tons, with a production value of (1,133,70) trillion. In 2022, a field was opened to export the surplus of production of food vegetable oils and a limited percentage of (4.7) of the total production of Al itihad factory, so the quantities of production increased significantly, reaching (1,168,000) tons, its value amounted to (2,452,800) million (Table 6) .

Table (6): Quantity and value of production for the food oil industry in Babylon Governorate for the years (2017 , 2019 , 2022).

PRODUCTION VALUE	Production size / ton	Year(s)
569,400billion	438,000	2017
Trillion 1,233,700	949,000	2019
2,452,800, Trillion	1,168,000	2022

Source: Etihad Oil Refinery, Quality Control, Sales Department, unpublished data, 2022.

Second: Efficiency of Employees :

It means the productivity of the worker for the total production, which reflects the extent of his experience and efficiency at work , and is extracted by dividing (the quantity of production /the number of workers) , and the amount of productivity of the worker in 2017 reached (1,055) tons per worker and in 2019 it reached (1,573) tons, while in 2022 it reached (865) tons , and the value of productivity of the worker in 2017 reached (1,055) billion, and in 2019 it reached (1,372) billion, while in 2022 it reached (1,816) billion per worker, as shown in Table (7).

Table (7) Production efficiency of workers in the food oil industry in Babylon Governorate for the years (2017, 2019 , 2022)

Productivity of the worker / dinar	Worker productivity/ ton	Number of Employees	Year(s)
1,371,500,000	1,055	415	2017

1,536,363,360	1,573	603.00	2019
1,816,500,000	865	1,350	2022

Source: From the work of the researcher relying on Al-Ittihad Factory, Information Department.

Third: Efficiency of raw materials:

The economic efficiency of raw materials depends on their quality and quality and on the technology used in their conversion into final goods. The raw material for the obesity industry (palm oil) enters at three levels and according to its degree of purity. The first grade of these materials is used in the manufacture of margarine (industrial butter) and the second level is used in the manufacture of obesity. The third level enters the oil industry. As for the quality of raw materials, raw oils extracted from soy seeds may be more pure and healthier for humans than oils extracted from sunflower seeds, as the latter contain a high percentage of candles, but they are more exhilarating, which is preferable to the use of sunflower oils. Their efficiency in general for 2017 reached 93.8%, meaning that each 100 tons of crude oil produces 93.8 tons of refined oil, while in 2019 it reached 97.3%, while in 2022 it reached 97.8%. See table (8) .

Table (8) Economic efficiency of raw materials for the manufacture of food oils in Babylon Governorate for the years (2017 , 2019 , 2022)

Lost Percentage	Efficiency of raw materials/ %	Quantity produced / ton	Amount of raw materials consumed / ton	Year(s)
7,2	93.8%	438,000	467,000	2017
2.7	97,3%	949,000	975,000	2019
2.2	97.8%	1,168,000	1.194,000	2022

Source: Al itihad Oil Refining Plant, Production Department, unpublished data, 2022.

It is clear from the observation of Table (8) that the production efficiency of raw materials indicates an increase during the period from (2017-2022), where it increased by (4%), which explains the development of experiences and skills provided by workers in the processing of raw materials during the stages of production .

Fourth: Capital Efficiency:

It means the economic or productive efficiency of the capital invested in the production processes of food vegetable oils. The efficiency of the capital is extracted by dividing (the value of production /the value of production inputs), including wages, the value of raw materials, energy sources, taxes, maintenance, etc. In 2017, it amounted to (3.9) dinars, while in 2019 it amounted to (3.7) dinars. In 2022, it reached (2.6) dinars. The efficiency of the invested dinar for the amount of production was extracted by dividing (the quantity of production /the value of production inputs) in 2017 (3 / g) and in 2019 (3 /g), while in 2022 it reached (2.2 g). It is noted through Table (9) that the productive value of the dinar for the year 2022 has decreased due to the high value of production inputs from raw materials, energy sources, wages, maintenance and taxes.

Table (9) Economic efficiency of capital invested in the food oil industry in Babylon Governorate for the years (2017, 2019, 2022)

Capital Efficiency/IQD	Capital Efficiency /IQD	Year(s)
3	3, 9	2017

3	3.7	2019
2.2	2.6	2022

Source: From the researcher's work based on : Al-Ittihad Factory, Accounts Department, unpublished data for 2022.

Fifth: Energy Efficiency:

Al-Ittihad facility consumes large quantities of diesel fuel to generate steam, which is used in production processes. It also uses electric current in the operation of machines and equipment. Fuel productivity in 2017 reached (81 kg / liter) and in 2019 (89 kg/ liter), while in 2022 it reached (108 kg / liter). As for electrical energy productivity, Table (10) may indicate a decrease in the productivity of one ampere for 2017, which amounted to (45 kg / ampere), which is low. This is due to the reliance on one production line and the lack of expertise to address problems during production processes. In 2019, it rose to (72.5 kg / ampere) , and in 2022 it reached (89.2 kg / ampere) due to the training of workers to lead the production system and their ability to face problems in raw materials while going through production processes in addition to the operation of another production line.

Table 10 Economic efficiency of energy used in the manufacture of food oils in Babylon Governorate for the years (2017,2019, 2022).

Electricity Production Efficiency Kg / Amp	Electrical Power Consumption/ Amp	Fuel production efficiency kg / l	Fuel consumption (diesel) / liter	Year(s)
45 kg	9,818,172	81 kg	5,400,000	2017
72,5 kg	13.090,896	89 kg	10,800,000	2019
89,2 kg	13,090,896	108kg	10,800,000	2022

Source: From the researcher's work based on : 2- Al-Ittihad Factory, Maintenance Department, unpublished data in 2022.

Sixth: VAT:

Achieving good VAT is the main objective that various industries seek to achieve, and it means the difference between the value of the final production in the industry and the cost of the materials used in its adoption. The VAT of Al-Ittihad factory in 2017 reached (422,725,300,000) dinars, and in 2019 it reached (804,351,100,000) dinars , while in 2022 it reached (1,493,079,500,000) dinars, table (11) shows.

Table (11): VAT, degree of manufacture and percentage change for the years (2017,2019, 2022).

VAT /IQD	**Production requirements**	Total Production Value/IQD	Year(s)
423,051,300,000	146,348,700,000	569,400,000,000	2017
904,351,100,000	329,348,900,000	1,233,700,000,000	2019
1,502,079,400,000	950,720,962,000	2,452,800,000,000	2022

Source: From the work of the researcher based on the data of Table (6) , and the following equations 1- VAT = (revenues - supplies) .

Seventh: Manufacturing Grade:

It is the percentage of the contribution of the total value of the production requirement compared to the total value of production and by noting Table (12) .

Table 12 Indicators regarding the change in the number of migrants with tertiary education in countries of the Organization for Economic Cooperation and Development: 1990-2000

Represents the degree of manufacture and percentage change of the food oil industry in Babylon Governorate for the years (2017, 2019, 2022).

variations ratio	Industry Grade	Year(s)
–	25/08	2017
116.7	26,7	2019
98.8	38.8	2022

Source: From the researcher's work based on the following equations:1- Manufacturing grade = (value of supplies / value of production) * 100. 2- Percentage change= (current year value/previous year value) - 1 *100.

Second: The Historical Development of the Food Oil Industry in Iraq:

Since prehistoric times, the ancient Iraqis knew many types of animal fats (animal margarine) and vegetable oils such as sesame oil, castor oil, etc. They often soaked the seeds in water and then pressed and squeezed them to extract their oil. The ancient Iraqi scribes left us many types of oils in addition to the multiplicity of animal fats, including kidney fat, sheep's eye fat, bird fat, deer bone fat, ox fat, and fish. However, it seems that vegetable oil is used alongside animal fats. As for wax, they used to extract it from tree leaves. They use it to make models to be poured with metals as they knew beeswax[(6)] , and in Islamic times, the cultivation of olives and sesame and the extraction of oil from them for the purposes of eating, medicine and lighting was active in Iraq, especially after Baghdad became the capital and center of the Islamic State [(7)] , and a primitive industry was established in Iraq to extract oil from the fruits of olives and oats (green bean) and use it in the manufacture of soap. It was widely produced in northern Iraq and was known as soap (sophistication) and green bean soap. In the center and south, sesame oil was used to make it , including the national laboratory in Adhamiyah, which was managed by a European engineer and included two parts A special section for squeezing oils and the other for the production of soap. In the early 1930s, many oil squeezing factories were established in Mosul, Baghdad and Basra, using the steam method to extract oil to meet the need of soap factories. These oils were not used for food or dyes until after the Second World War, when a modern oilseed squeezing factory was established in 1942. This led to the economic use of cotton and sesame seeds instead of using them as animal feed [(8)].

The food oil industry in Iraq has gone through several stages, the most significant of which are:

([6])Sabah Mustafian Kaji,Industry in the History of the Rafidain Valley, Al-Adeeb Press, Baghdad, 2002, p. 74.
([7])Abdul Zahra Ali Al-Janabi, Food Oil Industry in Iraq, previous source, p. 43.
([8])Sabah Kaja Ji, Industrial Planning in Iraq, its Methods, Applications and Mechanisms, First Edition, 1980 , pp.64-65.

Stage 1:

It is an attempt to extract vegetable oils in a modern way in Iraq. It was in 1940AD by a company to extract vegetable oils using a hydraulic squeezer operating in the method of batch process. This was followed by the introduction of sorters in which the oil was produced in the continuous process and then the entry of the hydrogenation process in the manufacture of vegetable oils. This process played a major role in the expansion of vegetable oil consumption compared to animal ghee, which was once the fat, common and preferred material [(9)].

Stage 2:

It represents the actual beginning of the emergence of a modern food vegetable oil industry after the enactment of Law No. (12) on the establishment of the Industrial Bank in 1940. However, this law did not enter into force until after 1945 with a balance of half a million Iraqi dinars and then its balance became (10) million dinars in 1961. The Industrial Bank contributed (20.2) of its funds to the establishment of the Vegetable Oil Extraction Company Limited in Baghdad after merging with it several private companies such as the Cotton Seed Products Company, which was established in 1953 and joined by the Rafidain Company for the production of detergents in 1967 and the Industrial Printing Company in 1969, which was nationalized by Law No. (74) of 1964 and became known as the General Company for Vegetable Oils in 1969[(10)]. The General Company for Vegetable Oils includes five factories, three of which are located in Baghdad and the fourth in Maysan and the fifth in Salah al-Din Governorate, producing hydrogenated oil, liquid vegetable oil, washing soapon of all kinds and cleaning and cosmetic materials [(11)]. Some of these factories are:

1- Al-Rasheed Factory: This factory was established in Baghdad in 1941AD and was the first modern factory established in Iraq to produce vegetable oils by a number of shareholders with a capital of (30) thousand Iraqi dinars and with the contribution of the Industrial Bank by (20%). As for its production capacity of (2) tons for one work meal and with signs of girl's oil, olive oil and coconut oil. In 1949AD, it began producing hydrogenated oils (butter) by (6) tons per day. In 1955AD, it began to establish Al-Rafidain Company to produce washing powders by (60%) of its capital and(50%) for the Industrial Printing Company, which was established in 1963AD. The three companies became under one management (the General Company for Vegetable Oils) in 1969, where Al-Rasheed production reached half of Iraq's production of liquid oils [(12)] .

2- Al-Ma 'moun Factory: It was established in 1952 under the name (Cotton Seeds Products Company) with a capital of (120) thousand dinars by a number of shareholders. The company began production in 1953 for liquid food oils with a card of (15) thousand tons / day. In 1964, the company was nationalized and became one of the public sector companies. Then, equipment was installed to filter oils by the physical method with a capacity of (50) tons / day in 1965.

3 Al-Mu 'tasim Factory: It was established in Maysan Governorate in 1973 with a production capacity of (50) tons / day to filter solid oils with the label of the sponsor , and

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([9])Abdul Khalil Fadil , Ahmed Habib Rasul , Iraq's Industrial Geography , University of Baghdad , 1984 , p. 178.

([10]) Ibrahim Ali Abdul Wahid , The Importance and Development of Large Food Industries in Iraq , Journal of Geographical Research, No. 30 , Volume 2 , 2019 , p . 31 .

([11])Abdul Khalil Al-Fadhli, Geographical Distribution of Industries in Iraq , Al-Irshad Press, Baghdad , 1976 , p. 178.

([12])Samira Kazem Al-Shamaa , Industrial Zones in Iraq , Dar Al-Rashid for Printing and Publishing, Baghdad , 1980, p . 101 .

then it was expanded in 1980 with the same amount of production capacity, followed by the production of detergents and toilet[13] soap in 1981.

4- Baiji Factory: After the extraction lines in Al-Rasheed Factory were about to disappear, it was necessary to establish a factory with a large production capacity for crude liquid oils produced from local plant sources. It was established in 1976 and began production in 1978 with a capacity of (112) thousand tons of seeds per year. It continued to work during the period from 1978 to 1982, after which it stopped working for five years from 1983 to 1987, and then resumed operation[14] in 1988 .

Third stage:

When Iraq was subjected in the nineties of the last century to the comprehensive blockade imposed by the United States and its effects, most industrial activities stopped working due to the prohibition of importing economic goods from abroad, which led to the disappearance of factories, including food vegetable oil factories in Iraq. After 2003, Iraq's consumption of vegetable food oils was completely based on importation. However, in 2017, Al itihad Oil Refining Factory of Al itihad Food Industries Limited was established in Babylon Governorate by the private sector to produce liquid and semi-arid vegetable oils to meet the country's need for edible oil based on imported raw materials that can be described as semi-manufactured. The factory began production with a production capacity (600 tons / day) as a rudimentary work in 2017 and then another production line was operated until it became stable with a production capacity of (1600 tons / day). Its annual production exceeds one million tons. Thus, Al itihad Factory is one of the national industries that contributed to meeting the needs of Iraq's local market of edible oil.

Conclusion:

1. Edible oil is one of the basic foodstuffs indispensable to humans because it contains a high nutritional value represented in carbohydrates and vitamins that provide the body with energy and calories, so it is used on a daily basis in cooking processes and in the manufacture of various sweets.

2. Nutritional oils and fats are produced and manufactured from sources such as sesame, sunflower, soy, cotton, coconut, palm oil, olives, etc. They are also extracted from animal sources such as milk fat and fat stored in the bodies of some animals.

3. The food oil industry in Babylon Governorate contributed to achieving significant economic development by providing a basic foodstuff, edible oil, to meet the needs of the population. It also contributed to the employment of large numbers of workers, as the number of workers in Babylon Governorate reached 1854 workers.

4. Babylon Governorate has 62 industrial facilities for food oils, including only two large scale facilities (Al-Ittihad Oil Refining Facility and Al-Rayyan Oil Extraction Facility), which are concentrated in Al-Hashemiyah District.

5. Hashemite District ranked first in economic indicators and second is the value of production, production requirements and VAT.

(13)Abdul Zahra Ali Al-Janabi , Food Oil Industry in Iraq , previous source, pp. 123-145 .

(14)Ahmed Habib Rasoul , Studies in Iraq's Industrial Geography, Al-Ani Press, Baghdad , 1975 , p. 194.

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3) Abdul Zahra Ali Al-Janabi, Food Oil Industry in Iraq, previous source, p. 43.

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8) Hoover, the location of economic Activity , Mccraw Hill Book co., New york, 1948 , p 40

9) Samira Kazem Al-Shamaa , Industrial Zones in Iraq , Dar Al-Rashid for Printing and Publishing, Baghdad , 1980, p . 101 .

10) Sabah Mustafian Kajji,Industry in the History of the Rafidain Valley, Al-Adeeb Press, Baghdad, 2002, p. 74.

11) Sabah Kaja Ji, Industrial Planning in Iraq: Its Methods and Applications, First Edition, 1980 , pp.64-65.