

# **Al - Ghari**

## **Journal of Economic and Administrative Sciences**

is a double-blind peer review quarterly  
scientific journal

published by Faculty of Administration  
and Economics / University of Kufa

Volume (1), Issue. (2) June, 2019.

We draw the attention of our readers  
and reporters of our Journal  
To email us at the following address:  
[algharee.mang@uokufa](mailto:algharee.mang@uokufa)  
ISIN: 194-0947

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شهادة رقم (463-2017)

## معامل التأثير العربي

مجلة الغري للعلوم الاقتصادية والإدارية

ISSN: 1994-0947

قد حصلت على معامل تأثير لعام 2016 وقدره 1.15

الأستاذ الدكتور محمود عبد العاطي



مدير مشروع معامل التصنيف العربي

19 فبراير 2017 م







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٢٠١٨ / ٥ / ٨





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والبحث العلمي

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أساسه المحبة والأخاء والمساواة بين مواطنيه .

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Economic Research







*Oil policy and investment licenses contracts in Iraq  
(analytical study)*

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**Researcher  
Ahmed Sajjad**

**Abstract**

As it is known, oil is one of the most important economic resources in Iraq, therefore the oil policy is the cornerstone for the investment of this vital resource, where it contributes to the revenues of the Iraqi budget were more than 90%. Since the discovery of Baba Gharghar field in Kirkuk at the beginning of the twentieth century, the retreat of the Ottoman Empire authority, the British occupation of Iraq began, and after Sykes-Picot Agreement in 1916, the right of exploration and exploitation of oil became for the British with 25% as a share for the French, so Iraqi oil was monopolized by the Iraqi Oil Company (IPC), under the concession agreement granted since 1928. The British and French monopoly companies exploited oil and extracted in large quantities and randomly to increase profits with a small share for the country which owns the resources. This resulted in the issue of Act No.80 for 1961 in the Republican era, which enabled Iraq to recover 99% of the land that was under the control of foreign companies. The National Oil Company was established under Act. No. 11 for 1964, and in the 1970s the operations of Iraq Oil Company Limited were nationalized, giving the National Oil Company the opportunity to explore, exploit and produce oil. In fact, nationalization constituted a significant qualitative leap in terms of increasing oil revenues, in addition to the prosperity and development, especially after the rise of oil prices in the seventies. But after 1980 and the entry of Iraq in fruitless wars, reflected on the nationalization achievements; production of oil declined significantly, especially after 1990 and the invasion of Kuwait till the occupation of Iraq in 2003, which led to the looting of oil fields and the destruction of some of them, therefore the oil sector was in a serious situation, prompting the operators in this sector in 2009 to resort to rounds of licenses to reinvest investment and production in this sector, in fact this option is a justification for the advancement of the Iraqi oil sector at present, but it is no longer the best option to promote it.

Hence, the research problem is the ambiguity and the varied opinions upon defining the advantages and disadvantages of investment via



licenses contracts.

The study aim is to highlight the oil policy in Iraq in general and its role in promoting it, with reviewing the role of licensing rounds as an oil policy to increase exploration, exploitation and production; assuming that oil policy in Iraq did not achieve the desired goals in general, and that licensing rounds could be a suitable immediate option but not the ideal option in the future. To reach the research goals we adopted a descriptive, analytical reviewing approach for the important stages in oil policy in a brief focusing on analyzing and clarifying the role of licensing rounds investment in investing the Iraqi oil.

The structure of the research includes an introduction and two topics; the first dealt with oil policy and its development horizons, while the second reviewed oil investment through licensing rounds in Iraq. The researchers submitted a number of conclusions and recommendations.

**The first topic:** The reality and prospects of the development of oil policy in Iraq

**First:** - The concept of oil policy

The great importance that oil occupies at the global level results in that each oil state has followed a specific strategies in the implementation ensuring the achievement of its goals. This depends on the philosophy and orientation of the political system( regime) in this country. It also depends on the nature of the economic orientation of each country, as it determines the essence and nature of that oil policy of the concerned state. In general the oil policy could be defined as: the initiative of the government or the ministry of oil in this or that country to develop realistic and practical plans, perceptions and studies in terms of how to dispose of the country's oil resources and wealth in a way that allows it to optimize the investment of its resources to achieve its objectives and interests.<sup>(1)</sup>

Oil policy is defined as a set of means and procedures that regulate the various stages of the oil sector, including exploration, drilling and reclamation of wells, production of crude oil, gas isolation, transportation, classification and storage of petroleum materials, the necessary investments for the development of oil sector and exploitation of the national oil wealth, on one hand, and on the other hand oil policy, due to its effectiveness, is defined as a set of rules and procedures followed by some countries with specific methods and tools in their policies to achieve certain goals consistent with sharing with each other, as well as harmonizing them within a practical framework or practical strategy.<sup>(2)</sup>





It is worth mentioning that oil policy is linked to the ability of the state to control its oil resources and its economic decision regarding the oil sector and related operations, thus contributing to economic development.<sup>(3)</sup>

As one of the most important oil countries, Iraq has strategic aims attempts to achieve by following oil policy depending on certain bases and principles, in this regard, the Iraqi Ministry of Oil has developed an oil policy to achieve the country main goals and interests, represented by the following points:<sup>(4)</sup>

1-Developing an oil policy based on balanced principles that can preserve oil wealth sources, as well as achieve development and efficient investment of resources to ensure payment of the state's financial commitments and development plans.

2-Strengthening the position of Iraq, supporting its impact on the world oil markets, and obtaining a fair price for oil in world markets.

3-Formation of an efficient national oil industry capable of supporting the national economy, and securing the local needs of oil and its derivatives with the other available sources of energy .

The researcher believes that oil policy in Iraq is a set of measure, tools and means used in the optimal investment of oil wealth in Iraq and related to exploration and investment, extraction and export, as well as the resettlement and development of oil and gas industry and petrochemicals to maximize the exploitation of this wealth, in order to increase revenues and sources of income to legitimize growth and development in general .

### **Second:** Development of Iraq's oil policy

The interest of Iraqi oil began with the entry of the first mission of experts sent by the German Bank for a preliminary search of oil in Iraqi territory in 1871, when Iraq was under the authority of the Ottoman Empire, and the subsequent entry of another mission in 1901; these two missions confirmed the existence of oil in Iraq in an optimistic character that indicates abundance. This stimulated the external ambitions to exploit oil in Iraq, specifically in the area where the search was concentrated (Mosul), and on this basis the Germans were able to obtain the approval of the Ottoman authority to the right of exploration for oil. In 1906 the German Bank, through its, companies, obtained the right of search and investment the Iraqi oil. Then the competitive conflicts began by the British and the United States and other advanced industrial countries to obtain a share of Iraq's oil. Iraq becomes a clear region and point of conflict among between countries that attempt to control oil



wealth through companies and unfair agreements.<sup>(5)</sup>

The attempts of the big powers to control Iraq's oil continued, yet, Britain was the biggest and the winner by imposing full control on the Iraqi land as an occupier in 1914 to put Iraq under its influence. This, in turn, had enraged France, which controlled the Mosul area at the time. As the two countries had acquainted with the wealth of Iraq and for the resolution of disputes, an agreement was concluded between Britain and France under the title of San Remo Agreement on 24 June 1920 to divide the regions of influence and resolve disputes over oil-rich areas of Iraq. After that, the Iraqi government had concluded agreements with Britain under the influence of a number of revolutions and international pressures in favor of Iraq for the control of Iraq on part of its oil territory, but the British companies and contracting companies remained dominant the production, transport and marketing of oil to world markets. In the nineties and fifties of the last century, the monopolistic companies, known as (Al-Akhwat Al-Seba`a= The Seven Sisters) which were the seven largest monopoly companies in the field of oil industry, were the dominant of oil production and marketing in Iraq.<sup>(6)</sup>

The changes and events world had witnessed, especially in Iran and Saudi Arabia, had affected Iraq and encouraged to take serious steps to control its oil wealth; the Saudi agreement on the principle of the division of profits jointly with the Arab American company Aramco in 1951 and nationalizing the oil industry in Iran for the same year, had a clear role in the changes of oil policy approach to Iraq.<sup>(7)</sup>

Thus, the foundations of the Iraqi oil policy were established in the early beginning of 1960s for the first time in the history of Iraq's oil, specifically in 1961 with the issue of Act No. (80) issued by Iraq on the insistence and intransigence of foreign oil companies, as well as their continued exploitation of Iraq's oil and non-response to Iraq demands. With this Act the Iraqi government was able to impose its control over a very large part of the oil land covered by the investment of foreign companies, it is considered as the beginning of the conflict between Iraq and monopolistic companies, it was a devastating blow to the interests of these companies and their presence in the region. This Act paved the way for a serious beginning in the pursuit of a clear Iraqi oil policy that resulted in the establishment of the Iraqi National Oil Company in 1964, which had undertook its role by investing Iraqi oil as a direct national investment.<sup>(8)</sup>

In the terms of what had been mentioned previously, oil policy in Iraq was unclear and very weak concerning controlling the Iraqi oil sector, so the Iraqi economies were under the domination and control of the foreign



companies.

Oil policy in Iraq had witnessed a great and serious change in 1972; the Iraqi government had nationalized oil wealth by nationalizing (IPC) and Mosul Petroleum Company which were under the control of the capital countries. Their operations were handed to the Iraqi company of operations that had been founded by the Iraqi government, with the nationalization, for this purpose.

In 1973, during the Arab war with the aggressor Zionist entity, the Iraqi government nationalized the quotas belonging to the Dutch and American companies in the Basra Oil Company, leaving only the shares of French and British companies in Basra Oil Company. By 1975, Iraq nationalized these quotas, so the oil industry in Iraq, in all its fields and branches, became under the control and supervision of the Iraqi government.<sup>(9)</sup>

After the great of Iraq in the seventies of the last century, due to the impact of following successful oil policy, in addition to the structural changes in the global oil market, which were in favor of the producing countries, Iraq entered a dark historic period resulted in the destruction of the Iraqi oil sector and the destruction of the Iraqi economy in general. This period was known as the period of wars and international economic sanctions: the first war was with Iran 1980-1988, then Kuwait occupation in 1990, where the entry of Iraqi military forces to Kuwait led to the imposition of economic sanctions on Iraq in 1990 by the UN Security Council, which was a ban on all types of Iraqi trade and in particular the ban on the export of Iraqi crude oil, as well as freezing of Iraqi financial assets abroad, in addition to many other sanctions imposed on Iraq as a suspension of flights and prohibiting the financial transactions with Iraq.<sup>(10)</sup> Throughout these events, most of the infrastructures had been destroyed. Shortly after the removing the ban, Iraq passes another disaster represented by its new occupation by the United States of America 2003.

After this year, the Iraqi oil policy passed different stages, according to its relation with the political authorities changes, each has its effect on putting oil policy. The occupier authorities had re run and reform the oil institutions to export petroleum and to get use of its revenue, according to the interests of America. In 2004 the temporary government of Iraq had been formed under the supervision of America, following a policy that aimed to develop the oil sector by referring to the international companies, contracting with them to develop the oil fields with the advantages of the American and British companies.

The transitional government had been formed in 2005, it opened Iraq to foreign oil and energy companies, and in 2006 the preeminent Iraqi



government had been formed with the consent of the Iraqi people, and has changed the approach of the Iraqi oil policy in the interest of Iraq and its people aimed at maximizing production and increasing exports by encouraging foreign investment and taking advantage of the expertise and technological techniques introduced by foreign investment companies.<sup>(11)</sup>

### **The second topic:**

Investment of Iraqi oil in accordance with licensing rounds contracts

#### **First:** What are the licensing rounds

Licensing rounds represent a major development and a serious turn in the course of Iraq's oil policy. The introduction of licensing contracts and their transparency and clarity through competitive and public tenders for foreign companies have not been common in the history of Iraq's oil policy<sup>(12)</sup>

In general, licensing rounds are an agreement or a contract whereby the oil state gives a competitor a right to explore and produce crude oil in a specific area. The oil state offers some areas for competitive investment among foreign companies and the offers are presented by both parties. Contracts are less complex than other investment contracts. It does not require deep experience or technical support, as in other contracts. It is possible to focus on the specific terms of trade. If oil commercial production is reached, the hosted country will get the revenue, in turn the company that win the contract shall recover the financial costs incurred on the investment in addition to the project profit.<sup>(13)</sup>

The Iraqi government has taken the licensing rounds in order to achieve a number of objectives, namely the development of existing oil fields and their productive capacities and the development of discovered and untapped fields and seeking to eliminate the features of the apparent underdevelopment in the Iraqi oil industry resulting from the effects of wars and sanctions and isolation from the world through the introduction of advanced technology in order to increase Iraq's production capacity to a high level in order to enhance Iraq's global standing and increase its financial resources, as well as ensuring the continued flow of oil into world markets<sup>(14)</sup>, in addition to absorbing the increased unemployment in Iraq, as these projects will run a large number of Iraqi labor, and other goals which is in favor of Iraq politically, economically and socially.

The main conditions for licensing contracts can be described as following:<sup>(15)</sup>

1-The Iraqi National Oil Company and its subsidiaries are the owners of the contract and represent the employer, and the foreign contracting companies as the contractor with the government partner, It is





responsible of providing the capital and technology accompanying the technical expertise to achieve the objectives stipulated in the contract.

2-The foreign companies (contractor) shall implement the minimum work requirements within a period not exceeding three years from the date of entry into force. These requirements are represented by preparing a rehabilitation plan, preparing a comprehensive plan and work program, preparing the annual budget, initiating oil exploration and reclaim the wells that could be reclaimed.

3- The duration of the license contract is 20 years from the effective date of the contract. The contracting company may extend the contract for an additional 5 years according to new conditions.

4-Contracting companies, after studying the reservoir sites, are committing to work with the latest technological systems that will extract the highest possible percentage of oil reserves. These companies would be responsible for all the project development costs to be recovered later from the produced oil.

5- Contracting companies are obliged to employ Iraqi workers at least 85% of the total project employment. In case of lack of Iraqi trained manpower, foreign companies shall undertake training and developing them in or outside Iraq within a maximum period of 6 months from the date of entry into force of the contract.

6- Contracting companies must adhere to the application of the finest safety systems and take into account the protection of the environment from the pollutants resulting from the project.

7- Companies Contracting must commit to exploit gas associated with oil in an optimal manner and prevent burning it.

8-The responsibility for determining the level of oil production lies exclusively on the Iraqi Ministry of Oil. Contracting companies receive specific fees in the contract for each barrel actually produced.

9- The ownership of all assets processed by foreign companies would be transferred to the Iraqi company ownership immediately after entering Iraq.

10- The contract concluded between the Iraqi company and foreign oil companies shall be subject to all applicable laws and regulations in Iraq.

11- Assuming a tax of 35% of the total annual profits on the companies winning the contract.

12- The Iraqi company must carry out oil operations during the first year of the contract, and the work is transferred to the contracting companies



and their bodies after completing their equipment for work within a maximum of one year from the date of entry into force of the contract.

13- A Joint Administrative Committee shall be formed, whose members shall be equal members of the Iraqi Company and foreign companies, to supervise and manage oil operations.

### Second: - First and second oil licensing rounds

In June 2009, the Iraqi government held the first round of licenses, which included the presentation of eight fields, six of which are for oil and two for gas. These fields are West Qurna, Al- Zubayr, Al- Rumaila, Maysan, Kirkuk, By-Hasern, Akkas and Al-Mansoura gas fields. After the negotiations that took place between the companies and the Iraqi government, the approval has been granted to for foreign companies to invest three fields under the international conditions of the Iraqi government and identified in the licensing round stipulated in the contract; these fields are the Al- Zubair, West Qurna Phase I, And Rumaila fields. For the other fields displayed in this round, the approval had not been obtained because the conditions of the Iraqi government do not agree with that of the foreign companies.<sup>(16)</sup>

Table (1) The details of the first licensing round

Field	Reserve size/ Billion barrels	Investor company / nationality	Company percentage	Company reward for each additional barrels	Primary production Million barrels/day	Targeted production Million barrels/day	Contract fees or reward Million dollars
Al- Rumailah	17.8	British Petroleum(BP)	38	2 dollars	1.066	2.850	500 A loan
		Chinese National Petroleum(CNPC)	37				
Al- Zubair	4	ENI, Italian	32.81	2dollars	0.182775	1.200	100
		American Nitral Petroleum Oxide	23.44				
		Korean Gas	18.75				
West Qurna(1)	8.7	American Mobile	60	1.9 dollars	0.244	2.325	100
		Dutch Shell	15				

Source: The Iraqi Ministry of Oil / Department of Petroleum Contracts and Licenses, from the official website on the Internet <https://www.moo.oil.iq> The Effect of Foreign Investments in the Oil Sector on the Iraqi Economy, Master Thesis unpublished, Faculty of Management and Economics, Wasit University, 2012, p. 57.

The first table shows that the first round of licenses resulted in the investment of three important oil fields in Iraq. The investment of Al- Rumaila field, which is considered one of the largest oil fields in Iraq, with an estimated oil reserves of about 17.8 billion barrels had been granted to the coalition of British Petroleum BP and China National Petroleum Corporation CNPC; the British company share was 38% of the contract, and the Chinese company 37% of the contract, the remaining



25% was the share of the Iraqi government and its national company. The contract stipulated that the foreign companies invested reward ( \$ 2) for each additional barrel produced from Al-Rumaila for the production exceeded the initial field limit, which amounts to 1.066 million barrels / day. The contract aims to develop the production capacity of the Al-Rumaila field to reach 2.850 million barrels / day. It is worth mentioning that the Iraqi government has waived its right to the reward of signing the contract that should have been obtained from the investment companies in return for these companies to provide the Iraqi government a loan of 500 million dollars without benefits.

Al- Zubair field is the second field invested in this round; the right of investment had been granted to three cooperating companies represented by the Italian ENI, the American company Oxide Ntal Petroleum and Korea's gas company. The proportion of the Italian company was 32.81% of the contract, the American 23.44%, and the Korean 18.75%. The remaining 25% represents the share of the Iraqi national partner. The reserves of this field is estimated to be 4 billion barrels. The proportion of companies reward did not differ from the previous field (\$ 2) for exceeding the initial production limit of the field of 0.182775 million barrels / day. By this contract, it is aimed to make the production Al-Zubair field 1.200 million barrels / day. The Iraqi government received \$ 100 million from the investment companies as a reward for signing the Al-Zubayr investment contract.

With regard to the third field of this round, West Qurna Phase 1 with oil reserves estimated at 8.7 billion barrels, the right of investing it had been granted for ExxonMobil and the British Dutch Shell, 60% for ExxonMobil, 15% for Shell and 25% for the partner . The reward obtained by the Iraqi government as a result of the signing of the contract is \$100 million. The reward obtained by the companies for each additional barrel produced after the initial production of West Qurna phase1 of 0.244 million/ barrels slightly less than that of the previous two fields, to be \$ 1.9 The contract raised production to 2.325 million barrels / day.

At the end of 2009, the Iraqi Ministry of Oil launched the second round of licenses, which included ten oil fields. These fields are discovered and undeveloped, many foreign companies from 32 countries had competed for the investment, and eventually was contracted on seven contracts including: West Qurna phase 2, Majnoon, Al- Halafia, Al-Gharraf field, Badra, Najma , and Al-Qayara field.<sup>(17)</sup><sup>1</sup> as shown in the

<sup>1</sup> Haidar Hussain Awadah, A Calender for Oil Licensing Tours, previous source, p. 132.



following table:

Table (2) Details of the Second round of licenses

Field	Reserve size/ Billion barrels	Investor company / nationality	Company percentage	Company reward for each additional barrels	Primary production Million barrels/day	Targeted production Million barrels/day	Contract fees or reward Million dollars
West Qurna 2	12.9	Russian Lukoil	56.25	1.15 dollars	0.120	1.800	150
		Norwegian Statoil	18.75				
Majnoon	12.6	Dutch Shell	45	1.39	0.175	1.800	150
		PetroNas/Malaysian	30				
Al- Halafia	4.1	Chinese (CNPC)	37.5	1.40	0.070	0.535	150
		French Total	18.75				
		PetroNas/Malaysian	18.75				
Al- Gharraf	0.9	PetroNas/Malaysian	45	1.49	0.035	0.230	100
		Japanese /Jabix	30				
Badra	0.1	Russian Gasbrum	30	5.5	0.015	0.175	100
		Korean CoGas	22.5				
		PetroNas/Malaysian	15				
		Turkish T.P	7.5				
Al-Qayara	0.8	Anglian SunGold	5	75	0.30	0.120	100
Nagma	0.9	Anglian SunGold	75	6	0.020	0.110	100

Source <https://www.moo.oil.iq> The Iraqi Ministry of Oil / Department of Petroleum Contracts and Licenses, from the official website on the Internet, The Effect of Foreign Investments in the Oil Sector on the Iraqi Economy, Master Thesis unpublished, Faculty of Management and Economics, Wasit University, 2012, p.

Saif al-Din Muhammad al-Hadithi, Oil in Iraq between the facts of history and political and economic variables, Journal of the Iraqi Dinar / University of Iraq, Volume 1, No. 3, 2013, pp. 90-91

The second round of licenses has resulted in the investment of eight oil fields, the first in the West Qurna phase (2) with an oil reserve estimated at 12.9 billion barrels, where the Russian company Lukoil in cooperation with the Norwegian company Statoil had won the investment license, the shares were 56.25% and 18.75%, respectively, while the remaining 25% was for the Iraqi national partner, as the share of the Iraqi government in the second round of licenses did not change from the first round and for all fields. It is aimed to raise oil production in this field to 1.800 million barrels / day, while the figure is the initial production of the field was 0.120 million barrels / day and the investment companies get \$ 1.15 for Each additional oil barrel produced above the initial production. The second field in this round was Majnoon field, which was won by the Dutch Shell consortium with 45% of the contract and the Malaysian Petro-Nass Company by 30% with \$ 1.39 as reward for each additional barrel produced after exceeding the initial production limit of Majnoon field of 0.175 million barrels / day, knowing that the target production is 1.800 million barrels / day. This field is one of the fields with large reserves as its capacity is about 12.6 billion barrels. The third field Halfaya, with a reserves of about 4.1 billion





barrels, the investment was for a coalition of three companies, namely the Chinese company CNPC and the French company Total and Petro NAS. The ratio of Chinese chop was 37.5% of the contract, 18.75% for French and the same for Malaysia. The reward of the additional barrel is \$ 1.40 exceeding the production limit of 0.070 million barrels / day. The contract aims to develop the production capacity of the field to reach 0.535 million barrels / Day.

Al- Gharraf field is the fourth field of this round and has an oil reserve of 0.9 billion barrels. The right to invest in this field has been granted to Malaysian company Petro Nass, 45% of the contract and Japanese company Japex with a 30% share. The companies have the right to get \$ 1.49 per barrel additional output exceeding the initial production limit which is 0.035 Million barrels / day, it is aims to reach a daily production capacity of about 0.230 million barrels / day.

Badra field is the fifth in this round, four companies won the right to invest in it:- the Russian company Kazprom and 30%, the Korean company CoKaz 22.5%, the Malaysian company Petro Nass 15%, and the Turkish company TB 7.5% %. The reward of companies for the additional oil quantity produced by the field after exceeding the initial production limit was greater than the rewards of the previous contracts, amounting \$ 5.5 for each additional barrel. The last two fields of this round are Al-Najemah field and Al-Qayara, their investment right is won by the Angolan company Sun Gold right to invest with a share of 75% of the contract for the both fields, and the reward obtained by the Angolan company for each additional barrel produced after the initial production is \$ 6 for Al-Najemah and \$ 5 for Al-Qayara. The initial production of Al-Najemah field was 0.020 million barrels / day and 0.30 million barrels / day for the field of Qayara, and target is to raise production to 0.110 million barrels / day from the field of Al-Najemah and 0.120 million barrels / Day of the Al-Qayara field. The reward obtained by the Iraqi government for signing of contracts, was 150 million dollars for each license 0c0contract field West Qurna phase (2), Majnoon, and the field of Halfaya, and 100 million dollars for Al-Gharraf and Badra, Al-Najemah and Al-Qayara.

**Third:** Advantages and disadvantages of licensing rounds for oil investment in Iraq

The contracts of oil licensing rounds have been met with a number of criticisms that showed the negative side of the contracts and showed weaknesses in the contract terms, this could be can be explained as follows:

1-Concluding oil licensing contracts with foreign companies is contrary



to the provisions of the draft law of oil and gas in Iraq, which defined the investment and development of these fields in the Iraqi national companies, rather than to be invested by a number of foreign companies. Writing of licensing contracts had been done through referring the expertise of international companies specialized in the texts of contracts, but the implementation of the terms of contracts were under the supervision and follow-up of the Iraqi Oil Ministry and its affiliated institutions, and this in its turn has a negative impact on Iraq as it indicates that the ministry and its institutions lacks for the competence required to do so, especially with the phenomenon of brain drain and the security situation in Iraq.<sup>(18)</sup> Therefore it is possible for contracting companies to exploit this aspect to achieve their interests at the expense of Iraq's interests.

2-The fields put forward by the Iraqi Ministry of Oil in the first round of licenses are considered of the most important Iraq's huge oil fields with a very large reserves, the Iraqi cadres had worked for several years to study assisted by specialized foreign companies to be briefed on all the details of these fields by the support of the specialized foreign companies to be acquainted with all their technical and non-technical aspects. So the Iraqi cadres is able to manage and develop them in order to raise their productive capacity. These cadres need only the government support of and the expansion of their authorities to work on the rehabilitation of these fields through contracting agreements with the foreign companies for a limited period rather than long-term license contracts.<sup>(19)</sup>

3- Working with licensing contracts would reduce the profits obtained by the Iraqi government by raising the cost of production of Iraqi oil barrels from the fields within the licenses. The employment of foreign workers by contracting companies in Iraqi sites requires the provision of many high-level services and commodities. Moreover, increasing oil production according to the licensing contracts would be done after 3 years from the date of entry into force of the contract, so that Iraq will bear additional costs and the development process would be delayed, with the urgent need for oil revenues.<sup>(20)</sup>

4- To calculate the reward obtained by the investor foreign companies the Iraqi Ministry of Oil depends on the success of the companies in increasing the production of oil fields comparing with the initial production limit, and this is fraught with weakness, as the primary production was based on technological development and technical capabilities in Iraq, so the initial production is weak in light of the technological backwardness and the political and economic conditions experienced by Iraq, as well as the obsolete machinery used in the oil



operations in a manner that does not keep pace with global developments<sup>(21)</sup>

In spite of the criticisms and negative aspects of the previous contracts, oil licensing rounds are considered successful and indispensable necessity, they represent an important transition in the development of the oil sector reality in Iraq. The investment in accordance with the terms of licenses set by the Iraqi government is successful in the way of achieving the Iraqi benefits. Since its beginning, licenses rounds show a number of positive aspects and benefits that could be explained by following<sup>(22)</sup>:

1-Iraqi Ministry of Oil would have a full control on the oil wealth by supervising and directing the foreign companies and their representatives to achieve the interests of Iraq.

2-The rounds of licenses, and the resulted entry of expertise and advanced technology through specialized foreign companies, led to modernize the Iraqi oil industry in all its branches, which used to be described as a dilapidated before going into licensing. Recently a significant improvement is observed in the performance of Iraqi cadres which works directly with foreign cadres, as a result of acquiring technical expertise.

3-Increasing oil production rates resulted in increasing oil revenues.

4-The licensing rounds have helped in absorbing a large part of the Iraqi unemployment, as it has provided tens of thousands of jobs.

5-Development and improvement of the cadres of contracting through acquisition new foreign skills and experience.

6-The licensing rounds and their consequences of maximizing the financial revenues resulted in the stimulation of other economic sectors in Iraq, as well as the construction of infrastructure, the provision of public services and the improvement of living standard.

It is worth mentioning that the licensing contracts mainly aimed at raising oil production in Iraq and exporting it abroad, but OPEC sets specific production and export borders for its member states. This is an obstacle to increasing the Iraqi oil production, and thus make licensing contracts useless and make them benefits to foreign companies at the expense of the wealth of Iraq, therefore review the licensing contracts and reforming is an urgent necessity to make them in accordance with the treatment of the disadvantages mentioned previously and achieve the interests of Iraq in the first place.

### Conclusions and recommendations

#### Conclusions



- 1- Oil policy in Iraq has been affected by the wars that Iraq has fought for a long period of time, especially the imposed sanctions, which created many obstacles for the development of the Iraqi oil sector .
- 2- The oil policy in Iraq did not achieve the desired objectives of investing the Iraqi oil wealth optimally.
- 3- Licensing rounds represent an appropriate investment pattern for Iraq in light of Iraq's current economic and political conditions
- 4- The selection of oil fields that were raised in the first and second licensing rounds is an unsuccessful choice, as most of these fields are huge and considered by the National Company of Iraq and for a long time with the use of foreign companies competent, therefore the Iraqi government could invest these fields without resort to licensing contracts, rather, it would be a national investment with the use of international companies in short-term contracts.
- 5- Despite the many benefits of licensing rounds, they contain many disadvantages and complexes involve review them, and attempt to reformulate them in order to address the disadvantages and put them in a position that serve the benefits of Iraq

### Recommendations

- 1- To work on the formulation of an Iraqi oil policy aimed at developing oil sector and oil industry in an optimal manner to achieve the interests of Iraq.
- 3- To develop the means of dialogue and cooperation between Iraq and the international energy organizations, especially OPEC.
- 3- To supervision and follow-up the foreign companies operating in Iraq within the rounds of licenses to put them on the right way of applying the contract terms to achieve the benefits of Iraq.
- 4- Licensing contracts contain many weaknesses and negatives, and this should be reconsidered.
- 5- To invest the Iraqi oil fields nationally and to contract with the international companies in short-term rather than long-term contracts such as licensing contracts.

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## *Reality and Future of Unconventional and Renewable Energy Sources in International Energy Markets\**

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### **Introduction:**

The conventional energy sources represents a great deal of safety in meeting international energy needs, but with natural depletion of reserves and increasing consumption on an ongoing basis as world population grows and many variables change, doubts are being raised about the adequacy of these sources to meet the world's energy needs at the time. In addition, the world has begun to pay attention to the phenomenon of climate change, which is caused by the polluting emissions of the environment resulting from the end use of conventional energy sources, as well as the concern for the pollution of the environment in general, and in light of the depletion of resources less Energy sources and their effects on the environment necessitated the search for other sources of energy for the purpose of ensuring the supply and continuity of supplies. Consequently, renewable sources of energy have emerged as inexhaustible and widely available sources on the planet, and the energy generated by them is clean energy. In the extraction of oil and natural gas from unconventional sources and in the light of their large proven and technically recoverable reserves, these sources have been exported with renewable sources in the international energy supply mixture to take an active role in the structure of the energy balance.

### **First: The importance of research**

The importance of research is to know the extent of diversity and development in the production of energy sources, especially unconventional energy sources and renewable energy at the present time and the future.

### **Second: Problem of Research**

Fossil energy sources have become dubious that they cannot continue to ensure international supply security "under international economic and population growth, as they are depleted energy sources, as well as the

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\* Research, drawn from a master's thesis, titled The Role of Non-conventional and renewable energy sources in ensuring supply security in global energy markets, Faculty of Administration and Economics, University of Kufa.





uncertain future of renewable energy sources," will lead to increased demand for fossil energy sources Which requires greater changes in the diversification of unconventional and renewable sources of energy to ensure the security of suppliment, so it is necessary to study unconventional and renewable energy sources and their role in the international energy market.

### **Third: Research Objective**

The research aims to identify the reality and future of low energy and unconventional and renewable energy. As well as to identify the level of development and progress in energy sources, as well as to know the extent of the potential of unconventional energy and renewable in ensuring the continuity of securing the world's energy needs and its role in preserving the environment and achieve a sustainable balance.

### **Fourth: The hypothesis of research**

The research is based on the hypothesis that unconventional and renewable energy sources will contribute to the diversification of the international energy mix as well as their ability to ensure supply security in the international energy market.

### **Structure of research:**

The following topics were discussed:

First: International market for unconventional energy sources.

Second: International reserves of unconventional energy sources.

Third: The international market for renewable energy sources.

Fourth: Future outlook for energy sources: supply and demand.

### **First: The International market for unconventional energy sources**

Talking about oil and natural gas from unconventional sources as an energy source has its importance in the balance of international energy is not historically a long-term historically, despite the production of oil and natural gas from unconventional sources in some countries of the world for many years, but the world did not pay attention to the importance of these sources with the exceplion he success of the United States in increasing the production of oil and natural gas from unconventional sources, especially rock oil and shale gas, even referred to this large and unexpected increase in the production of unconventional energy in the United States, which began at the end of 2005, and the Which has triggered the world energy market as the "unconventional energy revolution" or "rock energy revolution"<sup>(1)</sup>. and that this revolution has made countries with reserves of oil and natural gas unconventional



reconsider their entry into the industry and work on the development of technologies for producing these sources have attracted world attention towards unconventional energy.

#### 1- The reality of international developments in the production of unconventional oil

Oil production is concentrated in unconventional sources in a few countries. The United States is the first to produce large quantities of shale oil and Canada by producing sand oil. The production of heavy oil and oil shale is concentrated in Venezuela, Brazil, Colombia and Ecuador. The development of unconventional production techniques and their spread of other countries began producing unconventional oil, but are still in their early stages. In general, unconventional oil production is concentrated in non-OPEC countries. Non-OPEC oil produced in non-OPEC countries in 2000 About 0.9 million b While unconventional oil production in non-OPEC countries rose to 1.4 million barrels / day in 2005, and in OPEC countries it reached 0.2 million barrels / day for the same OPEC production of unconventional oil has grown to 0.8 million barrels / day in 2015, and has grown significantly in non-OPEC countries to 7.7 million barrels / day for the same year. We can say that international production of unconventional oil is undergoing a continuous growth stage. The production of the world of rock oil has only doubled sevenfold from 2010 to 2009 in the year 2015, rising from 0.8 million barrels / day in 2010 to 5.6 million barrels per day in 2015. Rock oil produced in the United States accounts for more than 80% of the world's oil production, as the production of the United States Of oil is 4.8 million barrels / day in 2015, and the production of the United States of rock oil has increased significantly to 5.7 million barrels / day in 2017, and the production of other unconventional oil continues to increase, The world production of sand oil (bituminous) has been from 1.6 million barrels / day in 2010 to 2.5 million barrels / day In 2015, sand-based oil produced in Canada accounted for more than 90% of the world's sand oil production. Table 1 shows the world's production of unconventional oil and its development for the period 2000-2016:

**Table (1)** Evolution in world production of unconventional oil for the period 2000-2016 million barrels /day

year	World oil production*	World production of non-conventional oil	Rate of nonconventional oil out of total oil produced in the world
2000	74.8	1.1	1.4%
2005	81.7	1.6	1.9%
2006	82.4	1.5	1.8%
2007	84.3	1.6	1.8%
2008	83.8	1.8	2.1%
2009	83.3	2.3	2.7%



2010	85.7	2.6	3.0%
2011	86.6	3.9	4.5%
2012	87.1	5.0	5.7%
2013	88.2	6.2	7.0%
2014	89.5	7.5	8.3%
2015	92.3	8.5	9.2%
2016	94.2	9.1	9.7%

Table is prepared by researcher based on the information contained in:

International Energy Agency, world energy outlook, 2006-2017

\* International oil production includes conventional and unconventional oil.

\*\* The percentages were calculated by the researcher according to the table data.

Table (1) appears that international production of unconventional oil has increased substantially for the period 2000-2016, reaching 9.1 million barrels / day in 2016, while it was 1.1 million barrels / day in 2000, unconventional oil out of the total oil produced in the world, if the world production of unconventional oil accounted for 1.4% of the total oil produced in the world, while in the form of 9.2% in 2015 and about 10% in 2016, due to this large growth in oil production. Mainly due to the continuous increase in the production of these oils in the North American region, particularly the increase in production of the United States of America shale Oil, and which contributed to these developments for the growth of the production of unconventional oil is the entry of many countries outside OPEC to invest its unconventional sources to promote diversity in their economies.

## 2- Reality of international developments in unconventional gas production

The international production of unconventional natural gas is concentrated in North America, mainly in the United States, which is the engine of growth for the production of unconventional natural gas, especially rock gas, followed by Canada. Unconventional natural gas is produced outside North America and is very modest and concentrated in China which has the largest technically recoverable reserves of shale gas. According to the International Energy Agency (IEA), world production of unconventional natural gas in 2000 was about 169 billion cubic meters<sup>(2)</sup>. International production of unconventional natural gas Reached 460 billion cubic meters, equivalent to 14% of the world's natural gas production for 2010 (3284 billion cubic meters)<sup>(3)</sup>. With modern technologies and the great success of natural gas exploitation from its unconventional sources, the world production of unconventional natural gas The world's production of shale gas in 2013 reached about 331 billion cubic meters, and the kerosene gas about 232 billion cubic meters and methane gas has been applied about 67 billion cubic meters of coal and the production of 3 billion cubic meters of coal-to-gas conversion, Conventional to total world production of non-natural gas To 633 billion



cubic meters in 2013. Methane gas, according to current technologies, cannot produce an economically viable amount, but the IEA expects to play a significant role in international energy supply in the following years<sup>(4)</sup>. The year 2016 has seen significant growth in the production of unconventional natural gas, as illustrated in the following table:

Table (2) Evolution of international production of unconventional natural gas for the period 2000-2016 billion cubic meters

years	Global production of natural gas *	Global production of non-conventional natural gas	Rate of non-conventional natural gas out of total gas production in the world
2000	2506	169	7%
2010	3284	460	14%
2013	3513	633	18%
2016	3621	780	21.5%

Table is prepared by researcher based on the information contained in:

International Energy Agency, world energy outlook, 2012, p136

International Energy Agency, world energy outlook, 2015, p206, p233

International Energy Agency, world energy outlook, 2017, p346

\* International production of natural gas includes conventional and unconventional.

\* Percentages were calculated by the researcher according to the table data.

Table (2) shows that international production of unconventional natural gas has grown significantly over the period 2000-2016, reached 780 billion cubic meters in 2016, equivalent to 21.5% of the total world natural gas produced in the year 3621 Billion cubic meters, while it was 169 billion cubic meters in 2000, equivalent to 7% of the total natural gas produced in the world for the same year of 2506, and that this significant development in the production of natural gas is unconventional due to the large increase in extraction in America And to the United States production of shale gas.

In general, the production of oil and natural gas from their sources of unconventional is increasing in most countries that have these resources in its territory, and that this increase is significant effects, which reflected positively on the leading countries in the exploitation of these sources, the development of ways to exploit these energies of Which will enhance the security of their supplies and provide them with a measure of safety in achieving energy security. It will also reduce or reduce economic dependency (dependency of energy-consuming countries of energy producing countries), prolong the life of conventional oil and natural gas reserves and many other positive impacts, There This increase is reflected in the non-leading countries in producing these resources. Imports and profits will be reduced due to the reduction of imports of oil and natural gas in countries producing unconventional sources. Economic forces will also be distributed with the ownership of energy sources. Ultimately, however, these developments are increasing oil production Natural gas





from unconventional sources is boosting energy supplies in international markets and diversifying the international energy balance blend.

## **Second: International reserves of unconventional energy sources**

The estimation way reserves of unconventional energy sources differs from the known methods of estimating the reserves of conventional sources of energy for the different characteristics of unconventional sources and how they are discovered and their productive potential. The method of calculating unconventional oil reserves or unconventional gas is very complex and requires much Geological and geological data. Unconventional energy reserves are continuously changing according to the variables surrounding them, so their estimates are reviewed every 2-3 years or at least unconventional energy reserves are estimated once every ten years<sup>(5)</sup>.

The amount of unconventional oil found in the world of shale oil, oil rock, and heavy oil and oil sands in very large quantities, and its recoverable reserves according to the technology known now estimated at 3297 billion barrels by the end of 2012, and that the large amount of unconventional oil reserves More than double the proven conventional oil reserves in the world, and that very heavy oil and oil sands constitute the largest proportion of unconventional oil reserves, when the world reserves are technically recovered from the very heavy oil and oil sands 1879 (Kerogen) with a technically recoverable reserve of 1073 billion barrels at the end of 2012, and finally, rock oil with a technically recoverable reserve of 345 billion barrels by the end of 2012. It is worth mentioning that the quantities of oil is very heavy and oil sands (bitumen) concentrated in four countries of the world is the main dominant on its reserves, concentrated heavy oil in Venezuela and the oil sands of Canada. These two countries have more than 68% of the world's very heavy oil reserves and technical recoverable oil sands, Come and m Followed by Russia with 18.4% and Kazakhstan with 10.5%. Thus, these four countries have 97% of the world's very heavy oil reserves and technically recoverable oil sands, and the remaining fraction is distributed to the rest of the world. Oil Rock (Kerogen) is concentrated in North America, especially in the United States, which owns 93% of the total recoverable oil reserves in the world and the rest is distributed to different countries of the world<sup>(6)</sup>, and with regard to the existence of the world's rock oil reserves according to the report of management US Energy Information (EIA) issued in 2013, the technically recoverable oil reserves of 345 billion barrels at the end of 2012 distributed in different countries of the world, but ten countries acquire more than 81% of them, Russia comes first with 21.7% The United States, 16.8%, followed by China 9.3%, Argentina 7.8%, Libya 7.5%, Australia 5.2%, Venezuela and Mexico, as well as Pakistan and Canada 12.7%<sup>(7)</sup>. The estimates of





unconventional oil reserves in the world have changed according to new discoveries, The latest estimates from the Energy Information Administration On November 24, 2015, showed that the world's total technically recoverable oil reserves amounted to 418.9 billion barrels by the end of 2014, so that the recoverable rock oil reserves have increased by more than 21% compared with previous estimates issued in 2013, The changes in the amount of oil reserves have led to changes in the scale of the largest countries to own these reserves<sup>(8)</sup>. According to the latest report on the unconventional oil reserves issued by the International Energy Agency, the oil reserves of rock amounted to 420 billion barrels by the end of 2015, a The world's technically recoverable oil has reached 1073 billion barrels by the end of 2015 and has not changed from the previous estimates for 2012. The reserves of the world's very heavy oil and technically recoverable oil sands have changed only very little, The table below shows that the very heavy oil reserves and the oil sands formed 55.7% of the world total. The rock form constituted 31.8% of the world total and the rock oil finally reached 12.5%. Table (3) shows these facts:

Table (3) Unconventional oil reserves recoverable technically in the world as at the end of 2015

Non-conventional oil types	Quantity (billion barrels)	%
Very heavy oil and oil sands	1876	55.7
Oil rock (kerogen)	1073	31.8
Oil shale	420	12.5
Total world	3369	100

Table is prepared by researcher based on the information contained in:

International Energy Agency, world energy outlook, 2016, p128

\* Percentages were calculated by the researcher according to the table data.

According to the latest international studies and reports, the world's recoverable reserves, using currently known unconventional natural gas technologies, reached 343 trillion cubic meters at the end of 2012 , And rock gas accounted for the bulk of these reserves, reaching 212 trillion cubic meters technically recoverable, followed by rock gas impermeable reserve of 81 trillion cubic meters and finally the gas coal layers with a international reserve of 50 trillion meters As of the end of 2012, unconventional natural gas is found in every continent of the world. The bulk of unconventional natural gas reserves are located in the Asia-Basque region. This region has 42% of the world's technically recoverable gas reserves Coal deposits followed by Eastern Europe and Eurasia with 40% of the coal gas reserves and the remaining 18% owned by the OECD and European countries. The technically recoverable international reserve of impermeable rock gas has an Asia-Basque region



of 25.9% of the world total with 18.5%, Eastern Europe and Eurasia 13.6%, Africa 12.3%, Middle East 11.1%, OECD 18.5%, and technically recoverable Rock Gas Reserves, 25% in Asia-Basque region, 25%. , Followed by the OECD and the European countries (28.7%), Latin America (18.9%), Africa (18.4%), Eastern Europe and Eurasia (7.1%) and the Middle East (1.9%) respectively. , Followed by Argentina with 11% , Followed by the United States of America (9.1%), Canada (7.8%), Mexico (7.5%), and the rest distributed to different countries.<sup>(9)</sup> (according to the IEA report in 2015) Unconventional natural gas, up slightly from the 2012 estimate of 344 trillion cubic meters by the end of 2014,<sup>(10)</sup> but unconventional natural gas reserves have risen significantly, according to the latest report by the International Energy Agency (IEA), as shown in Table (4) below:

Table (4) Unconventional natural gas reserves technically recoverable at the end of 2016 trillion cubic meters

Region	Shale gas	impermeable gas	Coal gas layers	total
North America	61	11	7	79
Central and South America	41	15	-	56
Europe	18	5	5	28
Africa	40	10	0	50
Middle east	11	9	-	20
Eurasia	10	10	17	37
Asia-Pacific	53	21	21	95
Total	234	81	50	365

Source: International Energy Agency, outlook for natural gas, 2017, p345

Table (4) shows that shale gas is dominant in the world's reserves of unconventional natural gas that can be extracted technically, accounting for 64% of the total, followed by the reserve of clogged rock gas at 22.1% of the total, and coal gas at 13.6%, and the above table shows that the amount of unconventional natural gas reserves that can be extracted technically as at the end of 2016 increased by 21 trillion cubic meters when compared with the estimates of 2014. This increase in unconventional natural gas reserves is resulted from the increase of rock gas reserves to include new countries as well as the expansion and development of research and exploration techniques for shale gas, especially in North America. Methane hydrates, one of the most important types of unconventional natural gas, are still in their experimental stages and despite their huge quantities in the world, which is technically recoverable due to the lack of sufficient technological capabilities at present to calculate it but whose reserves are expected to be calculated and produced in large quantities in the next few years.

### Third: The international market of renewable energy sources

The controversy over oil's arrival and the issues of many studies and reports warning of the depletion of known reserves of fossil fuels,



especially oil, created a tense atmosphere and increased concern about the adequacy of the growing energy needs, the world's fluctuations in oil prices and the environmental considerations advocated by Reducing the consumption of fossil fuels and resorting to clean and environmentally friendly sources, has led to increasing international interest in renewable energies and is seen as necessary to ensure energy security in the future. Renewable energy sources play an important role in the use of renewable energies.<sup>(11)</sup> is now the first and best choice for clean energy at a competitive price. It is worth mentioning that more than 170 countries have adopted renewable energy targets. Some 150 countries have developed their energy policies including Stimulates investment in its renewable energy technology.<sup>(12)</sup> and that each renewable energy source has its own developments in the international energy market as follows:

### 1- International Solar and Wind Energy Market

The continuous improvements in technology and technologies for solar energy use have added a great deal of reliability to the use of solar energy, especially for the provision of electricity. In general, all solar technologies have been developed, including solar cell technology. Wind energy is also developing solar energy and wind energy are an inherent source of energy as well as reducing environmental pollution. Clearly, development can be seen in the world production of photovoltaic and wind power as shown in the following table:

Table (5) Total international production of solar photovoltaic and wind energy for the period 2005-2017

years	Global production of solar PV Giga watts	Solar Additive Giga watts	World production of wind energy Giga watts	Wind power added Giga watts
2005	5	1+	59	12+
2006	6	1+	74	15+
2007	8	2+	94	20+
2008	15	7+	121	27+
2009	23	8+	159	38+
2010	40	17+	198	39+
2011	70	30+	238	40+
2012	100	30+	283	45+
2013	137	37+	319	36+
2014	177	40+	370	51+
2015	228	51+	433	63+
2016	303	75+	487	54+
2017	402	99+	539	52+

Table is prepared by researcher based on the information contained in:

Renewable Energy Policy Network for the 21 st Century (REN21), Renewables International Status Report, 2018, p38, p42

and Renewable Energy Policy Network for the 21 st Century (REN21), Renewables International Status Report, 2017, p66, p77

Table (5) shows that international solar photovoltaic production reached 5 gig watts in 2005 and grew to 40 gig watts in 2010 and was



slowly increasing for the period 2005 to 2010 and that the energy added during The international solar PV production has increased significantly beyond 2010 to 402 gig watts in 2017 by the adding significant energy over previous years, and these developments in solar energy production have made an important location in the energy markets. As for wind energy, it is noted from Table (5) that international production is from Wind energy and the amount of added energy has developed significantly for the period (2005-2017), when the world production of wind power 59 GW in 2005 and increasing to 539 GW in 2017, and also notes the increasing quantities of wind energy in the world, The largest increase in wind energy, and the largest increase in 2015 is due to the development of wind power production in China.

It is noteworthy that the solar energy markets and the added quantities of solar PV are concentrated in China, the United States, Japan, Germany, Italy, India, United Kingdom, France, Australia, Spain, respectively, which is the top ten countries in that.<sup>(13)</sup> The year 2017 saw an increasing interest in the construction of solar projects in several Arab countries. The projects of the State of Kuwait, Dubai, Egypt, Saudi Arabia and Morocco were also highlighted. This plant is operational by the end of 2018. The project is one of the most important production projects the wind energy markets are concentrated in China, which is the largest producer of wind power, followed by the United States, Germany and India. Wind turbines are mainly concentrated in China, the European Union, India and the United States. Morocco, Morocco, Tunisia, Jordan, Algeria, Bahrain, Syria, Kuwait and Lebanon, and the Arab countries are striving to develop wind power production.<sup>(14)</sup>

## 2- International Markets of Water Power

Hydropower is one of the most reliable sources of electricity in the world. China, Brazil, the United States, Russia and Canada are the largest producers of energy from water sources, followed by India, Norway, Japan, France, and Turkey some countries generate more than half of their electricity using hydropower, including Brazil, Iceland, Nepal and Mozambique.<sup>(15)</sup> The hydroelectric market is booming worldwide and is expanding in Asia, Europe, North and South America, Africa, and that's why The world's installed capacity of hydroelectric power has grown from 723 GW in 2001 to 857 GW in 2007<sup>(16)</sup>, and the production of energy from water sources has increased from 2008 to the present, as can be seen from the following table:





Table (6) Total international production of hydropower for the period 2008-2017

years	World production Giga watts	Power added Giga watts
2008	874	
2209	900	26+
2010	936	36+
2011	970	34+
2012	990	20+
2013	1000	10+
2014	1055	55+
2015	1064	9+
2016	1096	32+
2017	1114	18+

Table is prepared by researcher based on the information contained in:  
Renewable Energy Policy Network for the 21st Century (REN21), Renewables International Status Report, 2011- 2018

Table (6) shows that international hydroelectric production reached 874 GW in 2008, and despite the fluctuations in the amount of energy added between international increase and decrease, international hydroelectric production has grown to 1114 GW In 2017, it is worth mentioning that the production of energy from water sources is directly related to the quantities of available water (water abundance, water scarcity) in the countries producing this energy.

Hydroelectric power is produced in many Arab countries, including Algeria, Egypt, Tunisia, Iraq, Syria, Morocco, Sudan, Lebanon and Jordan. Production is very modest compared with the rest of the world. 2016 of 12079 MW/year, accounting for 1% of the world's total hydroelectric production for the same year.<sup>(17)</sup>

### 3- International Markets of Geothermal Energy

The geothermal energy grows modestly when compared with the growth of other renewable energies. Their markets are regular. Despite their slow growth, the world's total installed geothermal energy has increased from 10.3 GW in 2008 to 14.1 GW in 2017. The energy added from geothermal 2017 is the largest addition for the period (2008-2017), as shown in Table (7):

Table (7) Total combined geothermal energy "Produced" in the world for the period 2008-2017

years	Total world Giga watts	Power added Giga watts
2008	10.3	0.3
2009	10.7	0.4
2010	10.9	0.2
2011	11.0	0.1
2012	11.3	0.3
2013	11.9	0.6
2014	12.5	0.6





2015	12.8	0.3
2016	13.4	0.6
2017	14.1	0.7

Table is prepared by researcher based on the information contained in:

**Organization of Arab Petroleum Exporting Countries (OAPEC), Annual Report of the Secretary-General (various issues), 2010-2017**

**Renewable Energy Policy Network for the 21st Century (REN21), Renewables International Status Report, 2018, p36**

Geothermal energy use and markets are concentrated in the USA, the Philippines, Indonesia, New Zealand, Italy, Mexico, Iceland, Kenya, Japan and Turkey. These countries highlight the production of geothermal energy from the rest of the world. Some countries rely heavily on geothermal energy, including Kenya, which has a geothermal capacity of 27% of its energy mixture.<sup>(18)</sup> In the Arab countries, the utilization of geothermal energy is still in its infancy. Some Arab countries are developing and establishing production projects The Electric power of geothermal energy.

#### **4- International Markets of Biomass energy**

Biomass energy differs from other renewable energies in the variety of uses. In addition to the use of cooking and heating in buildings and the production of energy in factories and the production of electricity, biomass is becoming a fuel of great importance in the international energy balance blend.

The amount of electricity produced from biomass in the world in 2016 is about 112 gig watts, which represents about 504 terawatt hours. The United States topped the world by generating electricity from biomass, followed by China, Germany, Japan, India, and energy from biomass in some Arab countries, led by Qatar, followed by Jordan, Lebanon and the United Arab Emirates (UAE)<sup>(19)</sup>. The production capacity of biomass in 2017 increased by only 1 terawatt-hour 2016, to 555 TW / h in 2017. But about biofuels, international production increased from 19651 thousand tons of oil equivalent in 2005 to 84121 thousand tons of oil equivalent in 2017<sup>(20)</sup> and at fluctuating annual growth rates between increase and decrease. This fluctuation is due to competition other types of fuel as well as the costs, prices and conditions needed by fuel The table below shows these facts and developments in the international production of biofuels for the period 2005-2017, as shown in Table 8:



Table (8) Evolution of international production of biofuels for the period 2005-2017

years	Biofuels Thousand tons of oil equivalent	Annual growth rate
2005	19651	
2006	25666	30.6
2007	37429	45.8
2008	50109	33.8
2009	55894	11.5
2010	63906	14.3
2011	65680	2.7
2012	66848	1.7
2013	72415	8.3
2014	80009	10.4
2015	79866	-0.1
2016	81483	2.0
2017	84121	3.2

Table is prepared by researcher based on the information contained in:

BP Statistical Review of world energy, June 2018, p45

BP Statistical Review of world energy, June 2016, p39

## 5- International Markets of hydrogen energy

International hydrogen energy is seen as a renewable energy component of the future international energy balance mixture and is seen as a complement to conventional international energy supplement. However, advances in hydrogen energy use need long periods of time. The work done by some countries such as the United States of America to develop the use of hydrogen energy in many areas, especially in transportation, the use of hydrogen as a source of energy production in its beginnings, which is very modest, as some countries see that hydrogen will become the main source of energy in the transportation sector <sup>(21)</sup>. In general, the exploitation of hydrogen as a source of energy requires a lot of investment and technological development as well as the development of the hydrogen storage system. The focus on the safety of the use of hydrogen with high degree of safety is one of the most important concerns and that all this increases costs and creates obstacles to achieving the goal of producing hydrogen energy economically. With the success of many experiments and the development of ways to exploit hydrogen as a source of energy came the issue of saying markets for products that D hydrogen in power generation, which promised obstacles that, need more time to overcome. <sup>(22)</sup>

In general, increasing energy production from renewable sources will be at the expense of conventional energy sources, reducing international demand for conventional energy sources as well as reducing their contribution to international energy supplies. In return, international demand for renewable energies will increase and contribute to international energy supply. That the leading countries in the exploitation



of renewable energy sources achieve advantages in the energy sector, which reduces the environmental pollution and emissions that will change the climate as well as to achieve some assurance in the supply security.

#### **Fourth: - Future expectations of energy sources: supply and demand**

Developments in the nature of the structure of the international energy market like modern production methods from unconventional sources and expansion of the exploitation of renewable energy sources as well as the international calls to reduce environmental pollution from fossil fuels all change the nature of international energy consumption and are impacting the energy outlook. In the future, in general, the expectations of international energy vary from one institution to another and they differ for the same institution according to the scenarios adopted by the institution, and there are many expectations issued by international and non-international institutions and some of the company T interested in the affairs of international energy, but come the International Energy Agency and the Organization of Arab Petroleum Exporting expectations (OPEC) as the most important and most reliable forecasts in the field of energy.

The international energy demand and supply outlook of the international energy agency (IEA) and the organization of petroleum exporting countries (OPEC) depend on many of its assumptions in the future, namely the growth of economic activity represented by GDP and changes in the world population, taking into consideration international energy prices and the development of technologies Energy sources, and interest in trying to increase reliance on alternative sources of fossil fuels and environmental concerns takes a large part in the numbers of their forecasts<sup>(23)</sup>, as well as many variables and factors that are considered when preparing future expectations.

In general, the IEA forecast that the international economy will continue to achieve an average annual GDP growth rate that is strong and that the population will increase. The economic growth rate is expected to be measured by 3.7% GDP during the period 2020-2030, Economic growth in the next few years beyond 2030 will be modestly reduced to achieve an average annual growth rate of 3.1% in the period 2030-2040. Emerging economies such as China and India are expected to grow faster than the rest of the world. The IEA expects its arrival to be over (9 million in 2040 and currently 7.5 million)<sup>(24)</sup>, and that such an increase in the world's population and the continued growth of the international economy is an effective factor in influencing international energy demand and supply and reflects these expectations on international energy markets.

#### **1- Future outlook for international energy demand**



The International Energy Agency (IEA) agrees with OPEC in its forecasts of international energy demand, both of which assume a significant increase in international energy demand over the coming decades. These assumptions are the result of the assumption of population growth and the continued growth of economic activity with an improvement in living standards. Individual energy consumption is expected to increase in international energy supplies enough to meet energy needs adequately, and much of this increase in supply will come from unconventional sources and alternative energies. Despite the continued dominance of fossil fuels in beside demand and supply, as shown in the following table, this shows the international energy demand forecasts according to the scenarios of the international energy agency:

Table (9) Forecasting international energy demand up to 2040 according to IEA scenarios Million tons of oil equivalents

Different energy sources	New Policy Scenario		Current Policy Scenario (Reference)		Scenario 450	
	2025	2040	2025	2040	2025	2040
Oil*	4577	4775	4751	5402	4169	3326
Natural gas*	3390	4313	3508	4718	3292	3301
Coal	3955	4140	4361	5327	3175	2000
Nuclear Energy	888	1181	865	1032	960	1590
Hydropower	420	536	414	515	429	593
Bioenergy	1633	1883	1619	1834	1733	2310
rest of renewable energy	478	1037	420	809	596	1759
Total	15341	17865	15938	19637	14354	14879
Percentage of fossil fuels	77.9%	74%	79.1%	78.7%	74.2%	58.1%
Percentage of nuclear energy	5.7%	6.6%	5.5%	5.2%	6.6%	10.6%
Percentage of renewable energy	16.4%	19.4%	15.4%	16.1%	19.2%	31.3%

Source: International Energy Agency, world energy outlook, 2016, p64

\* Includes conventional and unconventional.

\*\* percentages were extracted by the researcher according to the table data

Table 9 shows the different estimates of international demand for energy sources in the International Energy Agency (IEA) scenarios. Each scenario assumes specific policies that will be reflected in the number of projections and from the current policy scenario known as the IEA reference status scenario, which has been strongly enshrined in international legislation to lead the energy sector, shows that international energy demand will rise from 15,938 million tons of oil equivalent in 2025 to 19637 million tons of oil equivalent in 2040.

It is assumed that demand for oil will constitute the highest proportion of energy demand compared to With the rest of the sources, estimated international demand for oil in 2025 by 4751 million tons of oil equivalent and expected to rise to 5402 million tons of oil equivalent, and coal is supposed to be the largest proportion of demand after the oil





comes natural gas after them, Fossil fuels will continue to dominate international demand despite the decline in total energy demand for 2025-2040 from 79.1% to 78.7%. Nuclear power assumes demand for 865 million tons of oil equivalent in 2025, accounting for 5.5% of the overall demand for the same year, its environmental problems and the caution of its exploitation in non-peaceful ways the international demand for renewable energy sources is estimated to decrease by 2040 to 5.2 percent of total world demand.

In terms of demand for renewable energy sources, this scenario assumes demand for all types of humbleness continues until 2040, Most of the increase in the demand for renewable sources will come from the demand for solar, wind, geothermal and hydrogen. Its of demand has doubled in the period 2025-2040 from 420 million tons of oil equivalent to 809 million tons of oil equivalent. Driven by technological improvements and dwindling The demand for hydroelectric power is expected to increase slightly or modestly for the period studied.

This moderation is due to the problem of water scarcity in most of the world. The demand for bioenergy is estimated at 1619 million tons of oil equivalent in 2025 and is supposed to increase. To 1834 million tons of oil equivalents in 2040. In general, the demand for renewable energies will constitute 16.1% of the total energy demand in 2040. In terms of the demand for unconventional energy sources, the demand for them as an important part of fossil fuels as well as their status In the main economy OECD countries, especially in the United States.

Also the international energy agency (IEA) expects that the increase in international energy demand will occur mostly in countries outside the Organization for Economic Co-operation and Development (OECD). China and India will constitute the largest increase in international demand and the Middle East will contribute effectively to increasing energy demand. The international energy agency (IEA) expects demand in their countries to decrease in order to rationalize its energy consumption pattern<sup>(25)</sup>. As for the new policy scenario, which assumes the current policies, taking into account the measures and measures announced by various countries to reduce environmental pollution resulting from fossil fuel consumption, this scenario assumes a decline in international demand for fossil fuels, estimated at 77.9% in 2025 To 74% in 2040. This decrease is due to the policies adopted by countries to maintain environmental balance by reducing environmental pollution. These policies stimulate investment in alternative sources to develop their technologies and efficiently use them to meet the needs of the world. Energy is expected to increase demand for alternative sources. The proportion of nuclear energy is expected to reach 6.6% of the total world





energy demand in 2040, and the proportion of renewable energy of all types to about 19.4% of demand Total demand for energy sources in 2040. And about scenario 450, which is supposed to follow stricter policies and reduce emissions with a probability of approximately 50% to reduce the international increase in temperatures resulting from the continuous increase in fossil fuel consumption, it is therefore expected that the dependence on oil, coal and natural gas as demand for nuclear energy increases as alternative energy. The international demand for fossil fuels is expected to decline from 74.2% in 2025 to 58.1% in 2040 of the total demand for energy. Nuclear energy supposedly reaching about 10.6% of Starved energy demand in 2040 and with respect to the demand for renewable energy is expected to demand ratio reaches total types to 31.3% of the total international energy demand in 2040.

## 2- Future outlook for international energy supply

The international energy agency (IEA) predicts that fossil fuels will account for the largest share of international energy supplies and over 70% of the world's total energy supply by 2040, with the rest coming from renewable energy, especially solar and wind. Especially in Japan, this will rely heavily on nuclear energy for its energy needs. Shale gas and shale gas will contribute significantly and significantly to the international energy supply as the costs of unconventional sources of energy which strengthens their economies and their position in the international energy balance<sup>(26)</sup>. On the other hand, OPEC expects the growth of world energy supplies to continue with the dominance of fossil fuels over most of the supply, as shown in table (10):

Table (10) The international supply of energy according to OPEC forecasts "reference scenario" for the period 2020-2040 Million tons of oil equivalent \*

Different energy sources	2020	2035	2040
Oil**	4496	4830	5043
Natural gas**	3514	4435	5616
Coal	4425	5064	5631
Nuclear Energy	704	881	1175
Hydropower	375	445	507
rest of the renewable energies, including biomass	1691	2137	2797
Total	15205	17792	20769
Percentage of fossil fuels	81.7%	80.5%	78.4%
Percentage of nuclear energy	4.7%	5.0%	5.6%
Percentage of renewable energy	13.6%	14.5%	16.0%

Table is prepared by researcher based on the information contained in:

Organization of the Petroleum Exporting Countries (OPEC), world oil outlook, 2014, p8

\* Conversion from one barrel of oil / day to one tons of oil equivalent with one ton of oil equivalent to 7.11 barrels of oil and the adoption of the year 360 days, and percentages extracted by the researcher according to the data of the table.

\*\* Includes conventional and unconventional.



Table (10) shows that OPEC expects international energy supply to grow from 15205 million tons of oil equivalent in 2020 to about 20769 million TEU in 2040. It also expects fossil fuels to contribute about 81.7% 2020. Despite its declining contribution to environmental and political considerations, it will remain dominant in the largest share of suppliment, which is expected to account for 78.4% of the world's energy supply in 2040. OPEC also expects the Nuclear Power Conservancy to account for up to 5% until 2040. As regards renewables, it is noted from Table (10) its contribution to international energy supply increased from 13.6% in 2020 to 16% in 2040. OPEC's expectations are clearly in line with the international energy agency's expectations regarding the international supply of energy, both of which see fossil fuels as the biggest contributor to the international energy supply. International energy supplies as oil and natural gas contribute more from unconventional sources of supply, no significant change in nuclear power is expected until the near future, and they agree on the increasing share of renewable energy in supplies significantly.

### Conclusions and recommendations:

#### Conclusions:

1. Fossil fuels represent the largest share of global energy demand, as well as supply, it is the largest contributor to the global energy supply, at the moment, and in the near future, despite the expectation that the proportion of fossil fuels will gradually decline but remain dominant in the energy sector. On the other hand, the natural depletion of fossil fuels and environmental damage are important factors that have pushed many countries to look for energy alternatives that are inexhaustible and meet the human needs of energy, so that non-conventional and renewable energy sources have emerged to take the role of complementary sources, for the time being fuels for Fossil and in the near future.
2. The global reserves discovered from non-conventional and economically viable sources of energy are very large and outweigh the proven reserves of traditional sources, giving great importance to these sources, as well as complementing the traditional oil and natural gas reserves. and prolong her life.
3. Access to clean energy, which will reduce environmental pollution by generating energy from renewable sources, has become the use of renewable sources in the generation and exploitation of electric power, with highly efficient technologies, and is become an important place in the global energy markets.



4. Non-conventional and renewable energy sources are important energies, to diversify of the global energy supply mixture at the moment, and are expected to play an effective and important role in supplying the world with energy in the future.

#### Recommendations:

1. Necessity, diffusion and awareness of the fact that fossil fuels are prone to depletion, which necessitates reducing dependence on it, and taking energy saving measures in the future.
2. Expand scientific research in the field of non-conventional energy sources in order to know their reserves more accurately and to increase research and exploration in this field.
3. Work on the creation of markets for renewable energy technologies, To make it simplifies Access and deployment it.
4. The need to develop the non-conventional oil and natural gas industry in the Arab countries for what these sources will represent in the future.
5. Necessity for international cooperation in the field of scientific research, and the transfer of technologies, in relation to non-conventional and renewable energy sources, and work on the formation of a special international agency in the field of alternative sources in order to support and strengthen efforts aimed at enhancing the efficiency of the investment of these sources.

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## *The Relationship between Nominal Interest Rates and Inflation in Iraq*

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### **ABSTRACT**

The main objective of this paper is to investigate the relationship between the nominal interest rates and inflation rate, and to verify the presence of the Fisher effect in Iraq during the period 2005M01 to 2016M12. Using the Johansen cointegration analysis and error correction model (VECM). The empirical results of this paper indicate that there is a long-run equilibrium relationship between nominal interest rates and expected inflation and existence of the partial Fisher effect in the long run . But, Fisher effect did not exist in the short run. Thus, there is the effectiveness of monetary policy in the short run, and the weakness of its effectiveness in the long run .

**Keywords:** nominal interest rates, inflation rate, Fisher effect, cointegration, VECM

### **1.INTRODUCTION**

One of the important results in classical economic theory is the neutrality of nominal variables in influencing real economic variables. Including that the changes in the quantity of money in circulation , which occur in accordance with the policy of the Central Bank translated in the economic fact simply to changes in the rate of inflation in the same percentage and direction, which is called the neutrality of money . These changes in the rate of inflation have no effect on the real interest rate, but have a full impact on the nominal interest rate. In the same proportion and also in the same direction, this is called the Fisher effect after economist (Irving Fisher) in his study in 1930 by distinguishing between nominal interest rate and real interest rates. The first variable is analyzed according to two separate variables : the expected inflation rate and the real interest rate. As such, the high inflation rate of 1% leads to a nominal interest rate rise of 1%, given that the real interest rate constant is not changed and is determined by other variables . Such as, the rate of return, portfolio risk, uncertainty and indicators of future saving and investment balances (Orr, Edey, & Kennedy, 1995).

By using the expectation operator, the mathematical representation of Fisher's effect is as follows :



$$(1 + R_t) = (1 + r_t) \cdot (1 + E_{t-1} \pi_t) \quad (1)$$

1) By multiplying the brackets on the right side of the equation (1), we get :

$1 + R_t = 1 + r_t + E_{t-1} \pi_t + r_t \cdot E_{t-1} \pi_t$  (2) Thus, we obtain the following Fisher equation :

$R_t = r_t + E_{t-1} \pi_t + r_t \cdot E_{t-1} \pi_t$  (3) Where  $R_t$  = nominal interest rate

$r_t$  = real interest rate

$\pi_t$  = the rate of inflation

$E_{t-1}$  = expectations operator conditional on information at time t-1

Hence,  $E_{t-1} \pi_t$  = expected inflation rate held in period t-1 for period t.

The term  $(r_t \cdot E_{t-1} \pi_t)$  is usually very small; thus it can be neglected. So, the equation (3) can be rewritten as :

$R_t = r_t + E_{t-1} \pi_t$  (4) So, Fisher effect can be written as follows ( $\Delta R_t = \Delta E_{t-1} \pi_t$ ) which proposes a complete (one to one) relationship between the expected inflation rate and the nominal interest rate.

Thus, Fisher's equation includes a number of cases as follows (Benazić, 2013) :

**First** : if the expected inflation rate equals zero  $E_{t-1} \pi_t = 0$ , then  $R_t = r_t$ . In this case the money will not be lose or earn any value. Thus, the cost of holding money is equal to the opportunity cost and real return on assets.

**Second** : if  $E_{t-1} \pi_t > 0$ , then  $R_t > r_t$ . Where the expected inflation rate is positive, nominal interest rates will always exceed real interest rates.

**Third** : if  $E_{t-1} \pi_t < 0$ , then  $R_t < r_t$ . Where the expected inflation rate is negative, the nominal interest rates will be lower than the real interest rates.

When the central bank makes a fixed nominal interest rate at a certain rate, especially when inflation increases and production costs rise in the productive sectors, the rise in the inflation rate will have a negative effect on real interest rates. This is what can be read economically from the differential formulation of Fisher's equation :

$$\frac{\partial r_t}{\partial E_{t-1} \pi_t} = -1$$



Assuming the existence of rational expectations so that the expected inflation is different from the actual inflation by a white noise stationary error term ( $v_t$ ), which can be specified due to (Muth, 1961) as :

$$\pi_t = E_{t-1}\pi_t + v_t \quad (5) \text{ and } \pi_{t+1} = E_t\pi_{t+1} + v_{t+1} \quad (6)$$

where  $v_{t+1}$  is the forecast error term of inflation at period (t+1), which are independently and identically distributed with zero mean and variance  $\sigma^2$ . As in Lahiri & Lee (1979), and Booth & Ciner (2001) and Cooray (2002) we have argued proxied the expected inflation to the next period's inflation rate ( i.e. inflation rate at period t+1) . Consequently, we can estimate the Fisher equation in the form :

$$R_t = \alpha + \beta\pi_{t+1} + \varepsilon_t \quad (7)$$

Where ( $\alpha$ ) constant, according to Fisher hypothesis represents the real interest rate . ( $\beta$ ) coefficient of the expected inflation proxy, according to the Fisher hypothesis it is equal to unity .

Several economic studies indicate that Fisher effect is a phenomenon in the long run that may not exist in the short run . By the hypothesis neutrality of money and based on (one to one ) principle between inflation rate and nominal interest rate provided by Irving Fisher , changes in money supply should not have an impact on real interest rates , but their effects are fully reflected on the nominal interest rates through changes in the inflation rate, because the long-term real interest rate is determined in the real sector through societal preferences and productive opportunities. Thus, Fisher effect which is the key pillar of monetary models, is more neutral than the neutrality of changes in the quantity of money in circulation. So, the central bank has to take potential monetary policy options to influence the behavior of the interest rates and the efficiency of financial markets . When inflation is targeted by monetary authorities to prevent it from rising, nominal interest rates should be kept at low levels so as not to discourage borrowing .

This paper is organized into five sections . After this introduction , a review of relevant literature is presented in section 2 . Section 3 describes data and methodology, while section 4 provides and discusses the empirical results . Section 5 closes the paper with a review of the most important conclusions .

## 2. LITERATURE REVIEW

There are many applied studies that have tested the Fisher effect in different countries, that have yielded mixed results, and this difference in



results may be due to the difference in the econometric techniques used or the time difference in the concerned country.

In this part of this study, we try to briefly review a number of research on the Fisher effect across countries in chronological order.

Darby (1975) in his analysis of the relationship between inflationary expectations and nominal interest rates, supported Fisher's effect on a long run in economies without taxes. But taking into account the effect of the tax on interest income, the response to change in nominal interest rates would be greater than the change in expected inflation to keep the real interest rate constant as in the previous period. And that a 1% increases in the nominal interest rate by  $1/(1-T)$  assuming that is the marginal tax rate, and this is so-called Darby effect.

Barsky (1987) presented one of the empirical studies on inflation dynamics that has provided evidence of Fisher effect long run. The purpose of his study was to explain the difference in the presence of the Fisher effect by the time period of the data. Using the correlation relationships and the corrected determinant coefficient, the results showed that nominal interest rates could be used as basic indicators to predict real interest rates.

Daniels, Nourzad, & Toutkoushian (1996) targeted test Fisher effect at the level of the US economy using quarterly data for the period (1957:1 to 1992:4) by applying modern methods of testing the unit root test and the cointegration test method by Johansen. Moreover, it is found that in the long run there is a unidirectional causality from the inflation rate to the rate of interest. But, in the short-run, the results indicate a bi-directional causal relationship between the two variables.

Crowder & Hoffman (1996) investigated the long-term equilibrium relationship between the nominal interest rate and inflation rate consistent with Fisher's equation in the US economy using the error correction vector model (ECM) and quarterly data for the period March 1952 to December 1991. The results indicated a common long-term trend of Granger's causality which is from the inflation rate to the nominal interest rate, highlighting that changes in inflation rate give information about the future path of nominal interest rates. In addition, they found that when a nominal interest rate tax is imposed, the Fisher effect involves a response to nominal interest rates greater than the change in the expected inflation rate in order to maintain the real interest rate stability in the previous period, that is consistent with Darby's effect (1975).





Weidmann (1997) introduced a verification of existence a long run equilibrium relationship between the nominal interest rates of treasury bonds and inflation by using the cointegration tests and the error correction model (ECM) for monthly data on the German economy for the period from January 1967 to June 1996 . However, the obtained results refuted the idea of a Fisher effect .

Booth & Ciner (2001) examined the long-run bivariate relationship between the interest rate of the European currency and the rate of inflation in nine European countries and the US by applying the technique of cointegration. The results of this study indicate that there is evidence of the Fisher effect in the European countries on the interest rate of European currencies and the expected inflation. Thus, the interest rate contains information about the future path of inflation .

Atkins & Coe (2002) examined the long-run Fisher effect in the US and Canada using ARDL techniques for monthly post-World War II data samples. They found evidence to support the long-run relationship in which the nominal interest rate response to the change in inflation is consistent and close (one to one ) evidence supporting Darby effect, especially in Canada .

Jareño & Tolentino (2012) tested the Fisher effect on the Spanish economy by using Ordinary Least Squares ( OLS ) Method for monthly data on the expected inflation rate and the yields of government bonds for one year during the period from (1993:2 to 2004:12). The results indicated that the Fisher effect was partially in Spain .

Incekara, Demez, & Ustaoglu (2012) aimed to test the Fisher effect of the positive relationship between nominal interest rates and inflation without any effect on the real interest rate ,using quarterly data on the Turkish economy for the period (1989:Q1 to 2011:Q4).By applying the VAR model and cointegration tests, they found evidence of the Fisher effect on the Turkish economy in the long run .

Fatima & Sahibzada (2012) analyzed, tested, presented the long-term and short-term relationship between money supply ,nominal interest rates and the inflation rate at the level of the Pakistan economy for the period (1980-2010). They applied the cointegration tests for Johansen method and the Error Correction Model (ECM). This study used the variance analysis model to explain the error correction model and Granger's causality in determining the direction of the relationship. The results confirmed the Fisher effect in the Pakistan's economy on both the long and short term.



Benazić (2013) examined the Fisher effect in Croatia using cointegration and vector error correction model ( VECM ) for quarterly data for the period from March 1996 to September 2012. The results indicated that the full Fisher effect was achieved in the long run. In the short term, however, the results showed the partial Fisher effect and very small .

Laiboni, Jagongo, & Ph, D. (2015) investigated the bivariate relationship between monthly inflation rates and monthly yields for three months Treasury bills from January 2009 to August 2015. They found that the time series of the variables were integrated in the first order. However, the results of the cointegration test indicated that there was no long-run equilibrium relationship between interest rates and inflation. Thus, the Fisher effect was not achieved in Kenya during the study period.

Nemushungwa (2016) tested the validation of Fisher effect and the dynamic relationship between nominal interest rates and the inflation in South Africa for quarterly data during (2001Q1 to 2014Q4), using autoregressive distributed lag (ARDL) bounds tests and the Granger causality test . The empirical results of this study indicated an equilibrium relationship between the nominal interest rates and the expected inflation in the long run, not according to Fisher's rule ( one to one ) and this shows that full Fisher effect is not achieved in South Africa, but rather the presence of the partial Fisher effect .

Uyaebo et al. (2016) tested the Fisher hypothesis in Nigeria using monthly data for the period (1970M01 to 2014M07) by applying the cointegration tests and the error correction model (ECM), that confirmed the relationship between nominal interest rates and inflation in the long run. However, the estimated value of the Fisher coefficient (0.08) in the cointegration relationship indicated a weak Fisher effect . On the basis of these results, they supported a weak Fisher effect in the long-run and nonexistence of the Fisher effect in the short-run .

Clemente, Gadea, Montañés, & Reyes (2017) used the cointegration approach to test the Fisher effect in the G7 economies for quarterly data for 1970-2015. The preliminary results of the study indicated that nominal interest rates and inflation rate were stationary at the level I (0). Later, they used Bai-Perron procedure to see structural changes in the Fisher equation. The final results of their study confirmed the relationship between nominal interest rates and expected inflation, but not in line with Fisher effect and the hypothesis of monetary neutrality. As the estimated values of Fisher parameters in G7 countries indicated that



changes in rates of inflationary expectations included the effect on real interest rates .

Dritsaki (2017) tested the equilibrium relationship between inflation and nominal interest rates on long-run in the three European countries, Germany, Britain and Switzerland for the period from (January 1995 to May 2015), using the ARDL approach of cointegration, as well as using the Toda-Yamamoto causality test in the VAR model. The results of bounds test in ARDL approach showed the cointegration of the two variables in the three countries and existence the Fisher effect in the long run. The results obtained using the Toda-Yamamoto method showed that the nominal interest rate had a positive relationship and affects the inflation in a wide range in the three countries, inflation affected the nominal interest rate in Germany only .

ALTUNÖZ (2018) examined the Fisher effect on the Chinese economy by testing the long-run relationship between the interest rates and the inflation rates, using monthly data for the period (1996:01 to 2015:03) by applying the ( ARDL ) model after knowing the stationarity degree of the time series of the variables, using Augmented Dickey – Fuller ( ADF ) test . According to the study results, he found the presence of the Fisher effect in China .

### 3. Data and Methodology

#### 3.1 Data

In this study , monthly data for the period (2005M01 to 2016M12) were used for nominal interest rates for primary credit and inflation rates from the annual statistical bulletins issued by the Central Bank of Iraq. After consolidating the base year (1993=100) data on inflation rates issued on the Central Bank's website with different base years .

The time series plot of the variables shown in the following Figures revealed that the monthly data of nominal interest rates and inflation rate in Iraq could be non-stationary and susceptible to the structural breaks in the period (2007-2008).

These observed characteristics of the two variables were helpful in selecting the appropriate econometric techniques for our analysis.



Figure (1)  
Interest Rates for Primary Credit in Iraq for Preiod (2005M01 - 2016M12)

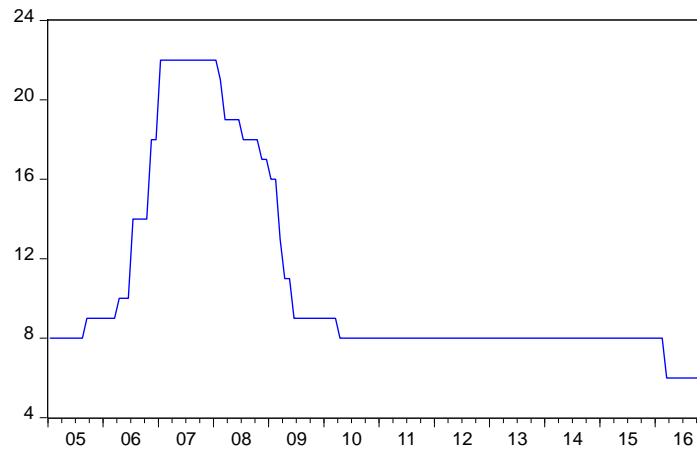
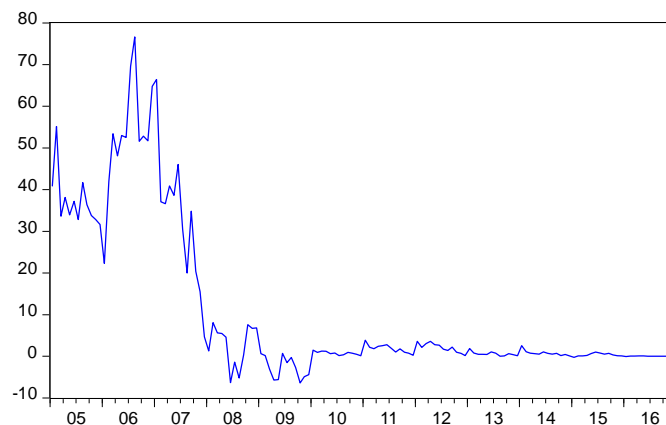


Figure (2)  
Inflation Rate in Iraq for Period ( 2005M01 - 2016M12 )



## 3.2 Methodology

### 3.2.1 Unit Root Test

The first step in analyzing the time series of the variables is to conduct the stationary test and determine its degree of integration . The absence of stationary time series in the linear combinations between the variables leads to shaded results through what is known as the spurious regression. In this case, the calculated values of t statistic for the estimated parameters are highly significant, the coefficient of determination  $R^2$  close to one. Then, in cases of non-stationary time series the t and F tests are not reliable, for they assume that the underlying time series are stationary (Gujarati, 2011,p: 217). It is therefore, necessary to use unit root tests to verify the presence of stationary or non stationary at the time series of variables to avoid spurious regression . For this purpose , the Augmented Dickey – Fuller test (ADF) proposed by Dickey & Fuller (1981) was used as the most common , which includes testing the following models :





$$\Delta y_t = \gamma y_{t-1} + \sum_{i=2}^p \beta_i \Delta y_{t-i+1} + \varepsilon_t \quad (8)$$

$$\Delta y_t = a_0 + \gamma y_{t-1} + \sum_{i=2}^p \beta_i \Delta y_{t-i+1} + \varepsilon_t \quad (9)$$

$$\Delta y_t = a_0 + \gamma y_{t-1} + a_2 t + \sum_{i=2}^p \beta_i \Delta y_{t-i+1} + \varepsilon_t \quad (10)$$

Dickey & Fuller (1981) provided three F-statistics (called  $\Phi_1$ ,  $\Phi_2$  and  $\Phi_3$ ) to test joint hypotheses on the coefficients. Using the equation (9), the null hypothesis is  $\gamma = a_0 = 0$  is tested using the  $\Phi_1$  statistic. Including a time trend in the regression so that equation (10) is estimated the joint hypothesis  $a_0 = \gamma = a_2 = 0$  is tested using the  $\Phi_2$  statistic and the null hypothesis  $\gamma = a_2 = 0$  is tested using the  $\Phi_3$  statistic (Enders, 2015,p:207). When rejecting the null hypothesis, we conclude the stationary of the time series. Unlike that, we can conclude non-stationary of the data and the existence of the unit-root problem. In this case, all previous models must be re-estimated in the differences formula until we reach the stationary time series of the variables under study. Then, we say that the time series is integrated in order (d), commonly denoted as  $y_t \sim I(d)$ .

### 3.2.2 Cointegration Test

In the next step, to determine the long-run relationship between the variables in the model I use the cointegration test.

This study employs the cointegration approach proposed by (S. Johansen & Juselius, 1990),( Johansen, 1992) which sets up a non stationary time series as a vector autoregressive process of order k in re-parameterized form as given in the following equation (Asteriou & Hall, 2011,p:368) :

$$Z_t = A_1 Z_{t-1} + A_2 Z_{t-2} + \dots + A_k Z_{t-k} + u_t \quad (11)$$

Thus, the VAR (11) above can be reformulated in a vector error correction model (VECM) as follows :

$$\Delta Z_t = \Gamma_1 \Delta Z_{t-1} + \Gamma_2 \Delta Z_{t-2} + \dots + \Gamma_{k-1} \Delta Z_{t-k} + \Pi Z_{t-1} + u_t \quad (12)$$

Where  $\Gamma_i = (I - A_1 - A_2 - \dots - A_k) = I - \sum_{i=1}^{k-1} A_i$ , (i=1,2,...,k-1) and  $\Pi = -(I - A_1 - A_2 - \dots - A_k) = \sum_{i=1}^k A_i - I$ . At the same time, the  $\Pi$  matrix contains information regarding the long-run relationships. We can decompose  $\Pi = \alpha \beta'$  where  $\alpha$  will include the speed of adjustment to equilibrium coefficients, while  $\beta'$  will be the long run matrix of coefficients. To find the number of cointegration vectors (S. Johansen & Juselius, 1990) used two likelihood ratios, trace statistic  $\lambda_{trace}$  and maximum eigenvalue statistic (denoted by  $\lambda_{max}$ ). The first



statistic using to test for the trace of the matrix , where the null hypothesis is that the number of cointegration vectors is  $\leq r$  against the alternative hypothesis is that the number of cointegration vectors  $> r$  , [(  $r = 0, 1, 2, \dots, n-1$ ) where  $n$  refers to the number of the endogenous variables in VAR ]. This statistic is calculated by :

$$\lambda_{\text{trace}}(r) = -T \sum_{i=r+1}^n \ln(1 - \lambda_{r+1}) \quad (13)$$

The second statistic ( $\lambda_{\text{max}}$ ) using to test the null hypothesis , that Rank ( $\Pi$ ) =  $r$  against the hypothesis that the Rank is  $r+1$  . In other words , it is used to test how many of the numbers of the characteristic roots are significantly different from zero . This statistic is calculated by :

$$\lambda_{\text{max}}(r, r+1) = -T \ln(1 - \lambda_{r+1}) \quad (14)$$

## 4. Empirical Results

### 4.1. Unit Root Test Results

To determine the order of integration of the variables, must be tested the null hypothesis of a unit root on the nominal interest rates and expected inflation rate . The results of the Augmented Dickey Fuller (ADF) test are reported in Table 1, which contains the values of t-statistic are calculated from estimates the models of this test on the level and on the first difference. By comparison with the critical values proposed by MacKinnon (1996), it is clear that the both of the two variables are not stationary in the level, but they are stationary in first difference formula at the 1% level of significance. This means that the variables are integrated of order one, i.e. I (1). The numbers in the parentheses refer to the optimal lag length based on the SC criterion .

**Table (1) ADF Unit Root Test Results**

Variable	Level		First Difference	
	Constant	Constant & Trend	Constant	Constant & Trend
$R_t$	-1.258700 (2)	-2.197242 (2)	-5.829944 *** (1)	-5.903069 *** (1)
$\pi_{t+1}$	-1.761212 (5)	-1.908879 (5)	-4.323447 *** (6)	-4.401146 *** (6)

The numbers in the parentheses show the optimal length of the lags based on the SIC criteria .

\*\*\* refers to as significant statistical within the 1% interval due to (MacKinnon, 1996) .



In the modeling of time series, after determining the order of integration of data, testing the existence of the cointegration relationship by Johansen procedure requires selecting the optimal lags order which is one of the challenges facing researchers in applied economic studies. Using a few lags can reduce the accuracy of predictions due to the loss of valuable information, but the addition of many lags increases the uncertainty in the estimation. Therefore, the choice of lags should balance the benefits of using additional information against the cost of estimating the additional coefficients (Stock & Watson, 2011, p:545). For this purpose, the study used five standard information criteria to select the optimal lag length after sitting the maximum lag period of the eighth order. These criteria are as follows: Likelihood Ratio (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC) and Hannan-Quinn Information Criterion (HQ). The results are reported in Table 2, which shows the varying lag order selected by the criteria. When the lag length chosen by (SC) criterion at order one and the lag length chosen by (HQ) criterion at order sixth, but the other three criteria agreed to choose the same period of lag at the eighth order. So, this lag length (Lags=8) will be used for both the cointegration test and error correction model.

**Table (2) Optimal Lag Order Selection**

Lag	LR	FPE	AIC	SC	HQ
0	NA	7051.597	14.53676	14.57980	14.55425
1	828.7327	14.04133	8.317744	8.446868*	8.370217
2	8.400848	13.96697	8.312382	8.527587	8.399835
3	19.41443	12.73556	8.219966	8.521254	8.342401
4	4.801393	13.01055	8.241119	8.628489	8.398535
5	22.93676	11.47733	8.115404	8.588856	8.307802
6	29.47770	9.568591	7.933043	8.492577	8.160422*
7	9.435377	9.391101	7.913674	8.559291	8.176034
8	11.93209*	9.013719*	7.871814*	8.603513	8.169156

(\*) indicates lag order selected by the criterion.

#### 4.2. Cointegration Tests Results

In order to determine the numbers of cointegration vectors in the Johansen technique between the cointegrated variables in the first order, appropriate model must be chosen for the deterministic components (the intercept and/or trend) of the multivariate dynamic system enter either the long run or short run, or both. The Johansen cointegration test includes five distinct models as follows (Asteriou & Hall, 2011, p:372-373):

Model 1 : No intercept or trend in Cointegration Equation (CE) or Vector Autoregressive (VAR) model.



Model 2 : Intercept (no trend) in CE , no intercept or trend in VAR .

Model 3 : Intercept in CE and VAR , no trends in CE and VAR .

Model 4 : Intercept in CE and VAR , linear trend in CE , no trend in VAR

Model 5 : Intercept and quadratic trend in the CE , intercept and linear Trend in VAR .

So, the problem lies in the five models one of which is appropriate in the test of cointegration, but the first model and the fifth model are unrealistic and are not believable in economic theory; therefore, the problem is reduced to choosing one of others three models .

Johansen(1992), indicates that the joint hypothesis of both order rank (number of cointegration relations) and deterministic components needs to tested, is to apply the so-called Pantula principle which includes the estimation of the three models and the presentation of the results from the most restrictive hypothesis ( $r=0$  and model 2) to the least restrictive hypothesis ( $r = n-1$  and model 4) . So, the process of choosing the appropriate model involves moving from the most restrictive model to the other models .At each stage, the calculated value of the trace statistic is compared to the critical value. The test is stopped only when it is obtained at the first time, when the null hypothesis which states that there is no cointegration relation is accepted (Asteriou & Hall, 2011,p: 373) .

On this basis , when applying Johansen System Cointegration Test in Eviews Program (taking into consideration the optimal lag interval (lag=8)) , 'option 6' was chosen to select the best model according to AIC criterion and SC criterion, for use in the (VECM) Vector Error Correction Model as in Table (3), which shows the number of cointegrating relations with the statistical significance between the nominal interest rate and the expected inflation by testing the joint hypothesis ( rank of  $\Pi$  and model ) using the tow statistics provided by S. Johansen & Juselius (1990). According to the AIC criterion , the appropriate model is in Rank 1 and Model 2, this means  $r = 1$  and intercept ( no trend ) in CE , no intercept or trend in VAR. This is due to the fact that this appropriate model has given the lowest value for this criterion ( AIC = 7.847312 ) .

**Table (3) Number of Cointegrating Relations by Model**

	Model 1	Model 2	Model 3	Model 4	Model 5
Trace	1	1	2	1	2
Max-Eig	1	1	2	1	2

The numbers in the Table denotes to the selected number of cointegrating relations by model at 0.05 level (\*\*).

(\*\*) Critical values based on (MacKinnon-Haug-Michells,1999).





Hence, the cointegration relation between the variables under study was tested as the best model (according to the AIC criterion) described above. The results were summarized in Table 4 which shows rejection of the null hypothesis that  $r = 0$  at the 5% level, because the calculated value of both the trace statistic and the max-eigen statistic is greater than its critical value. This is evidence of a one cointegration vector between the nominal interest rates and the expected inflation rate in Iraq .

**Table (4) Unrestricted Cointegration Rank Test**

No. of CE <sub>(s)</sub>	Eigenvalue	Trace Statistic	0.05 Critical Value	Max-Eigen Statistic	0.05 Critical Value
None	0.165272	28.83651**	20.26184	24.20700**	15.8921
At most 1	0.033959	4.629506	9.164546	4.629506	9.164546

\*\* denotes rejection of the hypothesis at the 0.05 level

### 4.3. Error Correction Model Estimation Results

In the next step, the error correction model should be estimated and tested for one of cointegration relationship VECM (1), in which the dependent variable is  $\Delta R_t$  and the matrices formula . The results were summarized as shown in the Table 5 .

**Table (5) Parameters Estimates of The Long Run Relationship and Adjustment**

Variable	coefficient	Standard Error	T-value
$R_{t-1}$	1.0000		
$\pi_t$	-0.319749	0.05645	-5.66471***
C	-6.928253	0.90352	-7.66810***
Adjustment of $\Delta R_t$	-0.060581	0.01770	-3.42252***
Adjustment of $\Delta \pi_{t+1}$	-0.15015	0.10272	-3.06671***

\*\*\*refer to as statistical significance at 0.01 level .

Table 5 shows the significance of the parameters of the long-term relationship, and proves that the values and signs of the adjustment coefficients are reasonable, as being less than one and negative at a significant level of 1%. ( $\Pi = \alpha \beta'$ ) is the mechanism of the error correction, where  $\alpha$  is the coefficient that indicates the speed of return from disequilibrium to long-term equilibrium, meaning that ( $\alpha$ ) shows the speed at which nominal interest rates change to remove the shocks in inflation during the month. According to the adjustment mechanism, we conclude that the adjustment coefficient drives the long-term interest rate by 6% per month to eliminate the long-term disequilibrium, so it takes more than 16 months to reach the full adjustment .



The results of cointegration analysis can be represented in the following equation of the long-term equilibrium relationship :

$$R_t = 6.928253 + 0.319749 \pi_{t+1} \quad (15)$$

Where ( $\alpha = 6.928$ ) it is the intercept, and according to Fisher's hypothesis, this coefficient represents the real interest rate. The coefficient  $\beta$  is (0.319749) with statistical significance at 0.01 levels. It is indicated that the expected inflation and the long-term nominal interest rates are moving in the same direction, but not the same percentage because it is less than one. This indicates that the partial Fisher effect is achieved in the long run .

#### 4.4. Weak Exogeneity Test

After confirming the long-term equilibrium relationship between the nominal interest rates and the expected inflation in Iraq . The weak exogeneity test should be conducted for expected inflation , to establish the long-term causation trend of expected inflation to nominal interest rates, as well as seeing whether the observed variable in the short-term model can be used , or excluded from the short-term model and remains in the long-term equation only (Benazić, 2013) .

In error correction models, the observed variable is said to be weakly exogeneity if the correction coefficient for this variable in error in the model is statistically insignificant (Opolot & Mpagi, 2017). Therefore, the weak exogeneity is investigated by the test of term  $\alpha$  which to represent to the coefficient of speed adjustment to equilibrium , is it equal to zero? this is done by imposing appropriate constraints on the previously estimated error correction model VECM(1). The results are presented in Table 6 .

**Table (6) Cointegration Restrictions and Weak Exogeneity Tests**

Restrictions	B(1,1)=1 , A(1,1)=0	B(1,1) =1 , A(2,1)=0
Chi-square (1)	10.42487	8.461371
P-value	0.001243	0.003628

Table 6 contains two constraints on the cointegration relation and the calculated value of the  $\chi^2$  statistic according to the Likelihood Ratio (LR) test for each constraint. Stating that the second column of the Table a null hypothesis test that states a weak exogeneity of nominal interest rates, the third column is a test of the null hypothesis that states the weak exogeneity of the expected inflation in the model. As it can be seen from the Table, the statistical significance of  $\chi^2$  statistic at 0.01 levels, which can reject the null hypothesis for each variable . Thus, it indicates the non



weak exogeneity, and supports this result is the high statistical significance of the error correction coefficients in Table 5 .

Based on this, I conclude that there is a long-run and the two-way causal relationship between the two variables, but they have little effect. In addition, although the parameters estimated in the VAR were not significant in the error correction model VECM, it was not possible to exclude the expected inflation from the short-term model .

According to the above results, by using the expected inflation as an explanatory variable in the short-term dynamic model as :

$$\Delta R_t = \beta_0 + \beta_1 \Delta \pi_{t+1} + \alpha ECM_{t-1} + e_t \quad (16)$$

Where  $\Delta$  is the first difference operator,  $\beta_0$  is the intercept,  $\beta_1$  is the estimated coefficient,  $\alpha$  refers to the coefficient of error correction and  $e_t$  is the error term (white noise process). The results of the short-term dynamic model estimation were shown in the Table below .

**Table (7) Short Run Conditional Dynamic Model <sup>(1)</sup>**  
Dependent Variable :  $\Delta R_t$

Variable	coefficient	Std. Error	t-Statistic	Prob.
Constant	0.025032	0.058473	0.428091	0.6693
$\Delta \pi_t$	-0.008667	0.012958	-0.668880	0.5048
$\Delta \pi_{t-1}$	-0.015926	0.011715	-1.359429	0.1764
$\Delta \pi_{t-2}$	-0.027279**	0.011614	-2.348873	0.0204
$\Delta \pi_{t-5}$	-0.010191	0.012922	-0.788645	0.4316
$\Delta \pi_{t-7}$	-0.024612**	0.010821	-2.274409	0.0246
$ECM_{t-1}$	-0.074450***	0.010814	-6.884434	0.0000

The results in the Table after excluding the estimated coefficients less significant.

\*\*\* indicates statistical significance at the 1% level, \*\* indicates significance at the 5% level .

The results in Table 7 indicate the significance of the short-term adjustment coefficient at the 1% probability level, but most short-term expected inflation coefficients are not statistically significant, although their values are very low. This can be explained by the fact that the monetary authorities in Iraq during the period under the study were working within the policy of the inflation targeting. One of the requirements of this policy is to determine nominal interest rates in the short run by the central bank and not through the market mechanism . Therefore, there may be fluctuations in real interest rates that will not remain constant, which is not consistent with Fisher effect .



## 5. Conclusions

This paper aimed to investigate the relationship between the nominal interest rates and the inflation rate, and to test the Fisher effect in Iraq during the period 2005M01 to 2016M12. Using the Johansen technique in the cointegration analysis and error correction model. The first result was non-stationary of the two variables in the level, but they are integrated in first order, i.e. stable in the form of the first difference. When testing the rank of the cointegration, we found that there is a stationary equilibrium relationship between nominal interest rates and expected inflation in the long run. The increase in inflation of 1% leads to nominal interest rates increases of 0.319 % over the long run. Thus, achieving long-run partial Fisher effect and absence of the Fisher effect in the short run. The most likely reason is that the monetary authorities in Iraq after 2003 are operating within the framework of the targeting inflation policy, and accordingly it should be determined interest rates centrally and not to let them according to the market mechanism.

These results have led to a partial and small partial neutrality of the inflation affecting real interest rates in the long run and non-neutrality inflation in the short run. At the same time, due to the existence of the partial Fisher effect in the long run, and its absence in the short run, I conclude the effectiveness of monetary policy in Iraq in the short run and the weakness of its effectiveness in the long run. As the Fisher effect is weaker, as the credibility of monetary policy increased.

Using the weak exogeneity test, by imposing the necessary constraints on the estimated model, I found that both nominal interest rates and expected inflation are not weak exogeneity. Thus, there is a bidirectional causal relationship between these two variables in the long run.

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*The role of green financial institutions in achieving sustainable development: A vision in the possibility of its application in Iraq*

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**Abstract**

Since the second half of the 1980s, after the publication of the ICRC's report on environment and development (1987), the issue of sustainable development has occupied a prominent place in economic literature. Over the past few decades, the shifts in the global economy from the liberalisation, opening up and accelerating the pace of globalisation. Globalisation has increased competition among countries without considering the adverse effects and serious consequences on the environment and the depletion of resources, which deprives the right of future generations.

The international financial institutions have tried to address this imbalance by seeking sources of financing and investment in economic activities that preserve the environment. Additionally, it works to achieve a balance between the interests of present and future generations, thus making development and sustainable growth.

The research seeks to show the role played by green financial institutions to achieve sustainable development through the provision of financial resources with the Iraqi perspective.

Keywords: sustainable development, sustainable growth, green financial institutions, green bonds.

**Introduction:**

Sustainable development is a guarantee of steady progress and the best alignment of resources and needs. Over the past few decades, the transformation of the global economy from the liberalisation towards globalization has intensified competition among countries. It has increased production without considering the adverse effects and serious concerns on the environment and the depletion of resources, which robs the right of future generations. Putting the economy on a sustainable development track requires an unprecedented shift in investments away



from polluting, greenhouse, etc. Hence the international financial institutions try to address this imbalance by seeking financial sources and investment in economic fields to preserve the environment for sustainable growth.

**Objective of the research:** The research aims to demonstrate the role of green financial institutions (through the use of green financial instruments) in achieving a sustainable economy that ensures the right of present generations to live decent without harming the right of subsequent generations.

**Research hypothesis:** Green financial institutions and their derivatives have a pivotal role in promoting sustainable development to preserve the rights of generations in light of the successive and rapid changes in the global climate.

**Research Problem:** The economic progress achieved at the global level led to a significant depletion of natural resources, and the accompanying neglect of the environment, which led to the decline of the progress. Therefore, sustainable development needs new and innovative tools to maintain sustainability.

### **1- sustainable development. A conceptual framework**

The issue of economic growth has clearly emerged as an economic concept since the end of the Second World War. The researcher explained that the issue of development is more complicated than a shortage of financial resources, besides these resources, there is the issue preservation of the environment.

It also became clear that development is not merely an economic issue that is exposed to economic quantities of production, investment and savings, or exports and imports, or industrial strategy or other. Economists have studied, it as a complex social issue, where the economy overlaps with politics and law, and play social, technological and demographic factors that cannot be neglected.<sup>(1)</sup>

In light of these developments, countries and institutions are beginning to realize that putting the global economy on a sustainable development path requires an unprecedented shift in investments towards technologies and models for sustainable growth and development.

Although the environmental issues are not new, the researchers have recently begun to understand their complexities. In the past, the concerns





have been focused on the effects of development on the environment. Today, we need to be equally concerned with the ways in which environmental degradation can put down or reverse economic development.<sup>(2)</sup>

After the integration of the term sustainability, as a new concept at the global level, which led to a significant improvement in the development approach. It became necessary to develop all ideas related to the economic field in general and the development field, in particular, has shifted from economic and social direction to sustainable development that takes into account the environmental dimension and future generations.<sup>(3)</sup>

The concept of sustainable development was first addressed in 1987 by the Brundtland Commission, which defined it as meeting the needs of the current generation without compromising the needs of future generations. It is a set of policies and activities geared towards the future. Enable all members of the community to expand their capabilities to the possible extent and employ them to ensure the achievement of a benefit acquiring future generations. Thus, the term sustainable development is not limited to growth, but beyond, as it refers to a wide range of issues require a multifaceted approach.<sup>(4)</sup>

The will of all countries are required to manage the environmental issues and preserve development threaten. Environment and development are not two separate challenges, but are inextricably linked. Development cannot be based on a crumbling ecological resource base, nor can the environment be protected when growth falls from costing. Destruction of the environment, these effects cannot be addressed separately by fragmented institutions and policies, because they are intertwined in a complex system of causes and effects.<sup>(5)</sup>

The concept of sustainable development has arisen as a result of the imperfect growth and development that did not provide the basis for judging the costs and benefits of different policies. The deterioration in the environmental situation at the global level has led to the need to integrate the environmental dimension in development and development planning.<sup>(6)</sup> Consequently, many seminars and conferences on environment and development were held, and sustainable development was defined through several definitions, all in one sense, namely that



sustainable development should be concerned with meeting the needs of present generations without prejudice to the needs of future generations.

Overall, there is a consensus that sustainable development refers to a wide range of issues and requires a multifaceted approach to economic, environmental, human and institutional capacity management. This information contains the current state affairs, trends and pressure points, and the impact of overlaps. The indicators allow decision-makers and policymakers to monitor the progress towards sustainable development.<sup>(7)</sup>

The Commission on Sustainable Development of the Earth Summit has published a book on sustainable development indicators, which comprises about 130 indicators classified into four main categories or dimensions such as, economic, social, environmental and technological<sup>(8)</sup>

First: The Economic Dimension: This dimension includes the current and future implications of economic activity on the environment.

- Per capita consumption of natural resources: In developed and mainly industrialised countries, the average per capita consumption of oil, gas and coal is twice as high in developing countries. Solo and Hartock stated that use is sustainable if it is maintained or increased over time. If it falls below its level or decreases over time, this consumption is unsustainable.
- Poverty eradication: Sustainable development, in developing countries, is concerned with channelling resources for optimal exploitation to improve and raise living standards in these countries. Local demand for agricultural products, manufactured goods and services will increase as the population grows, requiring the satisfaction of the basic needs of individuals in those goods and services in developing countries.
- Reducing income inequality: Sustainable development aims to reduce disparities in the distribution of countries between the rich and the poor. Thus, it requires that economic and social policy be directed to invest the available resources and equitable distribution among all to ensure their rights. These resources in the form of investments, goods and services in a sustainable manner reduce pressure on the environment.

Second: The social dimension: This dimension includes the social requirements for achieving and maintaining sustainable development:

- Good governance: It is one of the essential elements of sustainable development. It is required to choose democratically and encourages participation in governance by all members of society. The achievement



of this goal will be reflected in the political and economic decisions that will be in the interest of community.

- Providing health and education services: It is one of the fundamental objectives of sustainable development to provide essential health services and educational programs from the initial stages to the higher steps. Additionally, the acquisition and development of knowledge of individuals is a crucial goal of sustainable development.

- Population growth and distribution: This means to control the population growth and pay full attention to the welfare and composition of the family in general. Moreover, it works to distribute the population between urban and rural areas in a planned order to protect the green environment of agricultural land and reduce pollution in central cities.

Third: The environmental dimension: The environmental dimension of sustainable development means to achieve the economic well-being of present and future generations through preserving the environment from pollution and enabling it to provide a standard of living that continuously improves over time.

- Conservation of water resources: Sustainable development aims to preserve water uses by reducing wastage, constructing dams for storing water and protecting groundwater, as well as improving water and sanitation networks and improving drinking water quality.

- Protecting the climate from global warming: It means to avoid the actions that bring significant changes in the global environment. Different radiations, nuclear and chemical residues lead to adverse effects on the planet.

Fourth: Technological dimension: It is necessary to use the knowledge and modern technological methods to achieve society and sustainable economy development. The following are the most essential pillars of sustainable development: <sup>(9)</sup>

- Use of advanced technology and cleaner than industrial facilities.
- Reduce the emission of gases, hydrocarbons and global warming.

Generally, sustainable development aims to improve the living standards of individuals by taking care of their health, protecting the surrounding environment from pollution, and efficient use of resources. It leads to improve the economic competitiveness of the country in the long term, that is, sustainable development requires the integration and integration of several economic, environmental and health factors. The most important goals that sustainable development seeks to achieve are as follows: <sup>(10)</sup>



- Develop the standard living of the population by focusing on the relations between the activities of the society and the environment through the measurements of the environment quality, reform and rehabilitation and develop a relationship of integration and harmony.
- Enhance the awareness in the population of the existing environmental problems as well as developing their sense of responsibility towards them. It encourages the citizens to participate actively in finding appropriate solutions through their participation in the preparation, implementation, follow-up and delivery of sustainable development programs and projects.
- Respect for the natural environment and therefore, sustainable development is the one that accommodates the sensitive relationship between the natural environment and the built environment. Moreover, it develops this relationship to become a relationship of integration and harmony.
- Achieve the exploitation and rational use of resources. Sustainable development deals to prevent depletion or destruction of limited resources and encourages their reasonable use and employment.
- Link the modern technology to the goals of society for sustainable development attempts to employ advanced technology to serve the purposes of society, through raising awareness of the population on the importance of technology in the developmental field. Additionally, it helps to use the new and available technology in improving the quality of life and achieving desired objectives, without leading to risks, or at least controlling these effects.
- Make a continuous and appropriate change in the priorities of society through a proper method. It allows achieving a balance through which economic development can be activated, on all environmental problems.
- Achieve technical, economic growth to preserve the natural capital, which includes natural and environmental resources, which in turn requires the development of institutions and infrastructure to manage the risks. It ensures equality in the sharing of wealth between current and successive generations. A set of indicators to assess sustainable development are:<sup>(11)</sup>
- Average GDP per capita: This indicator is one of the crucial signs used to measure the robustness of the economy and evaluate performance. This indicator is calculated by dividing GDP by the total population. It also loses its importance as the proportion of the people whose actual income





is far removed is significant, but it is an essential component of the quality of life according to the United Nations.

- Exports of goods as a percentage of imports of goods: This indicator shows the relationship between the semen economy with other economies in the world, and the components of the index are exports and imports of the country. This indicator reflects the variation in the exchange rate and international competitiveness, and trade liberalization, in general, may have effects. Alternatively, this indicator can have adverse effects by increasing the unsustainable use of resources when environmental costs of production are not taken into account.
- The proportion of official assistance in GNP: This includes official development assistance and /or soft loans provided by the formal sector to some countries and regions in order to promote development within a year Divided by GNP multiplied by 100, this indicator is an essential measure of the contribution of states to the international partnership in development. It measures the levels of assistance, facilitating the conditions that aim to achieve global growth. When official development assistance flows from donor countries are measured, this includes bilateral payments from concession funds to developing countries and multilateral institutions.
- Net foreign investment as a percentage of GDP: This indicator is calculated according to the following formula:
- Foreign investment ratio = net direct investment / GDP multiplied by 100 This indicator measures the stimulus in economic development, an important financial element in accelerating the pace of development.

## 2- the concept of green financial institutions and strategies

Over the past three decades, the world economy has witnessed spectacular technological, technological and informational developments. In contrast, the world economy has faced many challenges and difficulties.

These challenges have changed the perception of how sustainable development and sustainable growth can be achieved. The success requires the adaptation of the facts, and the development of appropriate strategies to achieve them.

In this context, international financial institutions such as the World Bank, the International Monetary Fund and others are beginning to find solutions to these challenges, which pose an imminent threat to economic



stability, and have started to devise solutions by shifting towards a green economy in an attempt to mitigate the severity of environmental challenges and changes.

Green financial institutions (green banks, green financial markets, asset management companies, green insurance companies, green pension funds, etc.) are one of the most recent innovations that finance green economic activities by offering long-term loans at low-interest rates.

Green finance, as part of green banking, contributes significantly to the green industry and green economy, and is part of a global initiative by a group of stakeholders to save the environment.

There have been many definitions of green financial institutions. Some have defined them as all forms of investment or loaning that take into account the environmental impact and promote environmental sustainability. Important aspects of green finance are sustainable and banking investments. Investment and lending decisions are made based on environmental screening. Risk assessment to meet sustainability criteria, as well as insurance services covering environmental and climate risks.<sup>(12)</sup>

Or institutions that provide low-cost and long-term financial resources through the use of various financial mechanisms (stocks, bonds, etc.) to use it in financing environmentally friendly and low-emission projects such as renewable energy projects, clean water supply projects, wastewater treatment plant, solid waste disposal and disposal plants. Hazardous waste, biogas plant ... etc.<sup>(13)</sup>

It is clear from this that the concept of green financial institutions revolves around their ability to provide the necessary financial resources from different institutions, whether public or private, in investments that respect and preserve the environment (environmental considerations have started to play a significant role in financing projects).

These institutions seek to support green growth and sustainable green development and achieve a balance, harmony and integration between the environment and the economy.

Areas of green finance cover improvement of environmental degradation (air pollution, deforestation treatment, biodiversity loss, soil conservation, clean energy, renewable energy projects, green housing,



rural and environmental tourism, pharmaceutical waste recycling, energy efficiency improvement and heat utilisation projects).<sup>(14)</sup>

For successfully aligning the financial system with sustainability objectives, financial management must target the following goals:<sup>(15)</sup>

- Raise awareness among regulators and market participants in the financial sector regarding environmental and climate risks.
- Develop the capacity of the financial industry to analyse and manage environmental risks through knowledge building and participation.
- Build capacity in the financial industry to develop sustainable financing practices and new lending tools to finance sustainable projects such as renewable energy.
- Promote transparency through ESG disclosure requirements.
- Provide incentives, if needed, to banks and non-governmental financial institutions to finance green projects.
- Support the development of new market sectors, such as the green bond market or climate risk insurance.
- Develop long-term sources of local currency refinancing for banks to enable them to extend long-term credit.

For achieving these goals, there is a need for dialogue among all relevant local stakeholders. Public financial institutions including central banks, development banks and public pension funds can play an important role in developing and promoting adaptation to new green financial products. International initiatives and networks, the Sustainable Banking Network, the Sustainable Stock Exchanges Initiative, the G7 Initiative on Climate Risk Insurance and the G20 Green Finance Study Group, help countries to benefit from international expertise.<sup>(16)</sup>

The following strategies are needed to attain green finance:<sup>(17)</sup>

- Allocate a political environment to encourage green investment
- Increase public and private sector investments.
- Identify appropriate projects for green finance.
- Identify issues and approaches for green finance.
- Define the role of different credit rating agencies in promoting and supporting green finance institutions.

The objectives of the green financial institutions are as follows:<sup>(18)</sup>

- Develop strategic plans to finance green projects.
- Create awareness and build capacity for staff on green finance.



- Dissemination of information on green projects, project plans, unit costs, etc.
  - Create awareness among potential entrepreneurs and identify appropriate projects to invest in.
- 3- the relationship of green financial institutions to sustainable development.

Green financial institutions are crucial to spreading a culture of transition to an economy free from the consequences of global warming and climate resilience. This type of innovation helps create fair and green jobs and build prosperity, enhancing countries' ability to build resilience and respond to the effects of climate change, and more markets. Khadra helps financial markets diversify costs and distribute risks for investors interested in environmental and climate issues.

International financial institutions and multilateral banks have begun to devise financial instruments and products to meet the challenges of environmental pollution, catalyzing the trend towards a low-carbon, environment-friendly economy.

Financial institutions take a variety of forms, which may be public institutions, maybe private institutions, and possible joint institutions, and these institutions provide the necessary monetary resources to serve the process of achieving the transition towards a green economy and conservation and low emissions, by:

First: Providing essential financial resources to build an advanced infrastructure:

Massive investments in green and flexible infrastructure are estimated to be needed worldwide. For example, the infrastructure gap in developing Asia from the Asian Development Bank was assessed to reach \$ 26.2 trillion between 2016 and 2030 or \$ 1.7 trillion. Annually, of the \$ 26.2 trillion that needs to be invested by the 45 member countries of the Asian Development Bank, \$ 3.6 trillion is explicitly required to mitigate and adapt to environmental pollution. 56% of energy investment is needed, 32% For transportation, 9% for no As for Southeast Asia alone, the 2015 ASEAN Investment Report estimates that US \$ 110 billion per year is needed to invest infrastructure in energy, transport, ICT, water and sanitation in ASEAN until 2025. <sup>(19)</sup>

Second: Providing financial resources for the establishment of low-emission projects and preserve the environment, and this represents the





most prominent role of these institutions. New financial provides financial needs.

Of the 1,874 signatories to the Principles for Responsible Investment (6.5%) coming from Asia, about 122 financial institutions have signed up to global sustainable finance initiatives. Signatories include asset holders, investment managers and professional services, partners. Of the 57 insurers that have globally signed the FI Principles for Sustainable Insurance of the United Nations Environment Program (UNEP), 8 of them from Asia (14 per cent), according to the 2016 Global Sustainable Investment Review, total sustainable investment assets Managed in a US \$ 52 billion in 2016 (excluding Japan).<sup>(20)</sup>

Japan is the fastest growing market for sustainable investments with sustainable investment assets increasing from \$ 7 billion to \$ 473.6 billion between 2014 and 2016. This increase in sustainable assets can be explained by changes in Japan's sustainable investment market, as well as increased reporting and sustainable investment activities from institutional asset owners.<sup>(21)</sup>

On the other hand, the most recent development has been the creation of Green Bonds by international financial institutions, and financial institutions have started trading in the financial markets to face environmental degradation and mitigate it. Almost 12 years after the issuance of the first bond, the green bond markets saw strong momentum, rising from about \$ 800 million in 2007 to about \$ 155.5 billion by the end of 2017.

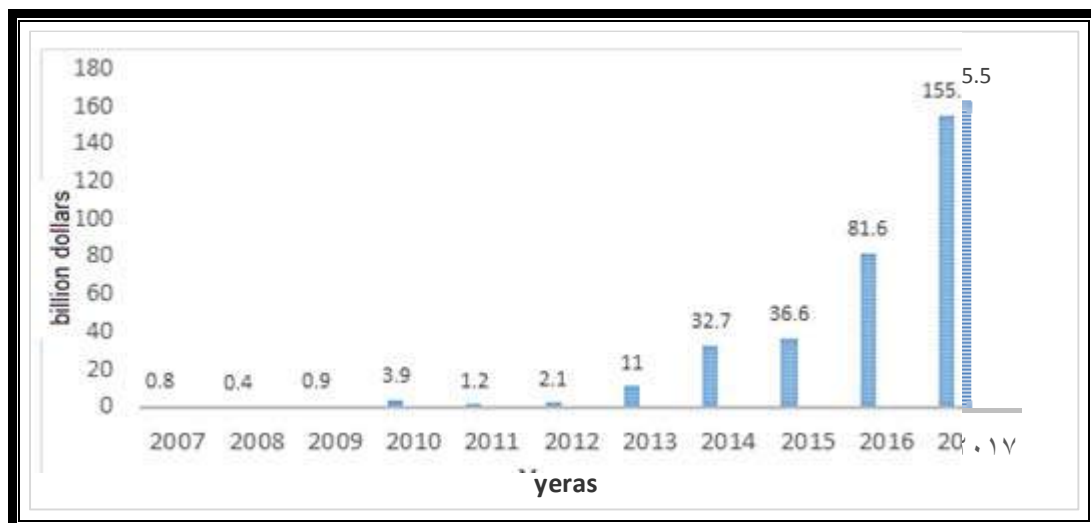


Figure (1) The volume of green bond issues for the period 2000-2017 globally (US \$ billion)



The form of work of researchers based on:

– Green Bonds Highlights, Climate Bonds Initiative, Different numbers.

The form of research work based on: Green bond markets have become more important as a source of long-term financing in green investments around the world. In Asia, China was the largest issuer of green bonds in 2016 with a total green bond issue of 248.6 billion yuan (the US \$ 37.1 billion). The following chart shows the green lending from Chinese banks as a share of total bank assets for the period 2007-2016.

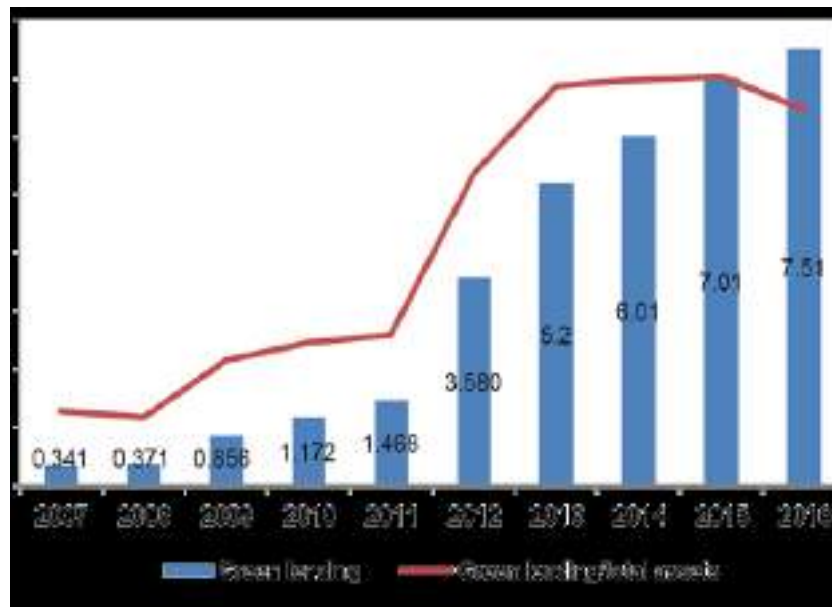


Figure (2): Green lending from Chinese banks as a share of total banking assets for the period 2007-2016 (RMB 1 trillion)

Source: Ulrich Volz, Fostering Green Finance for Sustainable Development in Asia, Asian Development Bank Institute, ADBI Working Paper Series, Tokyo, 2018, p9.

In India, climate bonds were first issued in 2015 to be used to finance renewable energy projects such as solar, wind, renewable energy, energy efficiency and biomass, and spread rapidly and some banks and institutions have issued many of these bonds, and inspired and encouraged the increasing popularity of green bonds stock market. The Securities and Exchange Commission to create a more favourable environment for green bonds, and in 2016 developed a set of regulations, instructions and regulations for the work of these bonds. <sup>(22)</sup>

In South Korea, the first Asian green bonds were issued in 2013 by the Export-Import Bank of Korea, raising the US \$ 500 million. Indonesia saw its first environmentally friendly bond issuance in April 2014 with IFC support with a partial credit guarantee of residential development of



Rs 500 billion. Efforts are underway to develop green bond markets elsewhere in the region, and in March 2017 the Singapore Monetary Authority (SMA) launched a green bond grant plan covering costs up to S \$ 100,000 per issuance for an external review of available green bond issues. In September 2017, the ASEAN Capital Markets Forum, which brings together the capital market regulators of the 10-member Association of Southeast Asian Nations (ASEAN), launched the ASEAN Green Association (ASEAN) Green Standards, based on the International Capital Markets Association (ASEAN).<sup>(23)</sup>

The eurozone has also witnessed significant developments in the green bond market based on an extensive financial infrastructure. The EU market has seen participants and investors as well as increased support from EU institutions.

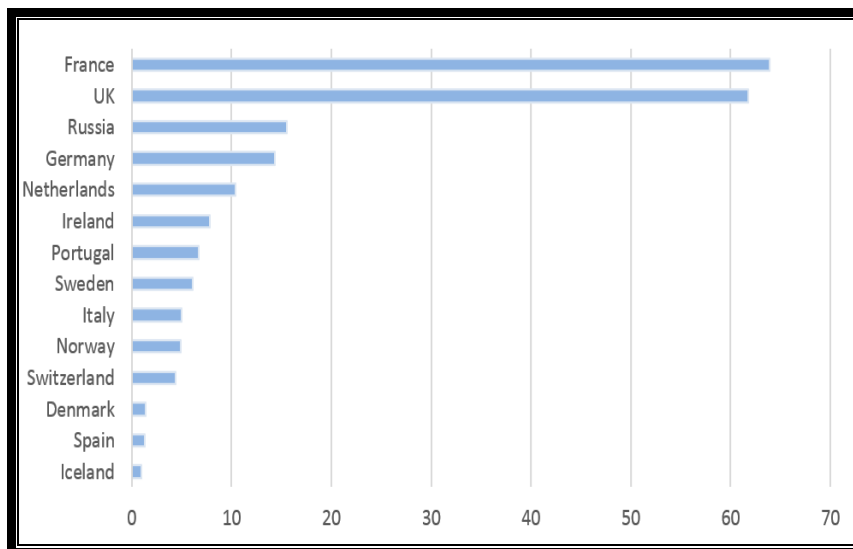


Figure (3) Geographical distribution of green bonds in Europe until 2016

Source: European Commission, Study on the potential of green bond finance for resource – efficient investments, the office of the European Union, Luxembourg, 2016, p24.

The EU green bond market is generally developed due to well-established funding infrastructure, active participation of EU-based organizations and political support, yet there are significant differences in the development of the green bond market across EU member states, mainly due to the differences in the development of the national bond market and policy frameworks. The EU green bond market is led by multilateral development banks (such as the European Investment Bank and the European Bank for Reconstruction and Development), municipalities, companies, etc.



Based on the significant developments and the rapid growth in the green bond markets, these markets are expected to play an essential role in the transition towards a low-emission economy.

To, achieve sufficient funding for mitigation and adaptation costs, IFIs and multilateral banks should:<sup>(24)</sup>

1. More sovereign issuances from developed and emerging economies as more governments seek to finance climate-friendly infrastructure and encourage investors to enter green capital markets.
2. Progress in common international standards and definitions for green bonds, with the launch of a European sustainable finance rating expected in the first half of 2018.
3. Regulators will continue to innovate with further guidance, regulations and incentives being developed.
4. Pressure the banking sector to increase green lending and switch to green finance to help achieve the Paris objectives.
5. Increased linkages between green bonds, green investment and the SDGs, particularly as a funding source for goals 6, 7, 9, 11, and 13, but the aim is to keep the volume of issuances doubled by the end of 2020.

In this context, these institutions have been able to mobilize and direct financial resources towards environmentally friendly and low-emission investments, and there is a looming glimpse of the horizon. By integrating sustainability goals into financial decision-making, we not only reduce our environmental footprint or social inequality, but also reduce the impact of long-term risks on global environmental health in general, and the stability of the financial system in particular.

#### 4- Environmental sustainability .. Necessity to sustain development

The importance of financial institutions in the process of achieving growth and economic development of any country has become self-evident, as most economic literature (especially recent ones) on the importance of institutions as one of the most critical elements of development and growth, and financial institutions retain a leading role in the economic system through the financing of economic activities (Production, investment, trade) as well as creating incentives for saving.

The Green Economy Initiative was announced by the United Nations Environment Program (UNEP) in late 2008. The initiative consists of a





set of components aimed at supporting, analyzing and formulating policies aimed at investing in the green sectors on the one hand, and on the other hand the greening of unclean and non-environmentally friendly industries. For existing projects, it is required to pre-plan the transition towards a green economy, through the renewal of technologies. It ensures their adaptation to a clean environment and the requirement of the same results for new projects.<sup>(25)</sup>

The green economy represents the environmental dimension of sustainable development as well as the economic and social dimension. The green economy aims to link the requirements of achieving all kinds of development with the protection of the environment. Rio + 20 Conference stressed that the green economy is one of the essential tools to make sustainable development and enhance its capacity. It aims to manage natural resources in a sustainable manner, increase the efficiency of using resources, reduce waste and reduce the harmful effects of development on the environment. It also aims to achieve economic prosperity and social security. The principle of the relationship between the green economy and sustainable development is the relationship of the part with the whole sustainable development can be achieved only through the achievement of environmental rehabilitation and environmental protection, where the latter is an integral part of the development process.<sup>(26)</sup>

In Iraq, interest in the environment and sustainable development has begun to be evident through the adoption of policies aimed at this, and the issuance of several plans for sustainable development and human development and environmental development, and the law has strengthened attention to regulations for the exercise of activities, especially those concerned with human life and the environment. 2005 to formulate environmental policy to ensure the protection of the environment from pollution and maintain cleanliness, in cooperation with the regions and governorates not associated with the territory.<sup>(27)</sup>

However, this is not enough on its own, if not accompanied by application on the ground, the environment of Iraq is heavily polluted at all levels (air, water and soil) as a result of the conditions experienced by Iraq over the past half century, wars, terrorism and the remnants of weapons used in it had a negative impact in The environment reflected on human life and health.



Even the oil sector, which has played a significant role in the process of economic and social development in Iraq for decades, which accounts for more than 96% of revenues, at the same time must pay attention to the adverse effects of this sector on the Iraqi environment, represented by air pollution resulting from burning The associated gas and the non-production and use of oil derivatives of international standards, and sabotage in the lines of transport of oil and its derivatives and the outbreak of fires that lead to increased rates of air pollutants in the air, in addition to other factors contribute to air pollution in sweat, the massive increase in the number of vehicles The use of fuel that does not meet the environmental standards for transport and traffic, and the use of citizens to burn waste as an alternative to poor waste collection process, as well as over-cutting of trees and forest areas in general and palm in particular, which in turn reduces green spaces and increases air pollution.<sup>(28)</sup>

In this area, green investment is an effective remedy for the problems of air pollution resulting from the use of energy in its traditional form, it can invest in renewable energy generation (such as wind and solar power) and thus can maintain energy sources and uses as clean and efficient energy sources, and this type of investment Helps increase growth in income and employment driven by public and private investments that reduce carbon emissions and pollution and increase the efficiency of consumption of natural resources and energy sources. This type of investment needs to be stimulated and supported by the state. To enter into environmentally friendly investments and to reform economic policies to create a climate conducive to such investments and projects.

In the area of food security, it is expected that the number of souls of Iraq in 2030 will be 60 million people, as a result of population increase ranging from 2.66% to 3%, offset by a new threat of complete drought of the Tigris and Euphrates in 2040 due to the total dams built on the rivers and exceeded Neighboring countries over the Iraqi rights to water, as well as the lack of a clear strategy for rural development and encourage farmers to return to their farms and land that they abandoned for various reasons, in addition to the apparent lack of water management (drinking and watering), which makes Iraq threatened by comprehensive famine and lack of drinking water supply will lead To expose the total life of the Iraq brings together to direct threats, as well as undermining the development and finish off the achievements.<sup>(29)</sup>



Therefore, the requirements of resettlement of the farmer in his land and the return of those who migrated by providing the needs of decent living for the farmer and the provision of life requirements of schools, health centers, hospitals, energy sources, etc., as well as providing financial support for the farmer to restore the agricultural sector to its position in economic life Sustainability in this sector.

Access to a healthy state of dealing with the inputs and outputs of green financial institutions requires a sophisticated banking system capable of keeping abreast of developments in the international financial markets in particular and the banking sector in general, and noted in Iraq that the banking system is still underdeveloped and not keeping up with these developments, as the techniques used Obsolete, as well as the typical management methods, and sagging non-responsive administrative owners skillfully with modern technological changes, and the absence of a suitable environment for dealing with customers, and poor marketing of non-traditional banking products, all of which make banking and administrative systems that Banks are not able to cope with modern banking systems, in terms of some indicators, such as the rise in the value of doubtful debts, which amounted to about 3079.7 billion dinars in 2015, which constituted a burden on financial stability, where the credit default rate of government banks reached 67.1%.<sup>(30)</sup> This has to be the development of the banking sector to keep pace with developments in the rest of the world and work to provide financing for green projects, and the adoption of environmentally friendly projects to t invest in the environment a way to lay the foundations of the green economy.

## Conclusions and recommendations

### First: Conclusions

1. The environmental challenge has become one of the most significant challenges facing the world economy in the twenty-first century, impeding the achievement of the Millennium Development Goals.
2. Green financial institutions have demonstrated an excellent capacity to provide and mobilizes financial resources to mitigate the effects of environmental degradation.
3. Despite its short life, the green bond markets have witnessed increased growth and full acceptance from international financial institutions, banks and private investors. The size of these bonds amounted to about \$ 155.5 billion in 2017 compared to \$ 800 million in 2007.



4 - The environment of Iraq today suffers from pollution significantly as a result of the wars fought by Iraq, pollution included water, air and soil, as well as incorrect practices in factories and oil extraction has also worked to increase the intensity of pollution.

5. The economic environment in Iraq remains underdeveloped, especially in the banking and investment sector, which in turn slows the growth and development process.

## Second: Recommendations

1- Urging banks, banks and financial institutions to establish sub-banking units responsible for providing soft loans to finance green projects.

2 - The need to work to address the shortcomings of the green financial institutions to be able to mobilise the necessary financial resources to transition to a sustainable economy.

3 - The need to work on the development of global and international initiatives on the environment and its role in the economy, and to provide and invent innovative financial tools and products that can provide financial resources.

4 - work on the exploitation of gas associated with the extraction of oil, because of the effects of harmful to the environment, and the exploitation generates additional income for Iraq, can be put these projects for investment as environmentally friendly projects.

5 - To benefit from the experiences of leading countries in the field of banking services, and activate the role of green investments and green bonds, as one way to contribute to achieving sustainable development.

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## *Green Training and its Impact on the Sustainability of the Health Organization*

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### **Abstract**

The main objective of this research is to build a sustainable health organization and to develop sustainability business through green training. To achieve this objective, the researchers surveyed the opinions of a number of employees who work at Najaf Health Directorate headquarter. The research community is (250) employees. The sample of the study is (155) analyzable valid responses. The researcher analyzed the data collected using tests and statistical methods powered by the (SPSS v.24) program. The study adopted one main hypothesis and three sub-hypotheses, which are the influence relationship among the variables of research. The hypotheses are to review the sustainability dimensions of the health organization, and the extent to which green training affect these dimensions. Finally, the research came up with a set of conclusions, the most important being that sustainability in the health organization is inevitable and not voluntary actions to engage the community's concerns and environmental concerns, as the lack of sustainability of the health organization means transforming it from an organization that tries to relieve the burden and pain of members of society to a bomb time-threatening ecological health. The recommendations touch the needs of the Directorate. The most important recommendation is to increase the number of the green training programs in a way that promotes the sustainability of the health organization. In addition, the research recommends adopting this concept (the green training) in the annual training plans.

**Keywords:** Green Training, Sustainable Health Organization, ecological health.

### **1. Introduction**

The health organization is the cornerstone of a country's development, through which a healthy society is created with the capacity to produce and work. The health organization has witnessed a rapid development in the light of technological progress, and its work has expanded and its activities have been complicated, as people perceive it as a safe haven for restoring wellness and a bulwark against various diseases. Building on



the global approach of the World Health Organization (WHO) in the area of sustainability, to reduce and minimize the environmental burden of the Organization's internal processes and to complement its vital role as an active organization in society, it must reach its sustainable objectives. The health service lacks a framework for the process of making sustainability initiatives and many recent publications have expressed the need for better ways to identify sustainable health care practices (Unger et al., 2016:134). Thus, the researchers started to identify the problem of research in the seriousness of some of the work of the Health Organization discussed (Najaf Health Directorate headquarter) if it is not sustainable. A proposal for a practical and realistic training programme that will help to achieve the sustainability of the health Organization, namely green training, is suggested. The objective of this research was to help the organization's health management to take more informed paths about the sustainability of their organizations.

## **2. Research Methodology**

### **2.1. Research Problem**

The hidden aspect of the health organization's general clientele and even some of its employees is the seriousness of its internal operations if those operations are not sustainable and go beyond their gravity to reach the external environment. In line with the objectives set by the United Nations (Sustainable development objectives for the years 2015-2030), the World Health Organization (WHO), the world's primary sponsor of health, has identified several sustainable areas that require countries (including Iraq) and the international community to set its priorities for significant progress towards the new sustainable development objectives (WHO, 2015, p:4.). The problem of poor sustainability of the health-care organization was diagnosed by observing the lack of training on modern green means (training plan, 2018). This problem is a major one, and a set of questions is raised:

- Does the physical and human potential create a sustainable health organization?
- Is there awareness among workers towards building an effective sustainable health organization?
- Is there a possibility to apply green training in the health organization?

### **2.2. The Importance of Research**

The importance of the research in the scientific and practical aspects is highlighted in the following:





### 2.2.1. Scientific Importance:

Green training topics and the sustainability of the health organization have become important topics in today's world. The importance of research derives from the novelty of these topics, which have preoccupied the attention of researchers in recent years. Moreover, the researchers approached the topic from a new aspect that was not addressed, namely the relationship between the research variables of green training and the sustainability of the health organization, as the researchers could not obtain any study on this relationship. The researchers hope that this research will be the starting point for future studies in this field.

### 2.2.2. Practical Importance:

The research addresses realistic and actual problems that require specific solutions by defining the management of the health organization and individuals working on the importance of sustainability and ways to promote sustainable business as well as providing a systematic working mechanism through the green training program proposal.

### 2.3. Research Objectives

The research seeks to achieve several objectives, including:

- Making a sustainable health organization through the development of human resources skills.
- Raising the level of awareness of employees in the direction of building an effective sustainable health organization.
- Demonstrating the possibility and importance of applying the green training program in Najaf Health department.

### 2.4. The Research Community and its Sample

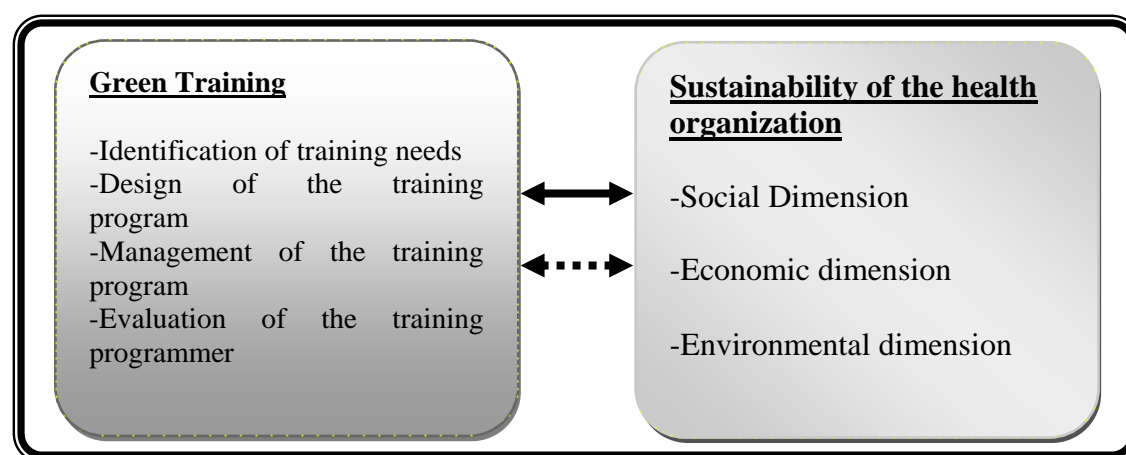
The research community included workers at Najaf Health Directorate headquarter, about 250 employees. According to (Sekaran, 2003:296), the research community in question corresponds to a sample amount of (152). The researchers resorted to the use of the sample method in determining the research sample, where it was distributed (170 questionnaires) to the personnel in the Engineering Section, the Technical Affairs section, the Inspection section, the Planning section and the Training and Human Development center. The number of the retrieved questionnaires was (160). (5 not valid) and (155) were analysed.

### 2.5. The Hypothetical Research Scheme

The hypothetical research scheme is designed according to the logical relationships between variables, taking into account the problem of research, its importance and its objectives to reflect the relationship



between the independent variable (green training), consisting of four sub-variables depending on (Cerot&certo, 2012:304) and the dependent variable (the sustainability of the organization), consisting of three sub-variables based on (Zadeh et al, 2016:2) as shown in Fig. 1.



**Figure (1) the hypothetical research scheme**

Source: Prepared by the researchers

## 2.6. Research Hypotheses

Based on the hypothesis scheme shown in Figure (1), the current research includes the following hypotheses:

- The main hypothesis: there is a statistically significant impact of the green training on the sustainability of the health organization, this hypothesis branches out in to three sub-hypotheses:
- First sub-hypothesis: there is a statistically significant impact of the green training on the social dimension.
- Second sub-hypothesis: there is a statistically significant impact of the green training on the economic dimension.
- Third sub-hypothesis: there is a statistically significant impact of the green training on the environmental dimension.

## 2.7. Test the Search Tool and the Results of Validity and Reliability

### 2.7.1. Virtual Honesty

The form is displayed in the initial image on a number of experts and arbitrators, some amendments are conducted within the deletion or modification in the light of the expert notes.

### 2.7.2. Reliability of the Questionnaire

The researchers conducted a test for the reliability of the search tool by calculating Cronbach equation Alpha, to reach the degree of overall reliability for this research (0.976). This means that the tool enjoys a high degree and high reliability, Recalling (Tavakol & Dennick, 2011) where



the accepted value of the best coefficient Cronbach Alpha is greater than (0.70).

## 2.8. Research Tool

The questionnaire is the main tool for the practical aspect of this research, to gather data on hypothesis testing to answer its questions and achieve its objectives. Having prepared the initial form and then presented to the arbitrators where its paragraphs and measurements are examined, this has the significant effect of modifying the wording of some paragraphs and adding new paragraphs in order to achieve precision in the measurement of research variables. The researchers have adopted the Pentert (Likert) scale (not fully agree, not agree, neutral, agree, fully agree), offset by weights (1, 2, 3, 4, 5) respectively.

## 3. The Theoretical Framework of Research

### 3.1. Independent Variable: Green Training

#### 3.1.1. The Concept of Green Training

Training can be understood as a systematic process that leads the behavior of staff towards achieving the set of organizational goals. As a result, it is an essential component of successful organizations (Jabbours & Sant'es, 2008:53). Training can also be understood as a practice focused on developing the skills, knowledge and attitudes of staff, and preventing the deterioration of knowledge, skills and attitudes. As part of the green human resources management, green training raises staff awareness of the value of environmental management, trains them in business processes that provide energy, reduces waste, disseminates environmental awareness within the Organization, and provides an opportunity to engage staff in the solution Environmental problems. Environmental training and education, coupled with the creation of an environment-friendly culture for employees who feel that they are part of environmental outcomes, are the most important human resource management processes that facilitate the achievement of environmental objectives (AHMAD, 2015:7). The aim of the basic green training is to develop an environmental sensitivity among employees and to make them aware of how their behavior affects the environment. It is about motivation and making one feel proud to participate in green initiatives. In this way, green training supports the creation of a green workforce, understands, appreciates and manages environmental initiatives (Bombiak & Kluska, 2018:5). The researchers can define green training in the health organization as (a special-type training sponsored by the health organization to develop the skills, knowledge and attitudes of environmental workers, especially medical waste treatment, and use



environmentally friendly training methods, and should be included as an integral part of the training and development plans ).

### 3.1.2. The Dimensions of Green Training

Training of personnel working in the organization is essentially a four-dimensional process: (certo & certo, 2012: 304)

- Identifying training needs.
- Designing the training program.
- Management (implementation) of the training program.
- Evaluation of the training program.

The following is an explanation of each dimension of green training:

- Identifying training needs

Training needs are areas of information or skills for the individual or group that require further development to increase the productivity of that individual or group. Only if training focuses on these needs can it be a product of the organization (certo & certo, 2012: 304).

- Designing the training program

Design means planning a comprehensive training programme, including training objectives and the development of programme evaluation criteria. The sub-steps include creating an outline for training (incorporating all the steps of the training program from start to finish), choosing the way the program is connected (such as lectures or the web), and verifying the overall design of the software with management (Dessler, 2013: 239). Staff training and development programmers should include social and environmental issues at all levels and it is necessary to design environmental training (green) based on training needs in order to achieve optimum environmental benefits from training (Masri & Jaaron, 2016:6).

- Management of the training program

Management of the training program means training the selected individuals to participate in the program. There are different techniques for both transferring the necessary information and developing the necessary skills in training programs, including two ways of transferring information in training programs: lectures and programmed learning. The lecture is primarily a one-way communication case where the trainer provides oral information to a group of listeners. The trainer usually performs most of the talk, and the trainees participate in the first place by listening and taking notes. Programmed learning is a method of mentoring without the presence or intervention of a human teacher. Small





portions of information that require related responses are provided to individual trainees. Trainees can identify by verifying their answers against the answers provided in the program whether their understanding of the information is accurate (Cert&Certo, 2012:305-306).

- Evaluation of the training program

It is important to evaluate the training program and some of the reasons why it is important to assess the effectiveness of the training which is that the evaluation allows the organization to know whether it has met the training needs identified. You can get a feedback on training that can be used for future training. The evaluation can test that learning has taken place and equally assess the costs and benefits of training for the institution (Kempton, 1995:123).

### **3.2. The Dependent Variable: Sustainability of the Health Organization**

#### **3.2.1. The Concept of Sustainability of the Health Organization**

Sustainability and the organization of health are two very important topics where they contain many common and complex topics (Merhaj, Dali, 246: 2014). The building of the health organization is one of the most important buildings in the society, where we are born, die and speak with the moments of happiness, sadness and pain. So, the architecture of these organizations must respond to the emotional and human aspects on the one hand and the functional requirements on the other hand. On the other hand, there are areas that are important to be considered when planning the establishment of the buildings of the health organization as they must keep pace with technology and adapt the environmental dimension from the perspective of the internal environment and the relationship of those buildings to the external environment (Merhaj, Dali, 247: 2014). The researchers define the sustainability of the health organization as (special operations in the health organization that maintain the safety of workers and patients in the internal environment and be friendly to the external environment surrounding it and seeks to reduce the depletion of natural resources and use modern technology to achieve its sustainable objectives).

#### **3.2.2. The Dimensions of the Sustainability of the Health Organization**

Zadeh et al (2016:2) see the three dimensions (social, economic and environmental) as an integral part of the concept of sustainability of the health part of the organization. Below is what explains each dimension:

- The social dimension of the sustainability of the health organization:



The social dimension of sustainability in a health organization refers to the human aspect of its development, and sometimes to the public interest. Sustainability, when combined with "social" descriptors, draws attention to justice, equality and health for people and their communities. Social sustainability is identified along with environmental and economic sustainability as the main feature of the "bottom line" of good corporate practices (Idowu, 2015: 466).

- The economic dimension of the sustainability of the health organization:

Although the organization of health services has been portrayed as the depletion of national wealth, the evidence has gradually accumulated to show the opposite. Those investments in health are effective strategies in both developing and developed countries not only to reduce poverty but also to achieve economic growth through increased productivity and increased household income. Addressing economic sustainability means devising better ways to assess what is to be done, prioritize resource allocation, and simply get the most out of the health organization (Borgonovi & Compagni, 2013: S35-S36).

- The environmental dimension of the sustainability of the health organization

Because of the indiscriminate work of organizations and the environmental degradation seen due to climate change, organizations are becoming increasingly aware of the importance of environmental quality and global and local risks, which require the rational use of natural resources. A detailed knowledge of environmental conditions and how they can be used and evaluated by the health organization can help to produce environmental policies that are compatible with the values and preferences of the local community (Vincenzi, 2017: 2). The organization seeks to reduce the negative impacts of its activities on the environment by adapting its activities with modern environmental management standards as well as the development of management for environmental objectives and the formulation of general strategies and guidelines for environmental projects and programs (Nascimento et al., 2016: 3).

#### 4. The Practical Framework of Research

##### 4.1. A Description of the Vertebrae and the Dimensions of the Independent Variable (Green Training)

The results shown in Table (1) indicate the following:

- The general mean of the green training variable is (3.416), which refers to a positive trend towards the dimensions of the green training variable.



- The relative importance of the total items is (68.32%), which is a high value and refers to approval in the answers to the sample of the study regarding the green training variable.

**Table (1) Response of the selected sample to the independent variable (green training)**

Variables and dimensions	Questions	Symbol	The weighted arithmetic mean	Standard deviation	Relative %importance
Identifying training needs	Training needs are raised to the training section	Y1.1	3.52	0.935	70.4
	Employed individuals are nominated according to the real need for training	Y1.2	3.38	1.158	67.6
	Our department determines its training needs on the type of problems it faces	Y1.3	3.34	1.131	66.8
	Accurate identification of training needs contributes to increased chances of success of the training program	Y1.4	3.66	1.003	73.2
	Training needs vary depending on the different levels of the job to be trained	Y1.5	3.68	1.037	73.6
	<b>Average to the definition of training needs axis</b>	Y1	3.516	1.052	70.32
Designing the training program	Staff training and development programs include social and environmental issues at all levels	Y2.1	3.54	1.071	70.8
	Our department ensures that the training objectives are clear to the trainees	Y2.2	3.67	0.941	73.4
	Our constituency is keen on designing the training curriculum that is consistent with the nature of its work	Y2.3	3.66	0.99	73.2
	Our department encourages training topics that combine theoretical and practical aspects	Y2.4	3.37	1.076	67.4
	Our constituency determines the right place and timetable for the start and end of the program	Y2.5	3.57	1.045	71.4
	<b>Average to the design of the training program axis</b>	Y2	3.562	1.024	71.24
Management of the training program.	Remote training is done on the organization's website	Y3.1	2.25	1.067	45
	Lectures are used to convey information in training programs	Y3.2	3.47	0.956	69.4
	Programmed learning is used to transmit information in training programs	Y3.3	3.28	1.109	65.6
	Our constituency is keen to implement the program as planned	Y3.4	3.34	1.034	66.8
	Our constituency is interested in determining the appropriate training place in accordance with the requirements of the training program	Y3.5	3.39	1.096	67.8
	<b>Average of training program management axis</b>	Y3	3.146	1.052	62.92
Evaluation of the training program	Effective training is verified	Y4.1	3.25	1.091	65
	Trainee satisfaction is assessed	Y4.2	3.55	0.975	71
	Trainee behavior has changed during work due to training program	Y4.3	3.46	0.914	69.2
	Avoiding the errors that occurred in previous programs when conducting similar training	Y4.4	3.50	0.989	70



	programs				
	Testing of trainees before and after the completion of the training program	Y4.5	3.45	1.094	69
	Average of training programme evaluation axis	Y4	3.442	1.012	68.84
The average for independent variable green training		Y	3.416	1.035	68.32

**Source: Preparing the researchers based on SPSS v.24 results  
n=155**

#### **4.2. A Description of the Vertebrae and the Dimensions of the Dependent Variable (Sustainability of the Health Organization)**

The results shown in Table (2) refers to the following:

- The results indicate that the general calculation of the sustainability of the health organization is (3.056) which indicates a weak trend towards the sustainability of the health organization.
- The relative importance of the total paragraphs is (61.12%), which is a low value to date, has been significant

**Table (2) Response of the selected sample to the dependent variable (sustainability of the health organization)**

Variables and dimensions	Questions	Symbol	The weighted arithmetic mean	Standard deviation	%Relative importance
Social dimension	Our constituency strives to achieve justice, equality and health for people and their communities	Z1.1	2.86	1.285	57.2
	Our health care systems have raised us from being socially sustainable	Z1.2	2.97	1.190	59.4
	Comprehensive health coverage implies a sense of solidarity and cohesion within society	Z1.3	3.19	1.199	63.8
	Health care systems generate positive social effects that go beyond health	Z1.4	3.41	1.178	68.2
	Health care is provided for people with special needs	Z1.5	3.27	1.191	65.4
	Average of the social dimension axis	Z1	3.14	1.208	62.8
Economic dimension	Investments in health are effective strategies for poverty reduction	Z2.1	2.97	1.253	59.4
	Low-power devices and technologies are used	Z2.2	3.05	1.216	61
	Some eco-friendly power generation technologies are used	Z2.3	2.82	1.365	56.4
	Recyclable materials are collected and delivered to the relevant ministries for recycling	Z2.4	2.85	1.328	57
	Design of sanitary buildings with modern engineering specifications and thus a better investment of resources	Z2.5	2.95	1.288	59
	Average of the economic dimension axis	Z2	2.928	1.29	58.56





Environmental dimension	Our department seeks to improve the health and environmental services of the community	Z3.1	3.03	1.138	60.6
	Our department follows the regular methods of treating medical waste without causing any damage to the environment	Z3.2	3.06	1.153	61.2
	Working individuals have the basics of safe handling of medical waste	Z3.3	3.09	1.279	61.8
	Wastewater treatment for hospitals with special treatment plants	Z3.4	3.08	1.262	61.6
	Buildings containing radiation therapy or radiation therapy are immunized	Z3.5	3.06	1.222	61.2
	Average to the environmental dimension axis	Z3	3.21	1.210	64.2
The average for dependent variable Sustainability of the health organization		Z	3.056	1.236	61.12

**Source: Preparing the researchers based on SPSS v.24 results  
n=155**

### 4.3. Testing the Hypothesis of Research

**4.3.1.(The Main Hypothesis):** The hypothesis states (there is a statistically significant impact of the green training on the sustainability of the health organization). To test this hypothesis, the results of table (3) are used, showing the simple linear regression model of the impact of the green training on the sustainability of the health organization. The results of table (3) show that the value of the fixed (B) coefficient is (-0.345), which means that there is a health organization's sustainability of (0.345) when the green training value equals zero. The value of the marginal inclination ( $\beta$ ) is (0.728) accompanying the value (X), which means that a change of (1) in green training will result in a change in the amount (0.728) of the health organization's sustainability.

**Table (3) the relationship between green training and the sustainability of the health organization**

Model		Unstandardized Coefficient		Standardized Coefficient	T	Sig.
		B	Std. Error	Beta ( $\beta$ )		
1	(Constant)	-.345	.265		-1.302	.195
	Green Training(X)	.996	.076	.728	13.137	.000

**Source: Preparing the researchers based on SPSS v.24 results**

In addition to the results of Table (4), it is clear that the value of (R) reaches (0.728). This indicates that the green training explains (0.530) of the change in the sustainability of the health organization. The value of (F) (172.576) is compared to the table value of (3.84) and on this basis the main hypothesis is verified.



**Table (4) analysis of variance (ANOVA) for the relationship between green training and sustainability of the health organization**

Model	R	Adjusted R <sup>2</sup>	Std. Error of the estimate	Change statistics			
				R <sup>2</sup> Change	F Change	df	Sig.
Green Training	.728 <sup>a</sup>	.527	.68131	.530	172.576	154	.000

Source: Preparing the researchers based on SPSS v.24 results

Three sub-hypotheses are branched out of the main hypotheses:

#### **4.3.2. First Sub-Hypothesis**

The hypothesis states (there is a statistically significant impact of the green training on the social dimension). To test this hypothesis, the results of table (5) are used, showing the simple linear regression model of the impact of the green training in the social dimension. The results of table (5) show that the value of the coefficient (B) is fixed (-0.370), which means that there is a social dimension of (0.370) when the green training value equals zero. The value of the marginal inclination ( $\beta$ ) is (0.730) accompanying the value (X), which means that a change of (1) in green training will result in a change in the amount (0.730) in the social dimension.

**Table (5) the relationship between green training and the social dimension**

Model	Unstandardized Coefficient		Standardized Coefficient	T	Sig.
	B	Std. Error	Beta ( $\beta$ )		
1	(Constant)	-.370	.272	-1.362	.175
	Green Training(X)	1.028	.078	.730	.000

Source: Preparing the researchers based on SPSS v.24 results

In addition to the results of Table (6), it is clear that the value of (R) is (0.730). This indicates that the green training explains (0.533) of the change in the social dimension. The value of (F) as it reaches (174.532) is compared to the table value of (2.60) and on this basis, the First sub-hypothesis is also verified.

**Table (6) analysis of variance ANOVA for the relationship between green training and social dimension**

Model	R	Adjusted R <sup>2</sup>	Std. Error of the estimate	Change statistics			
				R <sup>2</sup> Change	F Change	df	Sig.
Green Training	.730 <sup>a</sup>	.530	.69927	.533	174.532	154	.000

Source: Preparing the researchers based on SPSS v.24 results



#### 4.3.3. Second Sub-Hypothesis

The hypothesis is that (there is a statistically significant impact of the green training on the economic dimension). To test this hypothesis, the results of table (7) are used, showing the simple linear regression model of the impact of the green training in the economic dimension. The results of table (7) show that the value of the fixed (B) coefficient is (-0.338), which means that there is an economic dimension of (0.338) when the green training value equals zero. The value of the marginal inclination ( $\beta$ ) is (0.614) accompanying the value (X), which means that a change of (1) in green training will result in a change in the amount (0.614) in the economic dimension.

**Table (7) the relationship between green training and the economic dimension**

Model	Unstandardized Coefficient		Standardized Coefficient	T	Sig.
	B	Std. Error	Beta ( $\beta$ )		
1	(Constant)	-.338	.347	-.973	.332
	Green Training(X)	.956	.099	.614	.000

Source: Preparing the researchers based on SPSS v.24 results

In addition to the foregoing and due to extrapolating the results of the table (8), it is clear to us that the value (R) has reaches (0.614), which indicates that the green training explains the ratio (0.377) of the change in the economic dimension, and the value (F) calculated is too high, being (92.650) compared to its tabular value which reaches (2.60). The second sub-hypothesis is verified, too.

**Table (8) analysis of variance (ANOVA) for the relationship between green training and economic dimension.**

Model	R	Adjusted R <sup>2</sup>	Std. Error of the estimate	Change statistics			
				R <sup>2</sup> Change	F Change	df	Sig.
Green Training	.614 <sup>a</sup>	.373	.89265	.377	92.650	154	.000

Source: Preparing the researchers based on SPSS v.24 results

#### 4.3.4. Third Sub-Hypothesis

The hypothesis is that (there is a statistically significant impact of the green training on the environmental dimension). To test this hypothesis, the results of Table (9) are used, showing the simple linear regression model of the impact of the green training in the environmental dimension. The results of table (9) show that the value of the fixed (B) coefficient is (-0.326) means that there is an environmental dimension of (0.326) when



the green training value equals zero. The value of the marginal inclination ( $\beta$ ) is (0.695) accompanying the value (X), which means that a change of (1) in the green training will result in a change in the amount (0.695) in the environmental dimension.

**Table (9) The relationship between green training and environmental dimension**

Model	Unstandardized Coefficient		Standardized Coefficient	T	Sig.
	B	Std. Error	Beta ( $\beta$ )		
1	(Constant)	-.326	.293		
	Green Training(X)	1.004	.084	.695	
				-1.112	.268
				11.947	.000

Source: Preparing the researchers based on SPSS v.24 results

In addition to the foregoing and due to extrapolating the results of the table (10), it is clear to us that the value (R) has reaches (0.695), which indicates that the green training explains the ratio (0.483) of the change in the environmental dimension and that the value (F) calculated is too high, being (142.730), compared to its tabular value reached (2.60). The third sub-hypothesis is also verified.

**Table (10) analysis of variance (ANOVA) of the relationship between green training and environmental dimension**

Model	R	Adjusted R <sup>2</sup>	Std. Error of the estimate	Change statistics			
				R <sup>2</sup> Change	F Change	df	Sig.
Green Training	.695 <sup>a</sup>	.479	.75503	.483	142.730	154	.000

Source: Preparing the researchers based on SPSS v.24 results

## 5. Conclusions and Recommendations

### 5.1. Conclusions

- The material and human resources available in the organization can create a sustainable health organization and can form a model for other similar organizations.
- There is an awareness and willingness on the part of workers to build an effective sustainable health organization, and this is evidenced by the aspiration to participate in training programmers to bridge the gap between planning and implementation.
- There is the possibility of applying the green training in the health organization examined after making use of the academic effort of the Iraqi universities.





## 5.2. Recommendations

- Increasing the training programs that are part of the green training, enhancing the sustainability of the health organization, and adopting this concept in the annual training plans.
- Preparing the requirements of green training workshops to be credible for the sustainability of the use of electronic files instead of paper and devices with low energy consumption and others.
- The continuous development and modernization of hospital buildings designs to create sustainable health buildings that meet functional requirements on the one hand and reduce the burden on natural resources on the other hand.

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***The Importance of Product Cost Rationalization to achieve a Customer Satisfaction Applied research in the Electric Cables Plant / Ur State Company***

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***Abstract***

The research aims at explaining the reasons for the high cost of production and the application of modern concepts in accounting costs and administrative, which came to remove loss and waste and rationalization of costs and improve operational performance and in response to changing conditions in the business environment. As a result of these variables and circumstances, the research problem was manifested in the high cost of manufacturing the products of Ur Company, which lost competitive precedence with other products in terms of price, quality and other specifications imported from various sources. In order to achieve the objective of the research and solve the problem was developed a basic hypothesis that the use and application of modern concepts lead to rationalize the cost of manufacturing products and improve activities and processes and create a market share in the local environment.

divided of research into three topics The first topic reviewed the theoretical aspect of modern concepts and competitive priorities, including rationalization of costs and removal of loss and improve performance and address the negatives in traditional concepts and methods. Either the second topic dealt with how to rationalize the cost of some of the products of the electrification plant, either the third section, he concluded with a number of results, the most important of which was the high proportion of production costs, especially the proportion of direct wage costs to the total cost of manufactured goods (37%) Very high percentage and low competitive precedence prices of local products of the company compared to the prices of imported products, and the obsolete equipment and machines in the factory. This caused a significant increase in the cost of maintenance and backup tools. A significant reduction in actual production levels from the planned annual level of energy.

It is also necessary to continuously seek to reduce the production, marketing and administrative costs of the plant, the need to seek replacement of machinery and equipment with advanced technology



machines, and to impose customs duties on the imported product and activate the role of the standardization and quality control apparatus.

**Keywords:** Rational costs, Competitive Precedence.

### **Introduction:**

In view of the developments in the modern business environment and the increasing pressure on industrial companies to satisfy the desires and needs of customers and then stay in the market competition. It is necessary for these companies to produce goods or provide the services demanded by consumers with high quality and at the right prices.

That the process of production or delivery of goods and services by companies may significantly affect the global competition and technological progress, which necessitated the introduction of new products to meet the speed of change in customer requests and tastes and to be of high quality, which led companies to think seriously to keep pace with this development and respond to this change in applications Tastes.

In order to be able to guarantee, stay and compete in the local and international market, the companies must continuously improve their implementation activities and guide the cost of their products from product design and quality through adherence to production specifications and cost management to customer service. The best way is to adopt the methods and concepts of modern cost accounting and management Impact on product costs to achieve cost-competitive precedence.

The use and application of cost leadership leads to rationalization of costs, exclusion of waste, loss of time, material, human and informational resources, and improvement of the quality of goods and services provided to the customer for satisfaction, which is reflected in reduced prices, reduced response time, broad vision and innovation and competitive advantage.

The competitive superiority gives the company the ability to excel in the performance of competitors in the industrial sector in which it operates, and it provides harmony between the company's resources and opportunities in the surrounding environment as well as it is characterized by the durability and strength and the difficulty of imitating competitors and finally provides a basis for future improvements and through the guidance and motivation to the whole joint And the components of the company and for the purpose of achieving this research has been divided into three aspects to cover the theoretical and practical aspects and the main conclusions and recommendations that came out.





## Methodology of Research:

The research methodology includes the following:

### First: Research problem:

Most of the products, including the products of the Or Company for the manufacture of cables and cables - the electrical capacitor factory, the research sample suffers from a high cost of manufacturing, which makes its competitive position is weak compared to competing foreign products. This is due to the transformation of the business environment in which the company operates from a non-working environment Competitive environment to a wide competitive environment where products are exposed from different global originators at different prices and quality, which led to a significant drop in sales and significant losses.

### Second: The importance of research:

The research derives its importance from the following:

1. Study and application of modern concepts of cost accounting and management accounting and its contribution to achieve competitive precedence.
2. Contribute seriously to increase the level of awareness of the administrative leaders of the economic units of the importance and the need to apply modern concepts that lead to rationalization of costs and improve the performance of companies on an ongoing basis.
3. Providing the economic units with a working guide to rationalize the costs and raise the quality of their products in order to survive and compete.

### Third: Research Objective: The research aims to:

1. Statement of the reasons for high production costs and weaknesses in the performance of production systems management.
2. Application of modern concepts and methods that will enable the company to stay and continue in the competition market by identifying the areas of rationalization of costs and increasing the volume of production and collection of revenue and the elimination of accumulated losses.

### Fourth: The hypothesis of research:

The research is based on a basic premise:

The use or application of the precedence of rationalization of costs as one of the competitive priorities leads to rationalize the cost of making products, improving activities and processes, increasing sales, achieving



profits and obtaining a marketing share in the work environment which enables the company to stay in the industrial environment

### **Fifth: Research Methodology:**

First: The deductive approach: Adopted in this approach to:

- 1 - Arabic and foreign books and sources.
- 2 - Messages and messages related to the subject of the research.
- 3 - Research and articles published in scientific journals and periodicals.
4. World Wide Web (Internet).

**Second: Inductive Methodology** The research on this method was based on the following sources:

- 1 - Books and official documents of the company sample research.
2. Documents, records, audit balances and company reports.
3. Personal interviews with company officials.

### **Sixth: The limits of research:**

- 1 - Spatial boundaries: **Electric Cables Plant / Ur State Company.**
2. Time Limits: The research period is set for fiscal year 2016.

Seventh: Society and Research Sample:

The research community is the public company Ur for electrical industries, either from the sample of the research was chosen electrification plant, or the reason for the selection of the community and the sample of the research is due to the following reasons:

- One of the major companies affiliated to the Ministry of Industry, which produces a basic product, which is the electrical cables and cables, which fill 70% of the need of the Ministry of Electricity, varying percentages to meet the need of other ministries, 90% of the need of Diyala for electrical industries, Household electrical appliances.
- ISO 9000 certification for the quality of its products for the year 2016.
- The factory is the largest factory of the company.

The factory supplies other factories with electrical wires, especially copper and aluminum household wires.

- The staff in the factory is one of the competent staff in the company.
- Cooperation of the company cadre of engineers, technicians and administrators in providing the required data and information.



### Previous studies:

#### 1 - The study of Shaibani (2006):

(ICMS) Role in Supporting Competitive Competitiveness within Companies and Redrawing the Performance and Profit Map)

The aim of this study is to clarify the nature of the integrated cost management system and its introduction. The most important results of the study were the need to build an integrated cost management system to lead, control and develop activities and processes in the right direction while performing them and give them a future picture, rather than building systems that measure the cost of practicing these activities after the end of the study. Operations.

#### 2- The study of Taweel and Ismail (2010):

Entitled "The Relationship between Types of Technical Creativity and the Dimensions of Competitive Advantage".

The study aimed to increase the knowledge of managers and employees in the companies about the concept and types of creative creativity, as well as the concept and dimensions of competitive advantage. The most important results on the departments of companies to increase interest in the concept and types of technical innovation as well as the concept and the exclusion of competitive advantage of this contribution to the survival and growth of the company Strong competition markets. And the need to increase the attention of the departments of the companies under consideration to the dimensions of competitive advantage and work to achieve them efficiently in order to achieve superiority over competitors in the competition markets.

#### 3- (study Thiab (2012):

(The technique of continuous improvement and its role in achieving competitive advantage)

The study aimed to highlight the shortcomings of production and weaknesses of production systems and traditional costs. The use of continuous improvement technology in achieving the competitive advantage of the company sample study. The most important results are that Iraqi industrial companies urgently need to focus their strategies towards providing products or services that meet the needs and expectations of customers in terms of Quality, price and on-time delivery with high flexibility in continuously diversifying and developing the sales mix. This is achieved when the value chain activities of industrial companies have the ability to anticipate, respond and react quickly to



develop demand in the Iraqi market. Threats of domestic and foreign competitors.

#### 4- Abu Zeid study (2014):

(Causal relationship between precedents and supply chain strategy and their impact on institutional performance).

The study aimed at measuring the level of concentration of factories operating in the food sector on the competitive priorities of quality, delivery, flexibility and cost, and the direct impact of competitive priorities in the supply chain strategy. The most important results of the study is the impact of competitive priorities in the strategy of the supply chain. During cost, delivery and quality.

#### 5- The study of watercress (2014):

Entitled "The Easy Manufacturing Strategy and its Role in Achieving the Competitive Advantage of the Organization"

The study aims at measuring the contribution of the soft industrialization strategy to achieving the competitive advantage of companies and focusing attention on the role of industrialization in the industry, because of the substantial advantages that contribute to enhancing the competitive position of companies. The most important results of the study is that competitive advantage is a complex concept that requires understanding of its essence and Which it offers in the field of competition and exploitation

Resources and competencies well, and the combination of them in an effective manner leads to the establishment of competitive advantages crucial. The government must support the provision of facilities to industrial companies to enable them to implement the strategy of industrialization in order to keep pace with developments in contemporary manufacturing systems and applications in order to compete in international companies.

#### 6 - study Mahmoud, Saleh and Ahmed (2015):

(The Role of Organizational Innovation in Achieving Competitive Priorities A Field Study in a Sample of Industrial Companies)

The study aimed at determining the role of organizational innovation in achieving the ability of competitive precedents and diagnosing research variables and their dimensions

The most important results of the study call on business companies in different sectors to the importance of the role played by organizational





innovation in achieving competitiveness to rise to the level reached by the leading companies and match their global products.

### **The First section: Literature - The main concepts of cost rationalization and competitive priorities:**

First: Cost rationalization:

Companies need to determine the cost of the product they provide to their customers and determine the cost. It helps in determining the cost of units sold. It also helps in determining the cost of unsold units. It also helps in making pricing and profitability decisions, evaluating the performance of the organization and planning future. One of the competitive priorities in the work environment.

1. Cost: Cost is defined in several definitions, including:

A -cost is defined as a resource to be sacrificed or offered in return for a specific objective. This cost includes the cost of direct materials, the cost of wages, etc., which are usually measured in monetary units and which must be paid for the acquisition of the goods or services. (Horngren et al, 2012: 27)

B - Cost may be defined as a sacrifice performed, which is usually measured by the resources spent on them to achieve special symptoms. If carefully considered, the term cost can have several meanings depending on the context and nature of the purpose used. Cost data is classified and recorded in a particular way for one purpose may not be suitable for another. (Hilton & platt, 2011: 72)

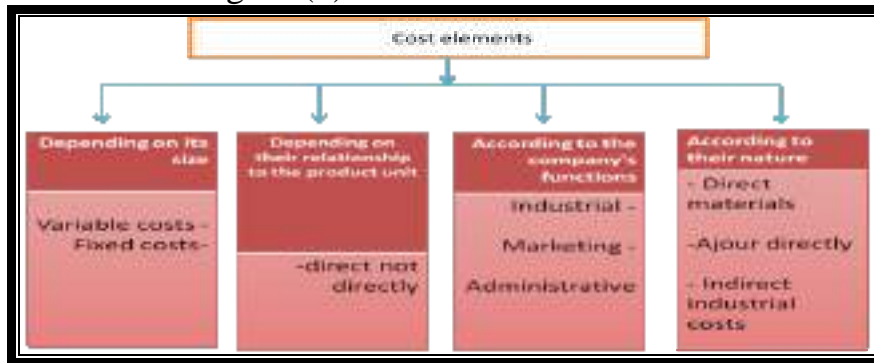
C-Cost is defined as an economic sacrifice for a portion of the resources of the enterprise, which is matched by a service or benefit necessary to achieve the objectives of the project and expressed in monetary units and can be foreseen and determined in advance. (Al-Azmah and Al-Adli, 1990: 106)

The two researchers believe that the cost is the sacrifice of the institution with its human and material resources, which they bear in exchange for the necessary benefit and service to achieve its goal and express this sacrifice in monetary units.

The process of categorizing the cost components is based on the nature or relationship of the functions of the company; the unit of the final product or the volume of production, as shown in forms (1) and (2), will be adopted during the research:

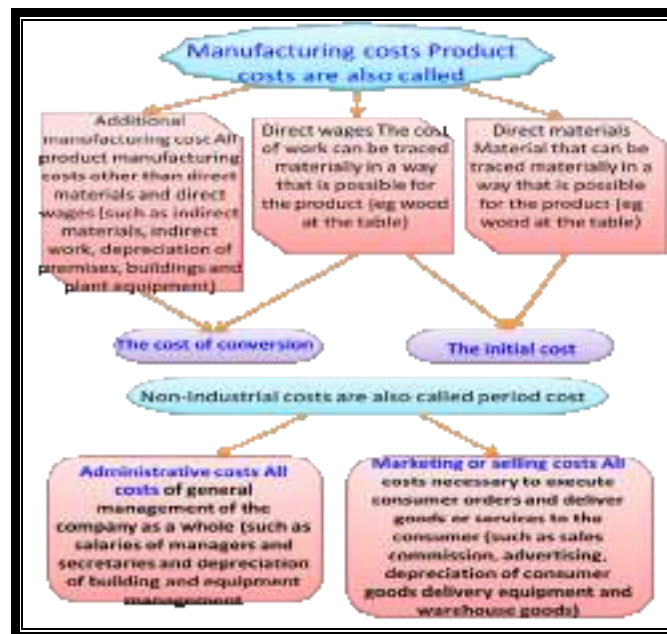


Figure (1) elements cost elements



Source: Al-Azma and Al-Adly, 1990, Fundamentals of Cost and Administrative Accounting, Al-Salsal, Kuwait, p. 63).

Figure (2) classification production costs



Source: Prepared by the two researchers.

## 2. Rationalization:

The word rationalization is linguistically meant to mean, or to be guided by, or guided by it. It may be guided by it. It means that it is given to him and approved by him (Arabic Language Complex, 359,2011), and rationalization means those who are injured and guided.

(Dictionary of the tongue of the Arabs ,203,1999,).

The term rationalization means control or control and is defined as the right decisions that are taken efficiently and effectively, which are in the interest of the company's objective, namely, rational and studied decisions according to historical data and future predictions according to changes in money and circumstances.



In the opinion of the two researchers that rationalization is the preservation and care of economy and the resources of the institution or doesn't spend the resources of the company without a corresponding benefit and not be considered a loss and waste, which causes losses to the company and thus does not achieve the desired goals that seek to achieve them gain profits and continuity and stay in the business world, which features unexpected changes. Hence, the rationalization of the cost of products is one of the competitive priorities that the company must have at least one of these competitive advantages in order to survive and continuity. The following paragraph will be addressed in detail to the competitive precedence (sometimes called competitive advantage) .

### **Second: Competitive Precedence**

The business environment is currently known for its strong competition and many competitors in light of globalization and the open market economy, which is characterized by the removal of customs restrictions and raising the protection of the government to its institutions and thus find the institution itself forced to face this competition and it is imperative to stay at least in this environment and that helps them to do so is On a precedence or competitive advantage that serves as a bumper to meet the challenges of competitors.

#### **1 - The emergence of competitive precedence:**

The reason for the emergence of competitive precedence was attributed to Chanberlin (1939). As well as to selznick (1959), which linked precedence with ability, and then developed precedence when he described (Schendel, Hofe) as the distinctive position developed by the company against competitors through the deployment of resources in a unique and distinctive way, and then came in (1984) M.Porter (1985), each of which formulated a conceptual formulation of competitive precedence. They considered competitive precedence as a strategic objective for the dependent variable, and their justification that outstanding performance which is linked to competitive precedence (Al-Zugbi, 2003:39).

#### **2 - Defining Competitive Precedence:**

Defining competitive precedence with several definitions, including:

a - Porter knows that it arises mainly from the value that the organization can reduce to customers, which can take several forms, including a lower price compared to the prices of competitors with equal benefits or to provide a single feature or advantage in the product attracts consumers

(porter, 1999: 8)



b - defined as (finding different dimensions of excellence owned by institutions /institution agree in the fields of production, marketing, human resources and finance). (Khudairy, 2004: 34)

c - defined as (means to find a single advantage superior to the institution to the rest of the competitors, that is, it makes the institution unique and distinct from the other competitors (Heizer & Render, 2008 : 36)

d - defined as "competitive advantage arises by increasing the value of the product to customers or lower the cost of delivery or display in the market in other words it is determined by increasing the value of products to customers and reduce the cost and thus reduction in the price of the product by (Garibaldi) (krajewski).

Competitive precedence was realized through the optimum utilization of resources and capabilities available to the institution as well as the capacity and competencies of the institution. (Garibaldi 2002: 17)

The two researchers know the competitive precedence which is the characteristics, qualities and characteristics possessed by the institution or product without others, which give or give the product some diversity and preference over the rest of the competitors, which is the case of uniqueness and excellence, which earns customers or consumers to buy the company's product such as low price (low cost) The best and other priorities that will be mentioned during the research.

### 3. Characteristics of competitive precedence:

In order for the organization to remain in the lead, it must realize that there is no competitive primacy forever. The institution that wants to continue with success is the institution capable of developing a continuous flow of competitive priorities and achieving strategic competition when it reaches above the average and remains at the forefront of competitors. In the foreground, they set in their expectations that everything is subject to change and that change is the only fixed thing and extends the survival of competitive precedence within a limited period of time and the space of this period increases when the competitive precedence depends on the efficiency and value of core and difficult tradition and Is expensive when imitated; therefore, the institution's ownership of competitive precedence is the secret of its success and superiority in the work environment. (Bakri and Suleiman, 18: 2004)

In order for competitive precedence to take precedence, it must have the following characteristics:

a - The property should be oriented towards the needs and desires of customers as the institution provides value to its customers not provided by other competitors.





- b - to have an important contribution to success.
  - c - Create harmony and cooperation between the unique resources of the institution and environmental opportunities as there are no two institutions possess the same resources, but the excellent strategy is to use these resources efficiently and effectively.
  - d- be constant and continuous and difficult to imitate;
  - e- It provides the basis for continuous improvement.
- And - it creates motivation and motivation for each economic institution.

(Evans & Dean, 2003: 19)

#### 4 - Priorities of competition / key success factors: -

Planning for competitive priorities is adopted or adopted within a single process or set of processes and is a capacity that should be available to create a market share or allow other internal processes to be successful. (Krajewski & Ritzaman, 2005: 62)

Competitive priorities are important dimensions that should be within the organization's aspiration to satisfy existing and potential customers. (Krajewski & Ritzaman, 2005: 62) focused on nine competitive priorities that are divided into four groups as follows:

- A-Cost: cost reduction processes.
  - B- Quality: quality improvement processes.
  - C-time: processes improve delivery speed, delivery time.
  - D - Flexibility: processes of diversification, diversification and flexibility.
- Each will be explained in detail as follows:

#### A- Cost:

The cost is the first competitive dimension to which many institutions are oriented towards maintaining and gaining market share, enhancing their position and enjoying the advantages of economies of scale, including compensating for the low profit rate resulting from the reduction of prices through a large volume of sales. (Maamouri, 1999: 13)

In other words, customers can not easily distinguish between products produced by other institutions and, as a result, customers tend to cost mainly as a function to determine the purchasing situation. (Chase, et.al., 2003: 24)

There are several conditions that the organization should adopt if it wants to reduce the cost of the products, including: (Waeli, 2005: 13)

- reduce the stocks of all kinds to a minimum.



Improve the quality control work and exercise strict control to eliminate or reduce the spoiled products.

- Maintain and continually improve product design.
- Developing the skills of employees through participation in training courses.
- proper interior design of the factory to ensure efficient flow.

Based on the above, we conclude that achieving competitive precedence by reducing costs compared to the costs of competitors' products should not be at the expense of sacrificing production quality.

### **B. Quality:**

The quality represents the product's suitability to the needs and desires of the customer according to the quality that suits his wishes. Quality is the key to achieving competitive precedence and is the critical success factor for each organization. Quality has been of great importance to the customer and quality is the key to achieving profits. "Improvements in quality help organizations increase sales and reduce costs, Through which quality is a measure of the extent to meet the needs of customers and their stated and implicit requirements and the importance of quality stems from the following: (Naama, 2006:14)

- reputation of the institution: the institution can rely on its reputation in quality whether good or bad.
- Global Standards: In order to compete globally, the enterprise should achieve quality products and global design as well as appropriate prices.
- Legal liability: The institution with defects in its products can bear legal costs and large losses in addition to bad reputation.
- raise the morale of workers: which lead to increased production and productivity.
- Improve performance by reducing the level of inventory and loss of various costs of the production process.
- Protect the enterprise from competitors who offer their products at low prices and low margin. (Heizer and Render, 2001: 172) (Evans, 1997: 45)

### **C. Time (delivery time):**

Increasing the need for effective delivery as a form of priority for enterprises and an indispensable competitive dimension in light of the increasing importance of time to the customer, especially with the institutions that(make-to-order), including service institutions. (Maamouri, 1999: 21).



The implications of this dimension are linked to three trends: rapid delivery, which refers to the time it takes between receiving the customer's request and delivery, delivery on time, and the speed of development, which indicates the speed of submission of the product and the time between the emergence of the design idea and the final production (Krajewski, 1999: 34).

The firm's ability to deliver fast and fast delivery enables it to deliver its products as quickly as possible, as the products must be delivered to the customer as soon as possible and on the agreed date of delivery (Chase et al 2003: 34).

The time and delivery is determined according to the quick response of the customer request in the modern manufacturing environment with the time that adds value and knows the time of the manufacturing cycle and the delivery to the customer. The time of receipt of the order from the customer and the time of manufacturing operations and the time of delivery of the final product to the customer, after excluding time that does not add value such as Waiting time, inspection time, storage time; and to reduce cycle time by improving the efficiency of the manufacturing cycle. (Garrison & Noreen, 2008: 447)

#### D. Flexibility:

It is the fourth dimension of competitive dimensions or priorities. Flexibility is one of the fundamental success factors for enterprises.

Flexibility consists of a strategic view of two dimensions:

The ability of the organization to provide a wide range of products to its customers in order to meet the specific needs and requirements of each customer.

The other dimension of flexibility is that the organization is rapidly diversified so that it can change its products to produce a new line of products, and this dimension has become more important so that the product life cycle becomes shorter and shorter. (Chase, et, al., 2003: 35)

(Russell & Taylor) explained that flexibility has become a competitive dimension and means the ability to produce new products in large quantities, as well as the ability to rapidly change existing products and respond quickly to customer desires.

(Russell & Taylor, 1998: 32)

That is, the concept of flexibility is the ability of processes to change from one product to another or from one customer to another at the lowest cost or at the least time.



There are three priorities of:

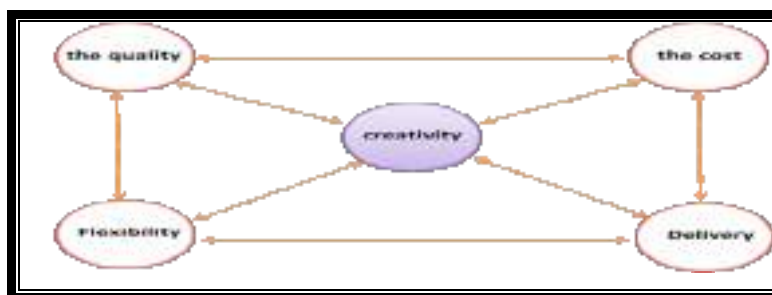
- Customization: is the ability to adapt and respond to the specific needs and desires of each customer and change the product designs, where the products are offered as desired by the customer. As the organization is well aware of the dire consequences if there is no immediate and rapid response to the requirements, expectations and needs of the customer.
- Flexibility Size: is the ability of the enterprise to accelerate or slow the rate of production quickly to address the large variables in demand to remain economically and profitably working, especially when the reduction of the rate of production suddenly.
- Diversification: The ability of an organization to deliver a wide range of products efficiently. diversification differs from customization because it is not directed towards a particular customer. Through this priority, the organization can have the ability to focus on the needs of its customers by focusing on pre-defined products and services.

(Davis, et al., 2003: 35) (krajewski & Ritzaman, 2005: 65)

There are those who add creativity as a competitive advantage to flexibility and there are those who consider it a fifth dimension.

Innovation can be achieved through continuous improvement and cost reduction and can be achieved by satisfying the customers' wishes when meeting the requirements for rapid delivery and timely product specification. Figure 3 illustrates the relationship between competition dimensions

Figure (3) Relationship between competitive dimensions



Source: - (Al-Raziq, 2004:203).

And we note that creativity exists in every corner of the process of manufacturing the product and that the method of providing the product or service well and this is what we want to buy it without others or mean a store without another or a restaurant without another creativity is an implicit process for each dimension of the competitive precedents (Chase, et Al., 2003: 35).





## 5. Relationship between the primacy of competition (basic success factors):

The superiority in the primacy of the primacy of competition depends on the performance of the distinctive priorities of the other in the sense that there is no superiority in a certain precedence at the expense of sacrificing other precedence because of the existence of mutual relations between them. There are two points of view on this subject. The American view that there is a relationship between the conflicting choices of priorities. Which requires different procedures between the cost and quality precedents, or between the two precedents of time and flexibility. In the field of the relationship between cost and quality, the corporation faces two types of first priorities: ensuring a high quality product and the second production of these products at the lowest possible cost.

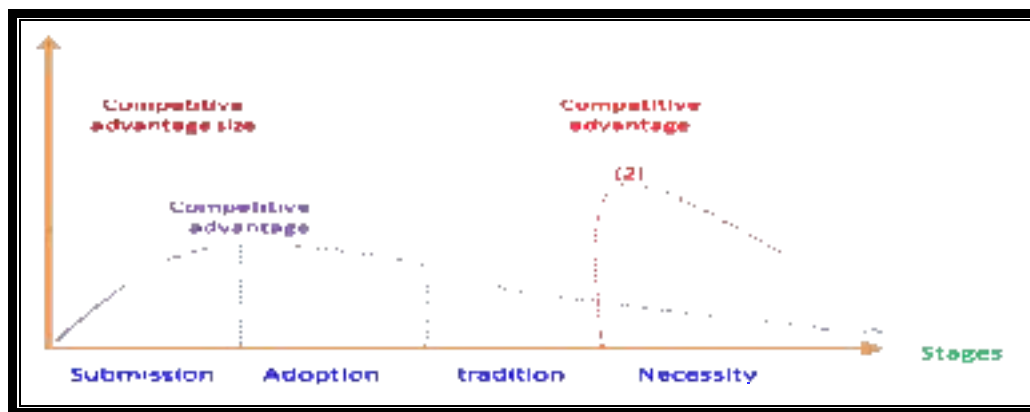
## 6. Competitive priority determinants:

The competitive precedence of the institution is determined from two dimensions as follows:

First: The competitive priority:

Competitive precedence takes place in the same life cycle of products, represented by Figure (3) below:

Figure (3) Lifecycle of Competitive Precedence



Source: (Nabil Morsi Khalil, Competitive Precedence in the Field of Business, Alexandria Book Center, 1998, p. 86, Egypt).

The competitive precedence shows that a competitive life cycle is similar to the life cycle of the product as it grows to maturity to stabilize its growth somewhat and then enters a phase of decline where the institution must achieve new competitive precedence to maintain its position in the market.



## Second: Scope of competition:

The scope of competition consists of four dimensions:

- Market segment: This sector reflects the diversity of the organization's outputs as well as the variety of customers for which products are offered; the choice is made between focusing on a particular sector of the market or covering the entire market.
- Degree of frontal integration: refers to the degree of performance of the institution for its activities, whether internal or external, higher frontal integration compared to the competitor may achieve the advantages of low cost or discrimination.
- Geographical dimension: represents the area of the geographic region or countries in which the organization competes. This dimension allows for achieving competitive precedence by providing one quality of products across many geographical regions, and highlights the importance of this priority for institutions operating on a global scale, Offering its products all over the world.
- activity segment: expresses the degree of interdependence between the industries in which the organization is made. The existence of this interconnection between different activities through several industries creates opportunities and challenges to achieve many competitive priorities. The same facilities, technology or customers may be used through these The various industries to which the institution belongs. (Khudairi, 2004: 88).

The third section - the practical side: The definition of the sample of the research and the production of electricity and the cost of production to diagnose problems and provide treatments and propose solutions and alternatives:

The company faces today many variables and rapid developments that require research and explore the best ways and approaches to address those variables by adopting ideas , concepts and modern principles aimed at reaching one of the competitive priorities, including rationalization of costs, creating the costs inflated by the waste of material and human resources.

The study will show the high costs of production suffered by the plant, which cause the company losses and decline in sales volume, as well as the section will explain the causes of high costs and put forward the necessary proposals to address the problems experienced by the plant and the company,

### 1- Company Profile: -

A-Ur Public Company was established after the merger of:



- General Establishment for the manufacture of cables and cables was established in 1974.

- The General Corporation for Aluminum Profiles Industry was established in 1975.

Was merged into a single company (Ur Public Company) under the dissolved Revolution Command Council Resolution 222 on 6/3/1988. Under the Companies Law No. (22) of 1997, it was transferred to Or Company for Engineering Industries. Electromechanical under the Ministry of Industry and Minerals / Administrative Department and Human Materials No. 9451 on 20/2/2012 and according to the law of the Ministry of Industry and Minerals No. 38 of 2011. Located in the province of The Qar / Al-Nasiriyah city and registered with the Registrar of Companies and according to the Ministry of Commerce No. 31 dated 15/12/1997 and governed by the Public Companies Law.

#### B. Corporate objectives and functions:

First, Or Company is a self-financed economic production unit wholly owned by the State and enjoys moral, financial and administrative independence; it operates on an economic basis and is linked to the Ministry of Industry and Minerals and has its head office in Dhi Qar Governorate

Second: The company's capital shall be JD (554.506,000).

Third: The company seeks to contribute in supporting the national economy and the development of industrial production by:

- Production of cables, electrical wires, telephone of various types, aluminum casting and production of various plates and sections.
- Achieving the highest level of growth in work and production and adopting the principle of economic calculation and efficiency of investment of public funds and effectiveness in achieving the objectives of the state.
- Raising the performance levels of the national economy to achieve the objectives of development plans.

C- To achieve its objectives, the company undertakes the following activities:

- Production of cables, electric wires of all kinds, wire winding insulated with enamels, cables and telephone wires of all kinds

Aluminum alloy of flexible alloy types of sheets, sections, pipes, wires and various forms for their purposes or for the account of others according to the approved specifications.

- Developing and expanding existing factories and production lines by establishing projects and complementary and new lines.



- Purchase and import of production supplies and any materials that fall within its production or need.

- Marketing its production inside and outside Iraq.

D - divisions and divisions of the company:

First: The Department of Receiving Factories: Managed by a specialized employee who holds an initial university degree in engineering and takes advantage of the available capacities of factories, machinery, equipment and equipment and the continuity of its work in supervising the production plants and supervising the implementation of regular maintenance programs and preparing them to work in harmony with the production service and participation in determining the owners Required to operate the laboratory and diagnosis of the ruling professions and their availability and associated with the following laboratories:

Electrical Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory.

### **Third: Service Centers:**

A-Production Services Center for the Aluminum and Aluminum Production Division which consists of 21 service centers.

B - marketing and administrative service centers.

2. Process of calculating production costs, production services, marketing costs and administrative costs:

For the purpose of determining and measuring the cost of manufacture of the products that shown (Table /1) for eight products. The researchers will determine the production costs and their relation to the production volume to variable costs and fixed costs as well as their nature to direct materials and wages directly and indirect industrial costs as well as by the company's functions to industrial, marketing and administrative With a view to reaching a precise definition

Cost of products. Quantitative data were collected, whether working hours or quantities in weights (kg) of the production section for the purpose of determining the cost factor. Therefore, the cost complexes were determined from the financial section of the company only in respect of the manufacturer of the electrics in order to determine the loading rates for each cost component. And the total cost of manufacturing, marketing costs and administrative costs. The purpose of the project is to compare them with the price of selling the products in the local markets and to the ministries and other government companies. The following tables will show the differences between the cost of the product and the selling price.





Table (1) Products for which production costs have been measured

Measuring the cable	3 x 150/70 mm 2 plain	240 x 4 mm 2 armed	10 x 4 mm 2 armed	10 x 4 mm 2 Normal	95 x 1 mm 2 Normal	50 x 1 mm 2 Normal	95 AAC	120/20 ACSR
Product Type	Multi-conductor copper conductor	Copper quadrilateral	Copper quadrilateral	Copper quadrilateral	Single copper clad (RM) Scheduled	Single copper clad (RM) Scheduled	Aluminum Alloy Wire	Aluminum alloy steel wire
Production quantity / Km for 2016	<u>2.529</u>	<u>1.162</u>	<u>4.338</u>	<u>0.632</u>	<u>30.75</u>	<u>18.12</u>	<u>157.9</u>	<u>661.974</u>

Table (2) has been prepared according to the classification of direct and indirect costs as well as their classification to indirect industrial, marketing and administrative according to the theory of total costs.

Table (2) Calculation of the cost of production of the production plant / electrical capacitors (cost center 5) (amounts in thousands dinars)

Direct Materials:	
Raw materials (168.551) tons (407.583) ton H / 3211	<sup>1</sup> 1532358
Help material A / 3212	40400
Direct wages:	
Ac / 3111's homepage!	2209870
A / 3118 equivalents	700
Indirect Industrial:	
Backup Tools / 323	29850
Packing and packaging for cables (wood, iron and bolts) A / 3241	71955
Supplies & Stationery Factory A / 32512	3460
Electricity A / 3272	76155
Oils A / 3223	3315
Transfer of affiliated factory H / 3341	11500
Factory deliveries H / 33432	2840
depreciations A / 37	745295
Other A / 39	6120
Total Productivity (Center 5)	5815380
Total Productive Services (Cost Center 6)( Table 3 )	2052065
Total Marketing Services (Cost Center 7)	183530
Total administrative services (cost center 8)	129910
Total costs.....	9343885

Source: Prepared by the Two researchers.

Table (3) Calculation of the total costs of production services for the movable factories section (cost center 6) (thousand dinars)

Cost element	the amount
Indirect Materials H / 32	_____
Indirect wages h / 31	1742745
Indirect costs	
H / 33 For production service centers	235375
H / 37 Indentations for production service centers	<u>73945</u>
Total amount.....	<u>2052065</u>

Source: Prepared by the researchers.

<sup>1</sup>The amount includes the raw materials of both electrical cables and aerodynamic wires ... The value of the primary materials that belong to the receiver is as follows:

Primary materials / copper = 1160005 thousand dinars.

Primary materials / Aluminum = 372353 thousand dinars.



Table (4) Manpower and the amount of wages in the company for the year 2016  
(amounts in thousands dinars)

The factory name	the Number	Wages
Cable electric	212	2161552
support	1756 <sup>2</sup>	17904786
=====	=====	=====

Source: Preparation of the two researchers.

Table (5) represents the all company's total revenue.

Table (5) Revenues for the year ended 31/12/2016(thousand dinars)

account number	Account name	Details 2016	
		Actual	Plan
	Revenue from commodity production / net sales	1434993	69660000
	Sale of waste	8578	-
	Variance difference (between the first and the last period of total production)	7245263	-
41	Total	8723071	69660000
42	Revenue of business activity	-	-
43	Revenue of service activity	45742	50000
44	Operating income for others	-	125000
45	Internally manufactured assets	680995	2475000
46	Benefits and rents of land	-	-
47	Subsidies	-	-
48	Transforming income	30869528	34595085
49	Other Revenue	937468	200000
TOTAL		41,256,270 <sup>3</sup>	107,105,085

Source: Preparation of the two researchers.

Table (6) Income statement of the power plant for the period ended 31/12/2016

The statement	Amount (thousand dinars)
Revenue	7507970
Revenue from commodity activity	19973681
+ Other income	
Total revenue .....	
Cost of goods sold:	27481651
Cost of direct materials	
+ The cost of direct wages	4308480
+ Indirect industrial costs	8733760
	10541815
Manufacturing costs	23584055
+ Change in the stocks of the first and last period under operation	170176
Cost of manufactured goods	23754231
+ Difference in stock change in the first and last period of total production	6283158
Cost of goods sold.....	30037389
	(2555738)
Total profit (loss).....	(488530)
Operational costs are raised:	(3865810)

<sup>2</sup>- The number of employees in the supporting bodies provide the work for all the factories of the company, including the plant of electrification.

<sup>3</sup>- The amount represents the total revenues of the company, the share of the Electrical Power Plant is 27,481,651 (thousand dinars).



Marketing costs	
Administrative costs	
Operating income (loss) .....	(6910078)

Source: Preparation of the two researchers.

### 3 - Determination of production costs in relation to the size of production and by nature:

#### First: Cost Calculation:

1 - Calculating the rate of loading the cost of wages and the cost of depreciations:

A. Calculation of the rate of loading Cost of labors:

Cost of labors / production department = [700 + 2209870] (Table 2)

Cost of labors / service department +1742745 (Table 3)  
3953315 Thousand dinars

Loading rate=Cost pool ÷ Cost drive =3953315 ÷3115(supplement /1) = 1280 thousand dinars/ hour

B - Calculating the rate of loading the cost of depreciations:

Table (2) = 745295 thousand dinars of the production department

Table (3) = 73945 thousand dinars and the department of production services

Total 819240 thousand dinars

Load rate = Cost pool ÷ Cost drive =  
= 819240 ÷ 3115 hours of operation (supplement / 1) = 263  
thousand dinars / hour

Table (7) Calculation of fixed costs (direct labors and costs depreciations)

S	the product	① loading rate Of labors Thousand dinars	② loading rate for deprecations Thousand dinars	③ Product time/ (supplement / 1) hour	④ ①×③=④ Cost of labors Thousand dinars	⑤ ②×③=⑤ Cost of deprecations Thousand dinars
1	20\120ACSR	1280	263	2.433	3123	647
2	95AAC mm 2	1280	263	2.17	2835	585
3	1 x 50 mm 2 Normal	1280	263	4.19	5360	1110
4	1 x 95 mm 2 Normal	1280	263	4.69	6870	1420
5	4 x 10 mm 2 normal	1280	263	9.79	12525	2595
6	4 x 10 mm 2 armed	1280	263	15.2	19446	4029
7	4 x 240 mm 2 armed	1280	263	54.0	69087	14318
8	3 x 70 \ 150 mm 2 normal	1280	263	31.0	39661	8219

Source: Prepared by the two researchers.

#### Second: Cost Calculation:

2 - Calculation of loading rate of raw material for aluminum and copper:

Cost of raw materials / aluminum = 372353 thousand dinars (Table 2).

Cost of raw materials / copper = 1160005 thousand dinars (Table 2).

Total = 1532358 thousand dinars

A) Loading rate for raw materials / aluminum = Cost pool ÷ Cost drive =  
= 372353 ÷ 110066 ton weight (supplement / 1) = 3.383 thousand dinars / ton

B) Loading rate for raw materials / copper = Cost pool ÷ Cost drive =  
= 1160005 ÷ 110066 ton weight (supplement / 1) = 10.541 thousand dinars / ton

3 - Calculate the loading rate of packaging cost:



Loading rate = Cost pool ÷ Cost drive =

= 71955 ÷ 561297 kg (supplement / 1) = 0.128194164 thousand dinars / kg

Table (8) Calculation of Raw Materials and Packaging costs (thousand dinars)

S	The Product	① Rate of raw materials / copper	② Download rate packaging Thousand dinars	③ Technological quantity Kg (supplement / 1)	④ Total weight kg (supplement / 1)	⑤ ①×③=⑤ Cost of raw materials	⑥ ②×④=⑥ Cost of packaging	Total costs of raw materials and packaging
1	20\120ACSR	3.383	0.128	342	496.4	1157	63	1220
2	95AAC mm 2	3.383	0.128	261.3	261.3	884	32	916
3	1 x 50 mm 2 Normal	10.54	0.128	428	653.6	4570	80	4590
4	1 x 95 mm 2 Normal	10.54	0.128	1630	1160	17182	148	17330
5	4 x 10 mm 2 normal	10.54	0.128	371.6	878.9	3914	111	4025
6	4 x 10 mm 2 armed	10.54	0.128	371.6	1107.7	3914	141	4025
7	4 x 240 mm 2 armed	10.54	0.128	9014	13569	94975	1730	96705
8	3 x 70\150 mm 2 normal	10.54	0.128	4738.4	7644.1	49940	980	50920

Source: Prepared by the two researchers.

4 - Calculate the loading rate of the spare tools

Loading rate = Cost pool ÷ Cost drive =

Loading rate = 29850 ÷ 3115 hours of operation (supplement / 1) = 9.6 thousand dinars / hour The need for spare tools.

Table (9) Calculation of the costs of the Spare Tools

S	the product	Loading rate Thousand dinars	Product time (supplement / 1)	Cost of spare tools (thousand dinars)
1	20\120ACSR	9.6	2.433	23
2	95AAC mm 2	9.6	2.17	21
3	1 x 50 mm 2 Normal	9.6	4.19	40
4	1 x 95 mm 2 Normal	9.6	4.69	50
5	4 x 10 mm 2 normal	9.6	9.79	95
6	4 x 10 mm 2 armed	9.6	15.2	140
7	4 x 240 mm 2 armed	9.6	54	520
8	3 x 70 \ 150 mm 2 normal	9.6	31	300

Source: Prepared by the two researchers.

5- Calculating the rate of loading other industrial costs:

Loading rate = Cost pool ÷ Cost drive =

= 338773 ÷ 3115 hours of operation (supplement / 1) = 103.8 thousand dinars / hour.

F.O.H=Cost of supplies & stationery + Cost of electricity + Cost of oil + Cost of transfer of employs + Cost of deposits + Other costs + Indirect industrial costs of production services =

F.O.H (Table 2) & (Table 3)= [3460 + 76155 + 3315 + 11500 + 2840 + 6128 + 235375 = 338773 thousand dinars.

Table (10) Calculation of other industrial costs

S	the product	Loading rate Thousand dinars	Product time (supplement / 1)	Other industrial costs Thousand dinars
1	20\120ACSR	103.855	2.433	267
2	95AAC mm 2	103.855	2.17	243
3	1 x 50 mm 2 Normal	103.855	4.19	460
4	1 x 95 mm 2 Normal	103.855	4.69	590
5	4 x 10 mm 2 normal	103.855	9.79	1070
6	4 x 10 mm 2 armed	103.855	15.2	1665
7	4 x 240 mm 2 armed	103.855	54.0	3770
8	3 x 70 \ 150 mm 2 normal	103.855	31.0	3395

Source: Prepared by the two researchers.

6 - Calculation of the rate of loading the costs of marketing services:

Loading rate = Cost pool ÷ Cost drive =





= 183530 (Table 2) ÷ 3115 hours of operation (supplement/1)=59thousand dinars / hour

Table (11) Calculation of Marketing Costs

S	the product	Download rate Thousand dinars	Product time ( hour )	Marketing costs Thousand dinars
1	20\120ACSR	59.48	2.433	170
2	95AAC mm 2	59.48	2.17	155
3	1 x 50 mm 2 Normal	59.48	4.19	291
4	1 x 95 mm 2 Normal	59.48	4.69	374
5	4 x 10 mm 2 normal	59.48	9.79	682
6	4 x 10 mm 2 armed	59.48	15.2	1060
7	4 x 240 mm 2 armed	59.48	.054	3770
8	3 x 70 \ 150 mm 2 normal	59.48	31.0	2165

Source: Prepared by the two researchers.

#### 7. Calculation of Administrative Services Cost Load Rate:

Loading rate = Cost pool ÷ Cost drive =

= 1292910 ÷ 3115 hours of operation (supplement / 1) = 415.9 thousand dinars / hour

Table (12) Calculation of administrative costs

S	the product	Download rate Thousand dinars	Product time ( hour )	Cost of administrative services Thousand dinars
1	20\120ACSR	415.059	2.433	1225
2	95AAC mm 2	415.059	2.17	1115
3	1 x 50 mm 2 Normal	415.059	4.19	2109
4	1 x 95 mm 2 Normal	415.059	4.69	2701
5	4 x 10 mm 2 normal	415.059	9.79	4928
6	4 x 10 mm 2 armed	415.059	15.2	7650
7	4 x 240 mm 2 armed	415.059	54.0	27180
8	3 x 70 \ 150 mm 2 normal	415.059	31.0	15605

Source: Prepared by the two researchers.

#### 4 - Identify and measure the cost of manufacture, marketing and management:

Table (13) and (14) below shows the total production, marketing and administrative costs which were calculated according to the above tables for determining production costs.

Table (13) Manufacturing Cost (thousands of Dinars)

Variable costs of production centers and production services			Fixed costs for production centers and production services			measuring unit	S	Manufacturing cost
Other industrial costs	Spare tools	Raw materials& packaging	Other	depreciations	Direct labor			
267	23	1220	-	647	3123	kilometer	1	5280
243	21	916	-	585	2835	kilometer	2	4600
460	40	4590	-	1110	5360	kilometer	3	11560
590	50	17330	-	1420	6870	kilometer	4	26260
1070	95	4025	-	2595	12525	kilometer	5	30310
1665	140	4055	-	4029	19446	kilometer	6	29335
3770	520	96705	-	14318	69087	kilometer	7	184400
3395	300	09205	-	8219	39661	kilometer	8	102495

Source: Preparation of the researchers.



Table (14) Manufacturing costs, marketing costs and Administrative costs 2016

S	the product	Measuring unit	Manufacturing costs thousand dinars	Marketing costs thousand dinars	Administrative costs thousand dinars	Production costs thousand dinars
1	20\120ACSR	kilometer	5280	170	1225	6675
2	95AAC mm 2	kilometer	4600	155	1115	5870
3	1 x 50 mm 2 Normal	kilometer	11560	291	2109	13960
4	1 x 95 mm 2 Normal	kilometer	26260	374	2701	29335
5	4 x 10 mm 2 normal	kilometer	20310	682	4928	25920
6	4 x 10 mm 2 armed	kilometer	29335	1060	7650	38045
7	4 x 240 mm 2 armed	kilometer	184400	3770	27180	215350
8	3 x 70 \ 150 mm 2 normal	kilometer	102495	2165	15605	120265

Source: Preparation of the two researchers.

### 5 - Differences between production costs and selling price:

Table (15) below shows the cost differentials incurred by the company and the prices at which the products are sold and the company incurs losses resulting from the sale of products at less than its cost . Despite this reduction in the prices of the company's products, there are similar products in the local market. The value of the product purchased by him, and because the cost of the product (manufacturing, marketing and management) is high compared to the similar product in the market and imported from different global origins (Thailand, Turkey, China, Iran, Malaysia, etc.).

As long as the customer is rational in his behavior at the time of purchase, he seeks benefits that go beyond the sacrifices he incurs in paying the value of the product, he is well aware that the product similar to the product of the company achieves its benefit either through its quality or price, thus it will achieve net benefit as long as the benefits are greater than sacrifices. The value of the product did not come from a vacuum has been found from several factors, including:

A- the quality of the similar product of its efficiency in the performance of the work (if the customer believes);

B- The appropriate price which the customer can pay.

C - Sometimes the customer does not recognize the length of the product when used as long as the price is appropriate for him.

D - as well as swap in the light of the market of full competition, and here the researchers indicate that the imported products are not subject to tariffs and tariffs as a tariff and not conform to the approved specifications. As well as the rationality and realization of dealers in this market, whether they are sellers or buyers has determined the value of the product, and here the emergence of swap conditions and competition, which affected and affected by the value of the product.



## 6- Problems experienced by the company / factory capacitors:

Table (15) shows the significant difference between the production costs and the selling price of a sample of products. This difference causes great losses for the company. This situation is one of the main reasons for weak performance of government companies.

Here, it is difficult for the government sector to compete with the private sector to sell its products for the following reasons that are characteristic of the private sector:

- a- The reluctance of ministries and companies affiliated with the government sector to buy the company's products.
- b- The private sector offers lower prices than the prices of the products of the company for the reason mentioned above and the variety of products, which are of different global origin.
- c- The absence of administrative routine in the private sector and applied in the state institutions in general and especially the products manufactured by the company, including a purchase transaction.
- d- Lack of proximity to marketing outlets from customers or markets compared to the private sector, which takes places more popular in the local markets.
- e- Delivery to the customer by means of simple means of transport, which is missing the government sector.
- f- The length of time it takes for the customer to purchase from the public sector (from the company by virtue of its distance from the customer's reach) more than the period of time when buying from the private sector according to the proximity of the shops from the reach of the customer.

Table (15) Calculation of the differences between the cost of production and the sale price (thousand dinars)

S	the product	Quantity Manufactured kilometer	Total production costs Thousand dinars	selling price	Difference between production cost and selling price (loss)
1	20\120ACSR	661.974	6675	2000	(4675)
2	95AAC mm 2	157.9	5870	1400	(4470)
3	1 x 50 mm 2 Normal	18.12	13960	6500	(7460)
4	1 x 95 mm 2 Normal	30.75	29335	12000	(17335)
5	4 x 10 mm 2 normal	0.632	25920	8000	(17920)
6	4 x 10 mm 2 armed	4.338	38045	8800	(29245)
7	4 x 240 mm 2 armed	1.162	215350	120 000	(95350)
8	3 x 70 \ 150 mm 2 normal	2.529	120265	65000	(55265)

Source: Preparation of the two researchers.



## 7. Finding solutions and developing treatment mechanisms:

### First: Rationalization of costs (reduction of loading rates):

A- reduction in direct labors by reducing the number of employees in the company, which is estimated at 3189 workers. The share of the electrification section is **212** workers (Table 4), except for the supports, according to the available energy, which is estimated at **10.7%** for electrical wires and **(7.3%)** Electrical (Table / 18), respectively. The reduction in the number of workers reduces the rate of wage load of (1,280,000) dinars per hour.

B - Reduce the rate of loading the cost of the endowments, through the disposal of some buildings of the Department of electrification through the use of them and the knowledge of the factory and the company.

C. Reduce the rate of loading of spare parts costs due to the aging of machines, equipment and equipment, where the manufacturer only receives the amount of 9600 dinars per hour due to the need for backup tools.

D. Reducing the rate of loading of other industrial costs, where the factory bears 103800 dinars per hour.

Thus for the rest of the marketing and administrative loading rates, which cause large production costs.

### Second: Proposals and Alternative Solutions:

Here, the two researchers suggest, to help raise the value of products after discussion with the marketing department, about the opinions and mechanisms.

The marketing and economic policy developed by the state is an open market policy where the principle of marketing is the principle of competition. In order to overcome these obstacles, it is possible to provide opinions and mechanisms for the marketing work of the company's products, through which it may obtain a market share of the company's products in the local market:

A: The rules of procedure for marketing:

Participation of marketing personnel in the communication processes with the private and public sectors for the purpose of displaying products, including at least one of them:

- Marketing Manager and his agent .- Sales Officer Receivables. - Quality Supervisor. - Director of Planning.

The researchers suggest that the managers above: -

- Communicating with government ministries and industrial and service companies in all governorates, as well as the local market for each





governorate, as well as attending the exhibitions, whether the participation of the company or non-participation. This is very important in trying to obtain a marketing share according to what they propose in their different visions, One person.

- The need for the general manager of the company to participate with the above officials in all their movements and contacts and in accordance with the instructions and work controls in force in the company to complete the marketing image.

B: The proposals submitted by the researchers to consult the opinions of the company's officials in the marketing department and the mechanism of marketing the products of the products are as follows:

**First-** activate the access of agents approved by the conditions of the ministry by contacting them in their workplaces, according to his province:

**I-** Models of small products and folders related to the products and a list of prices for products. Detailed explanations and exchanges of views are provided to attract more than one agent (customer).

**II-** In the case of the presence of agents (customers) to buy by installment or there is approval of the Board of Directors and then the Ministry to develop a guarantee agreed by the company, and the agent is enforceable and maintains the rights of the company.

**III-** There will be a financial reward at the end of each year or two for agents or customers whose products are marketed at a value of up to [200 million dinars] in a modern Pickup car granted by the company, as is the case in global product marketing operations.

**Secondly-** Promotion of advertisements in shopping centers and malls.

**Thirdly-** the planning department should issue or order work for products that enjoy a movement and a high demand for sales whether for the public sector or the private sector and put them in warehouses without resorting to the production process on demand. By following this mechanism, it is the immediate processing process that attracts the shopper and customers in Public and private sectors.

**Fourthly-** activating the role of manufacturing for others and announcing it is an immediate announcement in the media and others, which attracts customers who request that there be exclusive products for them.

**Fifthly-** Attracting participants, even if they are local, for the purpose of mutual benefit in terms of procurement of raw materials and conditional marketing, and in accordance with an economical scientific mechanism that is easy to apply (follow up with the commercial department in the company to conduct continuous meetings with local government / provincial councils and governors) to: Supreme audit, Integrity, National



Security, which requires the taking of necessary measures against anyone violating the laws of the protection of the local product and its application for the purpose of purchasing local products of high quality. These steps are of great importance that may result in obtaining a marketing position.

**Sixthly-** formatting trucks that is cargoes (2 tons) rather than (5 tons) because the latter prevent access to the provinces as in the case of large trucks; while the trucks with (2 tons) can enter easily even in the local markets where active markets can be selected In Baghdad or even provinces for direct sale, as well as agreement with the owners of shops to deliver products to them the next day in case of a sale of the product.

**Seventhly-** In the case of production of work for the production of a particular product in favor of a particular party; it should be emphasized that the payment in advance or half of the amount and after the completion of manufacturing should pay the amount within three days and raise the quantity sold.

**Eighthly-** Contacting the headquarters of the telecommunications companies (Zain and Asiaccell) and agreeing to send text messages offering promotion of the company's products and figures of business owners or companies known to them, officials and others.

### **Third: The Pursuit of Development, Improvement and Continuity:**

The pursuit of development and continuity simply means that there is no end to the development of processes and improvement of performance to reduce losses and then remove them permanently. The basis for development is to increase value and eliminate loss of production. This foundation leads to inspiring the workers for progress, development and a sense of responsibility. In ambitious and sophisticated institutions, improvement is the essence of evolution, and this is done by striving for clarity of goals Strategy and transparency of work and performance and zero errors and defects that occur in both processes or in the quality of the product and try to remove them as much as possible.

Disadvantages are one of the ten losses that cause not only unnecessary costs; but also distrust of products offered to the customer. In addition, transparency requires a clear relationship and communication between those who have a share and a share in the processing chain in order to communicate the valuable information used in proposing effective strategic plans; Be able to provide positive feedback to employees who will improve their performance to the expectations and wishes of the customer.

Table (16) and (17) show the design capacities and capacities available, planned and actual of the power plant at the level of production capacities, which shows the large difference between them due to poor performance as well as the level of sales planned and actual, which is



hoped to reach these energies and the quantities of planning specified in Table (16).

Table (16) Production capacity activity for 2016

the details  the product	Quantity of energies for the period from 1/1/2016 to 31/12/2016 (Tons)			The planned price per ton Thousand dinars	The planned capacity for the period from 1/1/2016 to 31/12/2016 (Thousand dinars)			Actual current price per ton Thousand dinars	Achieved for the period from 1/1/2016 until 31 / 12/2016			Percentage of production Actual to planning %
	① Design	② Available	③ Planned		④ Planned	⑤ Available	⑥ Design		⑦ The amount of production achieved Ton	Verified value		
										⑧ = ④ At planned prices Thousand dinars	⑨ = ⑤ Prices Effective Thousand dinars	
Hanging aerial wires	7300	3810	3810	6000	43800	22860	22860	5189	407.5	2445000	2114517	10.7
Electrical cable	8521	2300	2000	12500	106512	28750	25000	12736	168.5	2106250	2146016	7.3

Source: Preparation of the two researchers.

Table (17) Sales Activity for 2016

The product	measuring unit	Current period from 1/1/2016 to 31/12/2016						Actual sales amount to planned The ratio % ⑤÷②
		Planned sales			Actual sales			
		① unit price (Thousand dinars)	② For quantity Ton	③ ①×②=③ the value (Thousand dinars)	④ unit price (Thousand dinars)	⑤ Quantity Ton	⑥ ④×⑤=⑥ Value (thousand dinars)	
Hanging aerial wires	Ton	6000	3810	22860000	5346	130.415	697198	3.4
Electrical cables	Ton	12500	2000	25000000	5294	639.277	3384332	32

Source: Preparation of the two researchers.

***The two researchers provide the following suggestions to reach and seek to improve the performance and the operational and strategic work of the plant Sample Research:***

1- The production plant for the production of consumables was established according to a feasibility study to meet the needs of the Ministry of Electricity, Ministry of Oil, Ministry of Communications, Ministry of Construction and Housing. The factory sales are subject to the requests of these ministries because the company has special products. The central instructions related to the purchase of the local product and the non-importation of similar products except in the case of an official apology by the company, as stated in the provisions of the implementation of the federal budget for previous years, but there is no actual implementation.



2. In order to achieve continuity and improvement in the production processes of the plant, the replacement of all existing machines and equipment due to lack of efficiency as it has a productive life of about (50) General and this causes increase in lossing and replacement of spare tools in them, as well as these equipment and machinery left by modern technology and renewable Are not suited to the requirements of the current market and tastes of customers; for example, some of these plants stopped because of the use of production in all life facilities such as the production of telephone cables insulated paper, field wires and others.

3 - It is necessary not to include the company programmed parts of the electricity supply, especially in the summer as the inclusion of the company leads to the occurrence of abnormal damage.

4 - Reduce human resources in the company and the transfer of surpluses to other departments and what causes it to increase unjustified direct wages, which keep them from achieving competitive precedence led by cost, which is reflected in the reduction of prices of the company's products.

5- Seriousness in the application of laws imposing duties on imported products similar to the products of the company by the State.

6- Activating the standardization and quality control device to enter similar products (in terms of type) of the products of the company and not covered by quality standards, which increased the element of competition.

## **8- Proposed Alternatives to Increase Operational Capacity and Reduce Fixed Costs to Achieve Profits:**

### **1. Using the operational leverage equation:**

The two researchers suggest that the plant should increase the current operating capacity within the limits of available energy so that it can sell a larger number of units / kilometers, which have a 25% profit and are approved by the company as a profit ratio with the reduction of fixed costs, So that it is necessary to know the kilometers to be manufactured for each product by using the operational leverage equation within the limits of available energy.

Operational leverage = (selling price  $\times$  number of units / units - variable costs  $\times$  number of units / km) = (fixed costs + 25% of selling price)

Assuming the proposed number of units / km =  $\aleph$

Product 120/20 ACSR =  $2000 \times \aleph - 1510 \times \aleph = 3770 + (25\% \times 2000)$

$= 490 \aleph = 3770 + 500$

$= 490 \aleph = 4270$  thousand dinars





Then  $a = (4270 \text{ TH D}) + (490 \text{ TH D}) = 8.714 \times 1000 = 8714.285 \text{ km}$

Percentage of increase = number of units / km proposed number of units / current km =

$$13.16 \text{ times} = \frac{8714.28}{661.974} =$$

Table (18) shows the calculations of the products selected in the research:

Table (18) Operational power after using the operational leverage equation

S	the product	NO. unit produced	Operating leverage equation / Kilometers to be produced	Percentage of increase% And the number of times of increase	Available Energy (km)
1	20\120ACSR	661.974	$8714.28 = 3770 + 500 = ( ) 2000 - \text{N} \times 1510 = (\text{N} \times$	1316% 13 Once	1303020
2	95AAC mm 2	157.9	$17136.00 = 3420 + 350 ( ) 1400 \times - \text{N} 1180 = (\text{N} \times$	1080% 108 Once	995550
3	1 x 50 mm 2 Normal	18.12	$741.13 = 6470 + 1625 ( ) 6500 \times - \text{N} 5090 = (\text{N} \times$	31684% 317 Once	984400
4	1 x 95 mm 2 Normal	30.75	$) 8290 + 3000 = ( ) 12000 - \text{N} \times 17970 = (\text{N} \times 2891.1 =$	9402% 94 Once	3749000
5	4 x 10 mm 2 normal	0.632	$6092.5 = 15120 + 2000 = ( ) 8000 - \text{N} \times 5190 = (\text{N} \times$	9640% 96 Once	854680
6	4 x 10 mm 2 armed	4.338	$) 23475 + 2200 = ( ) 8800 - \text{N} \times 5860 = (\text{N} \times 8732.99 =$	2013% 20 Once	854680
7	4 x 240 mm 2 armed	1.162	$5967.1 = 83405 + 30000 ( ) = 120000 - \text{N} \times 100995 (\text{N} \times$	5135% 51 Once	20732200
8	3 x 70 \ 150 mm 2 normal	2.529	$6175.25 = 47880 + 16250 ( ) 65000 - \text{N} \times 5465 = (\text{N} \times$	2442% 24 Once	10898320

Source: Prepared by the two researchers.

Table (19) shows the reduction in fixed costs as a result of the increase in operating capacity as in the following equation:

The amount of reduction in fixed costs (direct labors) = fixed costs ÷ the number of units according to operational leverage:

Table (19) Reduction after using the operational leverage

S	the product	NO. unit produced KM	Fixed costs (current wages) Dinars / km	Fixed costs (direct wages) After the use of the operational crane Dinars / km	Amount of reduction (difference) Dinars / km
1	20\120ACSR	661.974	$\frac{3123}{661.974} \approx 4717$	$358 \approx \frac{3123}{8714}$	4359
2	95AAC mm 2	157.9	$\frac{2839}{157.9} \approx 17954$	$\approx 165 \frac{2839}{17136}$	17789
3	1 x 50 mm 2 Normal	18.12	$\frac{5360}{18.12} \approx 295805$	$933 \approx \frac{5360}{5741}$	294872
4	1 x 95 mm 2 Normal	30.75	$\frac{6870}{30.75} \approx 223778$	$\frac{6870}{2891} \approx 2376$	221402
5	4 x 10 mm 2 normal	0.632	$\frac{12525}{0.632} \approx 19818000$	$\frac{12525}{6092} \approx 2056$	19815944
6	4 x 10 mm 2 armed	4.338	$\frac{19416}{4.338} \approx 4482711$	$\frac{19416}{8732} \approx 2227$	4480484



7	4 x 240 mm 2 armed	1.162	59455249 $\approx \frac{67087}{1.162}$	11578 $\approx \frac{67087}{5967}$	59443671
8	3 x 70 \ 150 mm 2 normal	2.529	$\approx 15682483 \frac{39661}{2.529}$	6423 $\approx \frac{39661}{6175}$	15676060

Source: Prepared by the two researchers.

## 2. Use the Breakeven equation

Point of reference in units (kilometers) = Fixed costs Contribution margin per kilometer

Contribution margin per km = Sales price - variable costs

Product 120/20 ACSR = 2000 - 1510 = 490 thousand dinars

Contribution margin = 490/2000 = 24.5%

breakeven in units (km) =  $3770 \div 490 = 7.693 \times 1000 = 7693$  km

A point of equalization in amounts (thousand dinars) =  $3770 \div (0.245) = 15387$  thousand dinars

That the company / factory can sell 7693 km of product (120/20 ACSR) to reach the point of parity after this amount begins to achieve profit as well as the proportion of the equivalent (amounts) the company to receive amounts of 15387 thousand dinars after this amount realized Profits. Table (20) shows the calculations of the products selected in the research.

Table (20) Amount of units and amounts of a break-even point

S	the product	Quantity produced / Km	Equalizer equation In units / km	Equalizer equation In amounts / thousand dinars	Available energy ( How many)
1	20\120ACSR	661.974	$3770 \div 490 = 7693$	$3770 \div 0.245 = 15387$	1303020
2	95AAC mm 2	157.9	$3420 \div 220 = 15545$	$3420 \div 0.157 = 21783$	995550
3	1 x 50 mm 2 Normal	18.12	$6470 \div 1410 = 4588$	$6470 \div 0.216 = 29953$	984400
4	1 x 95 mm 2 Normal	30.75	$8290 \div 5970 = 1389$	$8290 \div 0.497 = 4120$	3749000
5	4 x 10 mm 2 normal	0.632	$15120 \div 2810 = 5381$	$15120 \div 0.351 = 5307$	854680
6	4 x 10 mm 2 armed	4.338	$23475 \div 2940 = 7985$	$23475 \div 0.334 = 70284$	854680
7	4 x 240 mm 2 armed	1.162	$83405 \div 19005 = 4388$	$83405 \div 0.158 = 527880$	20732200
8	3 x 70 \ 150 mm 2 normal	2.529	$47880 \div 10385 = 4610$	$47880 \div 0.159 = 301132$	10898320

Source: Prepared by the two researchers.

## 3: Reduction of fixed costs commensurate with the ratio of actual production to the plan (electrical wires and electrical cables at 10.3% and 7.3%, respectively):

1-reduction of fixed costs Total:

Fixed costs of air wires (aluminum bars) = 15537.732 thousand dinars (Supplement 2).



Fixed costs of electrical cables (copper bars) = 830084.734 thousand dinars (Supplement 2).

The amount of reduction in fixed costs (for air wires) =  $(15537.732 \times 0.893) = 13875$  million dinars

The amount of reduction in fixed costs (for Cables) =  $(830084.734 \times 0.927) = 769488$  million dinars

The Total Reduction of the plant = 783364 million dinars

2-reducing the fixed costs at the level of products selected in the research sample:

Table (21) Cost and production after reduction against current selling prices (thousand dinars)

S	the product	Fixed costs (2) and (3)	discount percentage %	Total fixed costs after reduction	Fixed + variable production costs	selling price	Profits or (Losses)
1	20\120ACSR	5170.12	0.893	553.20	2063	2000	(63)
2	95AAC mm 2	4694.209	0.893	502.28	1682.28	1400	(282)
3	1 x 50 mm 2 Normal	8873.267	0.927	647.75	5737.75	6500	763
4	1 x 95 mm 2 Normal	11372.183	0.927	830.169	18800.169	12000	(6800)
5	4 x 10 mm 2 normal	20732.529	0.927	1513.47	6703.47	8000	1297
6	4 x 10 mm 2 armed	32189.421	0.927	2349.82	8209.82	8800	591
7	4 x 240 mm 2 armed	114357.152	0.927	8348.07	109343.07	120000	10657
8	3 x 70 \ 150 mm 2 normal	65649.474	0.927	4792.41	59407.41	65000	5593
Total/ Profits							11756

Source: Prepared by the two researchers.

## The Forth section -: Conclusions and Recommendations:

### First: Conclusions:

1-The ratio of direct wage costs to the total cost of manufactured goods represented 37% (Table 6), which is a very high percentage, since the bulk of these costs are fixed costs due to the increase in the number of workers both in the company and the factories, The expansion of these numbers and costs has placed an additional burden on production and marketing costs.

2- low priority of the competitive prices of local products of the company compared to the price of imported products as it follows an incorrect policy to sell its products of cables and wires as it sells its products at prices well below the total cost to survive and maintain its presence in the domestic market, not for competitive priority purposes than the company Big losses. This indicates the poor performance of the marketing



department and the planning department in promoting the company's sales as well as its strategic plans.

3- The equipment and machinery in the factory are subject to permanent maintenance and maintenance of technological development and continuous for the purpose of increasing efficiency and the volume of productive capacity, but the reality indicates a significant increase in the cost of maintenance and backup tools because of the productive life of more than forty years.

4. A significant reduction in actual production levels from the 2016 planned annual level of cables and cables (10.7% & 7.3%) respectively, which led to higher actual production costs. This indicates the weak competitive performance of the company's products, the loss of its competitive position in the market and the significant decline in its market share, which led to the company's loss of precedence in rationalizing costs, which negatively affected it as a competitive priority.

5 - The lack of coordination between the company and the ministries of state and industrial companies that benefit from the products of the factory in the Ministry of Industry to sell and promote their products as the sales of the company depends on the requests of these ministries and companies because the company has special products, in addition to sales to the private sector of household wires.

6 - Lack of knowledge or interest of the top management competitive priorities and this is evidenced by the lack of studies of their own, especially the precedence of rationalization of costs as a guide to determine the selling prices.

7 - not to protect the local product and make it the forefront of products in the market; This is evidenced by the existence of many products similar to the products of the company, which led to flooding the local market.

### **Second: Recommendations:**

1 - Reduce the number of employees in the company and transfer of surplus to other departments of the ministry, which causes the reduction of high wages unjustified and approaching the competitive precedence at the prices of the company's products where the increases in wages as a result of central decisions related to the return of political dismissals and the transfer of employees to the company companies of the Ministry of Industry.

2 - The need to strive continuously towards reducing the production, marketing and administrative costs of the plant through alternatives and solutions In order to achieve cost reductions and create price flexibility to increase sales of the plant or company. In order for the company or the





manufacturer to overcome the causes of its production and marketing crisis and to achieve excellence on its competitors, it should define the goals of the planning and marketing policy and determine the competitive precedence, including what came during the research, the precedence of cost rationalization which will enable it to improve its capabilities and capabilities to meet the challenges, Local market.

3 - Achieving competitive priorities in the process of production and marketing of the company to replace all existing machines and equipment because of their inefficiency, which causes waste in production as well of these machines have left the modern technology and renewable as they are not suited to the requirements of the current market.

4 - The need to pay attention to the short and long term plans both for production or for sales by the planning and marketing departments and the need for high cooperation and coordination between them with other departments (such as production, quality, maintenance, laboratories, etc.); and work on preparing studies that work to raise the operational and marketing performance of the company Including activation of the role of the competitive priorities listed in the research, which has become one of the most important justification for the presence and continuity of the presence of companies in a changing world and fluctuating prices and tastes and customer needs.

5 - All ministries and other companies should be obliged to buy from the company's products and apply the central instructions regarding the purchase of the local product and not to import for similar products except in the case of an official apology by the company as stipulated in the instructions of implementation of the federal budget but there is no actual implementation .

6 - The need for senior management to support and apply the competitive priorities mentioned in the research to achieve substantial reductions in production costs and quality improvement to strengthen its competitive position in the long term and to maximize profitability in the short term and increase market shares.

7 - To apply the laws to impose customs duties on imported products similar to the company 's products at all border crossings, especially after the company obtained the decision of the Council of Ministers No. 282 of 2016 to protect the local product; as well as activating the role of the standardization and quality control; to enter products similar to the company' s products And not covered by quality standards.



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## SUPPLEMENTS

Supplement: (1) Production quantities for the period from 1/1/2016 to 31/12/2016

Details			the total weight Kg	Technological quantity KM	Technological time Time hour	production quantity kilometer	The factory name Electrical capacitors	S
Packaging Production × Total Weight (ton)	Raw materials Production of kt (Tons)	Cost of wages / cost Extinction and other costs Production × Time. hour						
328603	226395.00	1610	496.400	342.000	2.433	661.974	Manufactured from aluminum rods: ASCR 20\120/KM	a
8469	8469	72	136.6	136.6	1.16	62	50 mm 2 AAC	
16805	16805	190	185.8	185.8	2.1	90.450	70 mm 2 AAC	
41260	41260	343	261.3	261.3	2.17	157.900	95 mm 2 AAC	
395137	292930	2215				972.324	Total for Aluminum	b
15	12	0.117	184.5	143.3	1.4	8400.	Manufactured from copper rods: 1 x 16 mm 2 Insulated / Sleeve	
5.7	4	0.055	124.3	91.1	1.2	0.046	1 × 10 Mm 2 insulated	
1100	682	7	500	310.2	3.27	2.200	1 × 35 Mm 2 normal	
11843	7755	76	653.6	428	4.19	18.120	1 × 50 Mm 2 normal	
171	120	1	871.3	618.3	4.69	0.195	1 × 70 Mm 2 normal	
35652	25946	165	1160	1630	5.37	30.735	1 × 95 Mm 2 normal	
28877	21935	133	1442.6	1095.8	6.64	20.017	1 × 120 Mm 2 normal	
10338	7900	44	1744.2	1333	7.44	5.927	1 × 150 Mm 2 normal	
6143	4210	26	2471.1	1693.5	10.4	2.486	1 × 185 Mm 2 armed	
4965	3560	21	3107.3	2228	13	1.598	1 × 240 Mm 2 armed	
36	14	0.323	1651.2	638	14.7	0.022	2 × 35 Mm 2 armed	
25	8	0.308	571.5	185	7	0.044	2 × 10 Normal	
405	240	2	5637.8	3328	28.8	0.072	3 × 120 Mm 2 armed	
4831	2995	20	7644.1	4738.4	31	0.632	3 × 150 / 70 Normal	
44	24	0.279	1987.4	1101.6	12.66	0.022	3 × 35 / 16 Normal	
1587	945	8.6	3180.9	1894	17.3	0.499	3 × 70 Normal	
1140	505	8.8	2151.22	954.5	16.7	0.530	3 × 35 Mm 2 armed	
358	223	1.6	5595.1	3483.7	24.64	0.064	4 × 95 Mm 2 normal	
3813	1612	42	878.9	371.6	9.79	4.338	4 × 10 Mm 2 normal	
664	253	7	568.7	216.9	6	1.168	4 × 6 Normal	
150	78	1	1791	931.7	13.04	0.084	4 × 25 Mm 2 normal	
1287	432	16	1107.7	371.6	15.2	1.162	4 × 10 Mm 2 armed	
34316	22796	137	13569	9014	54	2.529	4 × 240 armed	
222	136	1.5	2072.3	1266.5	14.51	0.107	4 × 35 Normal	



1265	611	12	1216.8	588	11.370	1.40	4× 16 Normal
292	166	2	3074.4	1750.4	18.43	0.095	4× 50 Normal
13627	5381	147	1489.1	588	16.1	9.151	4× 16 armed
2989	1523	20	3436.2	1750.4	23.1	0.870	4× 50 armed
561297	110066	3115				102.833	Total

Source: Preparation of the two researchers based on quantitative data in the production plant.

(2) Determination and measurement of costs by nature for the year 2016 / Factory of Electrical capacitors (aluminum rods) (thousand dinars)

Total costs Thousand dinars	Administrative costs	Marketing costs	H / costs Other indirect industrial	H / 321 Cost of material Aluminum	H / 321 Cost of copper material	H / 3241 Cost of packing materials	H / 323 Cost of hacking tools	H / 37 Cost of investments	H / 31 Cost of wages	Quantity Kg	product name
6675.900	1228.966	170.441	267.652	1154.477	0.000	65.243	23.584	647.267	3123.446	661.974	MM 120/20 2ACS
5450.900	1079.844	149.760	235.176	627.199	0.000	24.420	20.722	568.729	2744.450	90.45	AA mm 2 70
5870.900	1115.839	154.752	243.015	882.061	0.000	34.343	21.413	587.686	2835.932	157.9	95 Mi2 AA2
3130.900	596.485	82.724	129.907	461.116	0.000	17.954	11.447	314.155	1515.982	62	AAC 50 mm
	2792.168	407.917						2117.837	10219.810		Total
	3200.085							12337.647			Total

(3) Determination and measurement of costs by nature for the year 2016 / Factory of Electrical capacitors (copper rods) (thousand dinars)

Total costs Thousand dinars	Administrative costs	Marketing costs	A / others	A / 321 Aluminum	A / 321 Copper material	A / 3241	A / 323 Backup	A / 37 depreciation	A / 31 Direct wages	Quantity Kg	Product name
4873.000	704.755	97.739	151.486	0.00	1510	23.652	13.524	171.177	1791.146	0.094	Insulated 1 * 16
3284.000	604.074	83.777	131.559	0.00	990	15.934	11.592	118.132	1535.268	0.046	Insulated 1 * 10
4365.000	1648.101	228.292	359.499	0.00	3299	64.996	31.589	366.963	4183.605	2.2	Normal 1*15
13960.000	2109.224	292.520	459.361	0.00	4510	83.767	40.476	1110.879	5560.644	18.12	Normal 1*50
14563.000	2560.022	327.427	514.177	0.00	6516	112.720	45.306	1243.442	6000.330	0.195	Normal 1*70
29335.000	2703.236	374.901	588.728	0.00	17182	148.704	51.875	1423.728	4870.324	30.75	Normal mm 2 1 * 95
22054.000	3342.542	462.564	727.961	0.00	11548	184.931	64.144	1760.438	8495.149	20.07	Normal mm 2 1 * 120
102225.000	3745.258	519.416	815.667	0.00	14048	223.594	71.872	1972.559	4518.662	5.927	Normal mm 2 1 * 190
37180.000	7399.904	1026.265	1611.600	0.00	6723	211.646	142.065	3897.355	18807.850	0.022	armed 2*35
16917.000	3523.764	488.697	767.429	0.00	1949	73.262	67.621	1855.884	8955.730	0.044	Normal 2*10
86455.000	14497.779	2010.641	3157.421	0.00	35073	722.725	278.214	7635.635	36846.430	0.072	armed 3*120
120265.000	15605.240	2184.251	3395.613	0.00	49940	979.918	299.466	8218.913	39661.800	0.632	Normal 3*70/150
35695.000	6388.080	885.939	1391.239	0.00	11609	254.770	122.588	1364.452	16235.460	0.022	3*35/16
78140.000	12403.650	1720.215	2701.349	0.00	36713	717.251	238.027	6532.710	31524.170	0.064	Normal 3*95
51254.000	8708.770	1287.781	1896.641	0.00	19980	407.768	167.121	4586.684	21133.450	0.499	Normal 3*70
43745.000	8406.694	1165.892	1830.866	0.00	10059	275.768	161.325	4477.608	21365.810	0.433	armed 3*35
24392.000	4928.235	683.478	1071.304	0.00	3965	112.669	94.573	2595.586	12525.230	4.338	Normal 4*10
14884.000	3020.369	418.884	657.796	0.00	2285	72.903	57.961	1980.757	7676.340	1.168	Normal Hard 4*6
35365.000	6564.268	916.374	1429.610	0.00	9818	229.593	121.969	3457.346	16683.250	0.084	Normal 4*25
38045.000	7651.601	1061.172	1866.417	0.00	3865	141.899	148.835	4029.918	19446.750	1.162	armed 4*10
215350.000	27183.320	3769.952	3770.163	0.00	94896	1709.44	521.651	14316.820	69887.860	2.529	armed 4*240
40853.000	7304.254	1013.000	1590.770	0.00	13347	265.654	148.169	3846.981	18563.850	0.107	Normal 4*35
29355.000	5723.599	791.784	1246.524	0.00	6196	155.885	108.836	3014.485	14548.600	1.04	Normal 4*16
52828.000	9277.566	1286.671	2020.530	0.00	18447	384.116	178.037	4886.276	21579.160	0.095	Normal 4*50
39971.000	8104.657	1124.004	1765.086	0.00	6196	100.892	155.520	4268.532	20988.180	9.151	armed 4*16
63322.000	11678.470	1612.702	2532.513	0.00	18447	440.486	223.151	6124.416	28553.810	0.87	armed 4*50
34424.000	5235.308	726.065	1140.180	0.00	17847	316.777	108.466	2757.313	11305.660	2.486	armed 1*138
43743.000	6544.133	907.583	1425.221	0.00	23480	398.333	125.583	3446.641	16632.870	1.598	armed 1*240
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*Using Value Stream Maps To Treatment Waste\**  
*Case study in Karbala Holy Health Department*

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**Abstract:**

The objective of this research is to employ the value stream map as one of the main tools in the strategy of optimization and redesign of service in the service business environment and reducing processes that do not add value which is wasted without being processed. The problem of the study is to increase the waiting times for the official version of the birth certificate of the new born, which is sent to the Directorate of Civil Status to be issued for the national card later. The study is based on the current stream mapping, analysis and mapping in order to identify, remove or reduce waste and improve service efficiency. The data and information needed to study the case were collected through field interviews, interviews and interviews at the government hospital. Some appropriate quantitative methods were used (total time to add value, total time not added value, service efficiency, improvement rate). The most important conclusions: The tool Value Stream Map is an efficient and efficient tool in improving service organizations to enable the organization to invest add times for value and reduce or eliminate non-adding times of value and improve the efficiency of service provided.

Keywords: - Value Stream Maps, Waste, Add value time, efficiency of service, Non-add value times, improvement rate.

**1. Introduction:**

The health sector is one of the most important service sectors. It provides the solid ground for building a healthy and healthy human being in a manner of commensurate with God's honor. The organizations of this sector must find an effective tool to remove all activities that do not add value to reviewers and improve the efficiency of service provided to them. To success, the development in this area are among the most important indicators to measure the level of civilization and economic progress of any country. The Value Stream Maps of the important topics in the service business environment for its important role in raising the

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level of these works for the better, To identify, remove or reduce waste whenever possible, thereby improving the efficiency of the services and the efficiency of the tasks provided to patients.

## 2. Methodology

### 2.1 Research problem

The length of the procedures adopted in the postnatal service to organize the birth certificate of the new born in the women's hospital and the obstetrician of the concerned parties by comparing it with the official version sent to the Directorate of Civil Status to issue the national card, which led to increased waiting times and times of transportation and the frequency. In light of this, the problem of the study can be framed by the following questions:

- a- Is there a possibility to apply the instrument to the value-stream map of the organization in question to reach a redesign of the health service?
- b- Does their use contribute to overcoming or reducing (non- add value times) as well as adding times of value, which improves the efficiency of the service provided by the organization in question.

### 2.2 Research Importance

The importance of this research to highlighted in an attempt to raise the interest of the organizations in improving the current situation and thus increasing the managers' understanding of the concept of value stream maps and their impact on the future perceptions of the organization. It is an efficient tool in identifying the waste areas in the operations and contributing to drawing future scenarios for improving these processes. And the efficiency of the service provided through its contribution to provide facts supported by quantitative indicators. It also helps institutions to work to avoid deficiencies and improve the working environment in these institutions.

### 2.3 Research Goals

This research aims to achieve several goals:

- a- Redesigning the health service by focusing on the design and construction of value stream maps for the future reality and testing its results in the current reality of their high efficiency, as proved by the researcher's findings in the applied side.
- b- Reduced times of waste (non- add times) by observing the waiting times and movements revealed by the value stream maps as well as the add times of value to improve the efficiency of the service provided by the organizations in question.





## 2.4 Data Collection Instruments

Based on the contributions of researchers collected from sources such as magazines, researches, articles, papers, scientific studies and Arabic and foreign languages, as well as the use of Internet services and personal interview with doctors, administrators and health staff in the community, and living to see the conduct of activities and collect the necessary data. The existing records and documents were examined in order to obtain information relevant to the research community and to determine the procedures studied.

## 2.5 Quantitative Methods

The research was based on a number of quantitative methods for data analysis, tabulation and scheduling, to achieve objectives and verify their results, as follows:

1. **Total Time add Value:** It is the total real time necessary to complete the actual work.
2. **Total time non-add value:** the total time of waiting, movement, delay and storage in the work done.
3. Depend on program microsoft office (Excell) to draw the maps stream value in current state and future state.
4. **Efficiency ratio:** The percentage of the add time of the value to the total time of the completion of the work (the time of the value + the time is not the add of the value) and according to the following equation:

$$\text{Efficiency ratio} = \frac{\text{add value time}}{\text{Total Time}} \times 100\%$$

**4.6 Percentage of improvement in service:** The percentage of the difference between the time in the current situation and the future situation to the time in the current situation and according to the following equation:

If we assume :

X= add value time for the current status

Y= add value time for the future status

The rate of improvement will be as follows:

$$\text{rate of improvement} = \frac{X - Y}{X} \times 100\%$$

## 3. Literature review

### 3.1 The Concept Of Value Stream Maps

Many practitioners believe that the value stream map is the key tool for achieving many things, including identifying the times that can be reduced in the process cycle, applying the process improvement, and in some organizations becoming a function of their agile application. In some areas, it can be a critical tool for documenting the process and



eliminating waste, as each improvement initiative must start from a clear understanding of current performance and the idea of achieving minimum waste (Chena, and Shadyc, 2010: 1069).

The value stream maps are a necessary agile technology, originally developed by Toyota, a key element of improvement as it provides a basic outline of the kinds of changes that require moving from one environment to another where resources stream smoothly from one process to another within a process that adds value and helps implement improvements On the system (Barbara, 2012: 23).

(Haizer & Render, 2011: 292) defined the value stream map as "the process that helps managers understand how to add value to the stream of materials and information through the entire production process." (Gopalakrishnan 2010: 95) defined it as "a tool used as an indicator Visible to all the work required to run the product or service from start to finish. "

And we believe, The VSM value maps are a continuous improvement process, based on the creation of the current status map and then the realization of the proposed future state map. Further mapping of the future situation can be done to enable the continuous improvement cycle to continuously eliminate waste, simplify procedures, reduce costs and eliminate waste.

### 3.2 Manage value stream maps:

Bonaccorsi defines the management of value stream maps as the preferred method for planning and implementing the change required to achieve the agile project on the ground(Bonaccorsi et al., 2011: 429).

Managing value stream maps is a tactical strategy tool to understand where the full stream of the process goes, allowing management to identify bottlenecks and problems in a value stream. It also connects individuals, flexible manufacturing tools, metrics together, and a planning tool that ensures a smooth business continuity and allows anyone to understand and continually improve things. (Thummala, 2004: 7).

And we believe that the management of value stream maps is the process of planning and linking initiatives or steps of improvement through systematic data collection and analysis. The goal is to identify and eliminate waste in the process and to design and implement a truly flexible plan for managing value stream. They will apply improvements that make it easier to meet customers' requests.

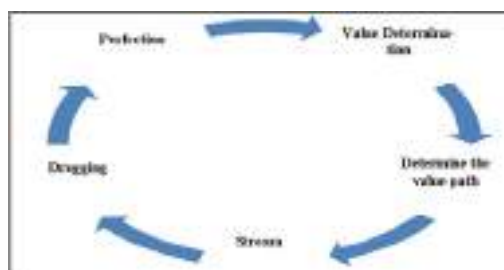


### 3.3 Principles of value stream mapping planning

There are five basic principles that the organization must adopt to get the benefit from the application of value-stream mapping planning in organizations (Hashlamon, 2017: 31-32):

1. **Value Determination:** By defining customer needs and determining the value of activities that add value to the final service.
2. **Determine the value path:** Determine the value of the stream by eliminating all operations that do not generate value for the final service (Yusuf, 2015: 54).
3. **Stream:** Ensure a continuous stream of operations and the entire supply chain. That is, the focus should be on the process rather than on the final service, and on reaching the optimal value stream and the value must be determined for the customers (Solding & Gollander, 2009: 232).
4. **Dragging:** The use of the drag method in the process of production of the payment allowance, which means production according to the desire and need of customers. The idea is to draw in the limit of unnecessary production and use of production on time.
5. **Perfection:** Aims to achieve optimal solutions and continuous improvements, and provide services that meet the needs and desires of customers and their expectations of the right time, quality and cost; the best way to achieve perfection is through close and constant contact with customers (Gopalakrishnan, 2010: 60).

The following figure summarizes the five principles of value-stream mapping:



**Figure (1) Five Principles of Value Stream mapping**

**Source:** Hashlamon, Yasmine Hatem, 2017, The Effect of the Application of Soft Manufacturing Platforms on Competitive Advantage Strategies in Jordanian Pharmaceutical Companies, Master Thesis, Faculty of Business Administration, Middle East University, Jordan, p.37.

### 3.4 Importance Of Value Stream Maps

Mentions (Gopalakrishnan, 2010:89) The benefits of value stream maps are as follows:

- Helps employees understand the current process as well as identify opportunities for improvement.



- Identifies the actual ways in which dangerous problems and possible solutions are identified by connecting ideas, information and data related to the process visually and effectively.
- Enables employees to examine each step of the process, identify waste in the process and create a future value stream map (developed).
- Employees can use the current and future activity map to clearly determine the amount of improvement.

Value Stream Maps (VSM) is a proven method for building a common team view of the workflow, identifying possible "quick success" improvements, and combining information flows and technical services. VSM combines multidisciplinary teams to understand all process details to avoid common project risks (Emily, 2014: 1148).

we see the expected benefits of using value planning for health organizations:

- Redesign services in a Service business environment such as hospitals using VSM.
- Dissemination of the culture of eliminating waste at work at different levels in the organization.
- Changing the location of some service centers, which reduces the distance between the health service center and the examination site and thus reduce the times that do not add value.
- It is used as a training tool for employees by drawing shapes and standing on the current situation and the possibility of improving the process in order to ensure their efficiency.
- Abandoning traditional technologies and investing in modern technologies.

### **3.5 Key factors for the successful implementation of value stream maps:**

Value stream maps are an integrated process that includes strategic dimensions in improving processes in order to reach the zero defect and seek to activate continuous improvement through the use of a set of tools and methods that eliminate all types of waste and efficient use of available resources and create a culture of thinking of improvement in all stages of operations (Tobias , 2016: 4)

The success factors can be summarized as follows (Hashlamon, 2017: 32):

1. Management commitment to the process of adopting and implementing the lean manufacturing system.
2. A comprehensive strategy for integrating the system in all operations of the organization..





3. Create the necessary changes in organizational culture.
4. Participation of all employees.
5. A good network (with suppliers, customers).

### 3.6 Stages Of Building Value Stream Maps

Prepare (Teemu & Juha, 2015: 9-10) Value stream analysis is a method for applying agile principles to the study of business processes, as it works to describe a realistic system is very complex and make it simplified in a two-dimensional format, which facilitates the vision and understanding, While Adwait believes that VSM is a graphical tool, which includes information about the production process, current and future status maps provide vital information related to the production process such as cycle time and lead time. The phases of VSM are discussed as follows (Adwait, 2017: 7670-7671) Steps to build the value stream map shown in Figure (2):

#### Step 1: Choose the service family to improve:

The service family is selected for mapping, and at this stage the organization's past experience, the amount of information available, the size of the service to be provided and its administrative boundaries (adwait, 2017:7670).

#### Step 2: Map the current situation:

Participants are given the opportunity to meditate and provoke intellectual controversy, criticism and creativity in stream maps by working in groups and exchanging ideas to access the best map for the installation of information, where the current status map is drawn (Roosen, 2013:30).

#### Step 3: Analyze and evaluate the current status map:

The current status map is fully analyzed to determine wastage, bottleneck operations, congestion points and all waste, and priorities are assigned to all wastes found (Yusuf, 2015:53).



Figure (2) Steps for mapping the value stream map

**Source :** Adwait , Deshkar & et al , (2017) Design and evaluation of a Lean Manufacturing framework using Value Stream Mapping (VSM) for a plastic bag manufacturing unit, Mechanical Department, Yeshwantrao Chavan College of Engineering, Nagpur , Maharashtra, India , Proceedings 5 (2018) 7668–7677.



#### Step 4: Waste disposal and mapping of the future status:

One of the objectives of the value stream map is to highlight the sources of wastage and target the foreseeable places for improvement. The waste present in the current status map is disposed of on the basis of its priorities. After waste disposal, the future status is drawn (Teemu & Juha, 2015:10).

#### Step 5: implementation

Following the support of senior management, the process of improvement is initiated in accordance with the plan and the results of the management process are noted.

#### 3.7 Types Of Waste

Value stream maps are also important in clarifying the wastage in operations, as the exclusion of waste sources would focus efforts on activities that create the value desired by customers and the outcome improved processes such as reducing time, minimizing errors, defects, and lower cost. (Roosen, 2013:25). And that there are three types of wastage as you can see in Toyota (Shlash, 2014:161):

☒ **(Muda):** Mean useless, or waste any business or movements that do not add value.

☒ **(Mura):** It means disparity, divergence, inconsistency and harmony, which means wasteful use of resources unfairly, unequal access or different downloads from time to moment and from one resource to another.

☒ **(Muri):** It is meant to be unreasonable, excessive, or overload, because it reduces output because of excessive work and sometimes because of something unnatural that generates obstacles and bottlenecks.

In service organizations there are other types of wastage, as in the table below.

Table (1) Types of wastage in service organizations

Types of waste	the details
Defects	Error entering data, missing files, crash or damage to goods.
Repetition	Data re-entry, multiple signatures, unnecessary reports, multiple queries.
Incorrect storage	Incremental storage, loss of time to search for lost, unnecessary copies.
Lack of focus on the customer	Bad treatment, rudeness or rough handling, lack of attention to the customer.
Communication is unclear	Wrong information, no data format, unclear flow.
Movement or transfer	Poor arrangement, ineffective filing, double amenities.
Incomplete use of workers	Insufficient tools, excessive or excessive bureaucracy, limited powers.
Diversification / variation	Ineffective procedures, lack of standard models, standard or standard time is unclear.
Delay or wait	Waiting for approvals, stop working, waiting for processing.

**Source:** Shalash, Fares Jaabaz, 2014, using the process map of the operation in reducing wastage: A case study at al-Diwaniyah Teaching Hospital, published on the site of the University of Babylon P 161.

There are also seven sources of waste or waste that Toyota has adopted in its industry, abbreviated in the word "**Timwood**" in the following terms:



## Transport, Inventory, Motion, Waiting, Over Processing, Overproduction, Defect And added to the eighth type is Eschewed Talents

The rationale is to eliminate (value not added) and shorten the time spent (necessary but not of added value), or even reorganize the stream in order to avoid the necessity of type II activities (Dario & Dorota, 2017:32).

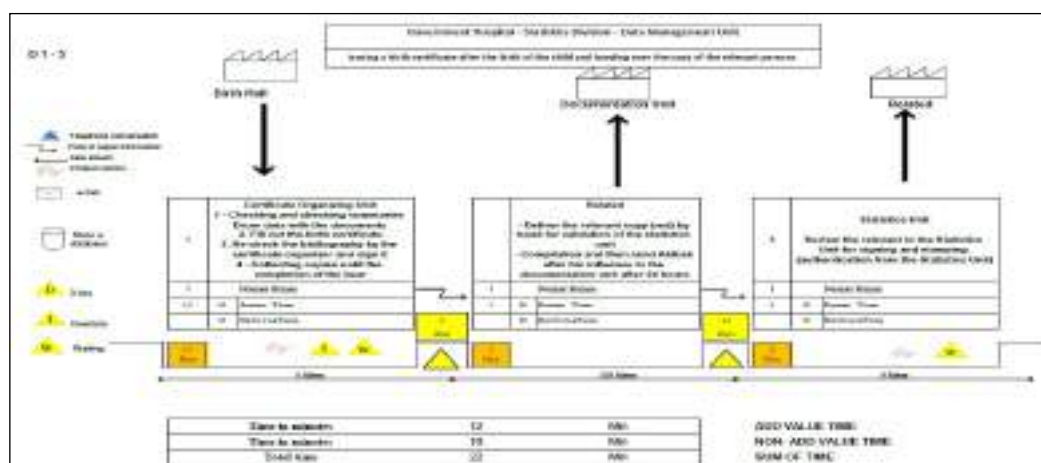
### 4. Results

#### Case study: birth Certificate for new baby :

##### 4.1 apping value stream maps of the current situation:

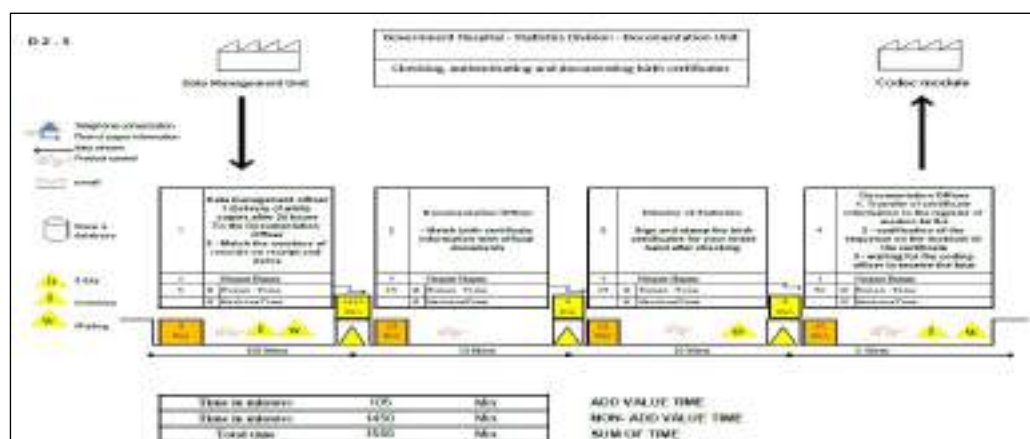
In this study, the current procedures for issuing a certificate of birth from the government hospital is provided by hand for those who remain restricted and are not allowed to review the Directorate of Civil Status were researched unless the official government copy arrives by official mail, which requires days to do so.

The following stream charts show the procedures adopted by the State hospital in its administrative operations, as follows:



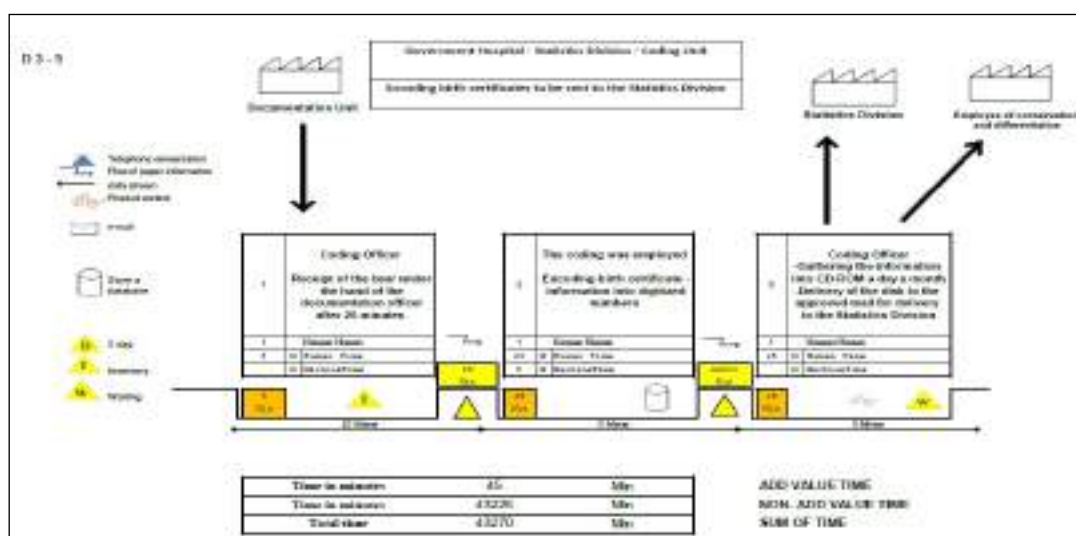
Value Stream Map D 1-5 (3) Data Management unit at the Government Hospital

Source: Prepared by the researcher



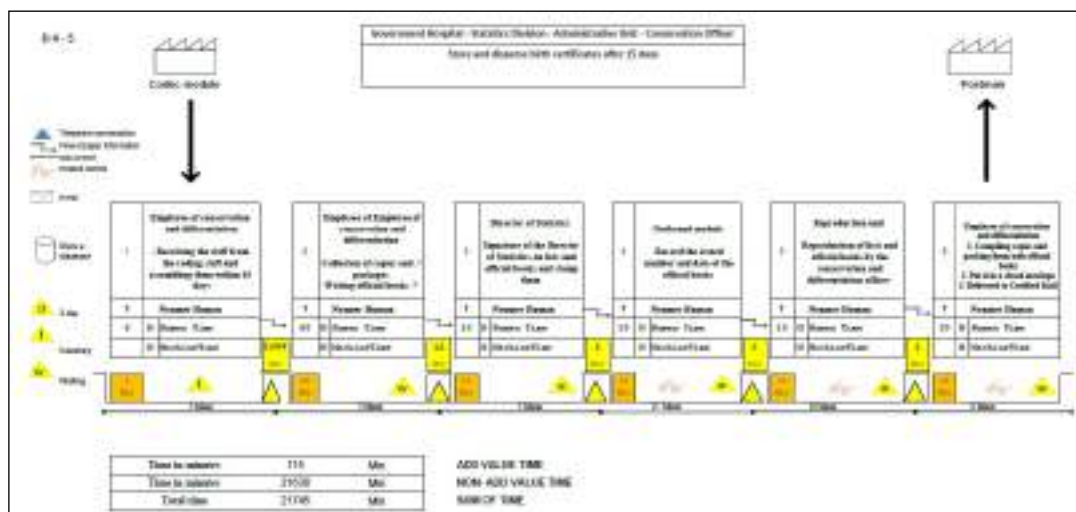
Value Stream Map D 2-5 (4) The documentation unit at the Government Hospital

Source: Prepared by the researcher



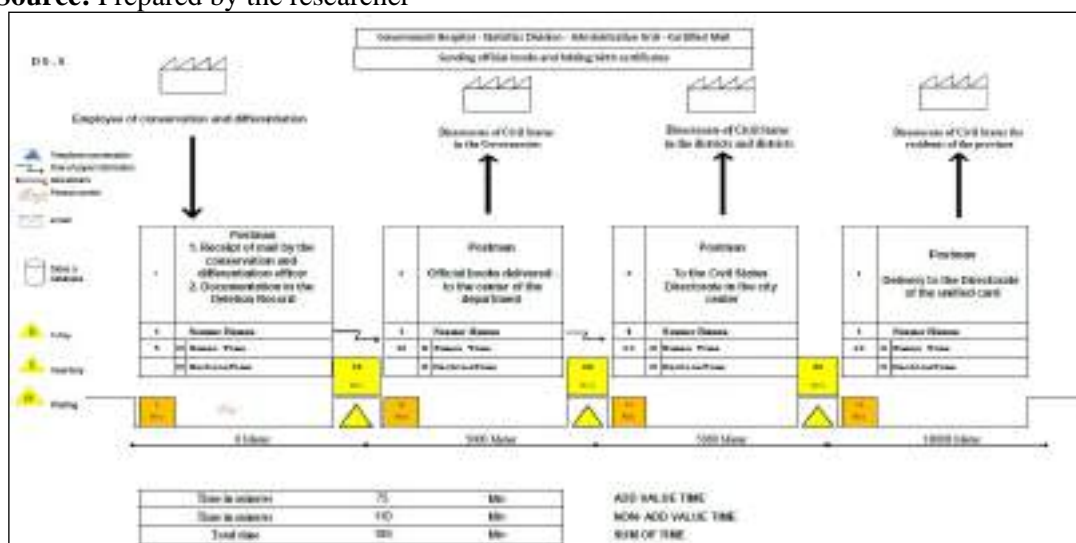
Value Stream Map D 3-5 (5) Coding unit at the Government Hospital

Source: Prepared by the researcher



Value Stream Map D 4-5 (6) Administrative unit at the Government Hospital

Source: Prepared by the researcher



Value Stream Map D 5-5 (7) certified mail at the Government hospital

Source: Prepared by the researcher





Illustrated by the above Value Stream Map and times of administrative procedures in the issuance of the birth certificate, As follows:

Table (2) shows the number of procedures and time elapsed to issue the birth certificate in the government hospital and to the three beneficiaries of the current situation

The main actions from	Service direction to	The result	No. procedures	Elapsed time		
				add value	Non_add value	all
Birth in the government hospital	Related to the certificate	Receiving relevant copies of official reviews	3	12	10	22
	Division of Statistics	Provide statistics with birth certificates after coding	9	162	44685	44847
	Directorate of Civil Status	To issue the national card	19	352	23200	23552

**Source:** Prepared by the researcher

The efficiency of the service can be calculated under the following equation, as shown in table (3):

$$\text{Efficiency ratio} = \frac{\text{add value time}}{\text{Total Time}} \times 100\%$$

Table (3) Ratio of service efficiency to the current situation

The main actions from	Service direction to	efficiency
Birth in the government hospital	Related to the certificate	54%
	Division of Statistics	0.36%
	Directorate of Civil Status	1.4%

**Source:** Prepared by the researcher

## 4.2 Draw Future Mapping :

After analyzing the flow charts of the current situation and presenting the ideas of the managers and the participants in the work teams, we felt that a network is established by using the information technology to ensure the best time in the service provided to the citizen as well as the high efficiency and the lowest effort with the possibility of high advanced, (Server) is working to receive information from all ports with authority and linked with it through the network (INTRANET NETWORK) as shown in Figure (8), and that there are infrastructure in health centers to work so step towards improving work and develop staff capabilities and improve the delivery The service is The strategic dimension because it achieves immediate goals and long-term future goals.

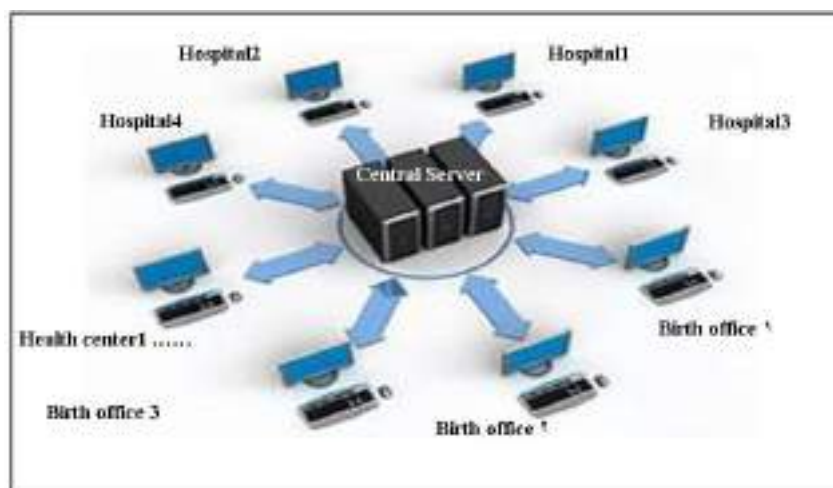
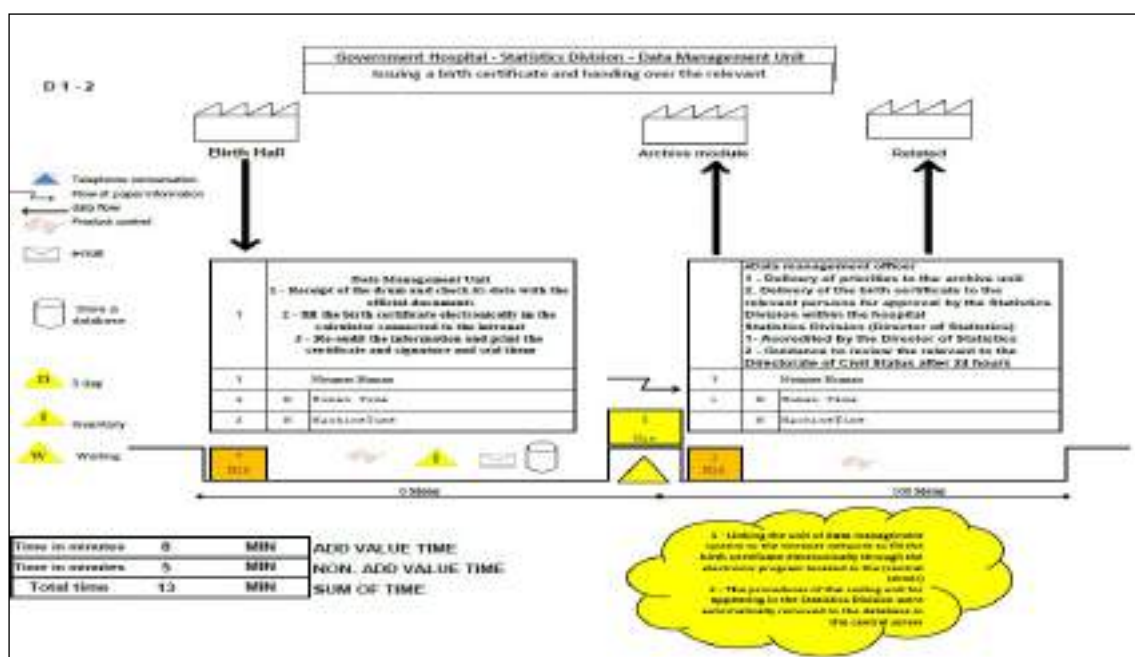


Figure (8) Central Server work with other health institutions

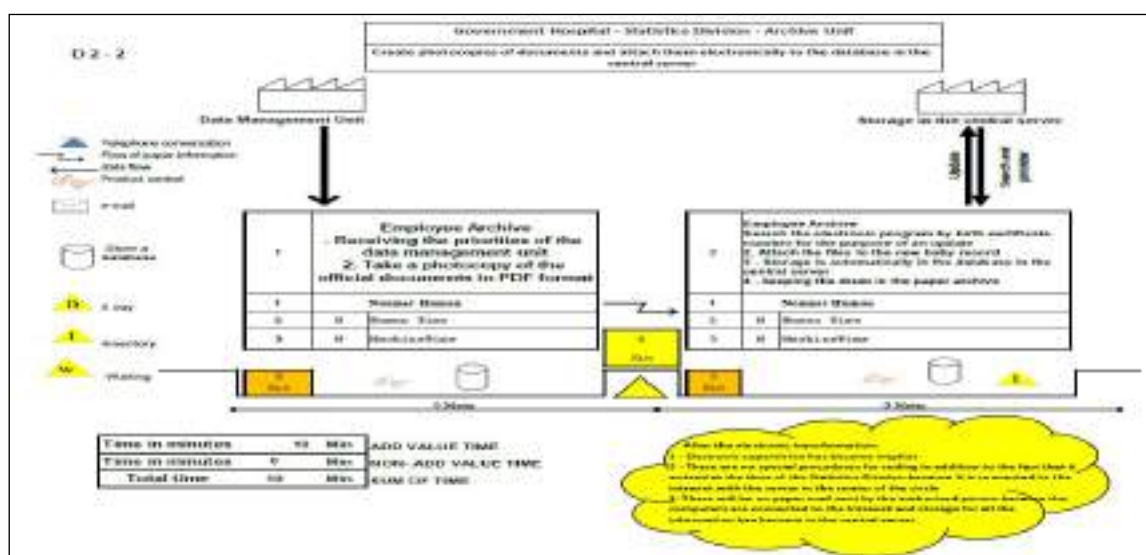
**Source:** Prepared by the researcher

Therefore, we see that the proposed stream maps for the organization of the birth certificate in the government hospital will be according to the following maps:



Value Stream Map D 1-2 (9) Data Management unit at the Government Hospital

**Source:** Prepared by the researcher



Value Stream Map D 2-2 (10) archive unit at the Government Hospital

**Source:** Prepared by the researcher

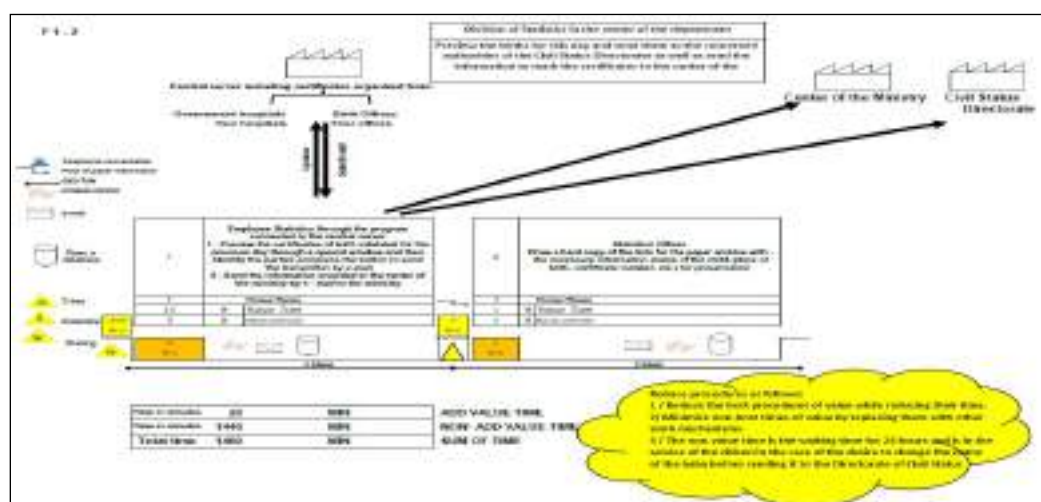
It is clear from the maps that the value stream and the times taken by the administrative procedures for the issuance of the birth certificate are reflected in the proposed reality, as illustrated in table (4).

Table (4) shows the number of procedures and time elapsed for the issuance of the certificate of birth in the government hospital and up to the three beneficiaries of the future situation

The main actions from	Service direction to	The result	No. procedures	Elapsed time		
				add value	Non-add value	all
Birth in the government hospital	Related to the certificate	Receiving relevant copies of official reviews	2	8	5	13
	Division of Statistics	Provide statistics with birth certificates after coding	4	18	5	23
	Directorate of Civil Status	To issue the national card	5	38	1445	1483

**Source:** Prepared by the researcher

For the above maps, a stream map of the Statistics Division is added to the center of Karbala Health Department, where it will inspect the information flowing from all the outlets and sent to the directorates of civil status according to the geographical area of the residence of the new born also send the information encoded by the program automatically to the center of the ministry, according to the following map:



Value Stream Map F 1-2 (11) Division of Statistics at the centre of the department

Source: Prepared by the researcher

As seen from table (5) The efficiency of the service for the future situation:

Table (5) Ratio of service efficiency in future status (proposed)

The main actions from	Service direction to	efficiency
Birth in the government hospital	Related to the certificate	61.5%
	Division of Statistics	78.3%
	Directorate of Civil Status	2.6%

Source: Prepared by the researcher

### 4.3 Discussions:

The results obtained are shown in the chart (12) for the Times of value and planned (13) for non-value-adding times, as Table 6 shows the number of actions, the rate of improvement and the efficiency ratio as follows:

**A.** In the case of childbirth in the State hospital until the delivery of the relevant copy:

- 1- Reduced number of actions from 3 to 2 administrative action.
- 2- The value of the add time decreases from 12 minutes to 8 minutes, an improvement rate of 33.3%.
- 3- Low non-value time from 10 minutes to 5 minutes, an improvement of 50%.
- 4- The service efficiency ratio increased from 54.5% to 61.5%.

**B.** In the case of childbirth in the State hospital until the information encoded reaches the Statistics Division at the Center of the Department:

- 1- Reduced number of actions from 9 to 4 administrative action.
- 2- The value of the add time decreases from 162 minutes to 18 minutes, an improvement rate of 88.9%.





3- The non- add time of the value is reduced from 44685 minutes to 5 minutes, an improvement rate of 99.9%.

4- The service efficiency ratio increased from 0.4% to 78.3%.

**C. In the case of childbirth in the State hospital until the official copy of the birth certificate to the Directorate of Civil Status:**

1- Reduction in the number of actions from 19 to 5 administrative procedures.

2- The value of the add time decreases from 352 minutes to 38 minutes, an improvement rate of 89.2%.

3- The non- add time of the value decreased from 23200 minutes to 1445 minutes, an improvement rate of 93.8%.

4- The service efficiency ratio increased from 1.5% to 2.6%.

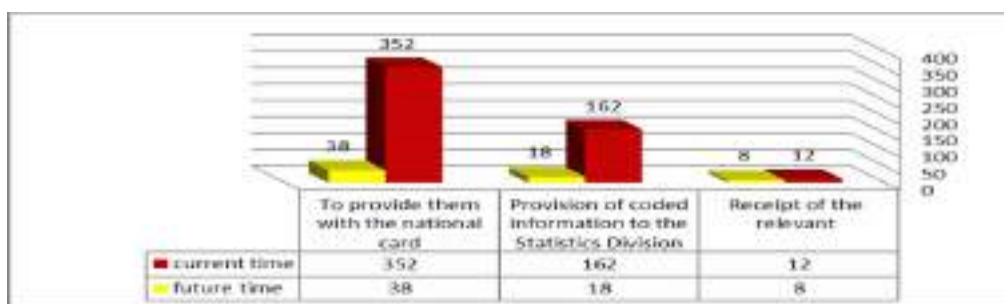


Figure (12) Diagram illustrating the improvement in the add time of birth value in the Government hospital

**Source:** Prepared by the researcher

Table (6) Comparison between the number of procedures and the efficiency of the service for the current situation and the future status of childbirth at the Government hospital

The main actions from	Service direction to	current situation		Future situation	
		No. procedures	Efficiency %	No. procedures	Efficiency %
Birth in the government hospital	Related to the certificate	3	54.5%	2	61.5%
	Division of Statistics	9	0.4%	4	78.3%
	Directorate of Civil Status	19	1.5%	5	2.6%

**Source:** Prepared by the researcher

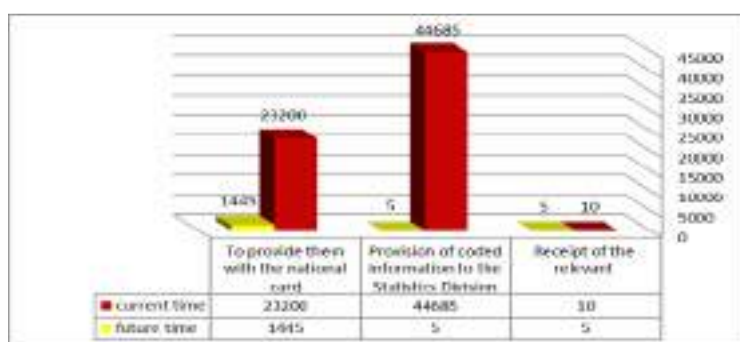


Figure 13 diagram showing improvement in the non- add time of birth value at the Government hospital

**Source:** Prepared by the researcher



Also, it is possible to clarify the redesign of the service provided after comparing the current status diagram with the future status diagram as shown in Figure (14) and Figure (15):

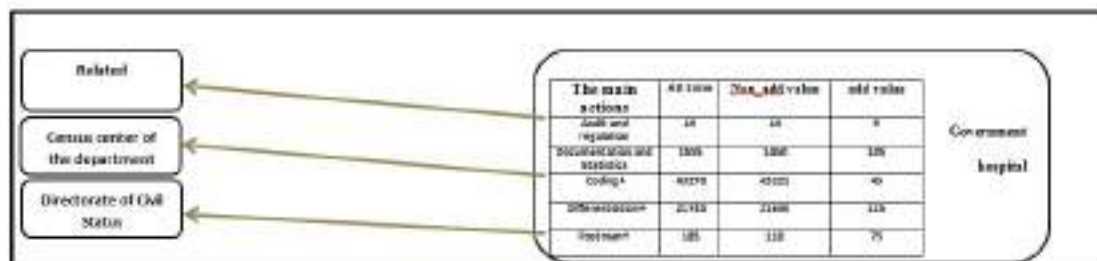


Figure 14 The main value flow chart for the delivery of the birth certificate and its delivery service in the current situation

Source: Prepared by the researcher

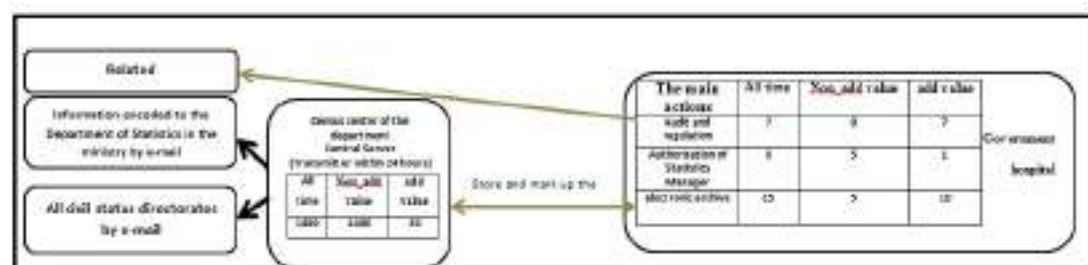


Figure 15 The main value flow chart for the delivery of the birth certificate and its delivery service in the future situation

Source: Prepared by the researcher

## 5. Conclusions And Recommendations

### 5.1 Conclusions :

1. The practical side proved that the tool value stream maps are appropriate in multi-action service delivery aspects and can be applied to several administrative problems involving waste and have an active role in redesigning the service provided.
2. The use of the value stream map in the current study has been shown to be an efficient and effective tool in service organizations to enable them to identify and address waste from reducing wait time and improve the efficiency of service provided to reviewers. Redesigning the service described in future stream maps reduced the number of procedures, Also, it helps to have a desire for an electronic transformation of transforming the organization of the birth certificate into an electronic archiving organization.

### 5.2 Recommendations:

1. Redesigning the service in order to improve management information systems by designing stream maps and testing their results and comparing them with the current situation to eliminate waste of all types while minimizing the number of procedures.



2. To increase the efficiency of the service provided in the health field by removing or decreasing the non-value-added times (waiting times and Movements times) and supporting the centralization of work in the compilation of encoded information and its access to the Statistics Division in real time as well as a unified transmission of the official version to the Directorate of conditions Civil multi-transmitter allowance results in a reduction of the value-added times.

3. The results of the value stream map are dependent on the extent, involvement and ability of the personnel involved and the support of senior management.

4. Open channels of communication between the administration and its staff to understand their problems and to listen to their views and suggestions concerning the support of the organization and contribute to improve it to continue continuous improvement.

5. Conducting research and studies on the actual state and needs of the community of actual health services in order to meet the patient's requirements and to be highly qualified and smooth in providing the necessary service.

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## *The role of the Internal Audit Charter in Reducing Cases of Financial and Administrative Corruption for Iraqi Economic Units*

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### **Abstract**

The phenomenon of corruption is not new, but the volume of corruption that has led many international companies in general and Iraqi economics Units in particular, to the abyss must be taken into account to reduce it. Many international organizations have addressed this phenomenon for instance; (Gray) has defined corruption in general as the abuse of power available to achieve personal returns and profits or to a group of people, who are among them. many Iraqi economics units Suffer from much managerial and financial corruption, because of the weak internal auditing and the weak role of monitoring and control units for the administration's functions. The study offers a proposed model to implement the strategy of description functions. The internal audit charter provides a legal support for the department's work through identifying the objectives of the internal audit function, independence, granted authority and the responsibilities assigned it by determining the scope of work, as well as determining the professional standards followed and types of reports issued by them. In order to impede the fraud and corruption, the study recommends using this charter in order to draw up of strategic and tactical plans to acquire and provide infrastructure, as well as the preparation and evaluation of skills of auditors that help to create an ideal environment which contributes to ending of corruption cases.

**Keywords:** Charter of Internal Audit, Corruption, Economic units, the structure of internal auditors function.

### **Introduction**

From time to time, the phenomenon of corruption is spread in different countries and economic units, whether in the public or private sectors when the appropriate conditions are present. The WorldBank defined Corruption as a commonly known misuse or the exploitation of public power for private benefits.<sup>(1)</sup> This mainly happens under the weakness of supervision or monitoring for economic units, as well as weak knowledge, legal and regulatory awareness of administrative regulations and instructions, which relate to different administrative levels. One of



the primary tasks of the administration is to develop a set of necessary regulatory measures to protect assets, create a favorable environment free from corruption. In this case, the administration delegates internal audit authority to introduce assurance on the adequacy and reliability of the measures taken in order to reduce corruption. The problem of this study refers to the non-issuance of charter that determines the strategy of the audit work. This, in turn, contributes to reducing and preventing the cases of corruption and provide advisory services for this phenomenon.

### **First Axis: The Causes of Corruption and its Implications**

The phenomenon of corruption is not new, but the volume of corruption that has led many international companies to the abyss must be taken into account to reduce it. Many international organizations have addressed this phenomenon. For instance, The World Bank has defined corruption in general as the abuse of power available to achieve personal returns and profits or benefit to a group of people who are among them.<sup>(2)</sup> The administrative corruption is described as irregularities issued by the employee during the performance of his/her functions, which are mainly related to the affairs of the work for instance, work irregularity, disrespect for time, laxity or failure to perform the tasks entrusted to him, and not to take responsibility as well as disclosure of the secrets of the job. The financial corruption refers to financial deviation and infraction of the rules and financial provisions that regulate the progress of the financial work in the state or other institutions, such as bribes, embezzlement, and tax evasion.<sup>(3)</sup> In order to reduce and prevent this phenomenon of expansion, it is necessary to know the factors that lead to the emergence of administrative and financial corruption, They are below:<sup>(4)</sup>

- 1- Weaknesses or absence of authority.
- 2- Lack of transparency and weak supervision at different administrative levels.
- 3-Lack of awareness and weak perception of laws, regulations, and instructions.

We can shorten the implications of administrative and financial corruption as below:

- 1-Instability of institutions and efflux of investment.
- 2-The decline in economic development which is followed by a breakdown in the social and cultural environment, The regress in economic development will be followed by a breakdown in the social and cultural environment.
- 3- Eliminating the power of law.



## Second Axis: Internal Audit Charter

Internal Audit Charter consists of a number of special principles for the profession and its practices, in addition to the rules of professional conduct preferred by internal auditors, in order to create a suitable environment that contributes in enhancing the ethical culture for internal auditors professions. According to the standard of internal, audit no. (1010), ethical charters are considered as obligation for all parties that provide services of internal audit as in below:<sup>(5)</sup>

**a. Integrity:** is an important basis for the internal auditor in any economic unit because its availability leads to confidence in the auditors themselves.

**b. Objectivity:** The internal auditor must practice the highest professional standards required for him to perform his work efficiently. He must collect, evaluate and deliver information regarding activities that he audits.<sup>(6)</sup> The judgments issued in respect of these activities should not be influenced by self-interests or interest of other. the rule guaranties the following:<sup>(7)</sup>

- Non-acceptance of mediation by parties related to the economic unit, which may weaken the credibility of their professional provisions.
- Neutral relations with officials in economic units so as not to lead to a biased decision, which leads to the weakness of their supervisory role.
- Disclosure of all fundamental facts which has been reached during performing their duties.

**c. Confidentiality:** The internal auditor should pay attention to the information obtained from the economic units by non-disclosure about any information that has been obtained, if there are necessary professional or legal obligations which require to disclosure. Therefore, the Charter of ethical behavior confirmed by the institute of internal auditors in 2012 requires from the auditor to not use any clear information for self-benefit or use it in violation of law and ethics. This principle includes the following:

- Honesty in using the information that obtained during performing their duties and protects the information.
- Not to use the information to achieve personal gains or to use them in a manner contrary to the law this will cause harm for the benefit of economic unity.

**d. Professional competence** is an essential element in performing the tasks of the internal audit. This includes knowledge, experience, and continuity of the rehabilitation of the auditor within a regular training policy for each member of internal audit division.



The Internal audit always needs to develop his/her skills in different aspects of knowledge in order to raise professional efficiency. There are several aspects which enhance the skills of internal audit, as shown below:<sup>(8)</sup>

- The necessity to enhance knowledge of quality standards.
- Perception of new direction of business management such as TQM total quality management, business re-engineering, and strategic planning.
- The necessity of strengthening skills in the management of change, flexibility, negotiation, and understanding of the personality.
- The necessity of enhancing the field of technical knowledge and information technology IT.

### **Third Axis: Ways to Eliminate Administrative and Financial Corruption**

In general, there are many attempts to eliminate corruption, in particular financial and administrative corruption. The agreements were made in Incosai in Uruguay and considered the fraud and corruption effective problems in varying degree in all countries, which required providing the free environment of corruption and fraud. The meeting resulted in a number of recommendations:<sup>(9)</sup>

- 1- The pursuit of the independence of monitoring systems.
- 2- To assess the accuracy and effectiveness of the internal control system, as well as to follow closely the recommendations of the regulatory bodies.
- 3- . Building a control strategy based on effective indicators of fraud and corruption.
- 4- Preparing monitoring reports which it's agreed with standards disclosure.

### **The Importance of Building a Job Structure according to Charter of Internal Audit**

The structure of function of the internal auditors shows in figure 1 the nature of the link between the internal audit department, the board of directors that provides it with independence, and the audit committee that provides technical support to the department. The internal audit charter provides legal support for the department's work through identifying the objectives of the internal audit function, independence, granted authority and the responsibilities assigned to it by determining the scope of work, as well as determining the professional standards followed and, The types of reports issued by them. The function of the internal audit includes setting strategic goals for the division which emanates from them

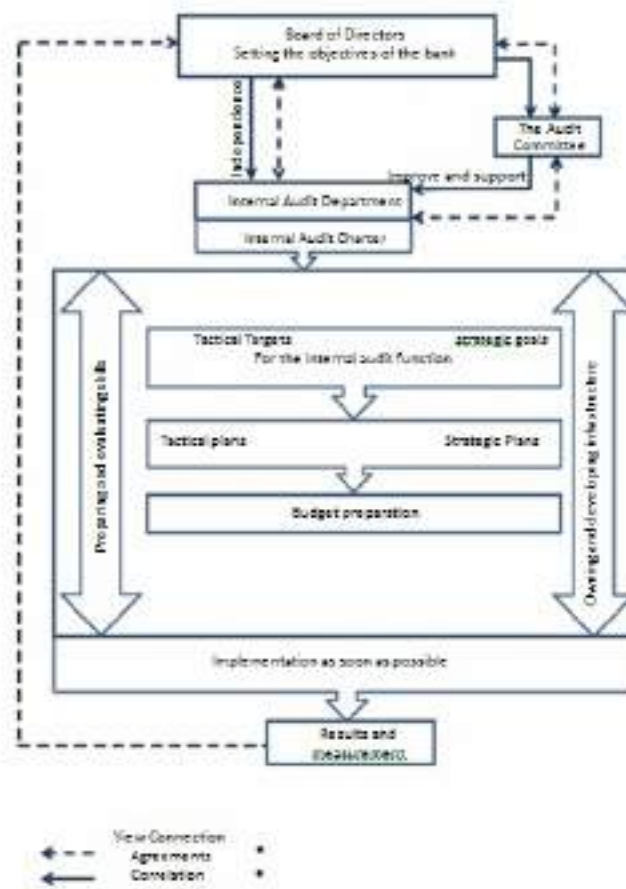




strategic planning and tactical goals, setting budgets related to this planning and achieving tactical goals through interaction among them.

When developing strategic and tactical plans for economic units, we must take into consideration developing The infrastructures, Preparation and evaluating of skills. When the plans are completed, implementation is carried out as soon as possible. The results are then measured and submitted to senior management in the form of final reports.<sup>(10)</sup>

Figure 1: Proposed Model of Structure of the Internal Audit Function



Source: Kadhim, Laith Jawad. (2015).

#### Fourth Axis: practical side

The samples of this study consist of 8 units, 5 of them are public economic units, and 3 of them are private units, as shown in table 1 & 2 below.

**Table 1: Public sector**

No	Economic units	Reports supporting weak internal audit function
1	Directorate of Agriculture province of Dhi Qar	The report issued by the Federal Financial Control Bureau for the years 2004-2008
2	National Pension Authority Dhi Qar Branch	The report issued by the Federal Financial Control Bureau for the years 2004-2008
3	General Company for Building Materials Trading Branch / Dhi Qar	The report issued by the Federal Audit Bureau until 2009
4	Directorate General of Electricity Transmission / Southern Region - Dhi Qar	The report issued by the Federal Audit Bureau until 2009
5	Ur Company for Engineering Industries	The report issued by the Federal Audit Bureau until 2010

Source: Prepared by researchers

**Table 2: Private sector**

No.	Economic unity	The report number and date
1	Gulf Commercial Bank Private Joint Stock Company	31 on 7-6-2016
2	Iraqi Investment Company Private Joint Stock Company Baghdad	27 on 20-2-2016
3	National Bank of Iraq Private Joint Stock Company	801-2016 on 25-2-2016

Source: Prepared by researchers

The researchers conducted an analysis study, in order to assess the work of the Internal Audit for division/department as well as the organizational structures and procedures for the course of work, which also reviewed. In addition, Performance reports were also reviewed, these reports were issued by the Federal Audit Bureau for the economic units of the public sector and the reports of the external auditors on private sector units.

After reviewing the units of the audit sample, some of the units that have problems with the internal audit are shown below:

1- The problems of internal auditors' reports. Through the examination of the reports, many of these reports are incomplete and do not include neutrality for all matters related to the risks to which these units are exposed. These reports are not detailed and are inaccurate.

2- Problems in job descriptions for internal audit. There is no real description of the function of the internal auditor in most economic units as they do not apply the international conditions of the auditor, although



some of the auditors do not apply the conditions that must be provided by the auditor.

3-Problems in the audit planning process. Planning is one of the basic principles in all sciences, especially accounting, However, most of the economic units have a serious lack in the process of planning for the audit, and a weakness in the time plan to determine where and when to check.

4- Unskilled staff. Most of the economic units in Iraq have a lack of work in the real specialization of the employee, as we find that there are some of the internal auditors does not have sufficient skills or basic conditions for the person of the auditor, which leads to weakness in the process of audit.

### **Fifth Axis: Conclusions and Recommendations**

The researchers reached a number of conclusions, the most prominent of which are below:

1. Corruption is a widespread phenomenon in all countries but appears to be growing when the environment becomes suitable.
2. It is possible to provide a suitable working environment free from administrative and financial corruption when it provides sound financial control procedures.
3. Some economic units (research sample) were subjected to a set of fines and penalties as a result of the violations that were committed.
4. The legal and organizational support for the work of the Internal Audit Division is the internal audit charter which includes the structure of the department and the audit work strategy.

The researchers recommend a number of recommendations, including:

- 1- Strengthening of the Internal Audit Division / Department of the Audit Charter which contributes to the construction of a clear strategy for the provision of assurance services to the validity of the internal control procedures followed, as well as the provision of advisory services to senior management on measures to reduce cases of corruption.
- 2- The Internal Audit Charter includes the drawing up of strategic and tactical plans to acquire and provide infrastructure, as well as the preparation and evaluation of skills that help to create an ideal environment that contributes to ending of corruption cases.



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## *Transformational Leadership and its Impact on Exploratory and Exploitative Innovation: Field Study of Jordanian Detergent Manufacturing Companies*

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### **Abstract**

The study objective to examine the impact of the transformational leadership on the explorative innovation and exploitative innovation. The study adopted three dimensions for the transformational leadership namely: Individual considerations, inspirational impact and the intellectual stimulation whilst employee's two innovation dimensions were adopted for innovation which the exploratory innovation and exploitative innovation. The study was conducted on a sample consisting of (167) employees in (10) Jordanian Detergents Manufacturing Companies, from whom the necessary particulars were collected for the study through a questionnaire method which was developed by the researchers subsequent to review of numerous previous studies. The study used the analytical descriptive method and using the SPSS statistical program. The study concluded the existence of high levels for utilizing the transformational leadership dimensions by the leaders in these companies in addition to the existence of high and balanced levels of attention in the exploratory and exploitative innovation together with the existence of a higher proportionate attention in favor of the exploratory innovation. The study recommended of the necessity of continued and balanced attention of the two types of exploratory and exploitative innovation.

**Key Words:** Transformational Leadership, Exploratory Innovation, Exploitative Innovation, Jordanian Detergents Manufacturing Companies.

### **The First Topic/ Methodology of the Study**

#### **1. Introduction**

The Jordanian Detergents Manufacturing Companies work in a variable environment and fierce competition. Its capability to survive and continue depends on its capability for rational and balanced dealing with such environmental changes as the capable organizations to deal with the environmental changes are those which are able to exploit the current opportunities and at the same time should be capable to adapt through exploration of the new opportunities (Raisch et al. 2009: 687). In order



for these companies to be able to deal without being environmentally certain, it has to renew, as the exploitative innovation is important for the success on the short run in view of drop of the environmental certainty (Popadic et al., 2016: 296). Whilst the exploration activity has lesser success on the short term because it requires to obtain knowledge and utilize remotely from the current operations of the Company. For all of the foregoing, companies need to achieve equilibrium between the two activities of the exploitative and exploratory activities, yet the question lies in specifying the optimum mix for these two activities (Chanda and Ray, 2015: 251). In order to realize this equilibrium and reach to the optimum mix for the two activities, the Jordanian detergent company requires a capable leadership to take care with the two activities in a balanced form. The concept of the transformational leadership as one of the solutions for realizing this equilibrium which leans on the capability of the leader to uplift the enthusiasm of workers for providing the best of the capabilities he holds. For all of the foregoing, this study came to examine the impact of the transformational leadership in the explorative and excogitative innovation in the Jordanian Detergent Manufacturing Companies operating in Jordan.

## 2. Study Problem and Questions

Numerous studies conducted on the extent of the possibility of management organizations to undertake the indicated exploratory and exploitative activities to the difficulty in realizing equilibrium between these two activities due to the radical difference between them as the exploratory activity gives importance to submitting the new thing on the long run whilst the exploitative activity concerns its self by submitting the new things on the long term whilst the exploitative aims at exploiting the short term opportunities thereby leading to the occurrence of a condition of tension with respect to the organization towards such two activities (Lavie et al., 2010: 114). There are those who find it necessary to maintain equal percentages of exploratory activities and exploitative activities (Posen & Levinthal, 2012: 590; Cao et al., 2009: 784). On the other hand others see that the tendency towards an activity at the account of another activity will be upon the Managers noticing the drop of performance and consequently select an increase in the level of one of the activist whom they deem suitable for realizing the best levels of performance (Chanda & Ray, 2015: 251). From the foregoing, the question appears concerning the extent of the possibility of utilizing the concept of transformational leadership in realizing the required equilibrium between the two activities. For all of the foregoing, this study centers around the response on the following queries:



- a. What is the level of application of detergent manufacturing companies for the concept of transformational leadership?
- b. What is the level of application of the Jordanian Detergents Manufacturing Companies of the exploratory innovation and the exploitative innovation?
- c. What is the impact of the transformational leadership in the explorative innovation in the Jordanian Detergent Manufacturing companies?

### 3. Study Importance

The importance of this study springs out through the following:

- a. The importance at the academic level, as this research treats a subject which is considered one of the most essential administrative subjects in the contemporary organizations environment, as it forms intellectual and future dimensions represented in the transformational leadership, exploratory innovation and exploitative innovation in order to enrich the administrative library by such modern topics.
- b. The importance of the study is embodied at the level of the field under study namely the Jordanian Detergents Manufacturing Companies through presentation of the proposals and recommendations to the top management in the companies under study by illustrating the extent of importance of the transformational leadership by equilibration between the exploratory and exploitative activities as well as utilizing same as these companies are always looking for new methods and styles which would enable them to acquire entrepreneurship in the field of its work and provide everything new, Consequently the possibility of making use from searching and adopting whatever it would be possible to reach in the form of results and recommendations with the object of improvement of performance.

### 4. Study Hypotheses

H01: There is no significant impact of transformational leadership with the dimensions there of (individual considerations, inspirational impact and intellectual motivation) of the explorative innovation for the Jordanian Detergents Manufacturing Companies.

H02: There is no significant impact of transformational leadership with the dimensions there of (individual considerations, inspirational impact and intellectual motivation) in the exploitative innovation for the Jordanian Detergents Manufacturing Companies.



## 5. Study Model

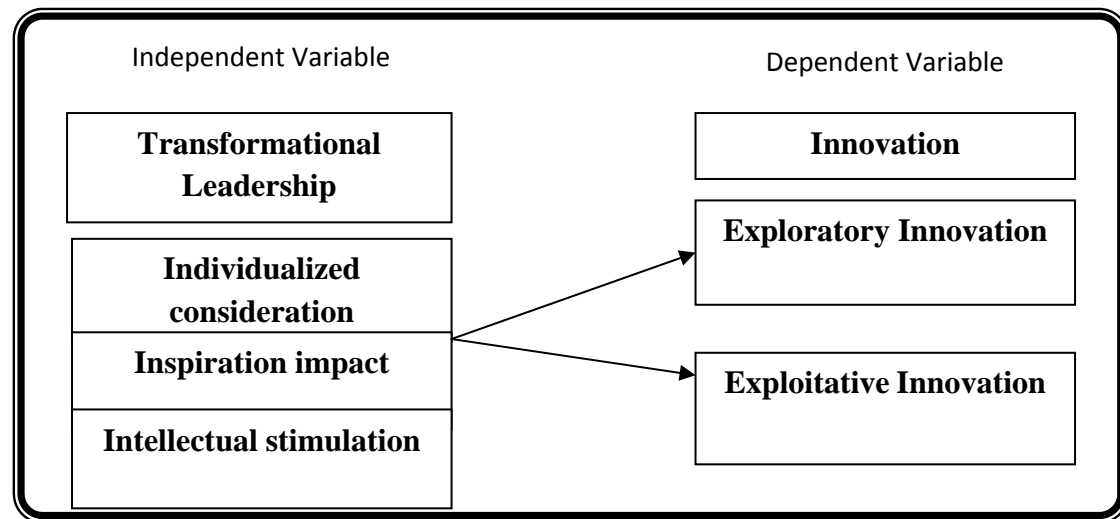


Figure (1) Study Model

## 6. Study Objectives

The study seeks to realize the following objectives:

- Identify the level of application of the Jordanian Detergents Manufacturing Companies for the dimensions of the transformational leadership.
- Identify the level of application of the exploratory innovation and exploitative innovation in the Jordanian Detergents Manufacturing Companies.
- Identify the extent of the transformational leadership impact on the exploratory innovation and the exploitative innovation of the Jordanian Detergents Manufacturing Companies.
- Identify the relationship between transformational leadership methods and exploratory and exploitative creativity.

## 7. Study Sample

The study pursued the employees in the Jordanian Detergents Manufacturing Companies which number (48) Companies (Amman Chamber of Industry, 2017). The researchers distributed (240) questionnaires to these companies, at the rate of (5) questionnaires for every company, where the questionnaires were distributed to the worker therein electronically through Google Drive, according to the method of simple random sample. The number of recovered and valid for statistical analysis amounted to (167) questionnaires which form (69.58%) of the total distributed questionnaires. Table (1) indicates to the personal characteristics of those formed the study specimen. The number of males amounted to (104) i.e. (62%) whilst the number of females amounted to





(63) i.e. (38%). As to the age category, the higher in number, it was 30 years and younger which amounted to (79) i.e. (47%) and the lowest was for the age category of (41-50 years) numbering (8) a percentage of (5%). As to the academic attainments, of the majority of workers were clearly from the holders of Bachelor certificate which amounted (117) i.e. (70%). With respect to the period of service, the concentration was at the category of (5 years and less) numbering (95) with the percentage of (57%).

**Table (1) demographic characteristics of study sample**

Variable	Category	N	%
Sex	Male	104	62
	Female	63	38
Age	30 years and above	79	47
	31-40 years	66	40
	41-50 years	8	5
	51 years	14	8
Education	Secondary and below	29	17
	Diploma	8	5
	Bachelor	117	70
	Postgraduate	13	8
Experience	5 years and less	95	57
	6-10 years	38	23
	11-15 years	20	12
	16-20 years	5	3
	21 years and above	9	5

## 8. Data Collection

By virtue of the nature of study and variables thereof, it has relied on two types of sources for collecting particulars and information, viz:

Firstly: Primary Source

Whereas the initial particulars were obtained through the questionnaire as a main tool for study in order to treat the analytical aspects of the subject of the study.

Secondly: Secondary source

Whereas the particulars relating to the current study were collected by reverting to the sources of the secondary information as represented in the pertinent Arabic and foreign sources, articles, periodicals, reports, researchers and previous studies which tackled the subject of study, research and findings at the various Internet sites.

## 9. Data Collection Tool

To collect the necessary statements for study, the researchers used the questionnaire which consists of three parts and in the following form:



- a. Relates to some personal characteristics of workers who are study specimen namely: gender, age, educational qualification and period of service.
- b. Comprised of the phrases connected with the transformational consisting of (15) phrases and these phrases were developed after reviewing many studies including: (Para- Gonzalez et al., 2018; Pradhan et al., 2018; Chen et al., 2016; Chang et al., 2017) The phrases of this part were distributed at the rate of (5) phrases for each dimension of the transformational leaders.
- c. Comprised of phrases pertaining to the exploratory innovation and exploitative innovation consisting of (12) phrases. In this part the study of (Para-Gonzalez et al., 2018; Chen et al., 2016; Baskarada & Watson, 2017; Chen et al., ; Zang 2018; Hong et al., 2018) distributed in the following manner: (7) for exploratory innovation, and phrases for exploitative innovation. To answer the phrases contained in the questionnaire in parts two and three. Measure Likert has been utilized in the following manner: Strongly agree (5), Agree (4), Neutral (3), Disagree (2) Strongly Disagree (1).

## 10. Validity and reliability

To understand the extent of validity of the study standards, the expressions included in the group of workers within the study community, in order to ensure the clarity of these phrases and of being free of terminology and unclear words. The standards were presented to some academics who are interested in the field of business administration, for the purpose of ensuring the capability of expressions to disclose the variables and dimensions of the study. In the light of the remarks and subsequent to evaluating same, the researchers made amendments on some expressions so as to become clearer.

In order to measure the reliability of these measures, Cronbach Alpha has been utilized and Table (2) shows the reliability value of the study's dimensions where all of them were higher than the acceptable borders for the purposes of statistical analysis namely (0.70) (Sekaran & Bougie, 2010: ) (0.70).

## 11. Statistical methods

For the purposes of statistical analysis and testing the study presumptions, the statistical bundles program for social sciences (Spss), by utilizing the following statistical analysis styles:

- a. Cronbach Alpha in order to know the extent of internal consistency of the phrases forming the study measures.



- b. Repetitions, to show the nature of distributing the terms of the study specimen with respect to the personal characteristics.
- c. Arithmetic mean and standard deviation in order to showed the extent of concentration and dispersal of responses of specimen expressions on the phrases relating to the transformational leaders and innovation.
- d. Multiple regressions to identify the extent of impact of the dimensions of the transformational leaders in the exploratory innovation and exploitative innovation.

## **The Second Topic/ Literature Review and Theoretical Framework**

### **1. Literature Review**

Study of (Park & Kim, 2015) aimed at looking into the amending role of the developmental diversification in the relationship of senility's performance and manpower innovation. The researchers anticipated that the diversified structure in the work framework contributes only in exploration and not in the exploitation. The two researchers examined the presumptions by utilizing the statements compiled from the Korean companies (234 Companies for exploitive innovation and 166 Companies for the exploratory innovation) as an exploratory study sponsored by the Korean Government. The study concluded that senility of the manpower had positive impact in the exploitative innovation and has a counter relation in the shape of the letter "U" with exploratory innovation. There is a negative impact for the manpower sending on the exploratory innovation only and that the impacts of manpower senility in the innovation depends on the age structure of the manpower as well as on the type of innovation followed by the Company.

Study of (Do, et al., 2016) where the researchers tried to identify the relationship between the flexibility of the human resources and adaptation culture with the existence of the organizational innovation as an intermediate variable. This study was conducted in Taiwan on 223 Taiwan Companies in the field of technology. One of the most important results concluded by the study that the flexibility of the human resources touch positively in the adaptation culture and contributes in the organizational innovation and that the ability to adapt has direct impact in the operations innovation and has an indirect impact on the products innovation.

Study of (Shanti, 2016) aimed at measuring the level of functional quality and extent of adopting the transformational leadership practices and impact of the transformational leadership with all its dimensions in improving the quality of functional life in the Palestinian Ministry of Health, as well as trend study for taking up the procedural justice factor



as an intermediate variable in the impact of the transformational leadership in so far as the quality of working life. The researcher utilized the analytical descriptive methodology and a questionnaire was designed for the purpose of collecting the particulars necessary for the study. The study community has been formed from all workers in the Ministry of Health in Gaza Sector and specifying a simple random sample of (370) individuals. The results of the level of the quality of functional life and the transformational leadership practices reached a middle grade at the Palestinian Ministry of Health. Also, there is a great and clear impact for the transformational leadership particularly the charisma impact and the individual considerations in improving the quality of working life.

(Alhelo, 2016) study aimed at measuring the transformational leadership and dimensions thereof in the organizational performance in the Communications Company in Syria. The study community consisted of workers in the Syrian Communications Company "Syratel " where the study sample has been set at 133) individual size. A questionnaire has been distributed on members of the study specimen namely Branch Managers Human Resources Managers and Finance Managers in Company branches which number (11) branches. The study reached several results the most important of which are the existence of impact with statistical sign for the transformational leadership with all its dimensions in the organizational performance be it the comparative performance or the internal performance. The study has also shown the none existence of differences with statistical sign as important as the transformational leadership attributed to the functional level.

(Al-Zahrani, 2016) study aimed at identifying the transformational leadership in the adaptation performance dimensions for workers in the Saudi Insurance Companies sector. The study was based on the analytical descriptive methodology and designing a questionnaire which was distributed on members of the study specimen amounting to (498) workers in the insurance sector in the Saudi companies. The study concluded that the Saudi Insurance Companies exercise the transformational leadership pattern by average degree. Also, the results have shown the existence of an impact with statistical sign for the transformational leadership in the adaptation performance of workers.

(Xia & Roper, 2016) study, the researchers tried to explore the relationship between two main sides for open innovation in the small companies and the assimilation capability as well as the external relations and impacts thereof in the growth of biological pharmaceutical preparations in the United States, Europe. The study was made in the United States, United Kingdom, France and Germany on a specimen





comprising (349) of vital pharmaceutical preparation companies. The results of the study indicated that the realized assimilation capability plays an important role in specifying the growth of the organizations ; that communication between the assimilation and the exploratory capability depends on the relations and strength of continued research and development whilst the partnership in the exploitative relations have more conditions on the assimilation capability realized by the companies.

(Popadica & Cerne, 2016) this study aimed at exploring the impact of the exploratory and exploitative innovation separately. Where the building was measured in the form by relying on the current studies in the administrative literature and for examining such relations, an analysis of the slanting pyramidal lines on a large specimen of the International organizations by utilizing accurate particulars. The results indicated that the relation between the exploratory innovation and the innovative performance of the companies are administered by partners who are geographically different and the proficiency presumption in the innovation context weakens the innovative performance.

(Kraft & Bausch, 2016) this study develops and examines pilot wise a trial mode which investigates the intermediary roles for three distinctive strategic trends (Market, learning, and trending of projects) on the relations between the transformational leadership, exploratory and exploitative innovation. The two researchers used the analysis methods together with formatting the structural formula?. They endeavored to combine the results with the separated search paths that cover more than (15) years of research, and the study utilized a specimen consisting of (215) impact sizes from (75) studies. The defining results uncovered the partial mediation from results that the transformational leaders paly a main role in creating defining strategic trends which in turn support the outcomes of innovation. As a matter of limitation, the results indicated that the transformational leaders promote mostly the exploitative innovation through building trends of the market whilst they encourage the exploratory innovation through motivating projects organization and head towards learning. The different mechanisms have shown that the transformational leaders encourage the exploratory and the exploitative innovation where it theoretically specify the unique medication roles in three specific strategic trends and proves its validity by trial.

(Popadic, et al., 2016) the study aims distinguishing between types of exploratory and exploitative innovations and its relation with the innovative performance in an increasing importance with respect to the companies. The study was conducted on companies in multi European countries (Cyprus, Czech. Astonia, Norway, Portugal, Romania, United



Kingdom, Slovakia, Slovenia, Spain and Switzerland), where the results of the study indicates that the simultaneous follow up of the exploratory and exploitative innovation hinders the innovative performance with the companies. Furthermore, the cooperation of companies with different types of partners (suppliers, customers, competitors, research institutions and universities) will mitigate the impact of the exploitative and exploratory innovations in the performance of deeply-rooted innovation in a different shape. The study has concluded that the utilization of multi collaborators is beneficial for providing contradictory pressures of the exploratory and exploitative innovation.

(Zange, 2018) the researcher tried in this study to examine the impact of the structural gaps in the two types of innovation namely the exploratory and exploitative. The study was conducted on several stages in the United States on the computer sector and reached (6894) alliances, and the listed alliances were selected in public only and a specimen thereof was taken from it and amounted (305) alliance. The most important achievement of the study is that the exploratory innovation requires miscellaneous outside resources to assist the organizations in overcoming the self-shortcoming and the structural gaps therein, whilst the exploitative innovation requires internal resources and exploitation of cognitions which enables the company to identify the aspects of shortcomings and probable gaps therein as well as determine the files of improvement.

Study of (Keskes, et al., 2018), aimed at examining three variables for measuring the impact of transformational leadership with its dimensions in the organizational dimensions by utilizing an average factor namely change of leaderships in the organization. The study was conducted by using the analytical descriptive methodology and the study specimen amounted to (427) French employee of the executive managers category and in various institutions in France of holder of a minimum of Bachelor certificate and they should have a minimum experience of two years within the institution in which they work. The study concluded that there is a role for the process of replacement of the leaders in the institution which would touch on the reflections of the transformational leadership on the organizational commitment. This contribution realized a great result in the dimensions of the organizational commitment and this outcome as a tie which increases the impact of the transformational leadership in the organizational commitment.



## 2. Theoretical Framework

### 2. 1. Transformational Leadership

The importance of leadership in the modern times organizations has increased due to the intensive competition and increased organizational and administrative issues encountered by the organizations. (Hareem, 2010: 216) indicates that the leadership is a social process which endeavours to have impact on the acts, behavior and tendencies of subordinates to act seriously and with interest to achieve joint and desirable objects. Therefore, the selection of the suitable leadership pattern- which has a major role in the success of organizations is one of the biggest challenges facing them. Therefore, the leadership is required to use new and innovative methods to stimulate and build full commitment and positive stands of all subordinates.

The strategic leadership for organizations refers to introducing a new pattern for the work of top management in the organization viz-a-viz the conventional leadership which was applied in leading the work group which was later applied on the various administrative levels in the organization of (Sanda & Arther, 2017: 281; Banker, et al., 2014: 879).

As seen by (Bass, 1985: 12) the leadership has two distinctive dimensions viz: Transactional leadership and transformational leadership, and the leader can be transactional or transformational or both together (Krishnan, 2005: 445).

The transactional leadership indicates that one of the leadership methods followed by the leaders who direct their followers to adopt the objects of the organization and endeavor towards its achievement by means of limited motivation such as the contingent reward which is the reward granted to subordinates in consideration of the efforts exerted by them and recognized by the leadership (Dartey-Baah, 2015: 102). In otherwards the transactional leader endeavors to formulate the material incentives regulation in a manner appropriate with the efforts exerted by the workers or through following some of the modern administrative methods such as administration by exclusion which requires the subordinates to inform their officers about all exceptional and unplanned matters in the work (Afshari & Gibson, 2016: 512; Hareem, 2010: 261; Kupers & Weibler, 2006: 372). This matter requires from the leader to follow up and search for any deviation in the application of regulations in order to take the necessary rectification measures thereto, and interferes only when the standards are not fulfilled. Therefore, the leader's pursuance of such ways would contribute in increasing the power of his influence on the subordinates to obtain their compliance with his decisions.



With the increase of pressures and big challenges which face organizations at the present time, the organizations need for an effective leadership appeared which have a major role in formulating and implementing the strategies which permit the organization to remain and grow as well as encourage innovation therein to raise its capacity endure and compete.

Consequently, many researchers who called of the necessity to shift to transformational leadership whilst indisating to the capability to convince the working individuals of the change and improvement. It also endeavors to evaluate the subordinates and motivate them to improve the performance and meet their needs and inclinations as well as advising them of the importance of their contribution in achieving the objectives of the organization (Northouse, 2013: 31). It also participates in changing the subordinates perception of the problems and issues through a new look, (Hareem, 2010: 233). It also represents a new model for the organizations leadership. (Krishnan, 2005: ;Kroon, et al., 2016: ). The latter took over the transformational leadership not only in the business organizations but it extended same to the military organizations, and at the end, it has become one of the accompanying invariables of the distinct performance in the various organizations (Chang, 2017: 816). The transformational leadership points out to the ethical and inspirational impact of the leader on his subordinates in order to vie in glory of their own interests in favour of the organization, and this is made through the utilization of codes and values. Apart from the personal characteristics of the leader which prompts the subordinates to admire him and have more trust and loyalty in him, a matter which motivates him to exert double effort in executing the work requested from him (Şahin et al., 2017: 109).

Also, the transformational leadership contributes in stimulating subordinates to undertake unexpected innovative work (Krishnan, 2004: 62). (Küpers & Weibler, 2006: 365) believe that the leader who adopts this type of leadership will have fundamental and considerable impact on his subordinates and continuously seek to stimulate them to obtain new innovative thoughts to solve problems and develop work. The transformational leader work to create an atmosphere of confidence and respect in his relationship with his subordinates to encourage them in converting their personal values to support the organization's vision and objects (Chen et al., 2016: 448). (Krishnan, 2005: 446) indicates that the transformational leader have the capability to achieve outstanding and distinctive accomplishments which clearly looks to third parties to be difficult to realize upon following any other method of leadership. Researchers agree that the application of the transformational leadership method depends on four basic pillars viz: (Krishnan, 2004: 67; Duckett &





Macfarlane, 2003: 315; Kupers & Weibler, 2006: 375; Al-Shanti, 2016: 44; Abu Rumman, 2016: 721).

1. Charisma characteristics for the leader, or fascination of the halo enjoyed by the leader. Tradition Barbutto of charisma impact that the "capability of the leader to gain the confidence, admiration, respect and appreciation of subordinates, and considering him their ideal example where the subordinates imitate the leader and yielding with desire to every demand".

2. Leadership inspiration of subordinates by using codes and values to increase their motivation towards work and expresses the important issues by simple methods.

3. Intellectual stimulation of subordinates and prompting them to present new ideas to solve and develop the problems of work. The transformational leader works on searching for the new ideas and encourage solving the problems in an innovative method by the subordinates and support the new and creative samples to perform the work.

4. Individualized Considerations for Subordinates i.e particularize treatment with the subordinates whereby each individual will be treated individually whilst knowing , training and advising.

Bass is considered one of the pioneers who called for the necessity of adopting the transformational leadership method in the organizations which looks for distinctiveness and endeavors to increase its efficiency and many researchers agree with him. (Krishnan, 2004: 65; Duckett & Macfarlane, 2003: 315; Küpers & Weibler, 2006: 373).

The importance of the transformational leadership as a modern leading pattern is due to its endeavor to enable workers, through their authorized powers and work to develop their skills, strengthen their self confidence as well as work on forming self dependent work teams (Abu Rumman, 2016: 717). The transactional leadership and transformational leadership should not be looked at as a conflicting introduction for accomplishing the issues, as the transformational leadership builds on top of the transactional leadership and realizes levels of efforts and efforts of individuals which exceed what may be achieved by utilizing the transactional model only, (Hareem, 2010: 234).

## 2.2 Exploratory Innovation

The exploratory innovations involves finding the new cognition and farness from the existing techniques and skills whereby requiring the organizations which get involved in the exploratory innovation to be more flexible, thereby enable it to respond in a better way in the troubled



environment (Hong et al., 2018) which leads to improving its competitive capability in the long run and improve its future income (Li et al., 2010: 301), thus it resorts to searching on multi interpretations of the available information and the diversified search for finding new solutions for the problems. This is tied with the search, diversification, adventure and trial (Park & Kim, 2015: 482) thereby granting the organization the capability to deal with the variable environments and open the way for it the way to it for new work opportunities and consequently be able to produce new products which are considerably different from the present products Thus improve its overall performance in the long run (Popadic et al., 2016: 298) and be able to add a new value which is different from what was available, in order to realize more diversified revenues on the long run (Park & Kim, 2015: 483) thus the exploratory innovation will be considered synonymous to the root innovation (Li et al., 2016: 301).

### 2.3 Exploitative Innovation

Organizations resort to applying the exploitative innovation strategy with the object of fulfilling current customer needs or the present markets through exploitation use the opportunities at hand such as (Hong et al. 2018) and also endeavors through this strategy to increase efficiency in the short run, improve the present income for the organization (Li et al., 2010: 302) as organizations which apply the exploitative innovation need to collect information on the current problems and then analyze them and look for solutions to the problems through improvement of products or techniques and upon finding the solutions, this will lead to providing opportunities to workers to look for new cognition as well as produce new ideas (Hong et al., 2018), which assists in the optimum exploitation of the available resources and in most cases the cost of the exploitative innovation will be lower than the cost of the exploratory innovation (Popadic & Cerne, 2016: 1169).

Researchers believe that it will be advantages to indicate that organizations which concentrate on the two types of exploratory and exploitative innovations reach to the phase of organizational ambidexterity thereby assisting it in achieving advancement and excellence. It also serve to improve its performance and excellence. It also serve to improve its performance and its competitive status in the market (Garcia et al., 2017: 83; Park & Kim, 2015: 489; Popadic et al., 2016: 299) and in the event of organizations endeavors to realize organizational skill, it will need to invest a considerable amount of resources in order to bring in new operations, products and techniques- explorative innovation- and at the same time it will need to maintain the



efficiency of its current operations- exploitative innovation (Popadic et. al., 2016: 397).

### The Third Topic/ Practical Aspect of the Study

#### 1. Descriptive results

Table (2) clarifies the arithmetic mean values and the standardized deviation and the relative importance for removing the study variable dimensions (transformational leaders and innovation).

As to the dimensions of the transformational leaders' dimensions, the highest arithmetic mean value for the inspirational impact paragraphs and in value of (4.03), a standard deviation of (0.79) and high relative importance. This indicates that the leaders in the Jordanian Detergents Manufacturing Companies, as per the opinion of workers study specimen, are able to develop loyalty with the subordinates, thereby lead to having them feel in a high degree of enthusiasm for completing their works, as workers look at their superiors to be exemplary which should be followed. Immediately thereafter came, subsequent to individual considerations, also by a high arithmetic mean of (3.95) and a standard deviation of (0.63) and with high relative importance.

As to the arithmetic mean value, relative standard deviation for the innovation, the outcome of the descriptive analysis of worker responses of the study specimen of the existence of high relative importance of their companies concern of the exploratory innovation with an arithmetic mean amounting to (4.17) and a standard deviation of (0.46) , the Jordanian Detergents Manufacturing Companies relies on the search for new method and techniques in their work, thereby leading to expanding its services to its customers in the long run by adding small amendments to its present products. As to the reliance of companies on the exploitative, it was little less than that by high relative importance by an arithmetic mean of (3.98) and standard deviation of (0.69) as the Jordanian Detergent Manufacturing Companies concentrate on seizing the new opportunities which emerge in the work market and receive the applications which appear in the market through regularly developing new distribution channels.

**Table (2) Descriptive Statistics for Study Variables**

Variable	Dimension	Items	Alpha	mean	Std.	Importance
Transformational Leadership	Individualized consideration	5	0.70	4.02	0.62	Height
	Inspiration impact	5	0.87	4.03	0.79	Height
	Intellectual stimulation	5	0.81	3.95	0.63	Height
Innovation	Exploration	7	0.77	4.17	0.46	Height
	Exploitation	5	0.87	3.98	0.69	Height



Based on the descriptive analysis of the variables and testing of the presumptions, the study concluded the existence of high levels in applying the dimensions of the transformational leaders in the Jordanian Detergents Manufacturing Companies, where the inspirational impact is in the forefront, thence the individual considerations and finally the intellectual motivation.

This result differs from what (Al-Shanti, 2016) study has concluded, which was carried out in the Palestinian Ministry of Health, and (Al-Zahrani, 2016) Study which was conducted in the insurance companies in the Kingdom of Saudi Arabia wherein it indicated to the existence of medium levels for applying the concept of the transformational leadership concept.

The study results also indicated the existence of high levels in applying the two types of exploratory and exploitative innovation in the Jordanian detergents manufacturing companies with the existence of greater attention in favor the exploratory innovation compared with the exploitative innovation.

## 2. Testing of Hypotheses

**Ho1:** There is no significant impact of transformational leaders with its dimensions (individual considerations, inspirational impact and intellectual motivation) in the exploratory innovation for the Jordanian Detergents Manufacturing Companies.

Table (3) Indicates to the results of multi impact analysis for the impact of the transformational leaders in the exploratory innovation for the Jordanian Detergents Manufacturing Companies from the point of view of workers in the study specimen, as the results of analysis to the existence of a moral relation between the informational leadership and exploratory innovation as the engagement value tie in is  $(0.38)^{R^2}$  factor R amounted to  $(0.61)$  and value of the determining factor amounted to  $R^2$   $(0.38)$ , this means that the transformational leadership interprets a  $(\%38)$  of the variance in the exploratory innovation and confirmed the value of F of this impact which amount to  $(32.90)$ , and moral level of  $(0.00)$ . The transactions table indicated the existence of two dimensions of the transformational leadership namely the inspirational impact and the intellectual motivation in the exploratory innovation as the value of B of these two dimensions namely the inspirational impact and intellectual motivation in the exploratory innovation, where the value of "B" amounted for these two dimensions  $(0.15$  and  $0.49)$  and the value of T  $(2.37$  and  $7.71)$  and a level of sign  $(0.02$  and  $0.00)$ .





Whilst the individual considerations dimension a moral impacting the exploratory innovation, as value B for these two dimension amounted to (0.15 and 0.49) and the value of T (2.37 and 7.71) with a level of sign of (0.2 and 0.00). Whilst the individual considerations dimension did not have a moral impact in the exploratory innovation, as the value of B amounted to (0.12) and the value of T (1.66) and moral level of (0.10) which is bigger than (0.05) which was adopted in this study. Based on the foregoing results, the first zero presumption cannot be accepted and accept the alternative presumption which provides the presence of a trace with statistical sign to the transformational leadership with its dimensions (individual considerations, inspirational impact and intellectual motivation) in the exploratory innovation for the Jordanian Detergents Manufacturing Companies.

**Table (3) Multiple Regression for the Impact of Transformational Leadership on Exploratory Innovation**

Model Summary		ANOVA			Coefficient				
R	R <sup>2</sup>	F	Df	Sig.	Dimension	B	Std. error	T	Sig.
0.61	0.38	32.90	3	0.00	Individualized consideration	0.12	0.07	1.66	0.10
					Inspiration impact	0.15	0.06	-2.37	0.02
					Intellectual stimulation	0.49	0.06	7.71	0.00

Existence of significance for the transformational leadership in the exploratory innovation for the Jordanian Detergents Manufacturing Companies, and this trace was clear to the two dimensions of the intellectual motivation and inspirational impact, should this impact was not significantly for individual considerations.

This result complies with the conclusions of (Kraft & Bausch, 2016) study where it was indicated that the transformational leaders encourage the exploratory innovation through motivating projects organization and tend towards learning.

**Ho2:** There is no significant impact of transformational leadership with its dimensions (Individual Considerations, Inspirational Impact and Intellectual Motivation) in the exploitative innovation for the Jordanian Detergents Manufacturing Companies.

Table (4) shows the results of multiple regression analysis for the impact of transformational leadership in the exploitative innovation for the Jordanian Detergents Manufacturing Companies. The results of analysis indicated to the existence of moral relation between the transformational leadership and exploitative innovation where the value of the linkage factor R (0.43) whilst the value of the determining factor R<sup>2</sup> (0.19), and this means that the transformational leadership interprets a percentage of (19%) of variance in the exploitative innovation and confirmed that the F



value on the morale of this impact which amounts (12.58) and with moral degree of (0.00). the transactions table indicates to the impact of the intellectual motivation in the exploitative innovation, where B value amounted to (0.34) and confirmed the moral of this impact which amounts to (3.10) at the sign level of (0.00). Whilst the individual considerations and inspirational impact do have a moral impact in the exploitative innovation, where the B value thereto amounted to (0.08 and 0.09) with the value of T at (0.68 and 0.70) with none moral sign which amounted (0.50 and 0.49) .

In reliance upon the results of regression, the alternative second zero presumption cannot be accepted and acceptance of the alternative presumption which provides that there is a trace with analytical sign for the transformational leadership with its dimensions (individual considerations, inspirational impact and intellectual motivation) in the exploitative for the Jordanian Detergents Manufacturing Companies.

**Table (4) Multiple Regression for the impact of Transformational Leadership on Exploitative Innovation**

Model Summery		ANOVA			Coefficient				
R	R <sup>2</sup>	F	Df	Sig.	Dimension	B	Std. error	T	Sig.
0.43	0.19	12.58	3	0.00	Individualized consideration	0.09	0.13	0.68	0.50
					Inspiration impact	0.08	0.11	0.70	0.49
					Intellectual stimulation	0.34	0.11	3.10	0.00

The study showed a significance for the transformational leadership in the exploitive innovation for the Jordanian detergents manufacturing companies, this trace was clear for the intellectual motivation and if this is not so with respect to the inspirational impact and individual considerations, it may be that the nature of work of such type of companies in this where the concentration of its work be in the market in which it is active.

This outcome complies with what has been concluded in the study of Kraft & Bausch which indicated that the transformational leaders are promoting for the exploitive innovation most of the time through building market trends.

### **The Fourth Topic/ Conclusions and Recommendations**

#### **Conclusions**

1- The managements of such companies have high tendency to utilize this type of leadership out of belief of its capability to realize its organizational objects, in addition to providing sufficient organizational flexibility to deal with workers.



2- The companies give greater attention for searching new ideas and products to provide it to its clients even if it cost them longer time in pursuit of achieving its objects.

3- The subordinates need and more so for the intellectual motivation and inspirational impact for reaching the exploratory stage of new products, way and styles compared with the individual considerations.

4- There is a focus in the work of Jordanian detergent companies in exploiting the current opportunities that appear in the market in which they are more active than exploring opportunities.

### Recommendations

1- It is necessary for the Jordanian detergents manufacturing companies to maintain the high level of application of the transformational leadership with all dimensions thereof (inspirational impact, individual considerations and intellectual motivation), to improve its capability to realize the exploratory innovation and exploitative innovation in the work thereof, thereby assisting it in realizing its organizational objects and consolidate its competition capability.

2- It's also important to realize the high and continued equilibrium in attending to the exploratory innovation through which these companies care through it in searching for the new products and the rising markets, new distribution method and the exploitative innovation through which it concentrates on exploiting the propitious opportunities which are not planned.

3- It is important that the Jordanian detergents manufacturing companies increases its concentration on utilizing the intellectual motivation by the leaders as one of transformational leadership dimensions in view of its clear impact whether in the exploratory innovation or in the exploitive innovation to urge the subordinates to submit the new ideas for solving and developing the work problems through searching for new ideas and encouraging solving the problems by the subordinates innovative methods as well as supporting the new and creative forms for performing the work.

4- Finally the study stresses the importance of utilizing the inspirational side by the leaders of these companies since it promotes workers enthusiasm to supervise whatever opportunities that surface in the work environment. This can be made through relating the heroic stories made by the workers as well as implant high values in them.



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## ***The Effect of Organizational Capabilities on Quality of Service***

*An Analytical Study of The Views of The Directors of The Inspector General's  
Office of The Ministry of Finance*

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### ***Abstract***

The purpose of the research is to explore the relationship between effectiveness organizational capabilities in terms of (organizational learning capabilities and knowledge management capabilities) and service quality in terms of (response, reliability, tangibility, and sympathy). The research problem is to identify several questions that will be focused on the nature of the effectiveness relationship among the variables of the search. For that the development of a hypothesis of the research reflects one main hypothesis and two sub-hypotheses.

In order to verify the validity of the hypotheses, all those hypotheses were subjected to multiple tests to confirm their validity. The research has used the questionnaire as a means of obtaining data. Meanwhile, the descriptive and analytical approach are used as a research method. The sample is taken intentionally from the selecting of managers and officials at the ministry of finance inspector. General office number forty seven.

The questionnaire is distributed to all of them, but only 44 respondents are prepared for statistical analysis. The results show that there is an effectiveness relationship of organizational capabilities in terms of organizational learning capabilities in improving the quality of service. Regarding knowledge management Capabilities it will not affect the improvement of service quality.

### ***Introduction***

The concept of quality of service has become one of the most important concepts in the world today, which aims to continuously improve and develop performance by responding to customer requirements. Quality means high quality or value, completing business correctly from the first time and meeting the customer's reasonable needs and expectations. Also quality is the leadership and the first to respond to the requirements of the customer which an excellence means perfection in terms of control and accuracy in the work of things and this is what all organizations need, whether productive or service, or public sector or private in order to improve performance and to achieve optimal performance in the application.



The quality of service must be achieved in the change methods previously applied to new patterns and methods of work. These methods, patterns or routines are called capacities, which will focus on organizational Capabilities through organizational learning and knowledge management in the office of the inspector general of the Ministry of Finance and also modify existing procedures and organizational routines to new procedures, routines and new organizational practices aiming at providing training, technical expertise and level of knowledge as well as enabling the members of the organization to acquire, apply and share knowledge among the members of the organization.

This research is conducted to identify the level of practice of the office of the inspector-general for the quality of service in its various dimensions and its relation to organizational capacities. The research included four topics. The first topic includes the scientific methodology of the research which starts the problem of research , its importance , objectives and dimensions. The second is a theoretical enrichment of the research variables. The third topic includes the applied side of the research, which focuses on the hypothesis test. The fourth topic presents a set of conclusions and recommendations.

### Section One: Scientific Methodology of the Research

**1. Problem statement :** The quality of the service at present is one of the important and necessary issues that all organizations of different kinds, whether public or private, are trying to implement in their activities through their (OC) available in the organization

The importance of the offices of the inspectors and the role that is necessary to activate the quality of service in its operations by developing the (OC) available in it, This research focuses on the important aspect of the quality of service implementation in the office of the general inspector in the ministry of finance (under consideration) through available organizational capabilities

The research is concentrated at provides the answer to the following question : (What is the level of application of the office of the inspector of the study sample to the dimensions of the organizational capabilities and its impact on enhancing the quality of service ? ) .

A number of inquiries arise from this question:-

1. What is the level of organizational capabilities in the office of the general inspector of the ministry of finance?
2. What is the quality of service level in the ministry of finance inspector general's office?
3. Are regulatory capacities improving the quality of service in the often several on the ministry of finances?



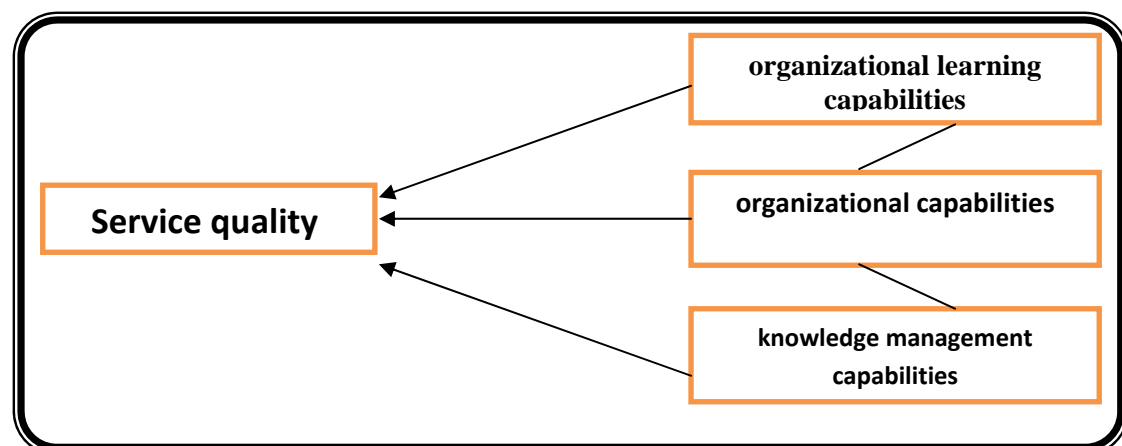


**1.2 Research Objectives:** The objectives of the research are summarized as follows:-

1. Measuring the level of organizational capabilities in the office of the general inspector of the ministry of finance.
2. Identify the level of quality of service in the office of the general inspector of The ministry of finance.
3. Test the relationship of the impact of organizational capabilities on qualifying service.

**1.3 Research Importance:** The importance of the current research is shown from both theoretical and practical aspects. The theoretical side, provides a summary of the most important ideas of researchers and thinkers of the variables of organizational capabilities and quality of service. Whereas the practical side of the research show an active contributing to the variables in the office of the general inspector of the ministry of finance and provides a useful information to the office of the general inspector on its capabilities to improve organizational capabilities And providing quality service to its stakeholders through recommendations of the research as a guiding model for the office of the general inspector.

**1.4 : Hypothesized Research Plan:** Based on the intellectual framework of the literature of the independent variable, organizational capabilities consisting of two basic dimensions (organizational learning capabilities and knowledge management capabilities) According to the researcher's measurement (Lee et al., 2007), and the dependent variable quality of service consisting of four sub-dimensions (response, reliability, tangibility and sympathy ) according to researcher's scale (Aikins et al., 2014). Basing on the research problem and its objectives, the researchers have synthesized a developed and hypothesized outline of the research which represents a chart of the relationships between these variables and the trends of their influence (see figure) .



**Figure ( 1) Hypothesized Research Plan**



**1.5 : Hypotheses:** After identifying the problem of the research and having informed with the previous knowledge related efforts, the current research has put hypotheses as a temporary or preliminary solution and will be tested in different ways and means to verify their validity on deny general:-

On deny : There is a significant effect of organizational capabilities on the quality of service at the comprehensive level . accordingly , the following sub-assumptions are derived:-

**A-** There is a significant effect of organizational learning capabilities on quality of service.

**B-** There is a significant effect of knowledge management capabilities on the service quality.

### **1.6 : Data Collection Instruments:**

**A- Theoretical side:** The researchers used to cover this aspect of the research with the available Arab and foreign sources as well as the studies, researches and articles that are available in libraries and the internet. The Internet is a fundamental aspect in obtaining the latest researches and studies covering the theoretical side of the research.

**B- Practical aspect:** The research adopted the questionnaire as a main source in the collection of data and relied on the efforts of previous researchers in its aspects. The additions and modifications processes is made in accordance with the reality of the Iraqi environment. The questionnaire is consisted of (34) items distributed on the research variables, (14) items to measure the organizational capabilities of each sub-dimension (7) paragraphs, (20) items included the variable concerning service quality for each sub-item ( 5) paragraphs .

**1.7: Population of Sample of Research:** The research community consists of all department directors , division managers and units in the office of general inspector ( 47 ) director and responsible persons in which 47 questionnaires are distributed among them 44 questionnaires are returned with full answers and are ready for statistical analysis as a full taken community .

## **Section Tow: Organizational Capabilities and Quality of Service**

### **2.1: Organizational Capabilities :**

**A. The concept of organizational Capabilities:** Organizations develop and change through the restructuring of their routines and Their Capabilities, which constitute the process of service development, thus eliminating the existing capabilities and restructuring them to enable and develop new services, so the business needs to gradually evolve through selection processes and decisions that may lead to abandonment of



current organizational structures to new ones (Gusberti & Echereste, 2012: 225).

Tangible resources are characterized with its capabilities for measurement, imitation and replacement due to its clearness. Eventually the competitors can repeat it easily. In other side intangible resources are difficult to replicate because of their intangible nature and are often ambiguous. Intangible resources include organizational routines, organizational processes, management skills, knowledge and information, customer orientation and organizational awareness, individual property, quality, brand, reputation, relationships and database.

The organization achieve competitive advantage by combining physical and non-physical resources together to create organizational capabilities. The organizational capabilities are a combination of resources, organizational routines and interactions through which the organization is resources at the coordination (Ticha, 2010: 160).

Organizational capabilities are high-level organizational processes that include the Capabilities to develop repetitive activity standards, also called routines. capacities are developed through the complex interaction of material and non-physical resources that takes long time (Gusberti et al., 2013: 131).

Resource-based theory establishes an interaction framework between the resources, organizational capabilities and competitive advantage. The primary and primary inputs of organizational processes are the unique resources of the organization, such as capital, material equipment, reputation, human resources, etc. In most cases the resources do not come on their own; The organization relies on unique resources that work in an integrated way to establish organizational capabilities (Tuan & Yoshi, 2010: 3).

Organizational capabilities are defined as high-level organizational processes consisting of new capabilities that are converted into repetitive activities known as routines. These activities or routines are inputs and outputs and that management can use as decision-making options to generate important outputs.

Resources are distributed through the use of organizational processes to obtain On the expected results, through the complex interactions between the tangible and intangible resources of the Organization that lead to the development of human capital (Gusberti & Echereste, 2012: 226).

Organizational capacities are also important for the organization to coordinate and use resources. A distinction can be made between resources and capabilities by defining capacities as a particular type of resource, whether concrete or intangible, that can be transferred from an



organizational point of view and is intended to determine the productivity of other resources owned by the organization (Ticha, 2010: 160).

## 2.2 Dimensions of Organizational Capabilities

Organizational capabilities are described as the orientation towards education as one of the organizational capabilities components that affect the organization's capabilities to appreciate learning generated in the form of workshops and encourage members to think outside the box. The main subjects in the definitions of education orientation as a source of knowledge, focusing upon content process.

Also means knowledge reserves, disseminates knowledge, scope and areas of learning, and focus on the value chain. The focus on commitment to learning, shared vision and openness is the dimensions of learning orientation, and the relationship between learning orientation and the value of the customers .

The data confirm that organizations need to implement the highest level of learning, including creative and innovative quality, and that learning as an element of cultural competence has a significant impact on customer value (Nasution & Movado, 2008: 481). Organizational capacities are defined as the acquisition, participation and application of knowledge that focuses on processes that use existing knowledge and acquire new knowledge. Their development requires concerted efforts and experience in identifying and acquiring new knowledge accurately and correctly.

Organizations generally have to know what, how and why they successfully absorb any complex technology? what is the real knowledge about technological innovation and its characteristics ? knowledge of how to apply technological innovation in the organization? and the knowledge required to measure the cost-effectiveness and benefits that will be achieved and the risks in applying this technology.

The infrastructure for the organization's activities are not only limited to the initiatives but also a familiarity with the knowledge and skills to acquire knowledge and correlation within capabilities of getting knowledge .Eventually ; we expect to be positively related to the successful implementation of the organization's activities .(Lee et al., 2007: 682). Therefore; the research will measure organizational capabilities through two basic dimensions (organizational learning capabilities and knowledge management capabilities) based on researchers (Lee et al., 2007). These dimensions will be clarified according to the following:-





### 2.2.1 Knowledge Management Capabilities:

For knowledge avail capabilities across the organization, there must have capabilities to manage the knowledge process, which is not possible without the capabilities to manage the knowledge infrastructure. Knowledge management infrastructure is required to provide routine management processes knowledge , practices and to promote the application of knowledge in specific business processes. (Sandhawalia & Dalcher, 2014: 3).

Knowledge management capabilities are the capabilities of the organization to acquire, create, transfer, integrate and apply knowledge related to the organizations activities to generate new knowledge that will enable the organization to apply a sustainable competitive advantage as well as improve organizational capabilities. (Salama, 2017: 72).

Knowledge management capabilities has proven to be a critical element in understanding IT management practices and the use of information technology, as well as enhancing this capabilities to help effectively implement new information technology. Knowledge capabilities is also a set of regulatory actions and processes involved in acquiring, applying and sharing knowledge In order to produce dynamic organizational capabilities and that effective knowledge management processes mean the acquisition, application and sharing of knowledge that are essential to the success and implementation of information technology (Lee et al., 2007: 681)

### 2.2.2 Organizational Learning Capabilities:

The organization should learn by acquiring new knowledge and skills in order to keep up with the difficult work environment and improve its performance. Organizational learning is a dynamic process that evolves from the individual to the group and then the organizational level. Again organizational learning activities include training, teamwork, e-learning, career attunement, career planning, and others that enhance organizational performance both at the individual and organization level (Salama, 2017: 72). Organizational learning capabilities are a dynamic process that involves moving between different levels of work, and reveals learning analysis as a process consisting of key aspects. First, knowledge is specifically acquired, created, disseminated and integrated within the organization and becomes a major strategic resource and foundation of the organizations learning Capabilities. Second, the creation and dissemination of knowledge involves internal changes that may occur at the cognitive and behavioral level. Finally, these changes lead to a process of continuous improvement that allows the maintenance



or increased performance of the organization to achieve competitive advantage (Gomez et al., 2003: 236).

### 2.3- Quality of Service Dimensions

Service quality dimensions mean the tangibility and included the material utilities and equipment also the officials and the credibility which means the capabilities to promising service performance in reliability and accurate way, as for the response means the readiness to assist customers and presenting fast service, and the sympathy implies individual care and attention providing by the organization for the customers (Agbor, 2011:10), the service quality is measured via four dimensions which are the tangibility refers to the material utility and the equipment and the officials' appearance, the credibility refers to the origination capabilities to perform the anticipated service in reliability and accurate way, as for the response means the desire to assist customers and presenting the service quickly, sympathy means individual care and attention of the organization for the customers (Munhurun, 2010:48) as follows:-

**A. Response:** it means the official's readiness to render the service in time and in suitable way (Yarimoglu, 2014:80) and the response is defined as the organization desire to assist the customer and rendering service to him quickly, and the capabilities to render service at one to the customers' requests service and lessening the waiting period, also the officials' readiness to render the service (Al-azzam, 2015:47) associated with the officials' readiness for rendering the service in time and ensure that the customer's service passes via successful criteria and rendering the service immediately to the customer (Aikins et al., 2014:9).

**B. Credibility(reliability)** it depends on dealing with customers' service, and implementation the service properly from the first instance and clear from errors and in specified time, credibility represented by maintenance the customers' desires, in accurate registers, and the service is implemented by within the instructions, laws and criteria (Al-azzam, 2015:47), the credibility lies in integrity the organization activities and it is an essential matter to achieve rendering high quality service and implementing it properly from the first instance (Aikins et al., 2014:8).

**C. Sympathy** is defined as the individual care and attention presented by the organization for its customers and this requires understanding of the officials to know their customers' demands and the necessities with in hours of work, also means welcoming the customers by the employees (Al-azzam, 2015:47). To put the customers' interest at the core of their work, subsequently understanding their special demands



and providing the individual care for their customers and response their questions(Ailkins et al.,2014:9)

### ***Section Three:3.Data Analysis***

The research will focus on exposing and knowing the research items and dimensions using the statistical description was a includes means and standard deviation, and exposing the amount of the effect between their branch variables, Whereas the independent variable is the organizational capabilities which are formed from two dimensions which are( the organizational learning Capabilities, the capabilities of managing the recognition), as for the seventh variable which the service quality consisted of four branch dimensions as follows( tangibility, credibility, response and sympathy), and would be tested as follows:-

**3.1:- Statistical description of the research variables:** This part is a part of the research devoted by statistical displaying which showed the dimensions level of the organizational capabilities and the service quality for the managers of depts.. and sections in general inspector bureau of the ministry of Finance via the statistical description included mean and the standard deviation. And virtual mean is (3) which is accepted.

***A-Displaying results related with sample individual response concerned the organizational capabilities:-***

**Table(1) Statistical description of the organizational capabilities variable**

Seq.	Main variable	Branch dimension	Mean	Standard deviation	Importance level	Dimensions arrangement
1	organizational Capabilities	Organizational learning Capabilities	3.63	0.99	0.73	2
2		Knowledge administration Capabilities	3.77	0.99	0.75	1
On total level of the organizational Capabilities			3.7	0.99	0.74	

It has become clear from table( 1 ) that the general balanced mean of the organizational capabilities amounted(3.7) and the general standard deviation amounted(0.99) and the percentage amounted (0.74) then the general balanced mean appeared more than the virtual mean (3) that implied that the researched organization depended clear machineries enhance the organizational learning levels and has keenness on employing individuals based on the experience and eligibility, besides, depended machineries to obtain knowledge and work on new knowledge suit capabilities with requirements of work, and it has become clear which table that some organizational knowledge capabilities is in the second order being achieving significance level amounted(0.73) whereas some administration knowledge capabilities obtained the first order as a result of achieving relative importance level(0.75).

**Table ( 2 ) Statistical description of the service quality.**

Seq.	Main variable	Branch variable	mean	Standard deviation	Importance level	Dimensions arrangement
1	the service quality	Tangibility dimension	2.95	1.30	0.59	2
2		After credibility	2.85	1.24	0.57	4
3		After response	2.90	1.28	0.58	3
4		After sympathy	3.00	1.24	0.60	1
On the total level of the organizational capabilities		2.93		1.27	0.59	

### ***B-Displaying results related with sample individual response concerned the organizational capabilities :-***

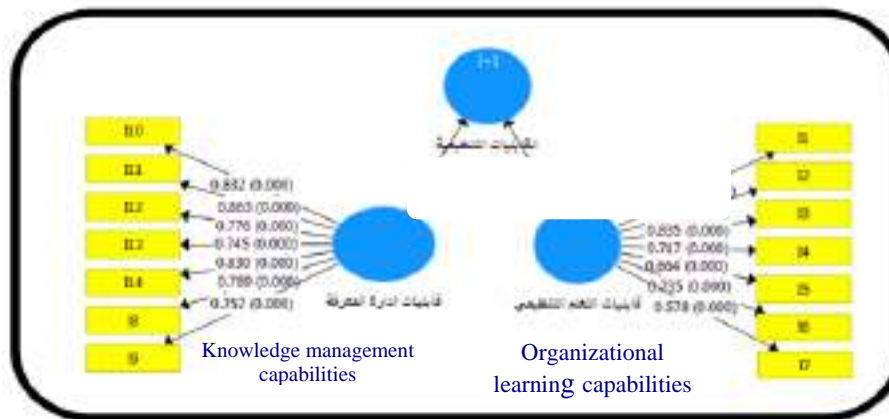
It has become clear from table ( 2 ) that the general balanced mean of the organizational capabilities amounted(3.7) and the general standard deviation amounted(0.99) and the percentage amounted (0.74) then the general balanced mean appeared more than the virtual mean(3) that implied that the researched organization depended clear machineries enhance the organizational learning levels and has keenness on employing individuals based on the experience and eligibility, besides, depended machineries to obtain knowledge and work on new knowledge suit capabilities with requirements of work, and it has become clear table that some organizational knowledge capabilities was in the second order being achieving significance level amounted(0.73) whereas some administration knowledge capabilities obtained the first order as a result of achieving relative importance level(0.75)

### **3.2: the operational analysis of the research items**

The confirmed operational analysis" is a collection of statistical methods, aims with reduction the variable number related with certain phenomenon", (SMART PLS) Program would be depended to calculate the saturation factor either acceptance or refuse of the factor would depend on percentage(P- value) which supposed to be less than (0.05) and when the percentage less than (0.05) and when the percentage more than this percentage the factor would be refused and omitted , and (Alpha Kronbach) percentage measure the questionnaire st capabilities in case of re-distribution again within specific period of time and considered accepted which recorded greater than (68%)

**A. The factor analysis of the organizational capabilities dimensions:** according to figure(2) which displays results of confirmed factor analysis of saturation percentages and the significance level of the organizational capabilities dimensions items



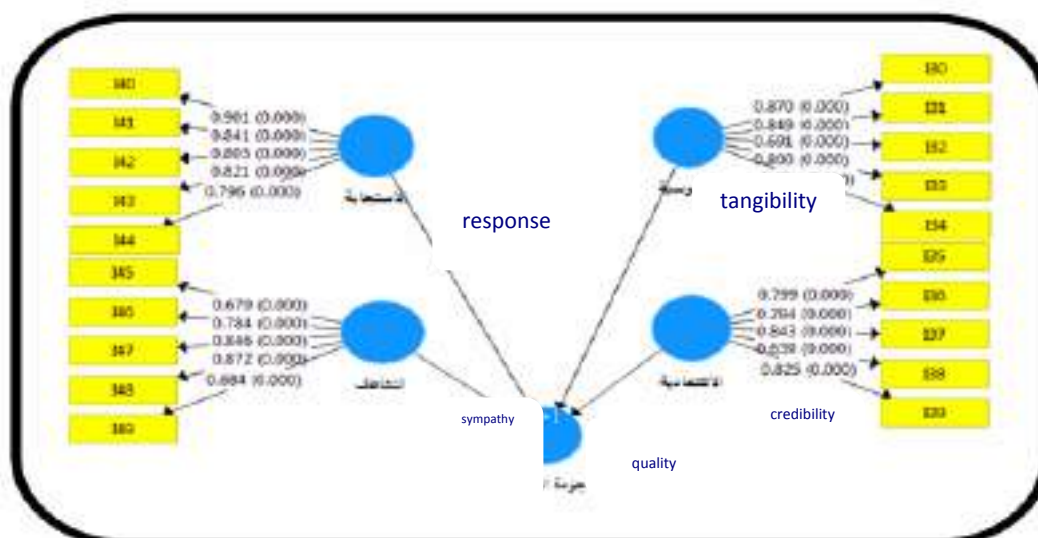


**Figure (2) Factor analysis of organizational capabilities dimensions items**

Resource: prepared by the researcher depended SAMPLE PLS) out puts

According to figure (2) the organizational capabilities dimensions items represented by( learning organizational learning and capabilities of knowledge administration) all achieved accepted saturation percentages depended on (P-value) which achieved less than (0.05)

*B- The factor analysis of service quality dimensions items:* According figure(3) displays the confirmed factor analysis of saturation percentages and significance level of service quality dimensions items.



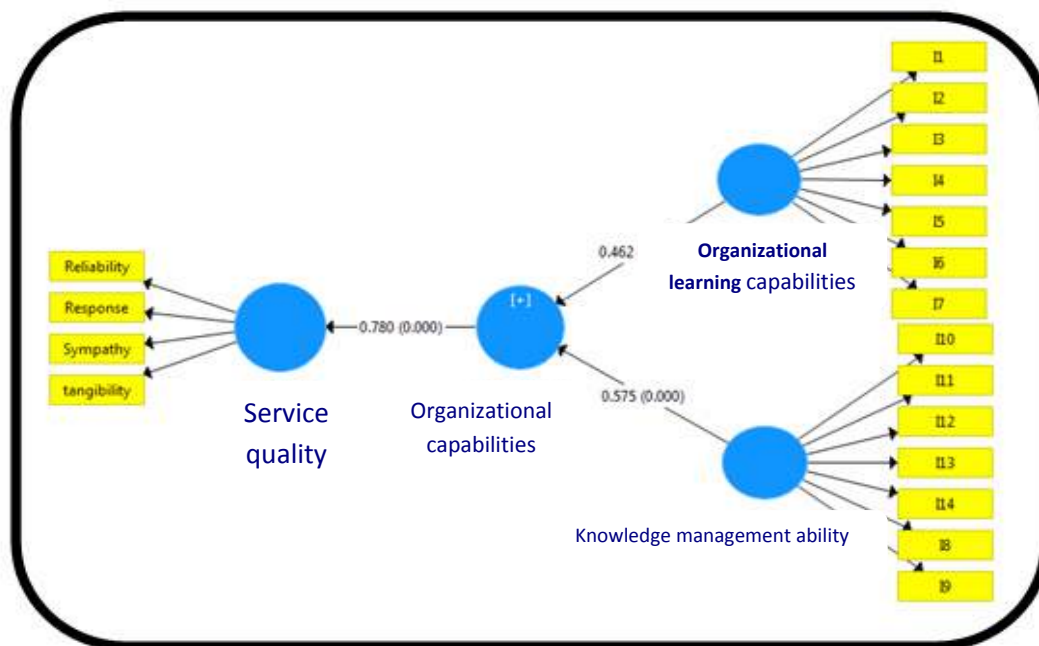
According to figure(3) it has illustrated that service quality dimensions items consisted of four branched dimensions( tangibility, credibility, response and sympathy) all achieved accepted saturation ratios depended on (P-value) ratios which achieved less ratios than (0.05)



### 3.3: Hypothes Testing

The multiple regression analysis is used in special tests to identify influence( the organizational capabilities dimensions) in service quality), also depended(Beta coefficient) and to know the anticipated variable of the independent variable( the organizational Capabilities) in the subordinate variable( service quality) The research is depended on significance level(0.05) and considered influences of significance indication if the level of the calculated significance level is less than the depended significance level and vice versa, and two hypotheses are stipulated to test the relation between the research variables as follows:-

**A. Test of the main hypotheses:** this hypothesis stated there existed positive influence relation of statistical significance of the organizational capabilities in service quality, and figure(4) illustrates (Beta) influence results and table(3) illustrates tests of influence relation.



**Figure(4) illustrated influence of the organizational capabilities in service quality**

**Resource:** prepared by the researcher depended SMART PLS outputs

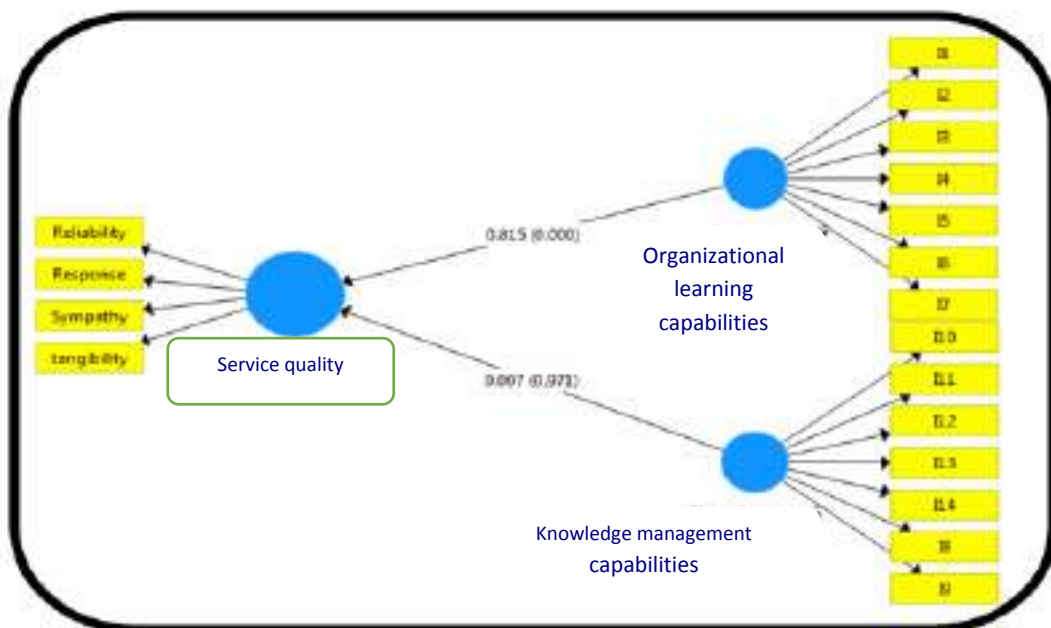
**Table (3) coefficient of the organizational influence relations in service quality**

Independent variable	Subordinated variable	Influence coefficient $\beta$	T value	Limitation coefficient 2	F value	Significance level
Organizational Capabilities	Service quality	0.78	0.61	0.61	93.38	0.000

**Resource:** prepared by the researcher depended SMART PLS outputs

Figure(4) and table(3) illustrates the organizational capabilities which are influenced on service quality of(78%) and significance level(0.000) and good limitation coefficient ratios (R 2)implies that the organizational capabilities interpreted(61%) of the occurred differentiation in service quality, according to acceptance of the hypothesis.

**B. Test of the sub-hypotheses:** after the test of the main hypothesis, then test of the branch hypotheses stated the existence of influence of the organizational learning capabilities and capabilities of knowledge administration in service quality which would be illustrated in figure(5)Beta influence results and table(4) illustrates the influence coefficient.

**Figure(5) illustrated influence of the organizational capabilities in service quality**

**Resource:** prepared by the researcher depended SMART PLS outputs



**Table(4) coefficients of influence relation of the organizational capabilities in service quality**

Independent variable	Service quality				
	Influence coefficient $\beta$	T value	Limitation coefficient 2	F value	Significance level
Organizational Capabilities	0.815	5.003	0.674	126.12	0.000
Knowledge administration capabilities					0,971

**Resource:** prepared by the researcher depended SMART PLS output

Figure(5) and table(4) here illustrated the organizational learning influence on service quality of(82%) and significance level(0.000) and the capabilities of knowledge administration influence on in service quality of ratio (1%) and significance level(0.971), and all( R 2) values are good implied that the organizational capabilities I service quality interpreted(67%) of the occurred differentiation in service quality, according to acceptance of the hypothesis at the organizational learning capabilities level and refused at the knowledge administration level in reference of what has explused earlier to following are the main conclusions

### Conclusions

1- After having knowledge management capabilities , got the first order which means that the office of the inspector-general has clear procedures to obtain knowledge from within the office or from experts outside it. Whereas individual learning capabilities came in second order , which means there is a lack of training and taking advantage of the previous experiences of the Office and the view.

2 - The results have shown that the staff of the office are very a to the auditors and are grateful to deal with and there is credibility, but still there is a clear weakness in the reliability that there are errors in transactions.

3 – it is have shown that any improvement in training or the appointment of staff with experience or increase administrative and technical skills will lead to improved quality of service.

4 - The results showed that the modification of procedures or routines followed, both in learning from previous experiences of the office or from the corresponding , increased technical skills and gain knowledge will improve the quality of service.

### Recommendations :

1. It is necessary to increase investment in all training fields according to the competence of the employee and increase the awareness of staff on





technical , new issues and increase skills continuously.

**2** - It is necessary to continue to draw up clear procedures and to support the office to access and gain new knowledge by the staff from within or outside and integrating of this knowledge and applying in all activities of the office.

**3** - More attention needs to be given to the provision of the necessary instruments means and necessary equipment in providing of the service, as well as work on the development of procedures or standards in transactions to reduce errors in dealing with references.

**4** - The procedures must be reviewed in the presentation of service because there is a need to determine the provision of service in a suitable time , the best quality , willingness and readiness of the to provide the best services.

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***The Impact of the Religious Factor on the Urban Growth  
of the Tourist Person in the Centers of the Holy cities  
(Holy Shrine of Imam Ali As A Model)***

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***Abstract***

The manifestations of human existence coincided in the concept of the sacred religious factor outside the physical framework of things which came through the diversity of the cognitive meanings of sacred symbols ranging from the deep sense of the past. Since creation the man tries to provide with the material and spiritual need of life needs that have affected his lifestyle.

It is one of the most prominent cultural aspects in the Arab cities, which were characterized by Islamic architecture and gave it its distinctive spirit, which was reflected in its cultural outputs, notably the city and the buildings of the Islamic cities and the manifestations of support for urban life in Islam, focusing on the settlement of the nomadic population in the centers of cities and stability which allowed Muslims to urbanization and stability Under the doctrine of a new religion is not a traditional process of settlement of the population, but settled on a new religious and urban foundations under the dissemination of the Islamic call and conquests carried out by the Islamic armies.

Planning is not only based on the economic situation and the physical aspects, but the Islamic city has been planning and building from the beginning to meet the desires of the human and satisfy his psychological, spiritual and material needs.

**Keywords :** Religious worker , Urban growth, tourist person, Holy City Center

**First: the problem of the research :** The lack of clarity of the religious factor in the urban growth of the tourist person in the center of the city of Najaf

**Second: hypothesis of research:** The main hypothesis of the research is the influence of the religious factor on the urban growth of Najaf city which can be established through the physical dimension

A -The influence of the religious factor in the physical dimension of the urban growth of the tourist person through its influence on the characteristics of urban formation of the city center



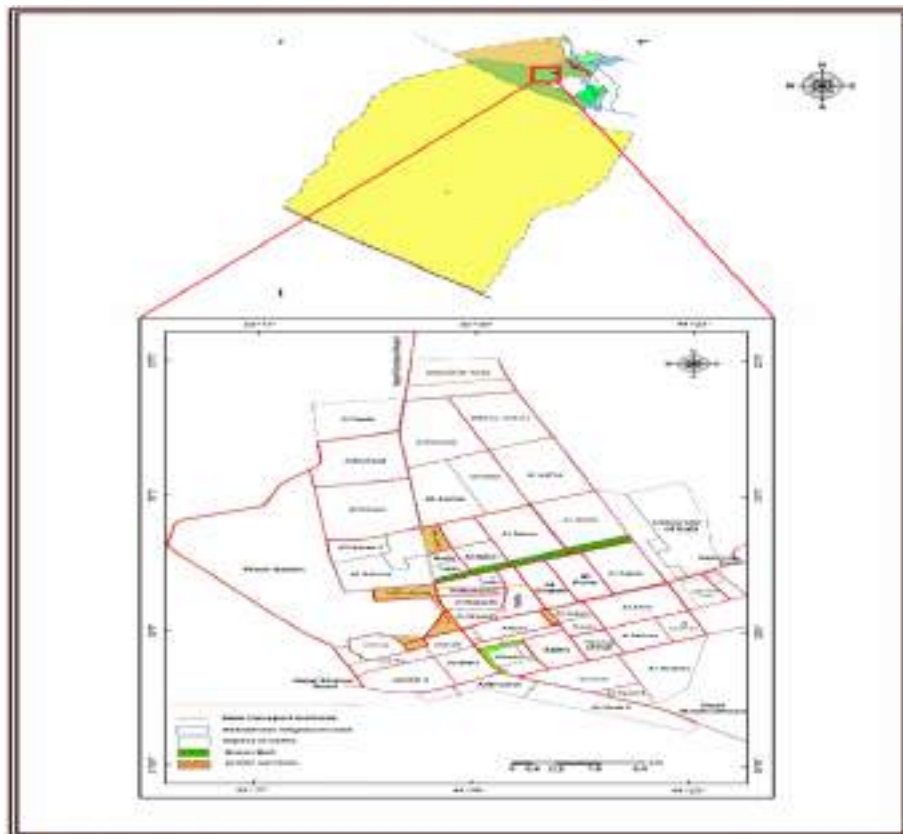
B - the influence of the religious factor in the physical dimension of the urban growth of the tourist person through its impact on the characteristics of urban blocks of the city center

**Third :The importance of research:** To determine the role of the religious factor in urban growth by identifying the material components of the religious tourism person..

**Fourth: The purpose of the research:** To demonstrate the importance of the reciprocal relationship between planning and spatial tourism. And how Sustainability through investment and the provision of their services and to highlight the role of the planning of tourism, including specially religious tourism and knowledge of their importance and linked it to city landmarks and give its cultural status in the past and present.

**Fifth :The boundaries of the research:** The spatial dimension is the administrative boundaries of the province of Najaf, which lies geographically in the southwestern part of the Republic of Iraq and extends between the widths (29.50 - 32.21) north and between longitudes (42.50-44.44 ) east. As on the map <sup>(1)</sup>

**Map(1) Najaf city center location**



**Source: Researcher based on: General Authority for Surveying, Topographic Maps of Najaf Governorate, scale 1: 100000, 2012**





## SiXth :Research concepts.

### Urban Growth A-

The increase in the area of human settlements in cities and villages at the expense of neighboring areas is represented by the factors of urbanization. The development of the city and the shape of the community health services and the development of morphological stages of the city, which begins with the stages of historical development and architectural variation and geometric shape and population increase, which was the beginning of human life for a Tourist signs are plastic elements that embody intellectual, spiritual, realistic or metaphysical symbols associated with the human being and its destiny. different period<sup>(1)</sup>

**B-The Mosque :** The religious factor is an indicator to the emergence of urban structures and forum of the political religious and cultural activities.

The mosque is the main source of the Islamic teachings and the forum of the ruler with the parish so it is crystallized around the natural formation of the city and is the center of cultural, social and political activities. The architectural features of the mosque and unity between The building and the sky formed the ends of the blocks, which were always avoiding the horizontal line cut off, which separates and does not connect the domes and contracts which reflect a vacuum concept that is homogeneous to the top to express something<sup>(2)</sup>.

**C- Sacred threshold :** It is a spiritual symbol which represents the religious values of the city because it is functional axis and schematic architecture, which controls all the events surrounding it and determines the nature of the land use and distribution,<sup>(3)</sup> It is considered the heart of the city that developed around it and the nucleus formative.to her and in the same context that the sacred shrine is characterized by steadily its central location in the city, so the cities of shrines are different from the rest of the other cities, the reasons of evolution, where it is not subject to geographical reason or economic or administrative like most cities, but determines its location depending on the position of the honorable tomb

**D -House of Muslims Ruler (The Governor )**, which represents in the Ruler's house in the city of the prophet (Medina)and it was adjacent to the prophet Mosque , which earned it great importance.

The Apostle adopted the establishment of the concept of the center of the Islamic city on the spatial link between the cultural and religious center which are represented by the mosque with the political center which is



represented by the House of the Apostle and that was taken by Muslims conquerors as model in the cities of conquests. As the mosque was adjacent to the palace of the caliphate and the houses of the rulers were later expressed power and political leadership and they were covered coordinated buildings, for example, Al Hamra palace which influenced in formations and coordinate the sites around it as the Description of Paradise in the Koran<sup>(4)</sup>

### **first topic**

The architectural design of the holy shrines in the Islamic cities.

**Firsty: the holy shrines**, which are limited in function and have a clear symbolism and are built as a mausoleum. The pattern of the building of the mausoleums has developed, according to many factors to turn into luxurious buildings with multiple spaces and huge entrances, overpriced in its decorations and ornamentation. This development has synchronized with the appearance of a new pattern of the architecture of the shrines that attached to the buildings of mosques and schools. In the late Islamic times the building of shrine reached its peak in the Islamic Orient countries, which became a clear expressionism of the signification of its basic function, and formed something resembling the graveyards surrounding the holy shrines. Islamic shrines can be divided architecturally into three basic patterns:

**1-The simple one-storied style:** of mausoleums is the primary pattern of Islamic shrines. It has a simple horizontal hometown shape (square, circle, polygon, astral) topped by a dome and a simple roof. It is built individually, regardless of the presence or absence of buildings that may have been erected at the time of construction or later. The shrine appears in the same shape as the tower covering the grave and attests to its existence, it may take a high form of form to denote and exaggerate the importance of the person and his place. The architecture of this type of shrines began from the first Islamic centuries and continued until the emergence of the Ottoman Empire and beyond. This type of mausoleum is often used with memorial shrines of a distinctive nature of semantic strength and symbolism, as well as in graves and royal tombs.

### **2-The pattern of multiple or multi-layered shrines**

The appearance of this type of mausoleum is characterized by increased interest in architecture and the appearance of two main types of composite pastures.

**A-First type** :Isn't different from the simple gravy but surrounded by an additional space around it called the hallway, and the shrine as a whole in



the form of a central, may be the level of the shrine higher than the level of the hallway to allow illumination and natural ventilation, and it may be added to the minarets or external walls.

**B-Second Type :** It is combined combining it with buildings of religious or worldly useful nature ,such as mosques or religious schools and that shall be a multi-functional complex. It is usually followed by the plan of the courtyard and the four awans, and this method was followed in the construction of the shrines in an attempt to legitimize the pattern of the shrines.<sup>(5)</sup>

**3-(Holy shrines)** This style is distinguished from its predecessors by boldness of expression and its strength. This type of architecture combines the buildings between the buildings of the shrine and the outer spaces in one combination, whose elements are integrated and interact in one architectural formation.

## **Secondly -Religious determinants Planning in the centers of Islamic cities**

**1-Pre-emption :** The jurisprudence of the Islamic religion gives the right to pre-empt the sale of land and property to relatives in the family and the term pre-emption is the principle of the partner's entitlement to acquire the share of his partner transferred from the hands of the transferred to him that is entitled to one of the partners in the property to buy priority property of the other partner, so pre-emption is one of the causes of property and the wisdom of them.

**2-The rule of no harm and no harming:** This rule of legitimacy left a large area of the population in the organization of their life matters among themselves while preventing the direct damage to the individual and the group and occupied the Prophet's Hadith (No harm and no harming ) a wide door in the jurisprudence of Islamic architecture and countless rules have affected this rule.

**3. The right of easement:** To explain how the network of roads and streets in Islamic cities is established, it is mentioned that the road belongs to the Muslim community, and therefore control over it is the right of passers-by or those who use it. Our legislation has made the removing of harmful things of the road as a charity and considered it to be one of the lowest levels of faith .Man, how this case, removes or prevents from attempted construction in the road ,where the pedestrians are users of the road is under their control, and because every inhabitant of the city is going through some ways more than others.



**Third -planning characteristics of Islamic architecture.** The Arab Islamic architecture is considered as a mirror of the civilized environment of the people of this age, whether in terms of social, cultural, natural or climatic, as it bears in its totality and details many of the architectural characteristics that are related to architecture in its different ages and can be summed up in the following aspects:

**1-The population participation in planning.** The planning of the Islamic cities based on the effective participation population in the city , where the social and cultural structure was taken. Each tribe or family took a particular position in the city line, leaving the possibility of growth and development for each one,<sup>(6)</sup> which is the neighborhood or the locality ,which be in their entirety the Arabian city and differs from each other in the area and therefore in the density of the population and if the general capacity is high density in which the locality consists of a number of houses inhabited mostly by residents belonging to one origin or have a close relationship and often the residential complex has a mosque and its own market has included some services, including public bath and public squares in which the celebrations and public events are held Where there is a social standard where harmony, rapprochement, cooperation and participation in good and bad as each inhabitant of the camp is a kind of social security guaranteed by the occupied time of need or adversity, and that the locality field criterion reflected on social cohesion as that Each individual knows the rest of the individuals and thus forms a kind of social control of the behavior of the individual and interferes in determining the pattern of human movement and dealing with others<sup>(7)</sup> The planning of the Islamic cities was natural and could be extended according to the general and special needs of the population, which intersects with the fundamental principles of engineering and analogy in other non-Muslim cities. This scheme has given way to all uses to grow for its inhabitants. The Muslims apparently adopted this field in all the cities they built or settled, even those built on the basis of ancient Western cities, turning that rigid creator into the demands of a new society and religion into a flexible development.<sup>(8)</sup>

**2-Human scale :** It represented in the Islamic house which has a special advantages, where the courtyard is the place of the family members to meet and gathering.

The House is a collection of the human standard and documents the family ties and does not differentiate. The house was mentioned in the Holy Quran in the sense of housing and safety. The elements of protecting the openings from the vision of the outside , were also





designed from the outside by means of suspended umbrellas and umbrellas .The yard is given as a postage in the housing unit.<sup>(9)</sup>

The required element of variation in the architectural and civilization bloc is integrated with the spaces of streets, alleys and public spaces. The city gave the continuous design and balance required between the closed, open, regular and irregular shadows by studying the sectors of streets and pavements and covering and reducing the openings. The city remains faithful to its aesthetic value .what distinguishes the Arabian city of the cities of the world is the mixing of housing in each locality to the level or layer of the population economically or socially, so the rich dwells side of the poor and that why the importance of the tribal role where the tribes are concentrated in one locality and this reduces the importance of Economic and class differences, as Islam never encourages the creation of a large variation class among the population so often the members of the camp, walk to the rich house where the Court is available and when considering laterally were mixed housing, but the scene is changing when looking plumb where attic housing folk in size and height, space and style of architecture is different. In spite of all these qualities, Arab Islamic architecture was characterized by simplicity and respect for the human scale. It was not an enormous scale, but through the extension of space and the connection with infinite space.<sup>(10)</sup> Respect for the Arab Islamic architecture of the human scale is not only meant by the formal measure and human proportions. Rather, the dream of man and his projections means the expression of human history, cultural civilization and belief.

**2-Openness to the inside** The open formation towards the interior is one of the characteristics of the Arab Islamic architecture. The shrine is the center of attraction, which takes care of the turn of all the elements and overlooking in all religious and worldly buildings ,vacuum is the starting point in the architectural configuration is characterized by special treatments in Islamic civilization The architects differed in Explanation of the reason for the use of the shrine as a fixed element in the Arab-Islamic architecture, where some of architects said that the social and environmental reasons are the engine idea of shrine where it achieved climate protection and maintains privacy for social reasons and urban space is divided into several areas with different rules and symbols show the border and the gradient between the public and private concepts and preferred to achieve the desired level and the interaction between the actors in different spaces, where the backyards emphasize life direction to the inside.

**A-The exposed interior space(courtyard):** that the houses of heritage in Najaf, like houses in other Iraqi cities characterized by the characteristics



of planning and construction of an architectural character and one is to replace the open inner courtyard, which is called the first place in the planning and the residential rooms and the rest of the facilities And the entrances and corridors to take its place around that arena and show the middle arena exposed in the forefront of design elements This is also considered one of the most important characteristics of housing construction in Islamic countries. The houses vary in size according to the different social classes of the people. The houses are usually from an open courtyard that starts with the guest boards and its facilities-are located at the front of the house and known as (Al-Barrani.), then came the rooms which are specified to the family members and it is surrounded the exposed interior space .The exposed space shape ranges between the square and rectangle .The central arena is exposed and hidden from view at the same time in addition to the role it plays in the distribution of natural light to the surrounding rooms and the large windows of these rooms on the central courtyard, which are in this case the interfaces of the first floor rooms and are required by the natural lighting and ventilation are usually tiling the floor of the arena The interior is exposed to the flat bricks known as "Al-Farashi" and isolates the housing from the street or the alley in such a structural configuration, which achieves within few spaces adequate facilities for multi-family housing<sup>(11)</sup>

**B- Al-Majaz (Refractory Entrance):** A distinctive feature of the heritage houses in Najaf is the well-known Refractory entrance (Al-Majaz) that connects the entrance or the door in the open inner courtyard. This is an Islamic innovation that appeared for the first time in the Emirate House in the city of Kufa, in 17AH (637AD) As well as in some of the houses in Samarra Abbasid and was aimed purely social purpose coincided with the Islamic tradition is to isolate the space of the inner arena exposed from the street or alley as well as moisturize the air through the penetration of Al-Majaz (Refractory Entrance)

**c - Iwan (Tarmah)** A key elements in the design of the Najaf House provide the so-called Iwan or (Al-Tarmah) which is a building has three walls and a roof and it's exposed with its front face which overlooking the open courtyard It is likely that the Iwan has been known in art of architecture in Iraq since ancient times in the north of Mosul and then emerged in the Islamic era, such as the emirate's headquarters in Kufa and the Shuaiba Palace near Basra and Al-Mansour Palace in Baghdad and Beirut Al-Akhaydir Palace, which dates back to the beginning of the Abbasid period .

**D-The Basement:**



The Najaf house is characterized by a place of comfort and stability called the basement and the family spend long hours in the hot summer days in it and it characterized by thick walls and low ground level from the ground floor of the house may reach a drop in some cases to twenty meters, which helps protect it from the extreme heat in the summer. A familiar phenomena in Najaf houses that some of the basements are connected to each other and this is the result of the deep family ties between the people of the city, in some houses there is more than one basement and the ventilation of the basement by small side openings are usually at the level of the floor of the inner courtyard. As well as from the door of the basement and the stairs leading to it. There are vertical channels for ventilation are holes inside the wall and the lens at the top of the surface. The air moves from the top through these openings to a low level in the floor of the basement, The water that sprinkles on the basement floor helps moisturizing the dry outside air.<sup>(12)</sup>

The surface of these openings is called the openings or the vertical channels, which are called locally Antenna or the pedicure. They are often built of domes and domes which are built of bricks and bricks and plaster. The ground floor is usually blurred with flat bricks, And it keeps the cold and humid by spraying it with water continuously. In the winter, the basements are used as a storehouse for the preservation of cereals and other grains.

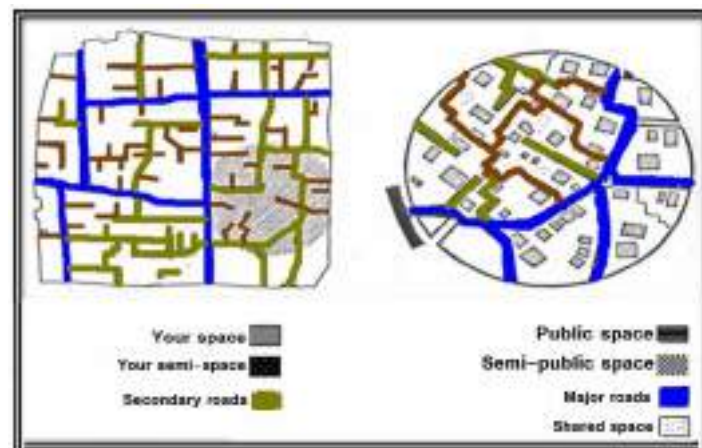
**Fourthly-urban fabric:** is a system of physical elements consisting of the network of roads, built space, free space. The location and response of these elements is known as the characteristics of urban space, which defines constant transformations and changes in the evolution of these elements over time. The interaction of a number of economic, architectural and social systems with each other, in order to create a coherent structure with a specificity. Thus, the urban fabric is a complex system that is governed by a set of reciprocal and interrelated relationships, in response to multiple needs and desires, the urban fabric takes its distinctive form through time and space. This reflects the fact that the movement of life and its variables are understood, which explains the high elasticity of the urban fabric produced by the interaction of these variables. The organic and harmonious organic tissue are the preferred fabric in the cities of the holy shrines in general and the Haidaric threshold in particular.<sup>(13)</sup> This urban fabric was due to the nature of the dry hot climate and the presence of the holy shrine which helped to knit the fabric in response to the desire of Muslims to live in the nearest holy point.

The presence of the shrine as the heart of the city has contributed to the creation of a circular urban fabric and became its center. This shape



that helped ensure the stability of the equal distances of all urban activities from the religious center, as well as its importance in forming a cohesive fabric. The religious considerations of the shrine have played an important role for the inhabitants of the Old City. As in Figure(1)

**Figure (1) pattern of interconnected urban fabric in the center of religious cities**



**Source: Researcher based on the: Doxiadis, Associates, General Approach to the cultural Islamic Arab Aspects in Design , technical , Report 3 , Athens, January 1986, p6**

The plan of the Arab-Islamic city reveals a basic system of society based on complete separation between men and women and achieving the privacy of the family. And life in general allows the participation of everyone in the economic and political life of the group at the same time and a semi-private or semi-public life allows the exercise of certain activities. This model stems from the religious reality through the affiliation of the population of the city and its ruler of Islam has reflected these concepts on the city architecturally and space and as in shape (2):<sup>(14)</sup>

**Shape (2) The Hierarchy of Spaces in the Islamic Cities.**



**Source: Researcher based on: Ministry of Housing and Construction, Design Maps Department Documents Section,**





## **Second topic**

### **The Historical and Geographical Characteristics of the City of Najaf**

**First-The Origin of The City:** the city's origins gained its historical and religious importance and emerged as one of the most famous Arab and Islamic civilization cities because of the shrine of Imam Ali bin Abi Talib (p) and so it had a cultural role in the history of Iraq and the Islamic world and was and still represents the center of intellectual, cultural, religious and cultural radiation and this historic city is a true example of the cities of holy shrines such as Karbala, Kadhimiya and Samarra where we find that the urban structure of this city has been affected by a large group of the spiritual values and principles that emerged directly from the Islamic civilization which are derived their spiritual influence from the Islamic religion and part of its physical composition from the heritage of historical civilizations that followed this pure land. It derived from it what suits it to highlight these spiritual values. Both time and space played an active role in shaping the urban fabric of the city. The values stemming from the Islamic religion became a comprehensive system of life in a specific social structure in a local urban form.

It was the visit of the shrine of Imam Ali Ibn Abi Talib (p) is the cause of the emergence and development of the city.<sup>(15)</sup> This place became the point of attraction for all Muslims. This city was only a small irregularly village and was in the form of miscellaneous houses around the shrine during the time of the Abbasid caliph Harun al-Rashid and it was (3000m) only, according to the historical sources. In 247 AH, the mausoleum and nearby houses were demolished to be rebuilt during the time of the victorious by Allah (Al-Montser) Caliph. Much attention was paid to the construction of the mausoleum. Since then, the architecture of the religious city closely followed and the city included a large urban movement such as restoration and reconstruction of the shrine, building and expanding mosques. In the time of the Caliph al-Nasser al-Din Allah al-Abbasi (575-622) and after the starting of the eighth century AH, Najaf was a developed city in terms of architecture and populated with the population and the houses of knowledge. Najaf, which replaced the Kufa became one of the mothers of Iraqi cities because of its distinctive religious and cultural character from the rest of cities. It is also has a reputation in the field of commercial and industrial activity, it is no less than the major cities such as Baghdad, Mosul and Basra.

The city of Najaf is located on the desert side of the Euphrates River,<sup>(16)</sup> southwest of the capital Baghdad 160 km away, between latitudes (31-32) and longitudinal lines (44-45) on a high hill bordered by



the south-west (Najaf sea ) And from the north and north-east cemetery (Valley of peace) On the west, Western Sahara lies about 10 kilometers to the west of Kufa and the Euphrates River and the city is a port of Berri as it represents a corridor between Iraq and Najed city in the pastime ,where were convoys of pilgrims trade passes from it and this land was known to the clerics on the day of the burial of the Imam on which the white smartness, three ribs known in Najaf until today called one (Mount Deek), which is located in the northern part of the grave, the second (Mount of Light) It is located to the south-east and the third is located in the south-west and called Mount of shareeshfan<sup>(17)</sup>

Najaf city and kufa city are sharing the historical heritage ,although there is a time difference in their establishment. The city of Kufah was established after the destruction of the Kingdom of Al-Hira, which was the capital of the state of Manatharah in the pre-Islamic era. Kufa became heir to confusion and was built from its stones. And then founded the city of Kufa, the city that occupied the status of the state and then the capital of the Islamic Caliphate and after the martyrdom of the Commander of the Faithful Imam Ali(p) built the city of Najaf in the back of Kufa and inherited its scientific and intellectual schools from the third century AH until the ninth century AD.

The geographical location of Najaf province shows the planing and architectural characteristics in size and the city shape of the humanitarian scale and the dominance of the holy shrine on the sky of the city .The urban fabric can be identified through the network of roads and the repetition of structural cells, in a coherent and cohesive form, without the buildings being independent and in harmony with the united, integrated and diverse fabric at the same time. And within the degree of religious privacy within the residential units and this illustrates the existence of the state of coexistence between the different classes of society and this is a realistic embodiment of Islamic values in the formation of the urban structure of the city. The residential locality gains human nature by the exact organic pattern of the movement network and its alleys Which are enhanced by the use of processors and architectural details that enhance privacy and promote the social and religious. philosophy of the population.

### **Second: The shrine of Imam Ali Ibn Abi Talib (peace be upon him).**

It includes the remains of the Imam of the Believers, Ali Ibn Abi Talib (p), also known as the Haidari Holy Garden. The center of the present city of Najaf is considered one of the most important religious shrines in Iraq. According to historical sources, Harun al-Rashid the -Abbasid was the first to order the construction of the tomb of Imam Ali. The construction



was prominent and preceded the construction of mosques and shrines in the second century AH (8th century AD) and mentioned that the construction was renewed in the Mughal era, as well as in the Safavid and Ottoman periods The existing building was done by the Shah safee Din's grandson Shah Abbas SafavidI .And was paving the dome and minarets with gold in the year (1156AH),and the year(170 AH) have considered the very beginning of the planning holy city of Najaf After the emergence of the holy shrine of Imam Ali and since this date the city of Najaf took the expansion of urban as new Islamic Civilized city .Muslims in all parts of the world seek to visit the holy shrine or to bury their dead people according to religious beliefs. The visit of the shrine and the transfer of the dead, to it by the Muslims was the reason for the place to become a pole of human attraction. Islamic groups and others who are followers of Imam Ali ,moved to it. <sup>(18)</sup>

### Third-The urban growth of the Najaf city

The architectural and civilization of the city of Najaf increased the number of residents living near the shrine of the Commander of the Faithful (p) (Ameer Al-moamneen Imam Ali)This section was witnessing the construction of the houses around it and burial near it without being planned by the Rulers and governors, as is the case in the planning of Arab Islamic cities in those ages, some courtyards have highlighted and others disappeared as a result of urban expansion through the walls of Najaf and Al-Haidari shrine remained the focal point for these courtyards to stand out ahead of the four parties located inside the fence. The urban planning of the city of Najaf has been characterized by the intensity of the houses that surrounded the shrine of Imam Ali (p). This is due to the solidity of the spiritual relationship between the residents and the holy shrine . The density of the houses increased wherever they approach it, while the most houses are intertwined and the paths and alleys leading to these dwellings They are often not straight and have zigzag shapes and may have blocked ends and no exits. And in the behavior of urban systems through the growth of cities that constitute them and follow three stages in their growth, namely:

#### 1-continuity

The process of growth and decay of cities is fundamentally different. The level of urban formal patterns of the city is slow and measured by taking the overall rate of change, but at the level of internal activities of the city, the change is rapid and large <sup>(19)</sup>



## 2-Transformations

As a result of continuity of growth by adding parts to the whole, there will be mistakes in the urban structures of the city. Another elevation to a higher urban level to fill the deficit is caused by the continued growth at one pace at a level that this change represents the critical limit of urban cells.

## 3- Emergence

Appearance depends on the size of the city and the time period in which it occurs is a relative phenomenon and evidenced by the changes that occur in the urban system, and over time becomes a gradual change to another level in the same urban system. The emergence plays a role in the formation of urban blocs through the law (sufficiency through the site), which depends on the support between the urban systems in a single urban bloc, where urban systems are linked with each other, and the problem of agglomeration of an urban neighborhood surrounded on all sides by other urban neighborhoods. When one urban system in a single urban bloc finds another adjacent arch in the opposite neighborhood, it will move towards it by extending kinetic links towards it, forming another urban bloc. In contrast, the group of urban systems in the old bloc cancels ties with the separated system. And that the prevailing area of these blocks and spaces create the so-called urban pattern, which is often called the fabric by distinguishing this fabric through the through the vaccination of building and spatial elements to give it the urban character, which is characterized as urban pattern, distinct from other patterns and these elements may be the main indicative points or gathering open spaces or other elements that are contributed in activating optical polarization points, and functional centers within this fabric.

The organizational axes of the theory of (mass – space) that the following organizational axes represent structural elements of the theory of mass - space in order to shed more light on the details of this theory, and what can be provided by the urban designer, namely:

- 1 - Patterns of urban form (patterns of relations between. Blocks and spaces within the urban fabric.
- 2- Patterns of urban masses .
- 3- Patterns of urban spaces
- 4- Positive space and negative space
- 5 - Space guidance .
- 6- Measure, proportionality and space sensitivity.





These three types of urban blocks, including the year are characterized by stability, such as public monuments and monuments, and some is semi-public / semi-private, and some of what is changing with time. These types of urban masses should be thought of as overlapping in design. The process of formulating the urban fabric in a coherent structure of mass and space relations also requires us to classify urban spaces and determine the degree of generality and specificity of those spaces in the structure of urban fabric

#### Fourth-The Engineering Dimension of Urban Design

The human scale of Arab Islamic architecture did not make it free of scientific logic and mathematical research. It contributed to laying the foundations of the basic mathematical basis for the establishment of the urban architecture (with geometric characteristics that accommodate the arts and styles).<sup>(20)</sup> The interest in space in the Arab Islamic architecture is reflected in the keenness of the architectural architect to create the engineering compatibility in the interior spaces on the three dimensions by choosing the dimensions and heights that are proportional to the sizes of the internal spaces on the three dimensions by choosing the dimensions and heights that are proportional to the sizes of the interior spaces and were The Arab Islamic architecture in harmony and balanced of its elements and scientific engineering with its mathematical and studied relations which made it balanced in harmony that this scientific system suitable for man applied to all buildings and various materials and techniques as a scientific base that benefited the whole society.

In this way, the Arab Islamic architecture achieved the balance between science and art. The geometric shapes and the proportions affected by the human scale carry visual aesthetic values which are carried out after the aspect of the meaning which is understood to take care of the form and its aesthetics resulting in the so-called independent form where it became a separated system which can be formed according to secondary systems and according to the common norms of time and place.<sup>(21)</sup>

#### third topic

#### **Analysis of The impact of the religious factor on the planning indicators of urban growth in the centers of the holy cities**

In this paper the engineering equations and design programs adopted in the analysis of physical data cities ,will be applied including the program (visual fortan) to study the pattern of urban growth at the micro level with the use of Excel.c 2010.In order to calculate the law (Zipf) to



compare the values of each , model is also used (Rank clcks) to measure the relationship between rank and size for each urban level, as well as the use of techniques (SPSS) advanced statistical program.<sup>(22)</sup>– For the purpose of identifying the variables necessary for the application of the mathematical model, the dynamics of the model require identifying the variables and classifying them into explanatory or independent variables represented by the factors associated with the urban elements which are supposed to influence the phenomenon In addition to the dependent variables, which are indicators of the phenomenon and its structure so that which are detailed in their definition the causal relationship between them caube understood<sup>(23)</sup>. On the details of the variables they are because we assumed through the main hypothesis of the research that the influence of the religious factor in urban growth through the physical dimension, which is the analysis of variables characteristics of the current formation Irrigation of the Holy Shrine.

The second secondary hypothesis is the influence of the religious factor on urban growth through the physical dimension.

### **Analysis of the variables of the characteristics of the urban formation of the Holy Shrine**

**First- Clarity:** The possibility of extrapolating systems at the mass and space<sup>(24)</sup> level depends on the physical form and patterns of effectiveness, and that awareness of physical forms (the main elements in the structure of the city) and types of activities must be complemented by the other, the unified skyline and buildings and achieve visual continuity<sup>(25)</sup> The city as a whole and its internal visibility a smaller scale contribute to the visibility of the image of the city as a whole and this variable(influence) can be achieved in context by the extent to which

the sacred buildings achieve guidance and inference Measuring the integrity of space asymmetry which is therelative asymmetry.A space that has a deep value(3)means that there is an intermediate space between this space and the basic space.

This indicator is related to the property of (symmetry, so as to indicate the relative depth of space or relative to the rest of the building spaces) This indicator is a comprehensive measure: values resulting from the equation  $RA = 2(MD-1)(K-2)$  are adjusted.

In order to balance the digital spaces between the systems that vary in the number of spaces significantly.The value of R.A for each space in the system is adjusted with its value from the intrinsic depth diagram, where the depth of the intrinsic shape represents an intermediate state between the maximum space depth rate when spaces are organized in a linear



sequence relative to the base space and the lowest rate when all spaces are directly correlated with Basic Space, The adjusted relative asymmetry, which represents the final value of the degree of integration, is calculated from the following equation

$RAA = RA / DK$  / RAA: modified relative asymmetry (degree of integration)

RA: degree of relative asymmetry

DK: relative degree of asymmetry of the base space from the intrinsic depth diagram

Spaces whose RAA values are less than (1) are integrated within the system and are at the highest integration when the RAA value is close to (0) while spaces with their RAA (1) or more are isolated within the system. A number of sacred sites are compared to measure the apparent results of the holy shrine.

**Table (2) The clarity of the space system for a group of holy sites in Najaf province**

	Name of Holy Shrine	Number Spaces	Number of central yards The President	Number of secondary central courtyards		Degree of clarity	Characterization of clarity
				Symmetrical	Asymmetrical		
1	Holy Top Threshold	63	8	0	0	0,683	high
2	Shrine of Muslim bin Aqeel	42	4	2	0	0,565	Average
3	Holy Mosque of Kufa	23	2	3	0	0,343	Weak
4	Alhananah Mosque	14	2	3	0	0,320	Weak

### Second: the emergence of the vertical height

The vertical height of the buildings means the height of the building, All the parts of the shrine, or the height of one of its prominent elements, which affect many aspects such as the functional aspect, which determines the functional linkage of the building and the ability to integrate the site with the surrounding context. Psychologically, it affects people's feelings about the site, in addition to its visual impact, which is very important in two directions. First, people feel the existence of the



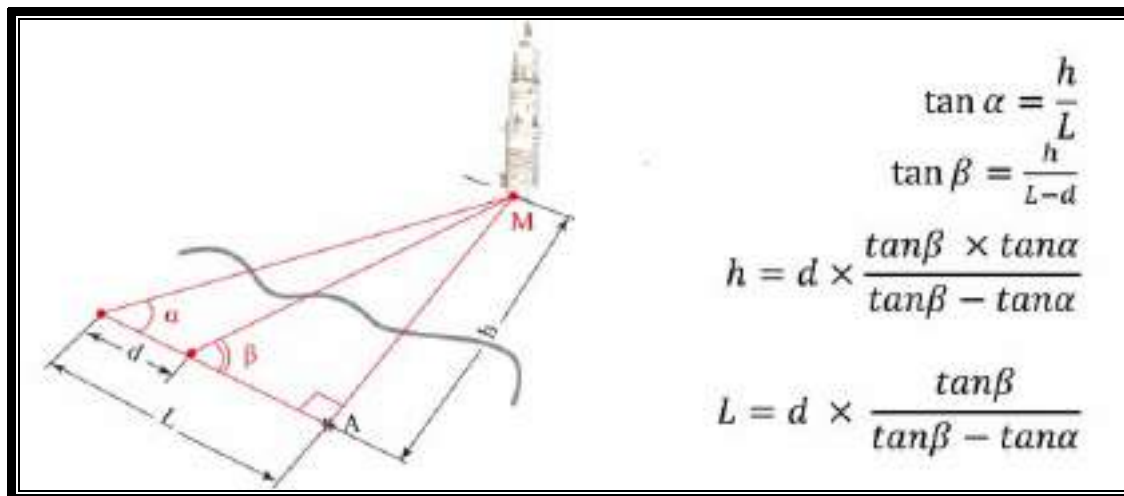
holy sites and knowing that they are a landmark in the fabric of the city. This variable can be measured in sacred sites by distinguishing the height of the sacred building or one of its elements from the surrounding context<sup>(26)</sup>. Through the formula

used to measure the vertical height of historical buildings ( $H = D - T$ ).  
Height - vertical height

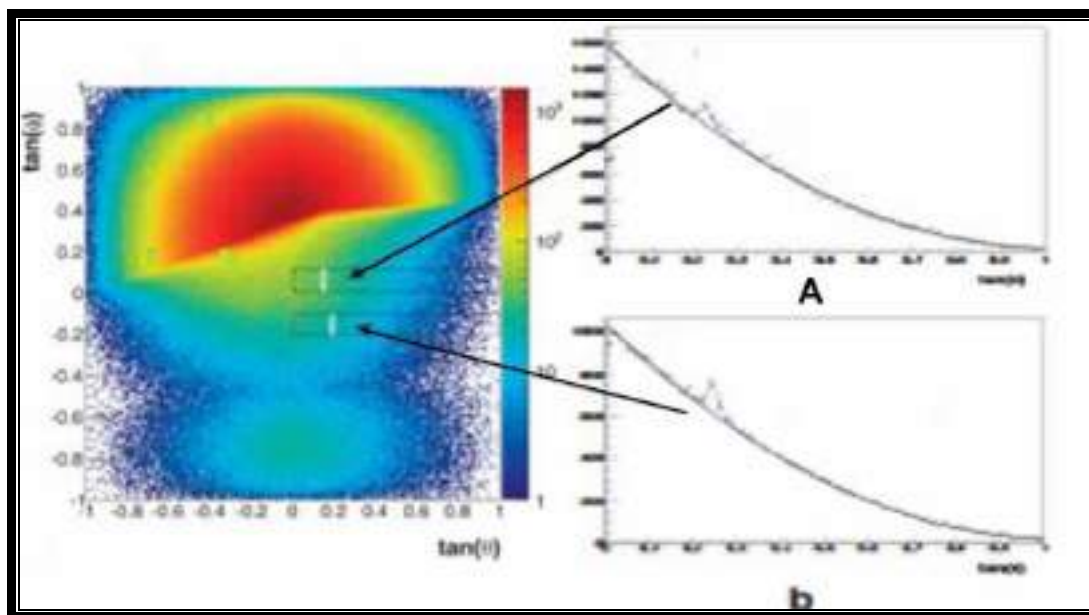
Dimension of construction base - Dimension of construction base

Tangent - corner shadow as in Figure (3)

**Figure (5) analysis of the vertical elevation angle of the holy shrines**



**Shape (1) Determination of the angle of the high person through the refractive radiation**



Source: Researcher based on the program ( Angle Meter PRO)

**Third: the integration of urban spaces**





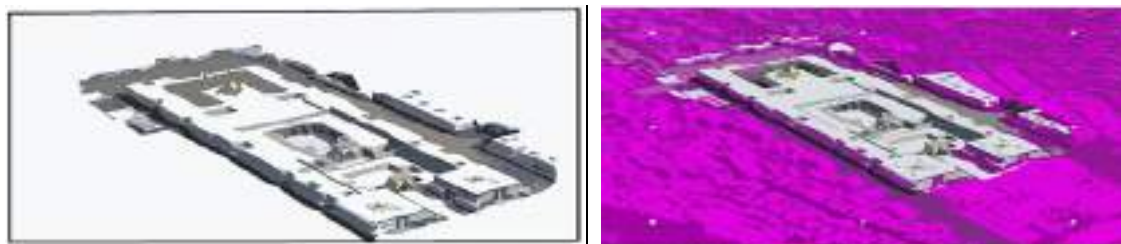
The urban space in the holy shrines is characterized by its regularity, graduality and great flow. It is the central nucleus of it to Achieving this depends on realizing the nature of human senses and spontaneous perception of what happens between them.

Spaces from the physical side may be independent entities of geometrical dimensions, but they are connected to an invisible dimension.<sup>(27)</sup> The main shrine space is one of the main spaces in the city, to which the movement flows in other assembly spaces leading to the entrances to the holy shrine.

The image of the city, especially the central area, can be likened to appear as a single mass in which spaces and paths appear as sculpted areas in this combined mass. functions of the urban fabric include changes in the behavior of urban systems.

They reflect the fact that internal changes are taking place at the urban level (through growth or interaction) of influential internal elements or influenced by external forces that generate some kind of spatial mobility (urban growth beyond city limits or Inside) which can be seen on the larger urban level, but it can be diagnosed by the interaction between man and space composition can not be seen as traditional engineering spaces permeate the building blocks but integrated urban formations that enter the depth of the general fabric of the city has cultural characteristics and met Consciousness associated with human spatial experience can be measured and analyzed the degree of impact of this factor by emptying the total engineering space of space, which is the urban area surrounding the sacred site, which is added to the partial space of the space represented by an urban space belonging to the holy site.<sup>(28)</sup>

**Figure (4) Total discharge of urban space**



**Source: Researcher based on the program( Rank clcks)**

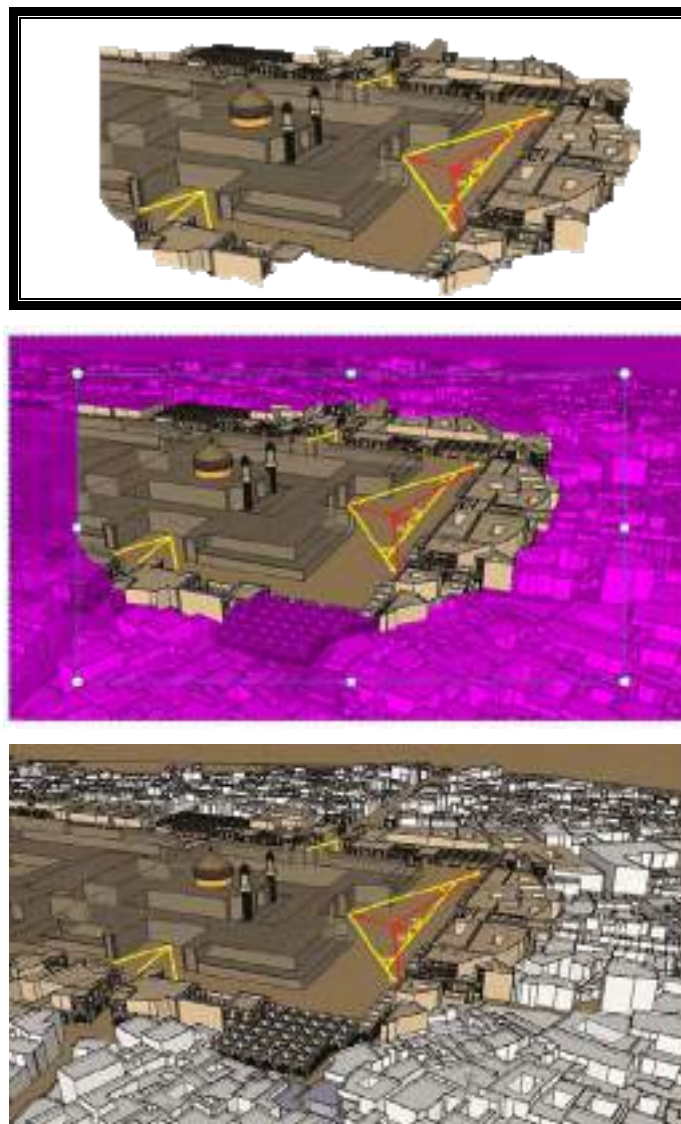
Figure (A) shows the urban area surrounding the sacred site, while (B) represents the partial space of an urban space belonging to the sacred site where the complementarity of urban spaces, The are shown elements of integration of urban space are as the Following:

### **1-The movement system**



The movement system in the cities of the holy shrines and especially in the central nucleus is characterized by dominance of the predecessor movement and focusing on the human scale. The antiseptic is the arteries that support the urban structure of the city in general and the region in particular. The system is characterized by high flow, sequential and gradual system, where the pathways of movement sequences of narrow paths to the wider paths and then pour on Paths for the main ways towards the holy shrine.<sup>(29)</sup> Then the path of the visitor directly to the center of the threshold cleared, and this moving factor easy to access the shrine Sharif smoothly and without facing any difficulties in movement.

**Figure (5) Angle of movement within the urban environment**



**Researcher source based on the program(Rank clicks )**

**2- Axial and directional :** This is an important term to define the contextual that can highlight the value of religious buildings and achieve a great psychological desire. This is represented in two types of urban



axis. The first, the optical axis, which represents the line of view extending from the religious shrine to the viewer and this axis is asubject to many conditions such as location (angle) for the part that is seen, whether static or moving and its impact reflected on the values of the environmental viewing and its relationship with it<sup>(30)</sup> while the second axis represents the second locomotive and represents a straight line between the two main points represent the beginning and end of a specific axis and ,axial flow can be measured in sacred projects by generating the sacred site of a visual, dynamic axis and there is no obvious axiality. The orientation of the holy shrine toward the Qibla has helped to find a hidden axis that affects the direction of the main streets intersecting with the shrine. The wide followed by the narrow alleys, which are connected by secondary roads, are followed by successive directions resulting from the accumulation of these successive spaces in the flow. By analyzing the distance between the spaces of the sacred site and determining the shortest path between them, the first half of the space is calculated with half of the last space and added to the sum of the total lengths of the interconnected space.

**3- Unity and diversity:** The unity in the planning index represents the openness towards the inside and the design closure from the outside and in the urban planning represents the method of expression in the repetition of the elements and methods of decoration and geometric decoration and colors and also find this element in the directionality as one of the characteristics of Islamic architecture,<sup>(31)</sup> where all Muslims go to the Holy House and this direction It means the achievement of unity of purpose, direction and religious character. The Islamic architecture is characterized by the use of conjugation within the general framework of unity and layout. This method was adopted for unification, conciliation and for psychological and religious desires. the concentration of a group of buildings rather than one single building. Most of the centers of the holy cities consist of connected groups of buildings that have been built at different periods of time and architectural designs that may look similar but are in fact quite different, Which gives each of them a distinctive character as the past model takes its technical value when it is diagnosed and compared with the present model. Urban diversity is a positive element in the urban environment and includes measuring the diversity of architectural elements and the diversity of relations by means of solidarity Between the blocks and the relation of the vertical and horizontal level of the holy

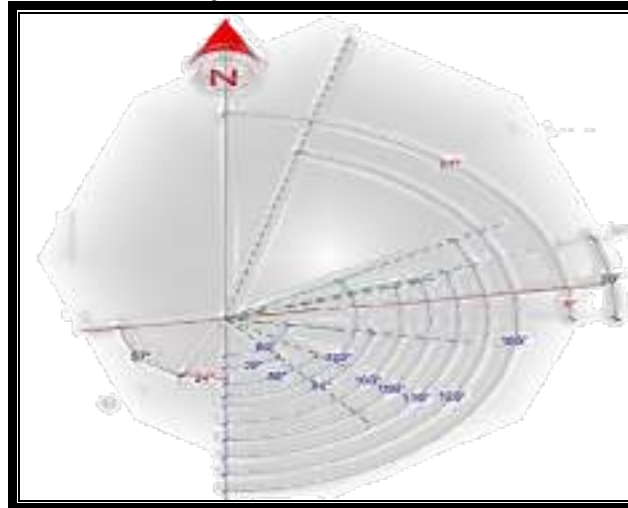
And this has had an impact on the multiplicity of patterns of Islamic architecture, where each region distinctly distinguish the opposite of the





specificity of time and place, such as the Umayyad, Abbasid, Fatimid and other styles, as explained in repetition and diversity in materials, colors and methods ,there is a diversity in viewing pictures and scenes. And the diversity in the division of surfaces and the installation of elements ,of different bodies represent part of the manifestations of philosophical harmony between the basic elements of Islamic architecture through the adoption of a unified system and format in.<sup>(32)</sup> As in Figure(6)

**Figure (6) Metric analysis of the axis (Metric measurement**



Source: Researcher based on the program

**Fourthly. Characteristics of urban blocks of the Holy Shrine.** Urban blocks are one of the most important elements in the urban space pattern by the relationship between them and the surrounding space. The nature of the relationship between the parts indicates the interaction between the moving element which is the , man ,and the social environment, where urban mass represents the material aspect of space. The form of urban space may be variable with the organization of the basic blocks while the relationship remains constant between the internal and external spaces, as the religious buildings, which include holy sites, are the most prominent characteristics of the urban blocs.

which are as follows:and switching between these patterns. Moreover, they are designed and planed through the process of juxtaposition of large and small patterns. It is the reciprocal relations of streets and blocks within the structure of the urban sector that give it its final form of assembly.

### 1 - Patterns of urban blocks

The types of urban blocks are divided into three main categories:.

- Public or institutional buildings
- The dominant area of urban blocks.





- The fabric of buildings adjacent to streets and squares.

**A-Public or institutional buildings :**It includes the public figures.This is the type of urban block that represents the distinctive character of the urban area and represents the city's memory.It represents The joint link between the past, the present and the future, and provides its services as central pieces within the fabric of the city.

These large buildings, often visually aware, need to occupy their position prominently in the open space to announce their presence on the one hand and to express their social or political importance on the other. These buildings often take free forms that are not associated with neighboring buildings or are attached to the blocks that make up the totals of the fabric structures. The front yards (public monument, institutions, and public figures), as well as the large entrances with huge stairs and open spaces surrounding these buildings, are all equally important as the buildings themselves. And the spaces that advance these buildings are working to unify and integrate them into the overall environment of the city and to form a coherent urban structure.

#### **B. The dominant area of urban blocks**

The size, style, and orientation of the urban block are the most important elements in the process of shaping the central public space.The area occupied by these urban blocks is regulated through repetition or pre-shaping of the parts, making up the specific pattern of use, such as residential, administrative and industrial use...Etc. Taking into account the dimensions of space, mass, and the third dimension of the pattern of each event. In general, the size, style and orientation of the urban block are rarely subject to change in urban development processes, but the constituent units of the block structure adjacent to the streets and squares are subject to change and development through the time component (representing the third group of urban blocks).

**c -The fabric of buildings adjacent to streets and squares:** The third group of urban blocks in the built environment is formed through the directivity or rims of the buildings, which are generally not repeated, and are subject to development and change over time. It takes special forms and often takes the shape or linear form.

These blocks can be structurally designed with a specific design intent, breaking the monotony of the dominant dominant area of the blocks on one hand, and then adapting to the front of the avenue or adapting to the circular shape or the arena on the other hand. These blocks (which together constitute the elements of the private sphere) can be designed to set the boundaries of the sector. It is also possible to surround the



monumental monuments and raise their value, as well as the definition of the central channels of the urban site as well as the framing of important places. These three types of urban blocs, including what is a year of stability, such as public figures and public monument, including what is semi-public semi-special, including what is special variable with time. These urban block patterns should be thought of as interrelated and related to design. The process of shaping the urban fabric in a coherent structure of mass and spatial relations also requires us to classify urban spaces and to determine the degree of generality and privacy of those spaces in the structure of the urban fabric. On the other hand, (urban blocks)

The nature of urban spaces depends on how the blocks are arranged and their outer boundaries adjacent to the spaces (such as buildings, and the group of adjacent urban blocks)

Structural patterns of street space form sectors, and the sum of those spaces creates the urban character that dominates and directs isolated and individual spaces.

Studies (mass-space) show that the overall urban form is only a process of union (or overlap) of the types of blocks and spaces, and in general, the form of relations between the masses and spaces is formed through Form and location of buildings Form and location of buildings

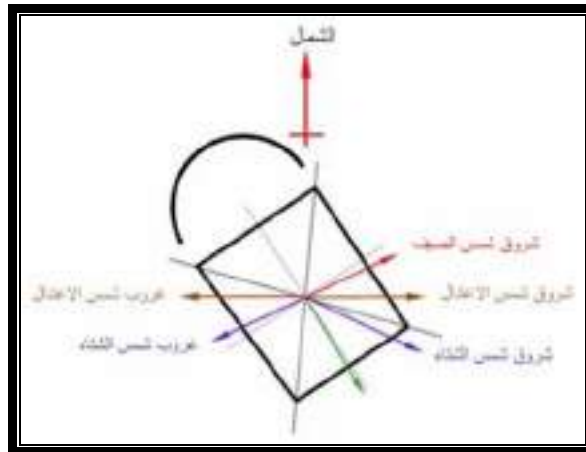
Design of adjacent site elements (afforestation, walls motion paths for the variable element)

In most cities they are built through overlapping, synthesis and switching between these patterns. Moreover, they are planned and designed through the process of juxtaposition between large and small patterns. It is the street-block interchange within the urban sector that gives it its final aggregate form, The main characteristics of urban blocks are as follows.

**1-Orientation Often the axially:** IT is linked to the orientation factor of the prominent site within the urban focus and the description of the holy shrines of the most important points in the urban context can analyze the data of the site and measure the ability of the holy site to regulate the movement of the variable element in its surroundings.



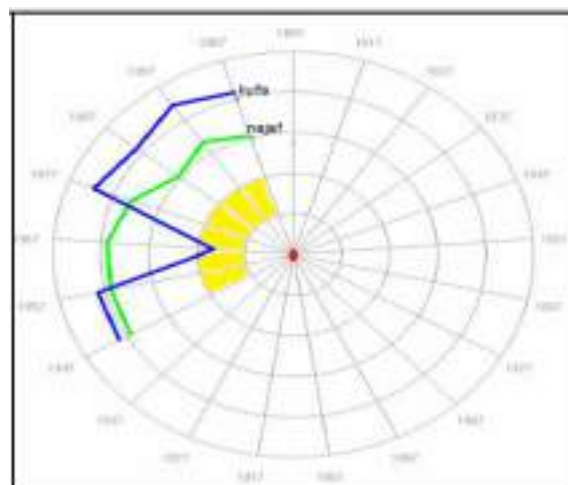
## shape (2) Geographical directions of the Holy Shrine



**2 – Centralism** :It is a contract or points in the center of holy cities which are directly related to sacred religious buildings as being central attractions that emphasize the importance of the building it embodies as a dominant element in the layout of the city's fabric. This confirms the role of religious buildings in shaping the urban structure<sup>(33)</sup> Centralism which can be seen as strategic targets for functional uses or for a specific physical character, The center of the forum starts from and to it, or it may appear as intersection points whenever they contribute to decisions to change the direction of movement within the city, this node becomes more important, the most established node in the mental images, which act as focal points for certain events in the city.

The sacred site is a central contract within its context and achieves secondary foci within the environment As in the shape (3)

**shape (3) The growth pattern of Najaf city center is shown in green and the center of Kufa city is blue**

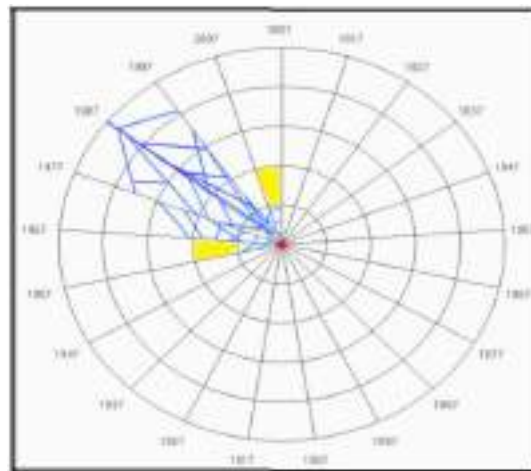


**Source: Researcher based on program rank-clocks**

While we take the status of the two cities on the level of urban growth



shape (4) The growth pattern of Najaf city shows the unilateral trend of urban growth at the micro level



Source: Researcher based on program rank-clocks

**3-The dominance of the holy shrine:** It is one of the most prominent characteristics of the sacred sites in general, which represents the emergence of an element in the urban environment on all the elements in terms of size and density and importance which can be measured this variable through the dominance of the sacred site by the volume of blocks by vertical height

The presence of the Sanctuary in the old city center has dominated all aspects of life in the city. The most important of which is the urban aspect and its impact on the city's spatial configuration. Where the open space in the shrine, known as the (front), is one of the largest open public spaces in the historic city.<sup>(34)</sup> Where the space sequence starts from the space of the central threshold towards the outskirts of the city and its borders, thus achieving clear dominance. And that the hegemony of the shrine stands out clearly in the great mass of the shrine, which dominates and overwhelms the other blocks of the city because it is the largest and biggest mass. In addition, the control of the shrine on the formation of the sky, The area of the Holy Shrine is more than (140) thousand  $m^2$  of the area of the old city, which amounts to (520) thousand  $m^2$  as shown in the picture.





## Map(2) The size of the urban mass of the Holy Shrine of the Old City



Source researcher depending on: Najaf Municipality Directorate, Urban Planning Department, Basic Design, 2018

The patterns of urban blocks can be inferred through the physical elements of them:

**A: Tracks:** IT means the corridors of movement that people are accustomed to use constantly, from which it is possible to see the physical elements of the shrine in the urban environment, which include passageways, streets and transportation lines, The angular analysis, is do net determine the range of paths the visitor favors for the holy shrine.

**1-Angular Rate :** This analysis is mainly based on the integration of Topological and Angular analysis but the most important modification is to take the general rate of the bonding angle between the spaces and axes of motion by collecting these angles and by direction, taking the absolute value of the angle of the alley and its direction towards the point of the target. The value of the output is the angular rate and is measured from the axis of the first trigger of the starting space and then the value of the angular angle of the angular rate is compared with the line between the starting point and the point of the target.

The path between point A and point B is with two works with an angle of (117) and the second at an angle of 45, Respectively. The optical axis is the connecting line between points A and D and an angle of 61 degrees from the starting area. Therefore, the angular rate is calculated as the following see in the figure (5)  $117 - 45 = 72$  the rate/  $72 - 61 = 11$

First path  $(104 + 75 + 30 + 19 + 30 + 170 + 90 + 90 + 42) / 9 =$

$650 / 9 = 72$  from East = 18 from North > 6 from Qibla shape (26)

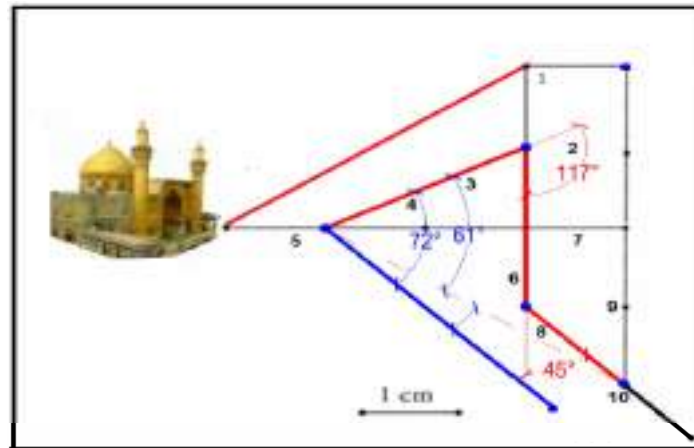
Second path



$$165+120+110+120+109+108+81+56+39+80)/10$$

$$988/10=99 \text{ from south / } 81 \text{ from North } >57 \text{ from}$$

### Shape (5) Geometric dimensions of the paths surrounding the Holy Shrine



**B– Rims:** The boundaries of design, whether continuous or interrupted, it is a dividing line between two areas, as it is not used by individuals such as tracks. For example, the edges of structural blocks

**C-Sectors:** A group of spaces and blocks, which is a unit of architecture characterized by special engineering and social distinction and know them from other sectors

**Figure (7) The emergence of sectors in architectural design**



**Holy Top Threshold, Engineering Design Department, 2018 : Source**

**D-Nodes:** The points that contain certain activities, as they represent the strategic places of the assembly points in the city. The intersection points of the city's traffic systems are the most important. Such as public squares, street intersections, or even crowded sections of public roads.

**E-Characterization:** These are visual points of visual character that are used by the viewer to highlight the composition of the city's general visual composition. Where landmarks, characters and buildings with privacy can



be visually distinguished from different distances and angles .In order to be able to highlight urban formation, the following characteristics must be presented

**1-Tourists public figure:**It works on the job attribution of public figure. the structure of the functional integration of the fabric with the public figure is achieved by rehabilitating the historic buildings of religious schools, libraries and residential buildings and its maintenance

**2- Employment of the tourist figure:** achieved through unloading (emptying the surrounding areas) and directing the fabric around the public figure , thus checking the discharge for the purpose of enhancing the religious function of the public figure as visitors come from everywhere for the purpose of visiting and reviving religious events.

### **3-Means of transport**

a- Use of separate roads for cars and pedestrians.

b-Use modern and environmentally friendly means of transport  
Development of bus waiting areas and distribution in several areas.

**4-Functional compatibility:** achieved through the use of traditional environmental treatments of the facades, which is represented in using Chenashil as well as using the style of openness to the inside using the traditional middle courtyard.

**5-Tourist Public figure :** The public figure is posing a spiritual symbolism and physical material represented in the spiritual sanctity and rituals of the visit and the revival of religious events, Materialism has been found in the central dominant position in the city, which caused the expansion of the city around the public figure as well as the size and height of it and the continuing importance of cultural and historical figures.

**6-The context surrounding the public figure:** The public figure imposes distinctive architectural details on the surrounding fabric in order to simulate the history of the person and the spirit of the person to create the integration and harmony between it and the surrounding fabric. This metaphor is through the brackets and materials of termination color and to show the importance of the person through the motor and visual axis and through the contemplation of stories.



## **Conclusions**

2-After analyzing the characteristics of the urban masses of the Holy Shrine, the following results were:

A-Figure (4) shows the ability of the holy site to regulate the movement of the changing elements in its surroundings in terms of directing all activities.

B-The results of the factor of centralization through the program (rank-clocks) that the holy shrine represents a central node within the context and achieve secondary foci within the ocean.

C-by measuring the actual area of the shrine blocks clearly shows the mass of the Holy Shrine, which dominates and dominates the other city blocks being the largest and largest mass. The area of the Holy Shrine is more than (140) thousand m<sup>2</sup> of the area of the old city, which (520) thousand m<sup>2</sup>

1-After analyzing the characteristics of the urban formation of the holy shrine, the following results were:

A-The results of the clarity factor after applying the integration of spaces to the equation of relative symmetry on the degree (0.668) and a high-definition characterization of the holy shrine

B-The vertical elevation factor of the shrine was the highest in terms of the surrounding context

C-The analysis of the kinetic system factor (flow) through the equation of the Nook has obtained this factor.

## **Recommendations**

1. To monitor the status of changes within the components of the fabric and to formalize and understand the factors and elements that cause them and deal with them on the basis of the strength of the impact of factors affecting change so that the concerned authorities can imagine the current situation and the proper methodology to deal with it.

2-The formation of a higher planning committee in the city to undertake the necessary solutions to the situation of random change of urban fabric and the enactment of the necessary laws in cooperation with the local legislative authorities to carry out tasks to reduce the excesses of fabric functions and avoid the urban problems resulting from them

3-To activate the policies of urban land management to prevent speculative real estate and thus reduce the change in the function of land uses under competition and invasion and others ,The uses of urban land in





the city should be as a red line and difficult to overtake and change, as happened in the case of the city of Najaf.

**4-**The development of population policies for the province of Najaf determine the population sizes of the cities of the province, especially the city of Najaf, which has a large population polarization and thus will facilitate the subject of identifying the rates of population growth of the city and control the increase of the population and the impact on the changing functions of urban fabric.

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*Measuring the Challenges of Quality Education in Private Universities  
Case study in AL-Hadbaa University\Mosul*

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## **Abstract**

In the recent years, education in Iraq was heading to the private education, so many colleges and universities were established in different cities. According to that, the students started to prefer the best university that has facility in procedure and that effects on education in Iraq.

This study aims to find the quality of education in private universities, and how the private universities effect on the education.

The information has been gathered using questionnaire survey among the employees and teaching staffs of (AL-Hadbaa University), 40 questionnaires have been obtained out of 45 respondents, and data have been collected and analyzed. After data analyzing, significant results of both dependent and independent variables have been gotten. Thus, we can find out the idea of the effecting of challenge of educational quality in private universities.

## **1. Introduction:**

### **1.1 Research Problem:**

The problem of the research is to identify how the university deals with the challenge of quality education. Therefore, the research problem is: how the challenge of quality education affects in private universities?

### **1.2 Objectives and Procedure:**

- 1- To examine the relationship between the quality education in private university and the challenge.
- 2-To answer research's questions, test the hypothesis, show the value of the relationship between quality and educational outcomes.
- 3- To present a theoretical background of the quality education.

### **1.3 Research Hypotheses:**

According to the research problem and importance, this study specified the basic hypothesis as below:

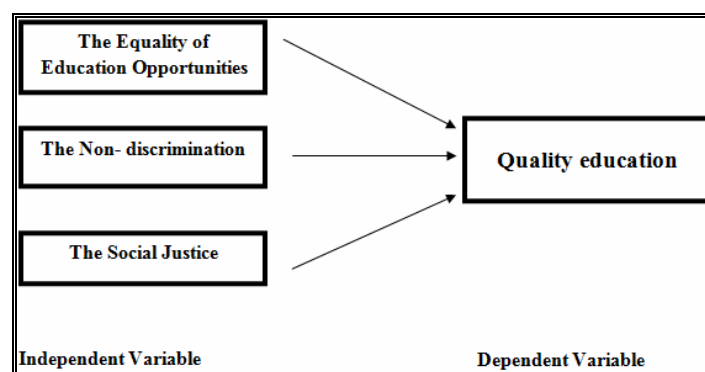


- 1: The Equality of education opportunities is affecting on Quality Education.
- 2: The Non- discrimination is affecting on Quality Education.
- 3: The Social justice is affecting on Quality Education.

#### 1.4 Research Methods:

This research uses qualitative approaches on both primary and secondary data by using (SPSS) program. The primary data were questionnaires obtained from employees and lecturers of the Universities, while the secondary data were collected from books, journals, and websites.

#### 1.5 Conceptual Framework:



## 2. Theoretical Background:

### 2.1 The Importance of Education

Many researchers wrote about investment in education, like (the World Bank, 1994) which focused on supporting this orientation to increase the quality of high education in the country. Psacharopoulos & Patrinos(2002), indicated that this sort of investment is small to be investing the capital, with a gap that there is no Migration between the micro and macro in education return. In 2015, UK Universities increased the investment in education to achieve high quality education and to compete with other foreign universities. While Hamalian & Sfeir (2017), mentioned that the government should involve the entrepreneurs in this kind of investment to achieve and increase support, continue, and benefit for all. Winthrop & other(2013) agreed with this kind of investment, because it helps for corporation between the stakeholders to improve the education in efficient and active way. Dolkart (2015) clarified that investment market in education provides many opportunities and in the same time improves the skills of people who looking for job.

According to Psacharopoulos (1995), the investment in education can be defined as a spending money during academic year while students still





in school, and use the benefits to improve the graduates lives. So, the World Bank (2012, 1) made a strategy for 2020 to improve learning in all countries; and to achieve that propose, the bank suggested three core objects:

- 1- Investing early : learning basic skill at a young age helps to keep these skills and information in life-time.
- 2- Investing smartly: it focuses on skills, learning, developing, and that why its results are more effective and useful than other investments.
- 3- Investing for all: this point focuses on girls and people who haven't educated in their childhood.

The reason behind the big interesting of education and learning in previous study and the World Bank study is the benefit of education and its impact for graduates to find jobs and works, and on their lives.

London Economics(2005,3) listed these benefits and divided them into five points:

**1-The benefit accruing to individual:** three benefits can be attained by the individual; First, people like to practice in markets to show their skills and to acquire a new skill; Second, people find more opportunities in life; Third, people who have high skills can make higher salary than others.

**2-Benefits for firms:** The firms can take moral benefits, they are called spillover effect which means that worker who don't have high skills can learn by imitation and developing himself from the other workers in firm.

**3-Benefits for the macro economy:** The effect of primary, secondary, and high level education on macro economy is very important, especially in developing countries, because it makes their student more skillful and helps to develop the country.

**4-Other externalities:** Sometimes, education makes an external effect that affected on people more than internal effect, one of these effects is called social cohesion, which means stable political situation and safely/secure environment for investment.

**5-Quality of education:** Quality is affecting on the education, Global Education Monitoring Report(2005,1), argued that quality has an impact on non-cognitive skills ,which means the managers not only depend on their skills in their work, but they also need honesty, reliability, determination and personal activity.

## 2.2 Investment in Education

Investment in education takes marketplace in business, because it is great opportunities and raised the growth of domestic economic, so there



are factors which make investors interested to this sector, some of these factors are (Nishith Desai Associates,2016,1):

1- **Expected Growth in the Market's Size:** many investors are interested in the education marketplace because the profits rise every year, and the main reason behind this interesting is increased turnout of the foreign investor on this kind of investment and the high profits achieved.

2- **Scalable Investment:** the limited ability of government for developing and modernizing education sector makes parents choosing private colleges and universities to provide good education for their children for what these places offering of modern models, tools, and services comparing with public sector.

3- **Migration to Quality:** the private sector focuses on the quality in education, thus the students prefer high quality private education sector.

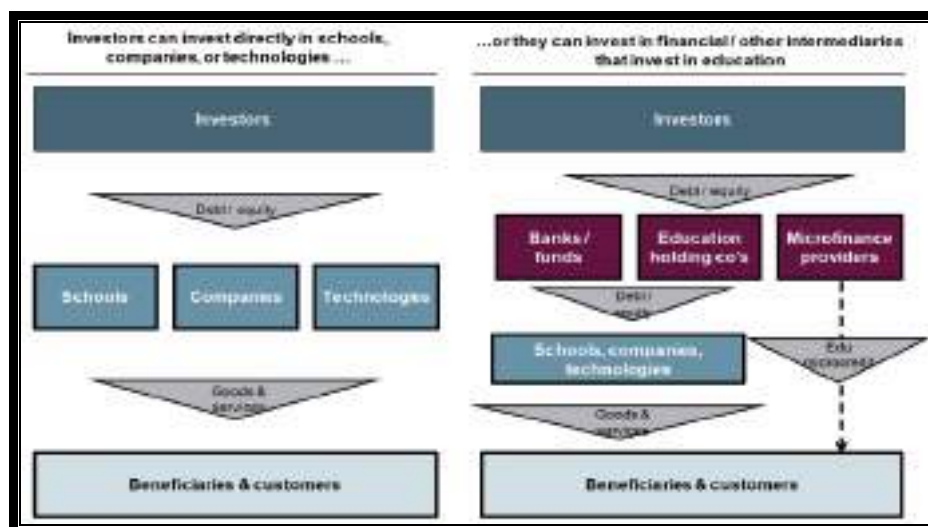
So, investment in education takes many shapes, it includes thus technology, people, service, and infrastructure. According to(D. Capital partner company,2013,15) there are four types of investment in education:

1-**School infrastructure investments:** this kind of investment is the most famous kind, because it is easy in building, an improvement, and measuring the results. It needs some programs and supporting from humanitarian organizations.

2-**Investments in people:** this investment focuses on student loan programs, training programs for teachers, and career training. All investments in these subjects are helping the developing countries.

3-**Investments in technology and services models:** it includes education program, e-learning like YouTube, this leads to reduce the cost of education and lets everyone studying from far place with less cost.

4-**Educational ecosystem:** the goal of this kind of investment is to make sure providing support for educational sector through rating program and support broader ecosystem to improve public education. And about how to use these kinds of investment in a useful way, (D. Capital partner company) mentioned two types of channels as shown in the figure:



Figure(1) : investment channels in the educational sector

Source: D. Capital partner company, 2013, Impact Investing in Education: An Overview of the Current Landscape, p16.

According to the figure(1) above, the investors can take two ways for investment depending on how much the profit they want, and to which level of risk they can take. First channel is taken when the investor decides direct investment with any partners in the investment project, but the risks are high. Second channel is taken when the investor decides to not take high risk and accepts partners to reduce the impact on the quality education.

### 2.3 The Challenge Factors

According to Moumné & Saudemont (2015), there are challenge effects of private education which impact on the teaching process:

1- **Equality of education opportunities:** the private universities put high fees with no control or order or rule from the government decides how much the fee is, and that makes many students can't go to this university, or buy the books from different and unsupported sources.

2- **Non- discrimination:**

The private university creates differentiation between the students in terms of material and social levels, and this leads to appear different levels of students in university.

3- **Social justice:**

The privatization affects badly in the education, there is clear distinction is made by the administration of private universities for the students who don't have any relationship with anyone inside the university.



### 3. Data collection and Analysis

#### 3.1 Data collection:

The research was undertaken among random sample of staff in private university. The primary data were collected from questionnaires which distributed on employees and lecturers. 45 questionnaires have been distributed, 40 were obtained only. An examination of the relationship between education Quality and private university were based on three factors, and five items were used (strong agree, agree, disagree, natural disagree, strong disagree).

Convenience sampling had been applied with various analytical tools such as regression analysis is applied to test the proposed hypotheses using SPSS and Excel.

#### 3.2 Data Analysis:

Findings of respondents profiles are illustrated in table(1)below which shows the Demographical Data.

**Table (1) Demographical Data**

Factors	Factors	Percentage
Gender	Male	88%
	Female	12%
Age	Below 25	2%
	26 – 35	26%
	36-46	45%
	Above 46	27%
Education	Bachelor Degree	22%
	Master Degree	56%
	Doctorate Degree	22%

Source: by researcher

#### 3.3 Multiple Regressions:

These research studies summarize the regression analysis results in table (4) below:

**Table (2) Regression Analysis Result**

R Square	0.583
Significant value	0.041

Source: by Researchers

In order to check dependency of quality education on perception, multiple regression analysis was done. ( $R^2 = 0.583$ ), this suggests that 58% of the variance factors can be explained. The significant value is (0.041),so the first hypothesis is supported. It means 59% change occurring in dependent variable due to independent variable.



**Table (3) Correlation Analysis Result**

In depended Variable	Measuring Factors
Dependent	
Customer Satisfaction	0.567*

\*p &lt; (0.05)

n=100

In order to check dependency of customer satisfaction on perception, multiple regression analysis was done. ( $R^s=0.567$ ), this suggests that of the variance of factors can be explained.

**Table (4) Coefficients (a)**

Standardized coefficient	Beta	P
The Equality of education opportunities	0.254	.039*
The Non- discrimination	0.017	.058 <sup>N.S</sup>
The Social justice	0.188	.041*

Source: created by Researchers

\*P&lt;0.05

N.S= Not Significant

**Dependent Variable:**

Coefficient values indicate if independent variable is increased by one unit dependent variable shall change by reported value.

Beta indicates that when (Beta = 0.254) of the equality of education opportunities is significant and positive, it supports hypothesis 1, when (Beta = 0.017) of the non- discrimination is not significant and negative, it does not support hypothesis 2, and when (Beta = 0.188) of the social justice is significant and positive, it supports hypothesis 3.

**4.Conclusion**

- 1- The private education has many advantages in students' teaching, because it offers many choices for them.
- 2- The private education reduces the pressure of high number of students in the state universities.
- 3- The quality education in private university offers opportunities for students to learn from lecturers of different countries.
- 4- It offers many opportunities for the master degree graduates to teach and get experience.
- 5- In the equality of education opportunities in private university, the fees are programmed to be paid in three or four premiums in the study year, so there is no problem with the students in this matter.



- 6- In the non- discrimination, the university has problem with dealing the students, because some students affect in the community as reflection of his father, relevant job, or function. Therefore, the lecturers and the board of university treat them in better way differ from other students in marks, exams or absence in lectures.
- 7- In the social justice, according to the result, the universities have strict laws in this subject, there is no different dealings between normal students and the students having relationship with lecturers or with any person in the university board, they are all equal in the exams and absence in lectures .

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# Accounting Research







## *Fair value Accounting between the Advocacy and Opposition*

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### **Abstract**

The conceptual framework of the financial reporting for 2018 clearly indicates fair value as one of the alternatives to the accounting measurement in paragraphs (6-12) and from (12-16) as one of the foundations of the accounting measurement. The increased interest in fair value is due to the unrelenting efforts that coincided with the efforts of (IASB) International Accounting Standard Board and (FASB) Financial Accounting Standard Board through joint action to issue standards, interpretations and clarifications regarding fair value measurement. Through the adoption of (IASB) the standard issued by (FASB) No. (157) in 2006 regarding the fair value as a draft for discussion in 2009, the approaches adopted in the measurement of financial and non-financial assets and liabilities were discussed. These discussions sought to focus on the importance of adopting the fair value because of the information it provides to stakeholders, so that accountants reach a convergence in the issuance of IFRS13 (fair value measurement) in 2011. However, there are conflicting professional and academic attitudes and research trends regarding the adoption of fair value. The article aims to review the two directions of analysis, interpretation and criticism by reviewing some of the studies that are concerned with the topic. The results show that the fair value is an important measurement basis that matches the requirements of stakeholders.

**Keywords-** Fair Value, Fair value accounting, FASB, Financial reporting, IFRS.

### **1. Introduction**

The adoption of fair value as a method of accounting measurement will lead to fundamental changes in the environment of accounting practices, and accordingly, the controversy has increased regarding adoption and adoption. As well as the controversy between supporters of fair value as it is more appropriate to make decisions and opponents who link the fair value and financial crises and profit management. Besides,



the problem of measuring the fair value of non-financial assets, the difficulty of verifying prices, and incurring high costs to achieve this are emerging. Accordingly, the article will be reviewed through two aspects, the first aspects includes the trend in favor of adopting the fair value, while the second aspect represents the tendency opposing the adoption of the fair value. Finally, the most important conclusions and recommendations for future research are reviewed.

## 2. Literature Review

### 2.1 Advocacy of fair value in accounting measurement

In the direction of advocacy of fair value, many studies believe that fair value information is more relevant for making decisions compared to what historical costs provide. Alexander, Bonaci, and Mustata (2012) tested the adoption of fair value in the financial reports of Romanian companies, so the research found that the adoption of fair value is best suited to its approval in the active market. Moreover, the inactive markets when adopting the fair value present practical problems because they rely on models of measurement based on personal judgment. We believe that this is not a criticism, given that the measurement in accounting has an aspect that depends on personal judgment. The figures in accounting are not with real numbers that must be taken as they are. With regard to the validity of the term fair value as being fair and do they deserve to be framed with justice, Sundgren (2013) reviews both the opposing and pro-fair approaches to conclude that the fair value is a fair right if it is accompanied by high-quality terms of reference because it provides important information to stakeholders. For example, investors who can predict the ability of the economic unit to generate cash flows from assets as well as provide indicators of importance regarding the uncertainty accompanying future cash flows. Numerous studies have demonstrated the benefits and benefits associated with adopting fair value such as (Laux & Leuz, 2009), (Caskey & Hughes, 2011), (Badia, Duro, Penalva, & Ryan, 2017), (Badia et al., 2017), (Diana, 2015), (Collins & Dent, 1979), (Marsh & Fischer, 2013). Fair value is more appropriate to the needs of users of financial reporting and is reflected in decision making. In addition, it provides transparency in financial reports, increases their confidence in financial reports, and assists financial analysts by providing the information necessary to calculate ratios and indicators. Taking into account the purchasing power of the monetary unit when measuring at fair value gives better indicators of the true value of the economic unit because it is directly related to the concept of maintaining the in-kind capital of economic units and leads to a reduction in agency costs.



## 2.2 Opposition of fair value in accounting measurement

The opposite research trends and opposition to the application of fair value have linked the application of fair value to the global financial crisis. Many are against the application of fair value accounting standards because the application of fair value accounting, as they justify, contributes to unjustified amplification of real estate values. Consequently, it exaggerates the mortgage loans granted by the banks that led to the financial crisis. The response to this trend came from the US Securities Regulatory and Trading Commission that the fair value was not the cause of the crisis and attributed the reason to the incorrect conditions that accompanied the granting of loans. In October 2008, the US Congress asked the US Securities Regulatory and Trading Commission to discover if fair value was the cause of the financial crisis. Accordingly, it undertook exploratory procedures, which consisted of examining a sample of 55 financial institutions that had achieved financial failure. They concluded that fair value accounting was not the main or root cause of the financial crisis, given that the banks that failed had a small number of assets affected by fair value losses. In addition, the study concluded that the US Congress took incorrect measures regarding the request of the Financial Accounting Standards Board to suspend the application of SFAS No. (157), Fair Value Measurements .

Palea and Maino (2013) examine whether the fair value can easily generate tampering by opportunistic managers and that the accounting measurement and disclosure according to the fair value has generated additional accounting problems. The clearest evidence of this is the collapse of Enron, which relied on estimates for the second and third levels of the fair value hierarchies. We believe that other valuation methods other than fair value can check errors and reflected on the financial reports. The changes in the value of assets are the result of fluctuations in asset prices in the economic environment and cannot be attributed to accountability. Moreover, the estimate or personal judgment is accompanied by error as a result of reliance on probability. In another direction, the following question may come to mind:

Is the fair value in the financial reports as an appropriate accounting method for measurement in all environments to protect the investor and provide information?

Siekkinen (2016) He explained that the fair value is the best way to make decisions contrary to (historical cost) and that environments that have strong protection for the investor are characterized by a relationship between the relevance of accounting information and the quality of profits in financial reports. In these environments, there is strong



protection for the investor from the opportunistic behavior of managers in terms of fair value. Whereas in environments that give weak investor freedom, there are strong incentives for managers to take opportunistic behavior to increase their wealth at the expense of shareholders. Managers manipulate fair value estimates and accordingly result in the risk of accounting information. Moreover, in strong investor environments, corporate governance is restricted to the manipulative behavior of managers. It was concluded that the environments with strong protection for the investor are the best in applying fair value due to the high control accompanying the investor protection.

### 3. Conclusion

The conceptual framework for financial reporting for 2018 clearly affirms that fair value is one of the bases of accounting measurement after long periods of controversy, research and comments by professionals, academics and interested parties. The fair value is one of the methods of accounting measurement that has been criticized, the most prominent of which is that it has generated the public financial crisis. However, the companies that failed have had a small number of assets that were affected by the losses of the fair value, and accordingly, the fair value was not the main cause of the real estate financial crisis. In addition, valuation approaches other than fair value can make mistakes and this will be reflected in the financial reports. Changes in the value of assets are the result of fluctuations in asset prices in the economic environment and cannot be attributed to fair value. Moreover, judgment or personal judgment is accompanied by error as a result of dependence on probability. We believe that the fair value is appropriate for stakeholders in making decisions because it takes into account the purchasing value of the currency unit. On this basis, they invite authors to pay attention to research currents that test the adoption of fair value in different environments and the benefits derived from them. In addition, the need to pay attention to the Iraqi environment and to reflect the adoption of fair value therein in the accounting and auditing professions.

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*Factors Influencing Forensic Accounting services Awareness  
In Iraqi environment*

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**Abstract**

Forensic accounting considered as modern tools to address fraud and corruption crimes in countries that suffering from this phenomena. There are many services that Forensic Accounting provided. In Iraq there is low level of awareness related to Forensic accounting services. This study was a theoretical attempt to declare the factors that influence on Forensic Accounting Services Awareness (FASA). Current study found that there five factors which they are: Professional bodies, Accounting firms, Multimedia, Government, Education, these factors affected on FASA and they are suitable for the Iraqi environment.

**Keyword:** Forensic accounting, Professional bodies, Media, Government

**Introduction:**

Corruption has clearly become one of the most difficult issues faced governments around the world. Corruption as a concept includes many sub-concepts such as fraud, Embezzlement, Bribery, Negligence, Damaging state assets, Exceeded and Falsification (UN, 2013; Agator, 2013). According to report issued by Transparency International (2013), the level of corruption during the last 10 years became growing up in all Iraqi sectors, the report showed that Iraq was ranked 169 out of 175 countries in 2014 (Commission of Integrity, 2015) . The rapidly increasing in corruption, fraud and unclear financial reporting around the world during the last decades, put pressure on the governments and professional associations of accounting to find out a mechanism that can help in addressing this phenomenon, thus forensic accounting appeared. Forensic accounting (FA) can be explained as application of accounting skills and knowledge in circumstances that have legal consequences (Ng'ang'a, 2015).

Efiong (2013) highlighted the importance of forensic accounting; he claims that it should be covered by the educational institutions. He added that the high level of corruption and fraud effect on standard of living and the services that provide for Iraqi citizens.



Based on the above discussion, it is clear that there is an urgent need in Iraqi environment to find out a mechanism which is effective in mitigating corruption and fraud. Forensic Accounting considered as successful way that help the countries round the world in addressing this phenomenon (Jameel, 2012; Chi-Chi & Ebimobowei, 2012), but still there was a low level of awareness and knowledge about forensic accounting in Iraqi environment, This because factors that influence on forensic accounting awareness are not clear enough. This study considered as an attempt to carry out the factors that influence on forensic accounting awareness an Iraqi environment. The urgent need to embark on a major overhaul of the economic situation has motivated this research and it is hoped that the findings will help Iraqi government in addressing to the fraud.

## 2: Literature Review:

### 2.1 Forensic accounting Services Awareness (FASA):

From the previous study, it is clear by that Forensic Accounting appeared because the traditional accounting methods' inability to handle fraud cases around the world (Al-Jaleeli & Jameel, 2012; Jameel, 2012). Thus, there are many definitions of Forensic Accounting, for example, Zysman (2004) explain that forensic accounting as combination of accounting, auditing and investigative skills. while Crumbley (2001) Joshi (2003), and Mehta and Mathur (2007) defined Forensic Accounting as using the accounting concepts and practices in solving legal issues, also Jameel (2012) defined Forensic Accounting as Incorporation between all of the accounting, auditing experience, legal knowledge, skills and techniques of investigation and inquiry in the financial, commercial and economic issues. Hence, it is clear that Forensic Accounting is an information system which is tries to provide information about the business deals. Sharma (2015) revealed that there is a lake of awareness of forensic accounting.

#### 2.1.1 Type of Forensic Accounting Services

Forensic accounting provides many types of services, the big four Audit firms (i.e. Deloitte, Klynveld Peat Marwick Goerdeler (KPMG), Ernst & Young, and Pricewaterhouse Coopers (PWC) highlighted the various Forensic Accounting services. In table 1 below, there an explanation of these types of services.

**Table 1: Forensic Accounting Services Provided by the Big Four**

Individual Services	Total No. of Services
<b>Deloitte</b> 1- Fraud & financial investigations 2- Litigation support & expert witness 3- Computer forensic services & e-Discovery 4- Data analytics & data visualization 5- Anti-Money Laundering (AML) consulting and investigations 6- Anti-Money Laundering (AML) Check 7- Foreign Corrupt Practices Act (FCPA) investigations & consulting 8- Business intelligence services 9- Fraud risk management consulting 10- Whistle blowing services (Tip-offs Anonymous) 11- Fraud & investigation training 12- Forensic tools and technologies	12
<b>KPMG</b> 1- Fraud Investigation 2- Fraud Risk Management 3- Dispute Resolution Services 4- Forensic Technology Services 5- Corporate Intelligence 6- KPMG Ethics Line 7- K-Trace 8- FCPA (U.S Foreign Corrupt Practices Act)-related services	8
<b>Ernst &amp; Young</b> 1- Anti-Fraud 2- Corporate Compliance 3- Investigations & Disputes 4- Fraud and Investigations 5- Dispute Services 6- Forensic Technology & Discovery	6
<b>PricewaterhouseCoopers</b> 1- Economic Crime Risk Management 2- Forensic Investigation 3- Litigation Support 4- Computer Science 5- Regulatory compliance 6- Licensing Management Services	6

Source: Source: Muthusamy, (2011)

Muthusamy (2011) summarizes this wide view of forensic accounting services which are provided by the big four audit firms in Malaysia as illustrated in the following table:

**Table (2): Summary of Common FAS provided by the Big Four**

Common Services	Deloitte	KPMG	Ernst & Young	PwC
Fraud and Financial Investigation	√	√	√	√
Litigation support, expert witness and dispute resolution	√	√	√	√
Forensic technology	√	√	√	√
Fraud risk management	√	√	√	√
Regulatory compliance strategies	√	√	√	√
Business intelligence	√	√	X	√

Source: Muthusamy, (2011)





This show how fare there are an interesting in providing Forensic Accounting services even in Third World Countries which Malaysia is one of them.

## **2:2 Factors influences on awareness of Forensic Accounting Services**

Based on previous studies such as Muthusamy, Quaddus & Evans (2010) and Gicuki (2012) there are many factors influencing forensic accounting services awareness, the factors are as follows:

### **2:2:1 Professional Bodies:**

Professional bodies are defined as establishments that represent the concern of the qualified practitioners, and so act to maintain their own privileged and powerful position as a controlling body (Harvey, Mason, & Ward, 1995). A study conducted by Weaver, Trevino and Cochran (1999) claimed that there is a significant impact of professional associations on corporate ethics program. Similarly, Muthusamy (2010) confirms that professional associations have a positive impact on FASA.

### **2:2:2 Audit Firms:**

According to Muthusamy (2010) audit firms have a considerable impact on FASA because they are supplies of the planned service. Muthusamy (2011) declared that Forensic Accounting services is provided by the audit firms, thus, it highlights the role of audit firms in spreading the FASA because they are the vendor of this type of services.

### **2:2:4 Media**

According to Eschenbrenner, Nah, and Telaprolu (2015) “knowledge sharing,” “socialization and onboarding,” and “branding and marketing” are the most common forms of communication Researchers claimed that the issue of social media usage by accounting professional services firm is not explored yet. for example, Prokofieva (2015) and Du and Jiang (2014) considered the market efforts on social media that have been done by the accounting firms and media has a positive effect on marketing of services that provided by accounting firms, such as Forensic Accounting service. Yaseen, Kate and Adams (2015) revealed that in Jordan the media which is contained all types of media (Social media and mainstream) have a positive effect on rising awareness. This is supported by Hajli (2012) and Hajli, Bugshan and Kalantari (2012). Form the above discussion it's clear that there are a big support to include the media as one of the main factors in this study.

### **2:2:5 Government Legislations**

In general, a government has the right and power to enforce the others to follow the rules and legislations. This shows how government is the



most powerful factor in this framework. In Iraq, the government is the only executive authority entitled to enact legislations on accounting and financial related issues. Muthusamy (2010) argued the government plays a vital role in awareness of Forensic Accounting services. Yaseen et.al (2015) confirmed that governments' role is vital in increasing citizens' awareness and setting laws. In other words, Joel (2013)

### 2:2:6 Accounting Education

Jameel (2012) revealed that Iraq education considered as a key factor in accountants' perception on Forensic Accounting. Furthermore, the result of zadeh and Ramazani (2012) study found low level of Iranian accountants' perception of forensic accounting methods. This reflects the importance of education in creating the awareness of perception. This viewpoint has been supported by Joel (2013), in a nutshell education plays a key role in awareness of perception. In a study conducted in India revealed that there is a lack of forensic accounting education (Sharma, 2015). The results of the Indian study confirmed that education as external factor that would positively influence awareness in forensic accounting (ibid).

Finally, in this section the researcher discussed the factors that influence on FASA, next section the discussion will be centered on framework and hypotheses of this research.

### 3. Hierarchy of Effects Theory:

The Hierarchy of Effects Model (HOE) explains that users go through a series of progressive steps that culminates in obtaining a product or services. This model has three stages:

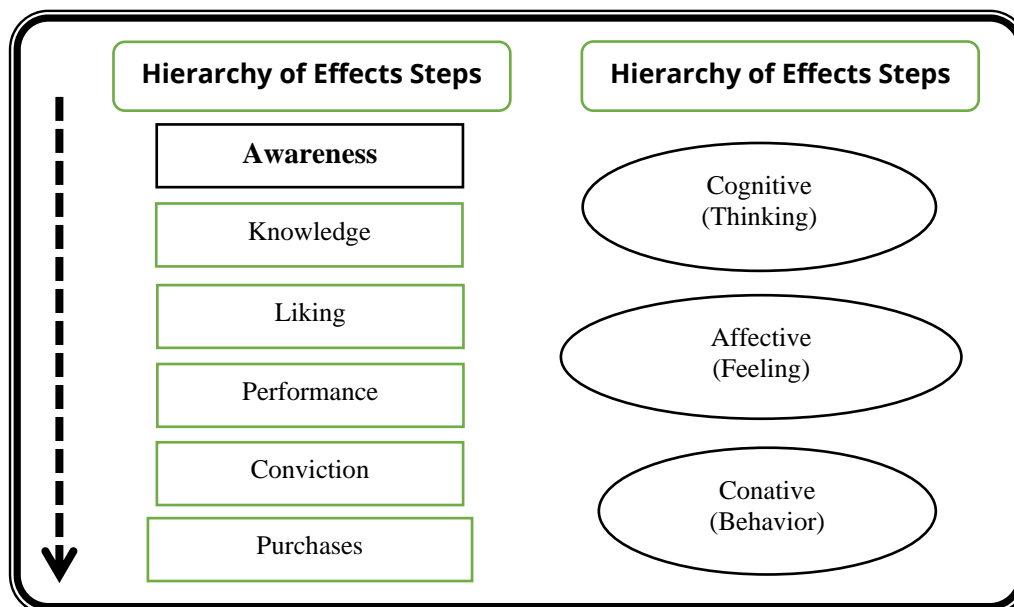
**1) Cognitive stage:** Similarly this stage termed "thinking" stage; this is where the user collects knowledge about the products or services and becomes aware of it. This considered as rational step where pros and cons, product or service specifications etc. of a product are evaluated.

Regarding to Lavidge and Steiner (1961) in this stage there are three effect steps which they are awareness, knowledge and liking. The authors declared that awareness considered as a critical step and the starting point for purchasing products or services. Thus, awareness is the startup point that production producers think about it which is mean that creating consumer awareness is the first step.

**2) Affective:** Similarly recognized as the "feeling" step, which is mean that user starts developing a liking for the product or service, and may even grow strong positive (or negative) feelings toward it. In this stage there are two steps which they are performance and Conviction.



**3) Conative:** This is the behavior stage of the process. This is when the user, after considering the pros and cons, and deciding his/her preference actually use the services. The model is depicted in Figure 1.



**Figure 1: Hierarchy of Effects Model**

Source: Lavidge and Steiner (1961)

In this study, professional bodies; audit firms; media; government pressure, accounting education considered as independent external factors that effect on forensic accounting services awareness which is depended variable for this study. The aforementioned Independent variables contribute to raising the level of perception among expected users of forensic accounting services. From the above dissection, it is clear that HOE considered as suitable theory to be adopted by this research as underpinning theory for explaining the research framework.

### **3: Research Framework and Hypotheses of the study:**

Sekaran and Bougie (2010) defined theoretical framework as a reasonably developed detailed network of associations between the variables estimated, related to the problematic situation and identified through such processes as interviews, observations and literature review.

The development of a theoretical framework is considered as an important step in the research methodology since it clearly understanding of directions and contributions of the study. The theoretical framework is an epistemology of constructivism that assumes a pluralist and relativist view of the reality (Guba & Lincoln, 1994). Based on the aforementioned discussion in the previous section this research intends to investigate five independent variables (professional bodies, audit firms, multimedia, government legislations and accounting education) and one dependent

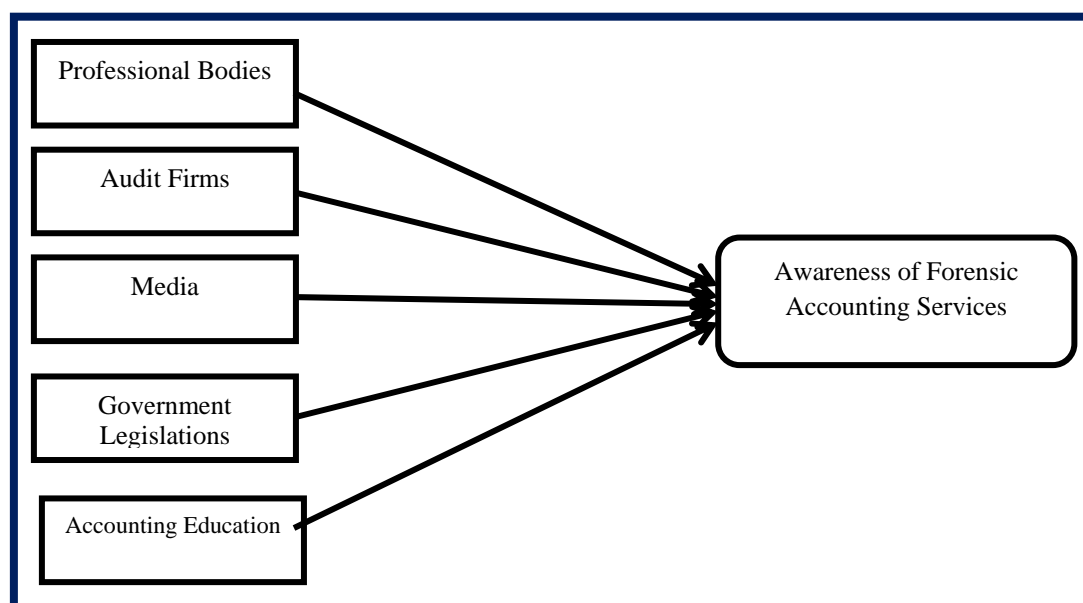


variable (forensic accounting services awareness). Table 3 illustrates the relationship between the main variables of the research and conceptual framework is illustrated in Figure 1.

**Table 3: Description of the Research Variables**

Independent Variables	Dependent Variable
Professional bodies Audit Firms Multimedia Government Legislations Accounting Education	forensic accounting services awareness

While in figure 2 the researcher clearly defined the relations, and effects between the dependent and independent variables.



**Figure 2: conceptual framework**

The previous studies highlighted that professional bodies, accounting firms, multimedia, government legislations and Accounting education have impact on Forensic Accounting Services . awareness of Thus, the hypotheses of this study were formulated as follows:

**H1:** There is a positive influence for Professional bodies' on the awareness of Forensic Accounting Services awareness

**H2:** There is a positive influence for Audit firms on the awareness of FAS Audit firms

**H3:** There is a positive influence for multimedia on the awareness of FAS

**H4:** There is a positive influence for government on the awareness of FAS





### H5: There is a positive influence for education on the awareness of FAS

After the declaration of hypotheses for the current study the author will discuss how far these study, contribute to the knowledge in the next section.

### 4: Contribution to the Knowledge:

In different way current study will contribute to the body of existing knowledge, this can be explained through the following ways: The study contributes to the existing knowledge by affirmation the current scenario in Iraq and how far there is a critical need to find out the suitable mechanism to address the corruption and fraud problems. The study will help the researchers to clear understanding about the factors that influence on the forensic accounting services awareness especially in the developing countries which Iraq represent one of them and the corruption and fraud problems are more pervasive than the developed countries.

### 5: Conclusion

This study reviews the existing literature on forensic accounting services and the awareness about this kind of services in order to find out the most related factors that effected on the awareness of forensic accounting services. Corruption and fraud consider as a complex phenomenon in Iraqi environment, the most modern ways to address this phenomenon is forensic accounting services, there no clear perception about factors that influence on forensic accounting awareness in Iraqi environment. The fundamental factors that affected of forensic accounting services awareness in the Iraqi environment are professional bodies, accounting firms, multimedia, government legislations and education. Based on the previous studies, the researcher found the factors mentioned above are suitable for the Iraqi environment.

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*Adoption the international accounting and financial reporting standards  
to the Measurement of Municipal Lands and their Reflection on the Financial  
Statements ( An applied Study in the Municipality of Najaf )*

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**Abstract:**

The research aimed to apply the international accounting and financial reporting standards to the measurement of municipal lands and its impact on the financial statements. The problem of the research is represented by the acquisition of land by the municipalities without cash payment, which led to the difficulty of knowing the real cost of land because of shortcomings of the municipal accounting system in dealing with this situation. The system did not include the accounting procedures for the lands' investment that meet the conditions of classification as investment properties. The research reached a number of conclusions, the most important of them is that the accounting measurement requirements for land under the accounting system differ from The special requirements for municipalities under international accounting and financial reporting standards, the most important research recommendations were including the need to update the accounting system based on the municipalities of international standards to keep abreast of developments and to provide financial information and reliable data in the internal and external environment.

**Keywords:** Land, Municipalities, International Accounting Standards, Financial Reporting Standards.

**1. Introduction**

The municipalities in all governorates of Iraq possess many land plots that have been divided into lands classified as fixed assets such as agricultural lands (gardens and parks, nurseries, land, commercial land) and the other lands classified as an inventory for sale (at a commercial price, low price), In addition to many of the investment lands that were not addressed by the accounting system for municipalities. And because of the problem in the cost measurement of those lands under used accounting system (the acquisition of land by the municipalities without cash payment), and according to Law No. (80) of 1970 (Amended) ownership of the Amiri lands located within the limits of the municipality to the administrative units (municipalities) and other relevant laws; The real cost of land and reliance on personal judgment in the accounting



measurement of these lands and the shortcomings of the accounting system of municipalities in the treatment of this situation, in addition to not include the system mentioned for the accounting treatments of investment properties of land that meet the conditions of classification as investment land.

## **2. Research Methodology**

**2.1 Research problem:** The municipality obtains various types of land without cash payment, which made it difficult to know the real cost of land classified as fixed assets or as land inventory for sale, and there are no specific controls for measurement. The municipal accounting system does not include accounting treatments for investment properties, which include land and investment buildings. In addition, the approved financial statements of the municipalities do not accurately and fairly reflect the validity of land account balances.

**2.2 Research importance:** Implementing the study in the municipalities, which are considered vital sectors in the country, in order to maximize revenues to enhance the budget of the municipalities to provide better services. The study contributes to the identification of strengths and weaknesses in the methods of measurement and accounting disclosure of the lands currently approved in the municipalities.

**2.3 Research objective:** The research aimed to identify the theoretical framework of accounting measurement, and the concept and importance of international accounting and financial reporting standards. And showing the account of the lands investment within the accounts of the municipalities and separating them from land classified as fixed assets and land inventory for sale. In addition to obtain a faithful and fair of financial statements which reflect the calculation of land belonging to municipalities.

**2.4 Research Hypothesis:** The possibility of preparing a proposed accounting framework for land classified as fixed assets and land inventory for sale and investment purposes in the light of international accounting and financial reporting standards. In addition to the preparation of the financial statements of municipalities according to international accounting and financial reporting standards could affects the faithfulness and fairness of financial statements

## **3. Literature Review**

3.1A study by (Abed and Da'our, 2008), entitled "Revaluation of Fixed Assets, A Field Study in Economical Units", which aims to study the revaluation of fixed assets in economic units. The problem of the study was to evaluate fixed assets that are of interest to academic and





professional thought. International Accounting Standards (IAS) intends to gradually shift from the historical cost-based asset valuation system to the current value system, specifically the value of fixed assets. The authors reached a set of conclusions, including the agreement of most accounting and auditing Fixed assets based on experts to ensure impartiality, objectivity and credibility of the evaluation process, as well as providing time for independent experts to be able to complete the evaluation process properly.

3.2A study by (Altai ,2013) , The purpose of this study is to select (prices of land and real estate in the shops of the center of Karkh). The problem of the study was the spatial variation of the prices of land and real estate in the center of Karkh. And its hypothesis that sought to explain this spatial disparity in their spatial relations with urban land uses (governmental, industrial, residential, commercial, community services, empty spaces, transportation and main streets) The correlation relationship between the land and property prices and represent a very strong relationship.

3.3 (Lei feng, et al, 2014) " Land value determination in an emerging market: empirical evidence from China , The objective of the study is to assess the pricing behavior of land in Beijing / China. The study hypothesized that the type of buyer affects land prices and that the value of the land is determined by traditional characteristics (location, planning characteristics and type of use). The main findings of the study are that state-owned enterprises pay more for land transactions because these companies have lower financial constraints, Investor has more opportunity to obtain favorable sales prices because investment policies are pro-foreign, and land users determine the price to be paid based on the characteristics of the land and the characteristics of the surrounding environment.

3.4 (Shen el at ,2018)"Exploring the relationship between urban land supply and housing stock: Evidence from 35 cities in China"., The research aims to study how government intervention in the supply of urban land affected the housing market in China over time using data from 35 cities between 2004 and 2014. The research hypothesis was that restricting the supply of land in urban areas has mixed effects on real estate prices on the ground Under the influence of the development of different cities, the study concluded that government interventions in the land market will have decisive effects on housing consumption and real estate prices. Based on these results, the study confirms that top-down policy intervention must be more prudent, Mischance need to reconsider them in specific local circumstances.



#### 4. Theoretical framework

##### 4.1 Accounting measurement

##### 4.1.1: The concept of accounting measurement

Measurement is the allocation of numbers of things or events according to certain rules, and it is a comparison process aimed at obtaining accurate information to distinguish between one alternative and another in the case of decision-making (Schroeder, 2010: 185). An accounting measure is the measure by which financial values are assigned to the various financial or economic activities associated with a specific economic activity or project within a certain period of time that are related to the work of the economic units, with an indication of the impact of those changes on events and their impact on the balance sheet and income statement. (Siddiqui, 2010:3). The process of accounting measurement in the scientific sense is an matching process of a specific property by comparing the monetarily of a special economic event to something that is the exact calculations of those accounting data through which the numerical values of objects related to economic unity are detected, Suitable for aggregation such as (sum of assets) , (Bolivar el at , 2018:4) . Accounting measurement is the "determination of all monetary values of economic events that can be substantiated by accounting and determining the basis of the value that must be fixed and presented in the accounting records according to the basic elements and then presented in the financial statements of the economic units", (Nikolaev, 2019:12).

##### 4.1.2: Measurement methods

Accounting has many methods for measuring economic events and transactions occurring in business enterprises. These methods differ from one method to another according to the purpose and type of accounting information required. These methods are: (lotfi ,2015: 43).

- **Direct measurement methods** : This method is based mainly on the measurement of the cost of a particular asset in terms of the purchase invoice provided as well as the accounting classification as part of the measurement process, (Maamouri, 2012: 23).
- **Indirect measurement methods (derived)** : This method of accounting measurement is used in a particular asset in the case of multiple characteristics to be measured. It is a method that is clearly and directly related to the direct measurement method. For example, if a particular installation is made up of several pieces, for example, a building may be forced to use the direct measurement method In order to measure each piece individually and then do the work known as the calculation process to collect all the private data of these buildings in order to reach the total cost ,(Lakhdar, 2017 :114) .



• **judgmental methods** : The judgmental measure methods are somewhat similar to indirect measurement methods, but are mainly limited to objective rules governing indirect measurement methods. However, the measurement methods do not require such rules, thus making them susceptible to the effects of bias resulting from the personal estimates and judgments of the measuring operators, (Jalil, 2009: 112).

## 4.2 Accounting and Financial Reporting Standards

### 4.2.1 The concept of accounting standards

The accounting standard defined as "a model or general guidance that leads to the direction and rationalization of practice in accounting and auditing", (Alqadi, 2000: 33). In the opinion of (Barry & Eva, 2010: 3), "An accounting standard is a model, measure or principle that is intended to determine the basis for the proper way to determine, measure and disclose the elements of the financial statements and the impact of operations, events and circumstances on the financial position of the entity and the results of its operations." (Reimers & Carpenter, 2005: 60) pointed out that accounting standards are primarily aimed at facilitating the accounting procedures and increasing their degree of acceptance by accounting professionals for unified procedures of accounting measurement and disclosure.

### 4.2.2 : Importance of accounting standards

The need for accounting standards comes through its importance in: (Dinh, 2014: 12-13)

- Determining the accounting measurement of the entity's financial events, without accounting criteria, sound results cannot be obtained as a result of using different and non-uniform accounting methods.
- Communicate the accounting measurement results to the users of the financial statements in a proper and appropriate manner and note that the absence of accounting standards will lead to the lack of proper measurement results.

Accounting standards are considered one of the most important accounting tools, taking account of the requirements of accounting measurement and disclosure of the items of financial statement, and providing the compatibility between the requirements of accounting thought and practical application in addition to achieving harmony with accounting objectives and to achieve the provision of accounting information with qualitative characteristics, making it useful for all users of that information Suitable for decision-making, (Alam, 2007: 3).



### 4.2.3 : Advantages of applying accounting standards

Many researchers agree that the use of international accounting standards involves obtaining many advantages (Healy, 2009: 22):

- International accounting standards are considered to be important pillars of the preparation of the financial statements and thus their advantage of objectivity.
- Adoption of accounting standards plays an important role in changing the perception of many countries and accounting bodies as a result of their attention to formulating important procedures and controls in order to define accounting objectives and financial statements.
- The accounting standards work to develop accounting disclosure, particularly in the annexes, by providing descriptive information, as well as by reporting financial statements in a manner that covers specific time periods in such a way as to obtain the necessary information in a timely manner.

added (Samani: 2015: 3) The most important characteristic of accounting standards is to make available to the financial statements preparers some of the freedom to choose some accounting procedures, where the standards of accounting and financial reporting international set of accounting methods and according to the nature and activity of the establishment.

## 5. Practical application of the study

### 5.1 Municipal land types and appropriate accounting standards for application

Municipal institutions in Iraq receive land without incurring costs and therefore it is difficult to use the cost model in accounting measurement of those lands. Consequently, the researchers adopted the alternative accounting measurement models mentioned in the accounting standards and international financial reporting standards. The lands belonging to the municipalities were divided into three categories :

- **Lands classified as (fixed assets)** : All of the land owned by the municipality and used for administrative purposes or in the conduct of its normal activities and the provision of miscellaneous services provided for by its law. IAS 16 Property, Plant and Equipment is the primary standard that deals with the measurement and disclosure of fixed assets. Valuation of the measurement of land classified as fixed assets.
- **Land classified as (Land inventory for sale)** : All of the land held by the municipality for sale at commercial or discounted prices, and IAS 2 is the primary standard for measuring and disclosing inventory. It is appropriate to use the net realizable value model to measure land classified as land Sell.





• **Lands classified as (investment properties) :** All of the land belonging to the municipality which is leased to others to earn rental income or retained for capital developers or both, and IAS 40 Investment Property is the fundamental standard that deals with the measurement and disclosure of investment property. Note that the unified accounting system for municipalities did not include accounting treatments and policies for the measurement and disclosure of investment properties, including investment lands. This requires the inclusion of accounting policies and treatments for investment properties. It is appropriate to use the fair value model to measure investment land.

## 5.2 Impact of the application of international accounting standards for the measurement and disclosure of municipal lands:

### 5.2.1 Lands classified as (fixed assets)

The study of land classified as fixed assets in the municipality of Najaf, classified as only three sections (agricultural lands, gardens, parks, nursery lands, construction lands, commercial lands) and study of their own data shows that they do not meet the conditions of their classification as fixed assets International accounting standards for non-use in the exercise of natural activity of the municipality, where it was found that all agricultural land and commercial assets in the financial statements are investment lands because they are leased to others, which requires the transfer of their assets to the account of investment lands, And revaluation of all land classified as fixed assets using the revaluation model, in addition to converting the invested land that does not meet the criteria for classification as fixed assets to the investment property account based on paragraphs (57/3 and 4) of IAS 40 As shown in Table (1):

Table (1) shows land classified as fixed assets after revaluation

Account name	Number of land	Current value / IQD	Estimated value / IQD	* Difference increase / IQD
Lands of gardens and parks	26	2,106,655,510	36,842,000,000	34,735,344,490
Lands of Nurseries	43	1,749,785,000	16,881,200,000	15,131,415,000
Building lands	11	408,000,000	63,224,000,000	62,816,000,000
Commercial Land	1952	103,425,709,900	398,912,067,750	295,486,357,850
<b>Total</b>	<b>2032</b>	<b>107,690,150,410</b>	<b>515,859,267,750</b>	<b>408,169,117,340</b>

\* Increases in land values are recognized in the surplus land revaluation account, which is considered to be an equity account.

### 5.2.2 Land classified as (Land inventory for sale)

The Directorate of the Municipality of Najaf did not inventory of land held for sale at commercial prices for the fiscal year ended 31/12/2016 and the years preceding it, despite the existence of many plots of land available for sale in most residential near to Najaf, (25) of the Law of Sale and Rent of State Funds No. (21) for the year 2013 (amended) and



documented transactions in the municipality has not been sold, and the researchers found that there is a stock of land for the purpose of selling commercial prices not installed in the Accounting records not disclosed in Financial statements of the Directorate of Najaf Municipality for the fiscal year ended 31/12/2016, although it does not represent the entire land stocks and represents only residential lands that were provided by the purchase orders have not been sold so far, as shown in Table (2):

Table (2) shows land stocks for sale at commercial prices

	Number of land	Total value of land IQD	Notes
1	1780	153,147,250,000	Evaluated by the researchers based on experts in real estate who are interested in selling land and buildings.
2	288	20,191,750,000	Evaluated by municipal administration and not disclosed in the financial statements
<b>Total</b>	<b>2168</b>	<b>173,339,000,000</b>	

As mentioned above, Najaf Municipality must show the value of land inventory for the purpose of selling at commercial prices, and its value in accounting records and disclosure in the financial statements.

### 5.2.3 Lands classified as ( investment properties)

As for the investment properties, including the investment lands, the municipality did not present them in its financial statements, although most of the land is invested through leasing to others. The unified accounting system for municipalities does not include the accounting treatments for real estate investments, contrary to the provisions of International Accounting Standard (IAS 40) As follows:

- The municipality owns a number of lands that have been leased to others in the manner of Masataha (land designated for the construction of commercial buildings, hotels, recreational cities, etc.) by investors, which will be transferred to the municipality in the future after a long period of "no more than 25 years" Of the investment of those lands, has not been disclosed in the financial statements of the Directorate of Najaf Municipality and has not been shown in the records, which requires to show their status as municipal lands until the expiry of the period of the land and then the land and buildings built to the municipality, as shown in Table ( 3 ):

Table (3) shows the investment lands for the establishment of projects after re-evaluation

Account name	Number of land	Fair value IQD
Investment of land for the establishment of hotels	24	20,151,320,000
Investment of land for the establishment of commercial complexes	15	4,910,500,000
<b>Total</b>	<b>39</b>	<b>25,061,820,000</b>



As investment property is not recognized in the municipality's accounting records, it is recognized at fair value.

- The existence of five investment lands that have not been disclosed in the financial statements of the Directorate of Najaf Municipality, and their records are not shown in addition to the failure to fix their cost or their estimated value, which requires their estimation and showing their status as municipal lands until the expiry of the period. And the buildings built on them to the municipality. The researchers relied on the owners of the real estate offices to estimate the value of these lands and to fix the lowest estimate according to due diligence. The fair value model for evaluating these lands was selected based on paragraphs (30, 32 / a, 57/3 and 4) International (IAS 40) investment properties, as shown in Table 4:

Table (4) shows the investment lands after their evaluation

Type of land investment	Area	Site	Estimated value / IQD
City of Water Games	139650 m2	Al-adala	69,825,000,000
City Games	2925 m2	Al-askari	731,250,000
Recreational city and restaurants	9030 m2	AL. Ghadeer	4,515,000,000
Recreational city and restaurants	7303 m2	Al-harfiyeen	1,825,750,000
Recreational city and restaurants	13195 m2	Al-Zahraa	<b>6,597,500,000</b>
<b>Total</b>			<b>83,494,500,000</b>

### 5.3 :The most important accounts affected after the use of international accounting and financial reporting standards

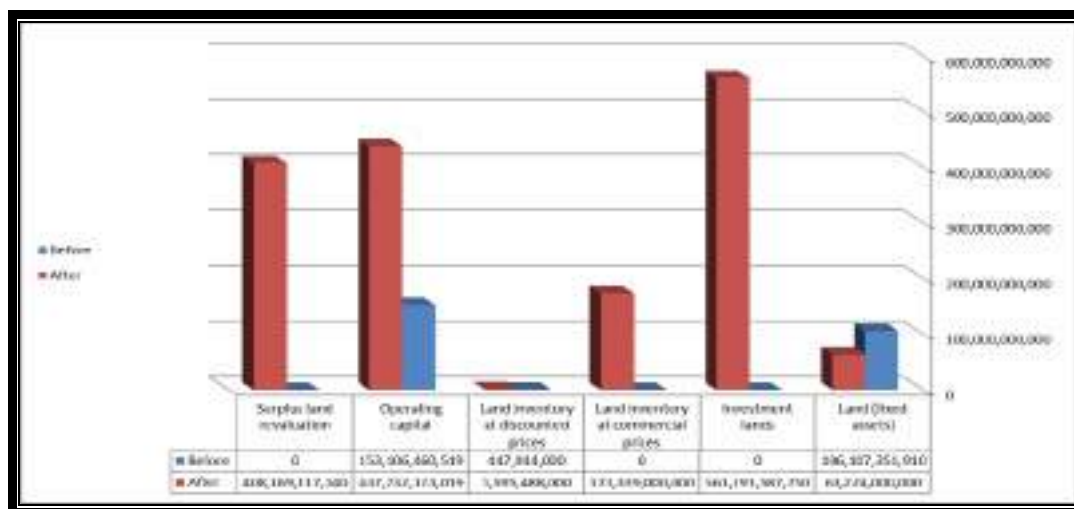
Table (5) presents the accounts affected by the application of measurement and disclosure methods in accordance with International Financial Reporting Standards (IASB) by presenting the balances of these accounts before applying the accounting standards and after application for the financial year ended 31/12/2016:

Table (5) shows the impact of the application of adjustments under IASB on some accounts

Account name	2016 - IQD		The difference- IQD	
	Before the application	After the application	increase	decrease
Land (Fixed Assets)	106,107,351,910	63,224,000,000		42,883,351,910
Real Estate Investment (Investment Land)	-	561,191,587,750	561,191,587,750	
Land inventory for sale at commercial prices	-	173,339,000,000	173,339,000,000	
Land inventory for sale at discounted prices	447,944,000	1,595,488,000	1,147,544,000	
Operating capital	153,106,460,519	437,732,123,019	284,625,662,500	
Surplus revaluation of investment land	-	408,169,117,340	408,169,117,340	



The following diagram shows the effect of the application of accounting measurement requirements on land in accordance with International Financial Reporting and Reporting Standards on the financial statements of the Municipality of Najaf for the fiscal year ended 31/12/2016:



5.4 Effect of adjustments in accordance with International Accounting and Reporting Standards on the financial position and comprehensive income for the year ended 31/12/2016:

#### 5.4.1: Balance sheet

Account name	2016 - IQD	2015 - IQD
<b>Total assets under the municipal accounting system</b>	<b>186,177,680,065</b>	<b>198,962,071,915</b>
Adjustments under International Accounting and Reporting Standards:		
Land inventory for sale	174,486,544,000	174,486,544,000
Land classified as fixed assets	(42,883,351,910)	(42,883,351,910)
Investment lands	561,191,587,750	561,191,587,750
Total adjustments in accordance with accounting and financial reporting standards	692,794,779,840	692,794,779,840
<b>Total assets under International Accounting and Reporting Standards</b>	<b>878,972,459,905</b>	<b>891,756,851,755</b>
<b>Total liabilities and equity in accordance with the accounting system for municipalities</b>	<b>186,177,680,065</b>	<b>198,962,071,915</b>
Adjustments under International Accounting and Reporting Standards:		





Excessive revaluation	408,169,117,340	408,169,117,340
Operating capital	284,625,662,500	284,625,662,500
Total adjustments in accordance with accounting and financial reporting standards	692,794,779,840	692,794,779,840
<b>Total liabilities and equity in accordance with the accounting system for municipalities</b>	<b>878,972,459,905</b>	<b>891,756,851,755</b>

#### 5.4.2: Statement of comprehensive income

Account name	2016 - IQD	2015 - IQD
<b>Annual income according to the municipal accounting system</b>	<b>(5,561,169,189)</b>	<b>2,238,333,879</b>
Adjustments under International Accounting and Reporting Standards:		
Surplus land revaluation	408,169,117,340	408,169,117,340
Total adjustments in accordance with accounting and financial reporting standards	408,169,117,340	408,169,117,340
<b>Annual income in accordance with International Accounting and Reporting Standards</b>	<b>402,607,948,151</b>	<b>410,407,451,219</b>

## 6. Conclusions and recommendations

### 6.1: Conclusions

6.1.1 : The unified accounting system for municipalities did not include the accounting treatments for investment properties, despite the municipal ownership of many investment lands. Consequently, the financial statements of the municipality did not present an investment property account.

6.1.2 : Most of the land that goes to the municipality is free of cash, which made it difficult to know the real cost of land.

6.1.3 : The difference in the accounting requirements for land under the unified accounting system for municipalities on the accounting measurement requirements under the International Accounting Standards.



The application of measurement requirements according to accounting standards affects the financial statements of the municipality.

6.1.4 : The lack of a proper basis for calculating the cost, and therefore other alternative methods of measurement should be adopted under international accounting standards, especially since such land is used for the purpose of selling land, Constitute a large part of the capital of the municipalities, which necessitates the adoption of appropriate measurement methods in accordance with international accounting and financial reporting standards as follows:

- IAS 16 specifies methods of measuring fixed assets using the cost model or the revaluation model. The appropriate model for measuring municipal land is the revaluation model.
- IAS 2 defines the method of measuring inventories at the lower of cost or value. Since there is no real cost, the appropriate measure of inventory of land for sale is the carrying amount of that inventory.
- IAS 40 defines methods of measuring investment properties using the historical cost model or the fair value model. The appropriate model for measuring investment land in municipalities is the fair value model.

## 6.2 : Recommendations

6.2.1 : The need to update the unified accounting system for municipalities in accordance with the international accounting and financial reporting standards and in accordance with the nature of municipal activity, especially with regard to accounting measurement of municipal lands, with the need to develop an investment property account and record all lands that meet the conditions on the account mentioned.

6.2.2 : The historical cost model is not used to accounting measurement of land belonging to municipalities unless there is material evidence of the validity of the calculation. The accounting for the land is based on the revaluation model for land classified as fixed assets, the value model of the land held for sale and the fair value model of the investment property.

6.2.3 : Land inventories for sale at commercial prices are measured at the carrying value. Land inventories for sale at discounted prices are measured according to the regulations in force and shown in the financial records and disclosed in the annual financial statements and statements attached thereto.

6.2.4 : The need to inventory and evaluate the investment lands belonging to the municipality at fair value and to record them in the relevant records and to present them in their financial statements.



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*Adoption the international accounting and financial reporting standards  
to the Measurement of Municipal Lands and their Reflection on the Financial  
Statements ( An applied Study in the Municipality of Najaf )*

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**Abstract:**

The research aimed to apply the international accounting and financial reporting standards to the measurement of municipal lands and its impact on the financial statements. The problem of the research is represented by the acquisition of land by the municipalities without cash payment, which led to the difficulty of knowing the real cost of land because of shortcomings of the municipal accounting system in dealing with this situation. The system did not include the accounting procedures for the lands' investment that meet the conditions of classification as investment properties. The research reached a number of conclusions, the most important of them is that the accounting measurement requirements for land under the accounting system differ from The special requirements for municipalities under international accounting and financial reporting standards, the most important research recommendations were including the need to update the accounting system based on the municipalities of international standards to keep abreast of developments and to provide financial information and reliable data in the internal and external environment.

**Keywords:** Land, Municipalities, International Accounting Standards, Financial Reporting Standards.

**1. Introduction**

The municipalities in all governorates of Iraq possess many land plots that have been divided into lands classified as fixed assets such as agricultural lands (gardens and parks, nurseries, land, commercial land) and the other lands classified as an inventory for sale (at a commercial price, low price), In addition to many of the investment lands that were not addressed by the accounting system for municipalities. And because of the problem in the cost measurement of those lands under used accounting system (the acquisition of land by the municipalities without cash payment), and according to Law No. (80) of 1970 (Amended) ownership of the Amiri lands located within the limits of the municipality to the administrative units (municipalities) and other relevant laws; The real cost of land and reliance on personal judgment in the accounting



measurement of these lands and the shortcomings of the accounting system of municipalities in the treatment of this situation, in addition to not include the system mentioned for the accounting treatments of investment properties of land that meet the conditions of classification as investment land.

## **2. Research Methodology**

**2.1 Research problem:** The municipality obtains various types of land without cash payment, which made it difficult to know the real cost of land classified as fixed assets or as land inventory for sale, and there are no specific controls for measurement. The municipal accounting system does not include accounting treatments for investment properties, which include land and investment buildings. In addition, the approved financial statements of the municipalities do not accurately and fairly reflect the validity of land account balances.

**2.2 Research importance:** Implementing the study in the municipalities, which are considered vital sectors in the country, in order to maximize revenues to enhance the budget of the municipalities to provide better services. The study contributes to the identification of strengths and weaknesses in the methods of measurement and accounting disclosure of the lands currently approved in the municipalities.

**2.3 Research objective:** The research aimed to identify the theoretical framework of accounting measurement, and the concept and importance of international accounting and financial reporting standards. And showing the account of the lands investment within the accounts of the municipalities and separating them from land classified as fixed assets and land inventory for sale. In addition to obtain a faithful and fair of financial statements which reflect the calculation of land belonging to municipalities.

**2.4 Research Hypothesis:** The possibility of preparing a proposed accounting framework for land classified as fixed assets and land inventory for sale and investment purposes in the light of international accounting and financial reporting standards. In addition to the preparation of the financial statements of municipalities according to international accounting and financial reporting standards could affects the faithfulness and fairness of financial statements

## **3. Literature Review**

3.1A study by (Abed and Da'our, 2008), entitled "Revaluation of Fixed Assets, A Field Study in Economical Units", which aims to study the revaluation of fixed assets in economic units. The problem of the study was to evaluate fixed assets that are of interest to academic and



professional thought. International Accounting Standards (IAS) intends to gradually shift from the historical cost-based asset valuation system to the current value system, specifically the value of fixed assets. The authors reached a set of conclusions, including the agreement of most accounting and auditing Fixed assets based on experts to ensure impartiality, objectivity and credibility of the evaluation process, as well as providing time for independent experts to be able to complete the evaluation process properly.

3.2A study by (Altai ,2013) , The purpose of this study is to select (prices of land and real estate in the shops of the center of Karkh). The problem of the study was the spatial variation of the prices of land and real estate in the center of Karkh. And its hypothesis that sought to explain this spatial disparity in their spatial relations with urban land uses (governmental, industrial, residential, commercial, community services, empty spaces, transportation and main streets) The correlation relationship between the land and property prices and represent a very strong relationship.

3.3 (Lei feng, et al, 2014) " Land value determination in an emerging market: empirical evidence from China , The objective of the study is to assess the pricing behavior of land in Beijing / China. The study hypothesized that the type of buyer affects land prices and that the value of the land is determined by traditional characteristics (location, planning characteristics and type of use). The main findings of the study are that state-owned enterprises pay more for land transactions because these companies have lower financial constraints, Investor has more opportunity to obtain favorable sales prices because investment policies are pro-foreign, and land users determine the price to be paid based on the characteristics of the land and the characteristics of the surrounding environment.

3.4 (Shen el at ,2018)"Exploring the relationship between urban land supply and housing stock: Evidence from 35 cities in China"., The research aims to study how government intervention in the supply of urban land affected the housing market in China over time using data from 35 cities between 2004 and 2014. The research hypothesis was that restricting the supply of land in urban areas has mixed effects on real estate prices on the ground Under the influence of the development of different cities, the study concluded that government interventions in the land market will have decisive effects on housing consumption and real estate prices. Based on these results, the study confirms that top-down policy intervention must be more prudent, Mischance need to reconsider them in specific local circumstances.



#### 4. Theoretical framework

##### 4.1 Accounting measurement

##### 4.1.1: The concept of accounting measurement

Measurement is the allocation of numbers of things or events according to certain rules, and it is a comparison process aimed at obtaining accurate information to distinguish between one alternative and another in the case of decision-making (Schroeder, 2010: 185). An accounting measure is the measure by which financial values are assigned to the various financial or economic activities associated with a specific economic activity or project within a certain period of time that are related to the work of the economic units, with an indication of the impact of those changes on events and their impact on the balance sheet and income statement. (Siddiqui, 2010:3). The process of accounting measurement in the scientific sense is an matching process of a specific property by comparing the monetarily of a special economic event to something that is the exact calculations of those accounting data through which the numerical values of objects related to economic unity are detected, Suitable for aggregation such as (sum of assets) , (Bolivar el at , 2018:4) . Accounting measurement is the "determination of all monetary values of economic events that can be substantiated by accounting and determining the basis of the value that must be fixed and presented in the accounting records according to the basic elements and then presented in the financial statements of the economic units", (Nikolaev, 2019:12).

##### 4.1.2: Measurement methods

Accounting has many methods for measuring economic events and transactions occurring in business enterprises. These methods differ from one method to another according to the purpose and type of accounting information required. These methods are: (lotfi ,2015: 43).

- **Direct measurement methods** : This method is based mainly on the measurement of the cost of a particular asset in terms of the purchase invoice provided as well as the accounting classification as part of the measurement process, (Maamouri, 2012: 23).
- **Indirect measurement methods (derived)** : This method of accounting measurement is used in a particular asset in the case of multiple characteristics to be measured. It is a method that is clearly and directly related to the direct measurement method. For example, if a particular installation is made up of several pieces, for example, a building may be forced to use the direct measurement method In order to measure each piece individually and then do the work known as the calculation process to collect all the private data of these buildings in order to reach the total cost ,(Lakhdar, 2017 :114) .





• **judgmental methods** : The judgmental measure methods are somewhat similar to indirect measurement methods, but are mainly limited to objective rules governing indirect measurement methods. However, the measurement methods do not require such rules, thus making them susceptible to the effects of bias resulting from the personal estimates and judgments of the measuring operators, (Jalil, 2009: 112).

## 4.2 Accounting and Financial Reporting Standards

### 4.2.1 The concept of accounting standards

The accounting standard defined as "a model or general guidance that leads to the direction and rationalization of practice in accounting and auditing", (Alqadi,2000: 33) . In the opinion of (Barry & Eva ,2010: 3), "An accounting standard is a model, measure or principle that is intended to determine the basis for the proper way to determine, measure and disclose the elements of the financial statements and the impact of operations, events and circumstances on the financial position of the entity and the results of its operations." . (Reimers & Carpenter ,2005: 60) pointed out that accounting standards are primarily aimed at facilitating the accounting procedures and increasing their degree of acceptance by accounting professionals for unified procedures of accounting measurement and disclosure.

### 4.2.2 : Importance of accounting standards

The need for accounting standards comes through its importance in: (Dinh,2014:12-13 )

- Determining the accounting measurement of the entity's financial events, without accounting criteria, sound results cannot be obtained as a result of using different and non-uniform accounting methods.
- Communicate the accounting measurement results to the users of the financial statements in a proper and appropriate manner and note that the absence of accounting standards will lead to the lack of proper measurement results.

Accounting standards are considered one of the most important accounting tools, taking account of the requirements of accounting measurement and disclosure of the items of financial statement, and providing the compatibility between the requirements of accounting thought and practical application in addition to achieving harmony with accounting objectives and to achieve the provision of accounting information with qualitative characteristics, making it useful for all users of that information Suitable for decision-making ,(Alam,2007:3).



### 4.2.3 : Advantages of applying accounting standards

Many researchers agree that the use of international accounting standards involves obtaining many advantages (Healy, 2009: 22):

- International accounting standards are considered to be important pillars of the preparation of the financial statements and thus their advantage of objectivity.
- Adoption of accounting standards plays an important role in changing the perception of many countries and accounting bodies as a result of their attention to formulating important procedures and controls in order to define accounting objectives and financial statements.
- The accounting standards work to develop accounting disclosure, particularly in the annexes, by providing descriptive information, as well as by reporting financial statements in a manner that covers specific time periods in such a way as to obtain the necessary information in a timely manner.

added (Samani: 2015: 3) The most important characteristic of accounting standards is to make available to the financial statements preparers some of the freedom to choose some accounting procedures, where the standards of accounting and financial reporting international set of accounting methods and according to the nature and activity of the establishment.

## 5. Practical application of the study

### 5.1 Municipal land types and appropriate accounting standards for application

Municipal institutions in Iraq receive land without incurring costs and therefore it is difficult to use the cost model in accounting measurement of those lands. Consequently, the researchers adopted the alternative accounting measurement models mentioned in the accounting standards and international financial reporting standards. The lands belonging to the municipalities were divided into three categories :

- **Lands classified as (fixed assets)** : All of the land owned by the municipality and used for administrative purposes or in the conduct of its normal activities and the provision of miscellaneous services provided for by its law. IAS 16 Property, Plant and Equipment is the primary standard that deals with the measurement and disclosure of fixed assets. Valuation of the measurement of land classified as fixed assets.
- **Land classified as (Land inventory for sale)** : All of the land held by the municipality for sale at commercial or discounted prices, and IAS 2 is the primary standard for measuring and disclosing inventory. It is appropriate to use the net realizable value model to measure land classified as land Sell.



• **Lands classified as (investment properties) :** All of the land belonging to the municipality which is leased to others to earn rental income or retained for capital developers or both, and IAS 40 Investment Property is the fundamental standard that deals with the measurement and disclosure of investment property. Note that the unified accounting system for municipalities did not include accounting treatments and policies for the measurement and disclosure of investment properties, including investment lands. This requires the inclusion of accounting policies and treatments for investment properties. It is appropriate to use the fair value model to measure investment land.

## 5.2 Impact of the application of international accounting standards for the measurement and disclosure of municipal lands:

### 5.2.1 Lands classified as (fixed assets)

The study of land classified as fixed assets in the municipality of Najaf, classified as only three sections (agricultural lands, gardens, parks, nursery lands, construction lands, commercial lands) and study of their own data shows that they do not meet the conditions of their classification as fixed assets International accounting standards for non-use in the exercise of natural activity of the municipality, where it was found that all agricultural land and commercial assets in the financial statements are investment lands because they are leased to others, which requires the transfer of their assets to the account of investment lands, And revaluation of all land classified as fixed assets using the revaluation model, in addition to converting the invested land that does not meet the criteria for classification as fixed assets to the investment property account based on paragraphs (57/3 and 4) of IAS 40 As shown in Table (1):

Table (1) shows land classified as fixed assets after revaluation

Account name	Number of land	Current value / IQD	Estimated value / IQD	* Difference increase / IQD
Lands of gardens and parks	26	2,106,655,510	36,842,000,000	34,735,344,490
Lands of Nurseries	43	1,749,785,000	16,881,200,000	15,131,415,000
Building lands	11	408,000,000	63,224,000,000	62,816,000,000
Commercial Land	1952	103,425,709,900	398,912,067,750	295,486,357,850
<b>Total</b>	<b>2032</b>	<b>107,690,150,410</b>	<b>515,859,267,750</b>	<b>408,169,117,340</b>

\* Increases in land values are recognized in the surplus land revaluation account, which is considered to be an equity account.

### 5.2.2 Land classified as (Land inventory for sale)

The Directorate of the Municipality of Najaf did not inventory of land held for sale at commercial prices for the fiscal year ended 31/12/2016 and the years preceding it, despite the existence of many plots of land available for sale in most residential near to Najaf, (25) of the Law of Sale and Rent of State Funds No. (21) for the year 2013 (amended) and



documented transactions in the municipality has not been sold, and the researchers found that there is a stock of land for the purpose of selling commercial prices not installed in the Accounting records not disclosed in Financial statements of the Directorate of Najaf Municipality for the fiscal year ended 31/12/2016, although it does not represent the entire land stocks and represents only residential lands that were provided by the purchase orders have not been sold so far, as shown in Table (2):

Table (2) shows land stocks for sale at commercial prices

	Number of land	Total value of land IQD	Notes
1	1780	153,147,250,000	Evaluated by the researchers based on experts in real estate who are interested in selling land and buildings.
2	288	20,191,750,000	Evaluated by municipal administration and not disclosed in the financial statements
<b>Total</b>	<b>2168</b>	<b>173,339,000,000</b>	

As mentioned above, Najaf Municipality must show the value of land inventory for the purpose of selling at commercial prices, and its value in accounting records and disclosure in the financial statements.

### 5.2.3 Lands classified as ( investment properties)

As for the investment properties, including the investment lands, the municipality did not present them in its financial statements, although most of the land is invested through leasing to others. The unified accounting system for municipalities does not include the accounting treatments for real estate investments, contrary to the provisions of International Accounting Standard (IAS 40) As follows:

- The municipality owns a number of lands that have been leased to others in the manner of Masataha (land designated for the construction of commercial buildings, hotels, recreational cities, etc.) by investors, which will be transferred to the municipality in the future after a long period of "no more than 25 years" Of the investment of those lands, has not been disclosed in the financial statements of the Directorate of Najaf Municipality and has not been shown in the records, which requires to show their status as municipal lands until the expiry of the period of the land and then the land and buildings built to the municipality, as shown in Table ( 3 ):

Table (3) shows the investment lands for the establishment of projects after re-evaluation

Account name	Number of land	Fair value IQD
Investment of land for the establishment of hotels	24	20,151,320,000
Investment of land for the establishment of commercial complexes	15	4,910,500,000
<b>Total</b>	<b>39</b>	<b>25,061,820,000</b>





As investment property is not recognized in the municipality's accounting records, it is recognized at fair value.

- The existence of five investment lands that have not been disclosed in the financial statements of the Directorate of Najaf Municipality, and their records are not shown in addition to the failure to fix their cost or their estimated value, which requires their estimation and showing their status as municipal lands until the expiry of the period. And the buildings built on them to the municipality. The researchers relied on the owners of the real estate offices to estimate the value of these lands and to fix the lowest estimate according to due diligence. The fair value model for evaluating these lands was selected based on paragraphs (30, 32 / a, 57/3 and 4) International (IAS 40) investment properties, as shown in Table 4:

Table (4) shows the investment lands after their evaluation

Type of land investment	Area	Site	Estimated value / IQD
City of Water Games	139650 m2	Al-adala	69,825,000,000
City Games	2925 m2	Al-askari	731,250,000
Recreational city and restaurants	9030 m2	AL. Ghadeer	4,515,000,000
Recreational city and restaurants	7303 m2	Al-harfiyeen	1,825,750,000
Recreational city and restaurants	13195 m2	Al-Zahraa	<b>6,597,500,000</b>
<b>Total</b>			<b>83,494,500,000</b>

### 5.3 :The most important accounts affected after the use of international accounting and financial reporting standards

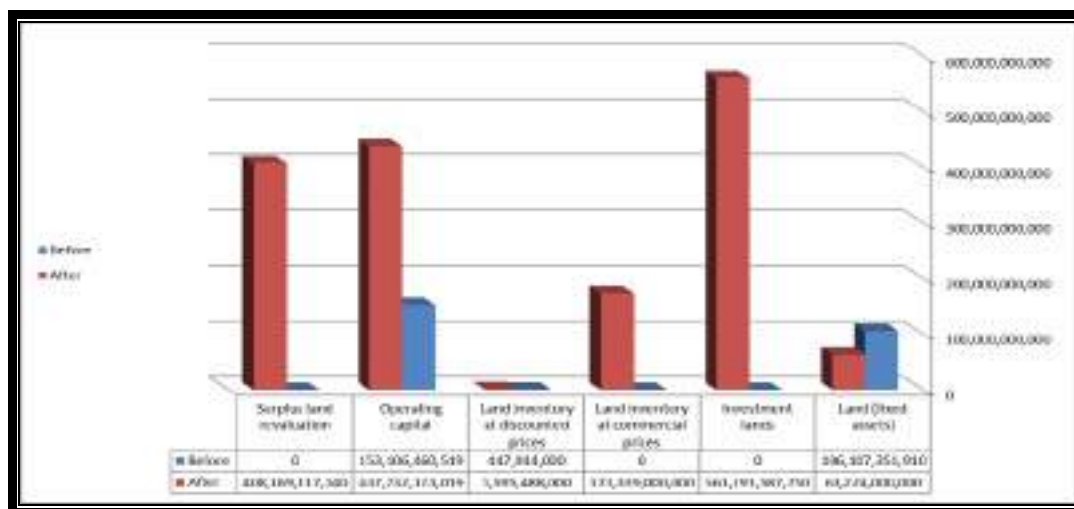
Table (5) presents the accounts affected by the application of measurement and disclosure methods in accordance with International Financial Reporting Standards (IASB) by presenting the balances of these accounts before applying the accounting standards and after application for the financial year ended 31/12/2016:

Table (5) shows the impact of the application of adjustments under IASB on some accounts

Account name	2016 - IQD		The difference- IQD	
	Before the application	After the application	increase	decrease
Land (Fixed Assets)	106,107,351,910	63,224,000,000		42,883,351,910
Real Estate Investment (Investment Land)	-	561,191,587,750	561,191,587,750	
Land inventory for sale at commercial prices	-	173,339,000,000	173,339,000,000	
Land inventory for sale at discounted prices	447,944,000	1,595,488,000	1,147,544,000	
Operating capital	153,106,460,519	437,732,123,019	284,625,662,500	
Surplus revaluation of investment land	-	408,169,117,340	408,169,117,340	



The following diagram shows the effect of the application of accounting measurement requirements on land in accordance with International Financial Reporting and Reporting Standards on the financial statements of the Municipality of Najaf for the fiscal year ended 31/12/2016:



5.4 Effect of adjustments in accordance with International Accounting and Reporting Standards on the financial position and comprehensive income for the year ended 31/12/2016:

#### 5.4.1: Balance sheet

Account name	2016 - IQD	2015 - IQD
<b>Total assets under the municipal accounting system</b>	<b>186,177,680,065</b>	<b>198,962,071,915</b>
Adjustments under International Accounting and Reporting Standards:		
Land inventory for sale	174,486,544,000	174,486,544,000
Land classified as fixed assets	(42,883,351,910)	(42,883,351,910)
Investment lands	561,191,587,750	561,191,587,750
Total adjustments in accordance with accounting and financial reporting standards	692,794,779,840	692,794,779,840
<b>Total assets under International Accounting and Reporting Standards</b>	<b>878,972,459,905</b>	<b>891,756,851,755</b>
<b>Total liabilities and equity in accordance with the accounting system for municipalities</b>	<b>186,177,680,065</b>	<b>198,962,071,915</b>
Adjustments under International Accounting and Reporting Standards:		



Excessive revaluation	408,169,117,340	408,169,117,340
Operating capital	284,625,662,500	284,625,662,500
Total adjustments in accordance with accounting and financial reporting standards	692,794,779,840	692,794,779,840
<b>Total liabilities and equity in accordance with the accounting system for municipalities</b>	<b>878,972,459,905</b>	<b>891,756,851,755</b>

#### 5.4.2: Statement of comprehensive income

Account name	2016 - IQD	2015 - IQD
<b>Annual income according to the municipal accounting system</b>	<b>(5,561,169,189)</b>	<b>2,238,333,879</b>
Adjustments under International Accounting and Reporting Standards:		
Surplus land revaluation	408,169,117,340	408,169,117,340
Total adjustments in accordance with accounting and financial reporting standards	408,169,117,340	408,169,117,340
<b>Annual income in accordance with International Accounting and Reporting Standards</b>	<b>402,607,948,151</b>	<b>410,407,451,219</b>

## 6. Conclusions and recommendations

### 6.1: Conclusions

6.1.1 : The unified accounting system for municipalities did not include the accounting treatments for investment properties, despite the municipal ownership of many investment lands. Consequently, the financial statements of the municipality did not present an investment property account.

6.1.2 : Most of the land that goes to the municipality is free of cash, which made it difficult to know the real cost of land.

6.1.3 : The difference in the accounting requirements for land under the unified accounting system for municipalities on the accounting measurement requirements under the International Accounting Standards.



The application of measurement requirements according to accounting standards affects the financial statements of the municipality.

6.1.4 : The lack of a proper basis for calculating the cost, and therefore other alternative methods of measurement should be adopted under international accounting standards, especially since such land is used for the purpose of selling land, Constitute a large part of the capital of the municipalities, which necessitates the adoption of appropriate measurement methods in accordance with international accounting and financial reporting standards as follows:

- IAS 16 specifies methods of measuring fixed assets using the cost model or the revaluation model. The appropriate model for measuring municipal land is the revaluation model.
- IAS 2 defines the method of measuring inventories at the lower of cost or value. Since there is no real cost, the appropriate measure of inventory of land for sale is the carrying amount of that inventory.
- IAS 40 defines methods of measuring investment properties using the historical cost model or the fair value model. The appropriate model for measuring investment land in municipalities is the fair value model.

## 6.2 : Recommendations

6.2.1 : The need to update the unified accounting system for municipalities in accordance with the international accounting and financial reporting standards and in accordance with the nature of municipal activity, especially with regard to accounting measurement of municipal lands, with the need to develop an investment property account and record all lands that meet the conditions on the account mentioned.

6.2.2 : The historical cost model is not used to accounting measurement of land belonging to municipalities unless there is material evidence of the validity of the calculation. The accounting for the land is based on the revaluation model for land classified as fixed assets, the value model of the land held for sale and the fair value model of the investment property.

6.2.3 : Land inventories for sale at commercial prices are measured at the carrying value. Land inventories for sale at discounted prices are measured according to the regulations in force and shown in the financial records and disclosed in the annual financial statements and statements attached thereto.

6.2.4 : The need to inventory and evaluate the investment lands belonging to the municipality at fair value and to record them in the relevant records and to present them in their financial statements.





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