

Sustainability in Industrial Development Requires Knowledge, the Size of the Spatial Development Indicators, the Number of Factories and the Number of Industrial Workers - Baghdad as a Case Study.

الاستدامة في التنمية الصناعية تتطلب معرفة حجم مؤشرات التنمية المكانية، عدد المصانع وعدد العاملين في الصناعة – بغداد دراسة حالة

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Abstract

Driving forces for the agglomeration growth are represented by the factors which affect the industrial agglomeration growth especially in major cities. Major cities are urban centers and densely populated radiate vitality and their economic activity are interlaced internally and externally. Metropolitan cities are extensive labor market with diverse skills, and this is one of the features that encourage industrial agglomeration in the urban environment. The industries which more agglomerated, often they are choosing to locate new plants near to the same industries which are agglomerated in the same place. The main aim of this paper is to investigate the spatial impact of sustainable development in the industrial sector, in Baghdad for the period from 2005 to 2014. This paper focused on the main factors that are driving and affecting of the industrial agglomeration growth. Therefore, it focuses on two main factors, employment, the number of factories, because of their importance and availability. To achieve broader analysis of industrial agglomeration growth under the impact of the main factors; so, this paper has used reliable methodical manner, actual growth evidence. The findings, Baghdad constitutes 0.1% out of Iraq area, and is considered the smallest province in terms of area in Iraq. Nevertheless, more than half of industrial activity in Iraq has been agglomerated and concentrated in Baghdad.

Keywords: sustainable development, spatial growth, sustainable agglomeration, industrial growth

المستخلص

القوى الدافعة لنمو التكتل مُمثلة بالعوامل التي تؤثر على نمو التكتل الصناعي خصوصاً في المدن الرئيسية. المدن الرئيسية هي مراكز حضرية ومأهولة بالسكان بشكل كثيف، وهذا ما يجعلها تشع حيوية ونشاط اقتصادي مُشابك داخلياً وخارجياً. المدن الحضرية سوق عمالة شامل بالمهارات المتنوعة، وهذه إحدى الميزات التي تشجع التكتل الصناعي في البيئة الحضرية. إنّ الصناعات التي أكثر تكتلاً، في أغلب الأحيان الصناعيون يختارون مكان المصانع الجديدة قريبة إلى نفس الصناعات التي متكثتة في نفس المكان. إنّ الهدف الرئيسي من هذه الورقة أن تتحرى التأثير المكاني للنمو المستمر في قطاع الصناعة في بغداد للفترة من 2005 إلى 2014. هذه الورقة ركزت على العوامل الرئيسية التي تؤثر على نمو التكتل الصناعي. لذا، ركزت على عاملين رئيسيين، عدد العاملين في الصناعة وعدد المصانع، بسبب أهميتهم وتوفرهم. لإنتاج تحليل أوسع من نمو التكتل الصناعي تحت تأثير العوامل الرئيسية؛ تم استعمال أسلوب منهجي موثوق، دليل النمو الفعلي. كما إنّ أهم النتائج سجلت أن بغداد تُشكل 0.1 % م مساحة العراق، وتعتبر المحافظة الأصغر من ناحية المساحة في العراق. على الرغم من ذلك فإنها احتلت أكثر من نصف النشاط الصناعي في العراق بمعنى أدق أنها مركز تكتل وتركز صناعي كبير. الكلمات المفتاحية: التنمية المستدامة، النمو المكاني، التكتل المستدام، النمو الصناعي

Introduction

Major cities have been characterized by population density. In other words, these cities have attracted the residents and activities generally and the industries particularly. Baghdad city considers one of these big cities, it have characterized by high density in population and activities. To achieve a sustainable spatial development. We need to diagnose spatial indicators, which are necessary and available like actual growth of factories and employment. .This paper intends to identify the main factors that are driving and affecting industrial agglomeration growth. This paper focuses on two main factors, employment, the number of factories, because of their importance and availability. The collected data is secondary data (industrial census) for period 2005 -2014 for seven industrial categories classified in Iraq- Planning Ministry. To achieve broader analysis of industrial agglomeration growth under impact of the main factors. Therefore, this paper has used reliable methodical manner, actual growth evidence, and has used a new set off indicators, set of leading indicators.

Industrial Agglomeration and Spatial Concentration

There are still high levels of industrial activity in big cities because there is main reason for this. This is because of the large inequality in the spatial distribution of the transport infrastructure linking urban areas [1]. Metropolitan cities have extensive labor market with diverse skills, and this is one of the features that encourage industrial agglomeration in the urban environment [2]. Hence, heterogeneity in general works as a centripetal force [3]. The long-term effects of the agglomeration economies, the negative influences from congestion outweigh the agglomeration economies [4]. Congestion or greater input competition in high-density areas could cause firms to locate in more rural areas [5] . Transportation and its infrastructures they are playing very important role to choose location[6] . The industry location is determined by regional agglomeration and also by infrastructures, moreover, a good network of roads between industries it considers the key

An industrial agglomeration can define as a spatial cooperative group, which it includes consumers, suppliers and supporting institutions like universities, private and public institutions. As the urban industrial agglomeration has advantages, there are also disadvantages, diseconomies such as wages, rents, the cost of congestion and pollution [7]. To locate sustainable industrial agglomerations, it depends on availability and quality of natural resources, quality of the infrastructures, and specific zones that are the most suitable to locate an industrial area [8]. Whilst, nowadays proximity to markets, communication, infrastructures and manpower availability are still the main factors of industrial location selection [9];[10];[11]; [12]. An application of concepts is the development of the sustainable industrial areas, which try to increase their economic efficiency and minimize their negative impacts [13]. The varied cities are more attractive than the specialist cities and the companies will benefit from their sites in the diversified cities which have high agglomeration in varied industries [14].

Spatial Concentration

Industrial concentration is not an independent economic and spatial phenomenon, but there is complementarity as a general phenomenon with the industrial agglomeration, often the concentration is the result of excessive growth in the urban industrial agglomeration [15]. In fact, if the economies of urbanization and localizations are working without excitation of compensating forces, the industrial agglomeration and concentration will tend to increase without stop [16]. Literature confirms that the spatial concentration is an advanced stage of agglomeration growth in selected areas. Specifically, the spatial concentration is the result of intensive growth of industrial activities in major cities; regardless of the result, excessive spatial agglomeration or regional specialization.

Most likely, in some regions by which impact of driving forces on industrial agglomeration growth appears spatial concentration, as an inevitable result of the increasing of the agglomeration growth, especially in capital cities and some regions in country. It is evident that the Chinese industry became more geographically concentrated in coastal cities, with preferential development policies [17]. As an example for spatial concentration in USA; is the rising concentration, specifically concentration of economic activities in the core or in the North US [18]. This explains the relationship of the urban size with the industrial concentration. Industry and urban size are as proxy indicators of localization and urbanization [19]. Capital cities distinguishing in the developing world, by vast majority of employment opportunities [20]. The majority of industries are concentrated in the capital cities and this cities consider the main engines of industrial agglomeration growth and economic growth [21].

Agglomeration economies consider the main reason behind the economic activities which generated industrial concentration in the capital cities [22]. The concentration or high level of concentration has been attributed to the operation of agglomeration advantages, notably localization economies. The spatial concentration of industries differ with the apportion of population and its distribution. The productivity growth, employment growth, and capital accumulation all stand to benefit from attention being paid to the degree of concentration in manufacturing industry [23]. Therefore, the same factors which affect the agglomeration growth affect also the spatial concentration. Hence, these factors contribute in increasing spatial concentration. The expecting result is a trend and size of concentration going to increase, i.e, up to increase the costs which named in agglomeration economies literature of diseconomies. In this stage begins the decline in the agglomeration earnings which has created the spatial concentration.

Specifically, emergence of spatial problems, pollution, congestion, noise, employment decline, strong competition for land use, increase their prices, overlap between land uses, residential and industrial, and a lot of other problems. Therefore, the major cities need to study and analyze the size and trend of concentration spatially and economically, so as to avoid a lot of problems such as diseconomies.

Table.1 Indicators of Actual Growth of Industrial Employment in Iraq and Baghdad for the period 2005-2014

Industrial categories	2005		2014		Actual Growth		Baghdad Ratio B / I
	Iraq	Baghdad	Iraq	Baghdad	Iraq: I I14-I05	Baghdad: B B14-B05	
Manufacture of food , drinks and tobacco	61687	34668	70593	39518	8906	4850	0.54
Manufacture of clothing, leather, yarn and fabric	53824	30740	73544	39868	19720	9128	0.46
Manufacture of paper and wood	28647	12592	43222	18924	14575	6332	0.43
Manufacture of Chemical and oil refining	34515	10974	33504	9217	-1011	-1757	1.73
Manufacture of Construction materials(Cement bricks, etc)	46155	22369	54920	18917	8765	-3452	- 0.39
Manufacture of metal products, machinery and equipment	175632	90145	239977	122690	64345	32545	0.50
Other manufactures	11845	5072	13920	5982	2075	910	0.43
Total	412305	206560	529680	255116	117375	48556	0.41

Data Source: Planning Ministry - Industrial Census

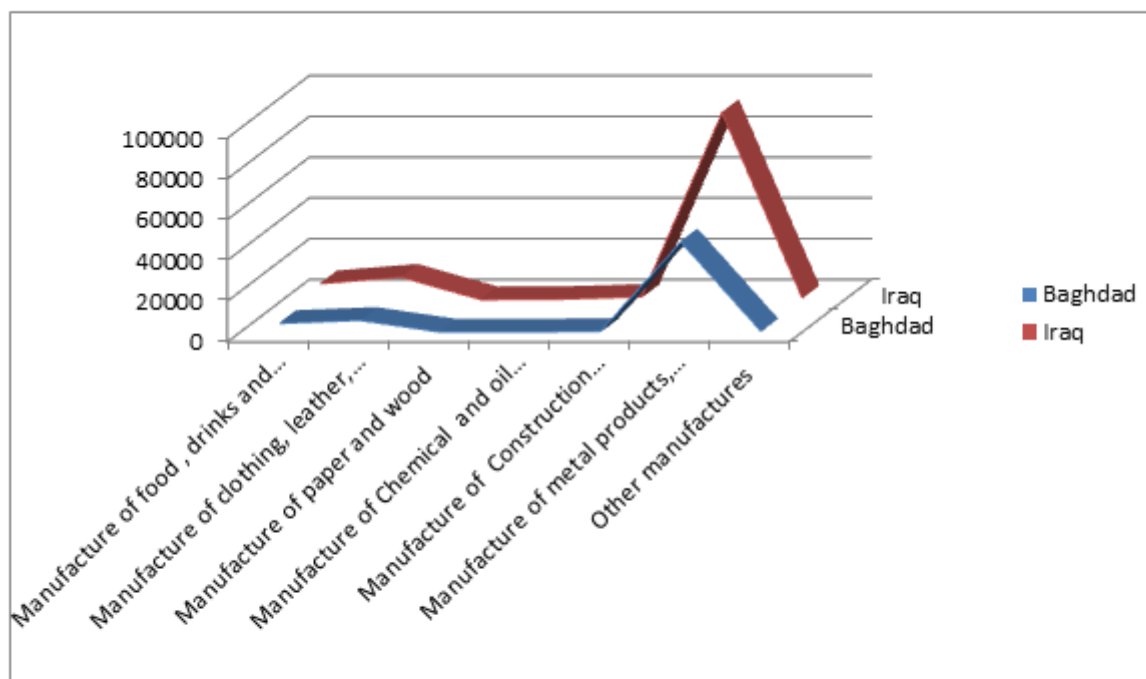


Figure 1. Industrial Employment in Iraq and Baghdad 2014

Table 2.Relative Importance Indicators of Industrial Agglomeration in Baghdad, Using Employment for the Period 2014

Industrial categories	Employment Industrial		Relative Importance B/I %	Rank	Relative Importance B/ \sum B %	Rank	\sum Ranks	Final Ranks
	Iraq I	Baghdad B						
Manufacture of food , drinks and tobacco	70593	39518	56	1	15.5	3	4	1
Manufacture of clothing, leather, yarn and fabric	73544	39868	54	2	15.63	2	4	1
Manufacture of paper and wood	43222	18924	43	4	7.42	4	8	2
Manufacture of Chemical and oil refining	33504	9217	27	7	3.61	6	13	5
Manufacture of Construction materials(Cement & bricks, etc)	54920	18917	34	6	7.41	5	11	3
Manufacture of metal products, machinery and equipment	239977	122690	51	3	48.09	1	4	1
Other manufactures	13920	5982	42	5	2.34	7	12	4
Total	529680	255116	48		100			

Data Source: Planning Ministry - Industrial Census

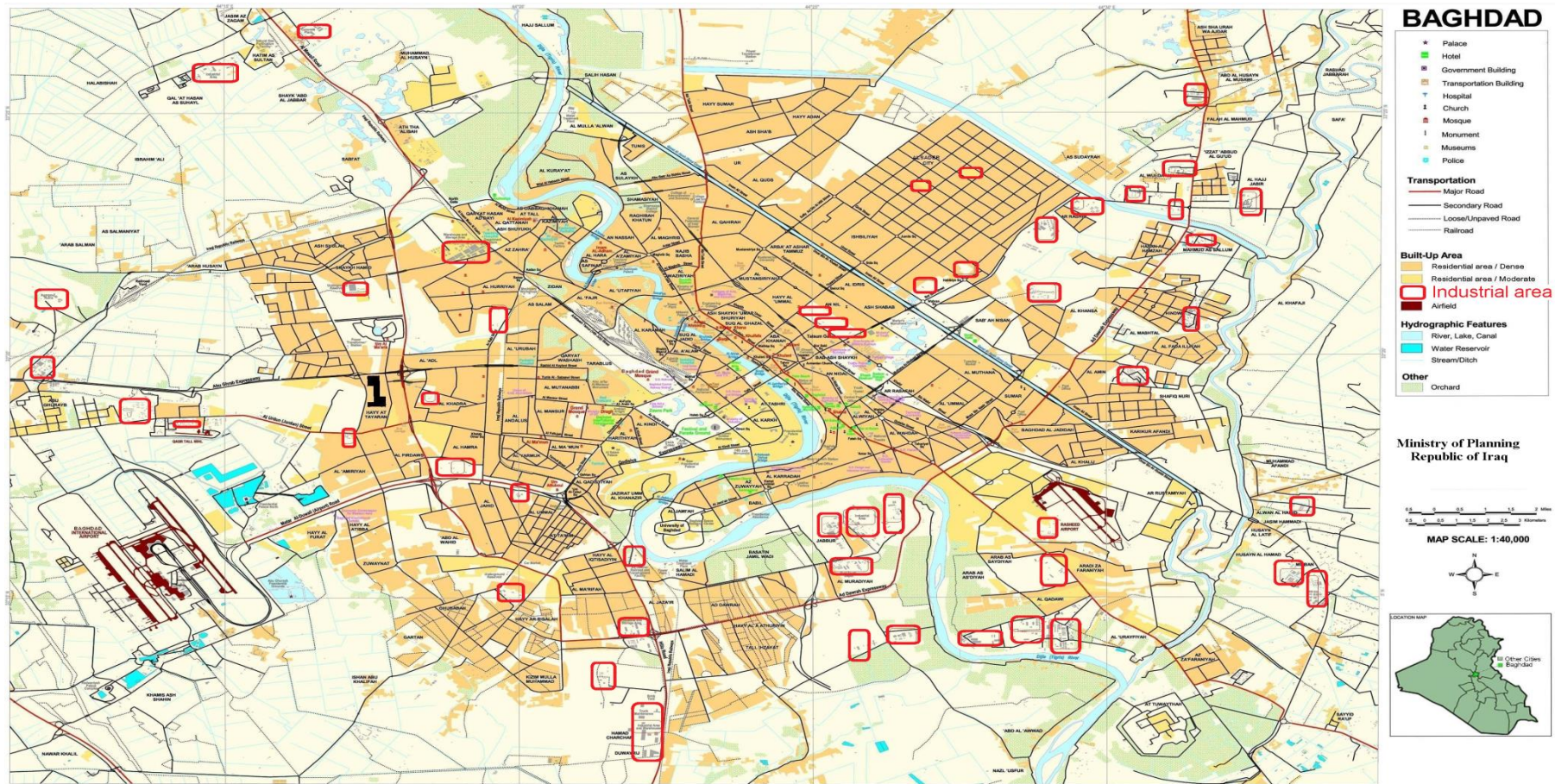


Figure 2.The Industrial Areas in Baghdad. Source: Iraq Data Base (2009)

**Actual Growth of Industrial Employment in Baghdad and Iraq
] for the Period 2005-2014**

This method is used widely in most countries of the world to assess the performance of the national plans [24]. This approach uses also in Iraqi planning ministry, to know an achievement degree of national plan and to measure government performance, by comparing the goals in the national plan with actual achievement for each ministry [25]. This paper utilizes this approach to get the actual change in employment and number of factories, during the study period. That is, will help to achieve the aims of the sustainable spatial development, and to avoid the problems of the undesirable spatial concentration.

Manufacture of metal products, machinery and equipment came in first grade. They have achieved an actual growth of 64345 jobs in Iraq. While in Baghdad, they accomplished 32545 jobs, Therefore, Baghdad constituted half of this growth, Baghdad ratio was 0.5. On this basis, the relative importance of this category compared to their counterparts in Iraq was 51%. While their relative importance in Baghdad, compared with a total industry in Baghdad was 48.09%. All these indicators have made this category with regard to final rank in the first rank.(see table 1, 2, and 5). Manufacture of clothing, leather, yarn and fabric came in second grade. The have achieved an actual growth of 19720 jobs in Iraq. While in Baghdad, they accomplished 9128 jobs, Therefore, Baghdad constituted 0.46 of this growth. On this basis, the relative importance of this category compared to their counterparts in Iraq was 54%. While their relative importance in Baghdad, compared with a total industry in Baghdad was 15.63%. All these indicators have made this category with regard to final rank in the first rank also.

Manufacture of food , drinks and tobacco came in third grade. have achieved an actual growth of 8906 jobs in Iraq. While in Baghdad, they completed 4850 jobs, Therefore, Baghdad constituted 0.54 of this growth, Baghdad ratio was 0.54. On this basis, the relative importance of this category compared to their counterparts in Iraq was 56%. While their relative importance in Baghdad, compared with a total industry in Baghdad was 15.5%. All these indicators have made this category with regard to final rank in the first rank. This is a significant indicator to agglomerate this industrial categories in urban environment. There are spatial and economic considerations behind the high rate of agglomeration in Iraq generally and Baghdad particularly. In addition to the availability of skillful workers in Baghdad, all these reasons behind of this growth in employment in these industries. Loach has pointed, that the large cities are combined similar and different industries, within the same agglomerations, which have taken different forms and that depending on the effects of market.

These types of industries are required different skills of industrial employment and these skills are available mainly in Baghdad. Metropolitan cities are extensive labor market with diverse skills, and this is one of the features that encourage industrial agglomeration in the urban environment [2]. These industries also need to a large market for their products and need to lower the costs of the transfer. Moreover, some food industries damage by storage for a long time, particularly, the fresh and frozen foods. Manufacture of paper and wood came in fourth grade. They have achieved an actual growth of 43222 jobs in Iraq. While in Baghdad, they accomplished 18924 jobs, Therefore, Baghdad constituted 0.43 of this growth. On this basis, the relative importance of this category compared to their counterparts in Iraq was 43%. While their relative importance in Baghdad, compared with a total industry in Baghdad was 7.42%. All these indicators have made this category with regard to final rank in the second rank.

Manufacture of Construction materials(Cement bricks) came in fifth grade. They have achieved an actual growth of 8765 jobs in Iraq. While in Baghdad, they accomplished a passive actual growth of -3452 jobs. Therefore, the retreat ratio in Baghdad constituted - 0.39 from this passive growth. All these indicators have made this category with regard to final rank in the third rank. Other manufactures came in sixth grade. They have achieved an actual growth of 2075 jobs in Iraq. While in Baghdad, they accomplished 910 jobs. Therefore, Baghdad constituted 0.43 of this growth. On this basis, the relative importance of this category compared to their counterparts in Iraq was 42%. While their relative importance in Baghdad, compared with a total industry in Baghdad was 7%. All these indicators have made this category with regard to final rank in the fourth rank.

Manufacture of Chemical and oil refining came in the seventh grade. They have achieved a passive actual growth of -1011 jobs in Iraq. While in Baghdad, they accomplished retreat -1757 jobs. Therefore, Baghdad constituted 1.73 of this passive growth. On this basis, the relative importance of this category compared to their counterparts in Iraq was 27%. While their relative importance in Baghdad, compared with a total industry in Baghdad was 3.61%. All these indicators have made this category with regard to final rank in the fifth rank.

All previous indicators will lead to very clear truth, it is diagnosed in spatial literature. The primate cities still remain as important capital cities in the developing countries and are fast growing despite many attempts to reduce their growth [26]. The problem is in the absence of an appropriate locational policy, excessive concentration in very large cities [27]. Diversity in the labor force and in the manufacturing sector will generate spatial industrial concentration [28]. Agglomeration economies consider the main reason behind the economic activities which generated industrial concentration in the capital cities [22]. Therefore, to achieve sustainable development we need to build an appropriate locational policy.

Table.3 Indicators Actual Growth of Factories Number in Iraq and Baghdad for the Period 2005-2014

Industrial categories	2005		2014		Actual Growth		Baghdad Ratio B / I
	Iraq	Baghdad	Iraq	Baghdad	Iraq: I	Baghdad: B	
Manufacture of food , drinks and tobacco	7403	3900	8664	4564	1261	664	0.52
Manufacture of clothing, leather, yarn and fabric	8498	4550	11875	6060	3377	1510	0.44
Manufacture of paper and wood	664	205	770	318	106	113	1.06
Manufacture of Chemical and oil refining	1544	312	1041	270	-503	- 42	0.08
Manufacture of Construction materials(Cement bricks, etc)	1821	827	2216	718	395	- 109	- 0.27
Manufacture of metal products, machinery and equipment	65572	31870	92542	44535	26970	12665	0.46
Other manufactures	1240	498	1491	606	251	108	0.43
Total	86742	42162	118599	57091	31857	14909	0.46

Data Source: Planning Ministry - Industrial Census

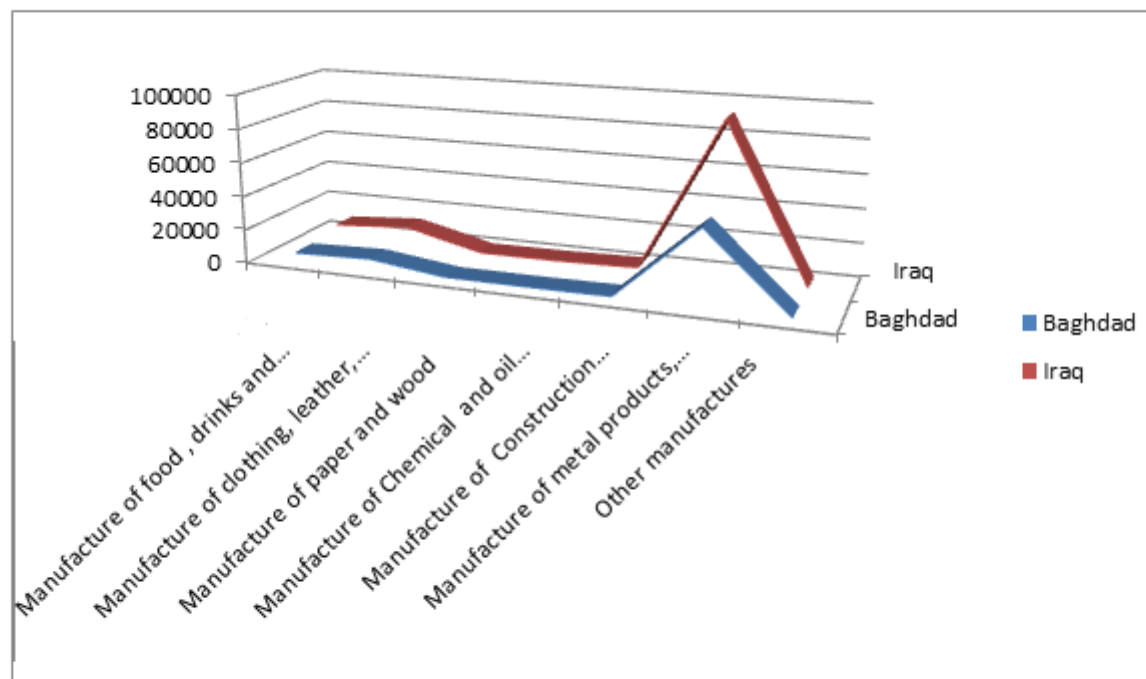


Figure 3. Factories Number in Iraq and Baghdad -2014

Table 4. Relative Importance Indicators of Industrial Agglomeration in Baghdad, Using Factories Number for the Period 2014

Industrial categories	Number of Factories		Relative Importance B/I %	Rank	Relative Importance B/ Σ B %	Rank	Σ Ranks	Final Ranks
	Iraq I	Baghdad B						
Manufacture of food , drinks and tobacco	8664	4564	52.67	1	8	3	4	1
Manufacture of clothing, leather, yarn and fabric	11875	6060	51.03	2	10.79	2	4	1
Manufacture of paper and wood	770	318	41.29	4	0.5	6	10	2
Manufacture of Chemical and oil refining	1041	270	25.93	7	0.46	7	14	3
Manufacture of Construction materials(Cement bricks, etc)	2216	718	32.4	6	1.25	4	10	2
Manufacture of metal products, machinery and equipment	92542	44535	48.12	3	78	1	4	1
Other manufactures	1491	606	40.64	5	1	5	10	2
Total	118599	57091	48.13		100			

Data Source: Planning Ministry - Industrial Census

Table 5. Aggregate Indicators – Final Ranks of the Industrial Agglomeration in Baghdad for the Period 2014

Industrial categories	Employment Final Ranks	Factories Final Ranks	Σ Ranks	Final Ranks
Manufacture of food , drinks and tobacco	1	1	2	1
Manufacture of clothing, leather, yarn and fabric	1	1	2	1
Manufacture of paper and wood	2	2	4	2
Manufacture of Chemical and oil refining	5	3	8	5
Manufacture of Construction materials(Cement bricks)	3	2	5	3
Manufacture of metal products, machinery and equipment	1	1	2	1
Other manufactures	4	2	6	4

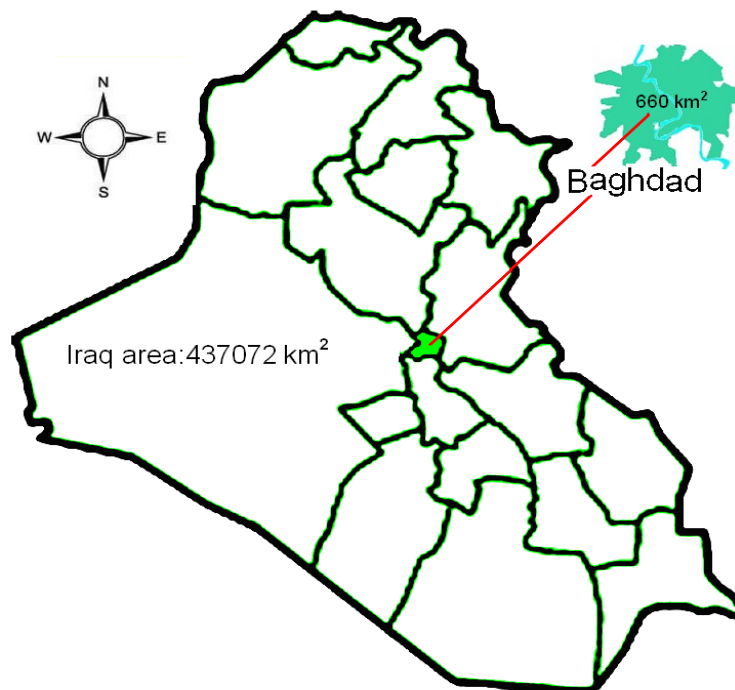


Figure 4. Map of Iraq
Source: Iraq Data Base

Actual Growth of Factories Number in Baghdad and Iraq 2005-2014

Employment index alone is not enough. We need to support the analysis through the knowing of factories number (the number and type of factories spatially). Because it may be a quantitative indicator often hides behind it an invisible qualitative indicator. In order to give the analysis a strong spatial dimension clearly and visible. Therefore, the analysis will combine between employment and the number of factories for the same time period 2005-2014. Manufacture of metal products, machinery and equipment. They have achieved an actual growth get to 26970 factories from the totality (92542 factories) in Iraq. While, they accomplished an actual growth get to 12665 factories from the totality (44535 factories) in Baghdad. Therefore, Baghdad constituted 0.46 of this growth. On this basis, the relative importance of this category is compared with their counterparts in Iraq is 48.12%. While their relative importance in Baghdad, is compared with the total industry in Baghdad is 78%. So, they occupied the first rank in Baghdad. All these indicators, they have made this category with regard to final rank in the first rank in Iraq also.

Manufacture of clothing, leather, yarn and fabric. They have achieved an actual growth get to 3377 factories from the totality (11185 factories) in Iraq. While, they accomplished an actual growth get to 1510 factories from the totality (6060 factories) in Baghdad. Therefore, Baghdad constituted 0.44 of this growth. On this basis, the relative importance of this category is compared with their counterparts in Iraq is 51.03%. While their relative importance in Baghdad, is compared with the total industry in Baghdad is 10.79%. So, they occupied the second rank in Baghdad. All these indicators, they have made this category with regard to final rank in the first rank in Iraq like previous category. Manufacture of food, drinks and tobacco. They have achieved an actual growth get to 1261 factories from the totality (8664 factories) in Iraq. While, they accomplished an actual growth get to 664 factories from the totality (4564 factories) in Baghdad. Therefore, Baghdad constituted 0.52 of this growth. On this basis, the relative importance of this category is compared with their counterparts in Iraq is 52.67%. While their relative importance in Baghdad, is compared with the total industry is 8%. So, they occupied the third rank in Baghdad. All these indicators,

they have made this category with regard to final rank in the first rank in Iraq like previous category.

Agglomeration literature confirms that the spatial concentration is an advanced stage of agglomeration growth in selected areas. Specifically, the spatial concentration is the result of intensive growth of industrial activities in major cities; regardless of the result, excessive spatial agglomeration or regional specialization. In fact, if the industrial agglomeration will go on to growth without stop, surely the industrial concentration will tend to continue without stop. This is a strong physical evidence of a spatial agglomeration. Who is born a spatial concentration. In order to make this growth serves the sustainable development. We need to monitor and guide this growth in the right direction. Manufacture of Construction materials (Cement bricks). They have achieved an actual growth get to 395 factories from the totality (2216 factories) in Iraq. While, they accomplished a passive actual growth, retreated to -109 factories from the totality (718 factories) in Baghdad. Therefore, Baghdad constituted -0.27 from this passive growth. On this basis, the relative importance of this category is compared with their counterparts in Iraq is 32.4%. While their relative importance in Baghdad, is compared with the total industry is 1.25%. So, they occupied the fourth rank in Baghdad. All these indicators, they have made this category with regard to final rank in the second rank in Iraq. These industries pollute the urban environment. So it is a huge problem for sustainable spatial development in cities generally, and the big cities especially.

Other manufactures. They have achieved an actual growth get to 251 factories from the totality (1491 factories) in Iraq. While, they accomplished an actual growth get to 108 factories from the totality (606 factories) in Baghdad. On this basis, the relative importance of this category is compared with their counterparts in Iraq is 40.64%. While their relative importance in Baghdad, is compared with the total industry is 1.%. So, they occupied the fifth rank in Baghdad. All these indicators, they have made this category with regard to final rank in the second rank in Iraq. Manufacture of paper and wood. They have achieved an actual growth get to 106 factories from the totality (770 factories) in Iraq. While, they accomplished an actual growth get to 113 factories from the totality (318 factories) in Baghdad. On this basis, the relative importance of this category is compared with their counterparts in Iraq is 41.29%. While their relative importance in Baghdad, is compared with the total industry is 0.5%. So, they occupied the sixth rank in Baghdad. All these indicators, they have made this category with regard to final rank in the second rank in Iraq.

Manufacture of Chemical and oil refining. They have achieved a passive actual growth get to -503 factories from the totality (1041 factories) in Iraq. While, they accomplished a passive actual growth, retreated to -42 factories from the totality (270 factories) in Baghdad. On this basis, the relative importance of this category is compared with their counterparts in Iraq is 41.29%. While their relative importance in Baghdad, is compared with the total industry is 0.5%. So, they occupied the seventh rank in Baghdad. All these indicators, they have made this category with regard to final rank in the third rank in Iraq. These industries pollute the urban environment. Therefore, these industries consider obstacle in front of sustainable development and they are not valid to settle in the city. The main reason is an unacceptable levels of pollution in urban environment.

Findings

The findings which have been concluded from the analysis and discussion of results above, as follows:

- 1- The actual growth (positive and passive). Therefore, the industries have been divided into three groups, depending on growth degree.
- 2- The first group achieved high level from positive actual growth (Manufacture of metal products, machinery and, equipment, Manufacture of food , drinks and tobacco, Manufacture of clothing, leather, yarn and fabric).
- 3- The second group achieved low level from positive actual growth (Manufacture of paper and wood, Other manufactures).

- 4- The third group achieved an passive actual growth, retreat in actual growth (Manufacture of Chemical and oil refining, Manufacture of Construction materials(Cement & bricks)).
- 5- The employment and the number of factories are driving and affect the industrial agglomeration growth passively and positively in Baghdad.
- 6- That is, will help to achieve the aims of the sustainable spatial development, and to avoid the problems of the undesirable spatial concentration.

Sustainability and Policy Implications

1- Manufacture of Food, Drinks and Tobacco

This industrial category is more appropriate for localization in Baghdad. Therefore, the spatial development of this category will create new job opportunities within the acceptable level of agglomeration growth, and will reduce the levels of unemployment and raise the per capita income in Baghdad.

2- Manufacture of Clothing, Leather, Yarn and Fabric

This industrial category is more appropriate for localization in Baghdad. Therefore, the spatial development of this category will create new job opportunities within the acceptable level of agglomeration growth, and will reduce the levels of unemployment and raise the per capita income in Baghdad.

3- Manufacture of Metal Products and Machinery and Equipment

This category satisfies the population's needs from final productions as durable goods and provides other industries by semi-manufactured goods as inputs and spare parts. Moreover, this industrial category is more appropriate for localization in Baghdad. Therefore, the spatial development of this category will be created new job opportunities within the acceptable level of agglomeration growth, and will reduce the levels of unemployment and raise the per capita income in Baghdad.

4- Manufacture of Paper and Wood

These industries are very important, especially the traditional furniture industry, in order to maintain the historical identity of Baghdad which supports the tourism industry and exports of this commodity. Baghdad is also a major center for printing and publishing and the press on levels locally and internationally. So, support and development of paper industry is an urgent need for the spatial development in Baghdad.

5- Manufacture of Construction Materials (Cement and Bricks)

These industries recorded a retreat in the agglomeration and a decreasing trend in the size of the concentration and they are still unconcentrated. Therefore, these industries are spatially inappropriate for localization in Baghdad because these industries have been polluting the urban environment. Moreover, they constitute a threat to the people's lives and health in Baghdad. This study recommends that the decision makers get these industries out of Baghdad.

6- Manufactures of Chemical and Oil Refining

These industries recorded a retreat in the agglomeration and a decreasing trend in the size of the concentration and they are still unconcentrated in Baghdad. Therefore, these industries are spatially inappropriate for localization in Baghdad because these industries have been polluting the urban environment. Moreover, they constitute a threat to the people's lives and health in Baghdad. This study recommends that the decision makers get these industries out of Baghdad.

7- Other Manufactures (All Handmade Manufactures)

These industries are very important, especially the traditional industry, in order to maintain the historical identity of Baghdad which supports the tourism industry and exports of this commodity. Baghdad is also a major center for marketing and tourism on levels locally and internationally, so, support and development this category is an urgent need for the spatial development in Baghdad.

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