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Economic intelligence and its role in improving some indicators of the knowledge economy in post-2003 Iraq

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Abstract : Economic intelligence contributes significantly to the development of economic development processes, as it is one of the modern fields of knowledge, The importance of the research comes from the modernity of the topic of economic intelligence and influential practical applications on the knowledge economy in light of the various economic changes and transformations that are sweeping the outside world, The research problem is whether economic intelligence brings about changes with a positive impact on the basic sectors of the Iraqi economy, which is based on a single depleting resource that is unable to meet the requirements of knowledge and the desired economic development, since it is necessary to keep pace with the developments and structural changes taking place in the global economy, As information has become involved in various details of life, For projects, what differentiates them from others is their ability to integrate and address numerous external events, in addition to their capacity to receive and analyze signals before others, and these skills are the value that distinguishes them, This prompted institutions to integrate what is called economic intelligence, which contributes to improving the indicators of the knowledge economy through its tasks of collecting and analyzing information, in addition to making smart, economically sustainable decisions.

Keywords: economic intelligence, knowledge economy, institutions, education, information

• Importance of the research:

This importance stems from the novelty of the topic of economic intelligence and the demonstration of the amount of support it provides in order to reach a developed and knowledge-based economy.

•Research Problem:

Due to the economic crisis that the Iraqi economy is experiencing, which is based on a single depleting resource, and its inability to meet the requirements of knowledge and the desired economic development, can artificial intelligence achieve available opportunities to get out of that crisis and integrate with the requirements of the technological revolution and achieve its development within the indicators of the knowledge economy?

• Research hypothesis :

The premise is that economic intelligence is capable of keeping pace with many of the demands of the technological revolution, meeting the various requirements of the knowledge economy, and achieving maximum advanced and sustainable development.

• Research objective:

The main objective of the research revolves around understanding artificial intelligence and the possibility of supporting it in developing the knowledge economy through various strategies that can be utilized in this regard in order to drive development and identify the challenges that prevent this.

- **Research Methodology:**

The descriptive-analytical method was used for the theoretical aspect, in addition to the deductive method for developing a future vision for the economic intelligence project, based on some international models..

• Research Structure:

The research is divided into four sections: The first section addresses economic intelligence, its theoretical and conceptual framework. The second section examines some models of countries that focus on economic intelligence. The third section discusses key indicators of the knowledge economy in Iraq. The fourth section addresses the strategy of economic intelligence in the Iraqi economy.

((First Section))
Economic Intelligence - A Conceptual Framework

First // The Concept of Economic Intelligence and its Historical Development:

Henri Martre defined economic intelligence in France in 1994. This definition is considered the first official attempt to introduce the concept in the French context. Martre's report focused on the fact that economic intelligence means "the systematic search for information, processing it in a way that makes it useful, and then transferring it to the parties involved in decision-making." In other words, it is a set of integrated activities aimed at controlling the strategic information of the organization and ensuring the maintenance of its competitiveness.

This intelligence is considered an offensive and defensive practice alongside information and aims to link multiple fields in order to serve the strategic and tactical goals of the organization, to be a tool for integrating the organization's behavior with its knowledge. (Shereen Badry, 2014, p. 98).

From this perspective, economic intelligence can be viewed as having a dual function:

1- Protection: Protecting critical information from threats, primarily those from competitors.

2- Influence: Utilizing information to achieve the organization's strategic goals.

Thus, economic intelligence represents an extension of the pursuit of curiosity and the organization's drive to achieve its strategic goals through effective and systematic information management.

Interest in this type of intelligence began in the United States in the late 1960s. In the mid-15th century, the United States experienced a large wave of European immigration, necessitating the first systematic census of the population using the first mechanograph, which represented the first mechanized counting process.. (Bruno Martinet and Yves-Michel, 1995, p. 147)

Modern economic intelligence crystallized clearly during World War II in the United States and Britain through the collection of information and intelligence about enemy movements. It then evolved after the war to become an integral part of the activities of economic institutions, supported by the development of electronic information processing systems (computers). Similarly, Japan developed a strategic model of cooperation between institutions after the war, aiming to maximize the benefits of economic intelligence and achieve its development goals.

In this context, Michael Porter focused on the fundamental objective of economic intelligence: to achieve a competitive advantage for institutions by providing the right person with the right information at the right time to make the best decisions. (Mustafa Boudrama, 2012, p. 115)

In France, interest in economic intelligence emerged relatively late compared to the United States and Japan, with formal discussions beginning in April 1992 through the establishment of the French branch of the Competition and Professional Intelligence Company, In 1994 the Martre Report endorsed state intervention in this area, calling for clear policies to support economic institutions and enhance their competitiveness, This coincided with the French authorities' focus on youth development and increasing culture among them by strengthening the role of financially and administratively supporting institutions and bodies.

In the Arab world, however, this concept remains limited and uncommon, with the exception of the United Arab Emirates.

Thirdly // Functions of Economic Intelligence:

Through studying the concept of economic intelligence theoretically and its application in various types of projects, it becomes clear that this concept is not limited to economic projects alone, but extends to include diverse fields. In fact, its application began first by non-economic bodies and departments, although the primary goal was to support national economies. From this analysis, it appears that economic intelligence includes several interconnected dimensions, which can be classified into four main axes: (Nasreen Maghmouli, 2016, p. 126)

1- Controlling project resources through the management of acquired and distributed information.

2- Coordinating between different economic activities to ensure the harmony of operations

3- Monitoring risks, threats, and opportunities that the project may face.

4- Influencing other parties.

These dimensions exhibit a clear interaction with one another. Although small and medium-sized enterprises (SMEs) face particular challenges due to limited communication and information dissemination, the first three dimensions are achievable and can be utilized. The fourth dimension, however, remains limited in application and is often seen in innovative or rapidly growing organizations.

Economic intelligence focuses on the informational aspect, which in turn leads to the functions of protection and influence. The functions of economic intelligence can be explained as follows: (Shereen Badry, 2014)

1- The Intelligence Function: This function aims to enable the organization to identify available risks and opportunities and reduce uncertainty. This is achieved through the continuous search for the best ways to gather information about the surrounding environment and competitors, which helps achieve a comparative information

advantage. LaRIVET defines this function as monitoring changes in the environment to make decisions aligned with project objectives, such as conducting market research to assess available opportunities and avoid uncertainty arising from consumer preferences.

2- The Influence Function: This function aims to influence the surrounding environment by using information as a tool of pressure. This is evident, for example, in the international policies of some countries, such as the United States, which uses international bodies to exert pressure on other countries. These policies have evolved to include modern strategies such as coordination and discouragement, alongside traditional pressure tactics.

3- The Protection Function: This function focuses on protecting information acquired or reported to specific parties, especially competitors. In doing so, it contributes to reducing the risks of information imbalance that the project may face.

Fourth // Stages of Economic Intelligence:

Economic intelligence goes through several main stages, which can be summarized as follows: (Mohammed Naama Al-Zubaidi, 2017, p. 48)

1- Information Gathering: This stage is in line with the vigilance that transforms the information produced by the environment into transparent and useful information for the project, meaning that a distinction must be made between the preparation stage for collecting that information and the collection stage.

2- Information Organization: This stage involves placing the information obtained for the project and used within the project. This is one of the factors affecting the organization of information, as a study by the European Commission in 2003 showed that the larger the project, the more information can be provided about its activity.

3- Defining Project Needs: This stage represents the actual beginning of applying economic intelligence. It involves clarifying the objective of its use, which helps to narrow down the scope of information gathering and avoid scattering it across multiple sources.

4- Information Transfer and Distribution: This stage focuses on the information technology aspect, specifically the systematic organization and distribution of information until it reaches the intended beneficiary effectively.

5- Innovation: This stage refers to the results generated from employing economic intelligence. Studies have demonstrated a strong relationship between innovation and a project's competitiveness, as it contributes to enhancing the organization's market share. (Alain Juillett, 2004, p. 77)

Fifth // Some Countries' Models of Economic Intelligence: (Mustafa Boudrama, 2012, p. 67)

1- The Japanese Model : The Economic Intelligence Center is located within the Ministry of International Trade and Industry in Japan, and its primary role is to assist Japanese institutions in their various tasks.

This ministry is also linked to Japanese universities, major corporations that fund research and think tanks and visiting researchers, as well as professional and administrative research and scientific organizations. This system was designed to benefit projects .

During the reconstruction years, the Japanese focused on integrating research and development, utilizing technologies that were later copied or stolen. This is precisely what happened with emerging economies in Asia, particularly China. Furthermore, Japanese economic institutions allocate approximately 1.5% of their revenue to spending on economic intelligence.

2- The American Model:

During the 1990s, the United States witnessed a significant shift in the field of economic intelligence, driven by a number of international variables, most notably the remarkable economic growth achieved by both Japan and Europe, which were the United States' main competitors at the time. This competition was clearly manifested, for example, in the challenge posed by the American company Boeing to its European counterpart Airbus, as well as in the competition between the American space agency NASA and the European Ariane space station (A. Bloch, 1996, p. 221). In response to these shifts, the United States sought to establish a thriving information market, quickly becoming a global leader in this field. This market encompasses a wide range of information actors, such as brokers, universities.

Its goal is also to enhance and support influence within it, serving American national interests both domestically and internationally, as well as implementing it according to precise and coordinated working mechanisms. Within this framework fall several sub-goals, including :

- Improving national cohesion and supporting the inclusion and integration of ethnic minorities.
- Reducing resource waste to control information technology.
- Rethinking the protection of the national information network.
- Facilitating access to strategic and economically valuable information for all.

It is noteworthy that the American economic intelligence system adopts the activities of private intelligence agencies such . Furthermore, American economic and strategic intelligence companies are characterized by their enormous size and global reach, utilizing vast material and human resources.

3- **The French Model:**

It is distinguished by the fact that, unlike the two previous systems, there is a strong role for the government in this field of intelligence, alongside major public institutions. Furthermore, various public initiatives in France outweigh all private ones. In addition, the development of this type of intelligence remains contingent on both :

A- The Constitutional Obstacle:

This obstacle stems from the dual system within the executive branch, characterized by the partnership between the President of the Republic and the Prime Minister, particularly during periods of political cohabitation. The structure of the ministries is also considered insufficiently robust to activate mechanisms for economic intelligence and vigilance, and it lacks the necessary will to bring about the required change.

B- The Cultural Obstacle:

The diverse party affiliations and varied cultural and intellectual backgrounds of employees, coupled with the tendency to withhold information and not share it, result in weak administrative coordination. Moreover, the differing administrative cultures, stemming from the varying degrees of qualifications obtained from French higher education institutions, contribute to a lack of desire for modernization and development. Furthermore, foundations lack the capacity to attract and leverage external human intelligence to build effective economic intelligence mechanisms, a feat successfully achieved by think tanks in countries like the United States and Japan (Nesrine Maghmouri, 2016). Since 1995, there have been clear calls for reforming the economic intelligence system in France, focusing on supporting economic intelligence at the regional level by strengthening the role of local authorities, such as administrative districts and municipalities, to support large and small projects in these areas. The aim of this support is to enhance the capacity of economic intelligence institutions to overcome obstacles, improve productivity, increase competitiveness, and boost exports.

Research and think tanks, local and international universities, and business organizations also play a significant role in this process to ensure the integration of information and knowledge within the value-added chain .

Section Two

Knowledge Economy - A Conceptual Framework

First // Definition of the knowledge economy :

It is also called the "new economy" or the "information economy" because of knowledge, whether directly (knowledge economy) or indirectly (knowledge economy). In this context, the economy is the main driver of growth. The availability of various communication technologies is one of the things that knowledge utilizes, employing different methods, including digital ones, for types of products and services that add significant value. Knowledge is also defined as the final stage in the process of transforming information into knowledge. This transformation provides a broad knowledge environment with an organic and interconnected relationship between the collected data and the knowledge itself. (Hilal Jawda Symposium, 203, 2016).

The UK and New Zealand Ministries of Trade and Industry defined it as "an economy in which the processes of generating and investing in knowledge play a role in creating national wealth and increasing the efficiency of all economic sectors, and is a fundamental and sustainable driver.

" Fritz McLub defined it as a knowledge-based economy that has surpassed The number of workers in knowledge-producing sectors is greater than the number of workers in other economic sectors. Unlike the traditional economy, where growth is driven by traditional factors of production (labor, land, capital, and organization), qualified and highly skilled human resources, or knowledge capital, are the most valuable assets in the knowledge economy ..

If a knowledge society is one that generates, disseminates, and utilizes knowledge to raise living standards and improve quality of life, then the knowledge economy forms its backbone. In a knowledge economy, knowledge is both a commodity and a service, constituting the primary driver of economic growth. It also relies heavily on the availability and use of innovation and information and communication technologies. Human capital is considered its most important asset.

Therefore, nations and societies aspiring to progress and development strive to build a knowledge-based economy.

If a knowledge society is one that creates, disseminates, and utilizes knowledge to improve quality of life and raise living standards , with human capital being its most valuable asset. For this reason, nations and societies aiming for development and progress seek to rely on the knowledge economy.

Second // The Importance of the Knowledge Economy (Heba Abdel Moneim, p. 166, 2019)

The importance of the knowledge economy lies in raising the efficiency of companies and fostering innovation within them through:

1- Opening up opportunities for innovation and creativity in products.

2- Greater emphasis on the role of human capital, as companies focus on attracting employees according to the new economic conditions.
3- Increased distribution of knowledge and the adoption of new work practices.
4- Providing new sources of economic growth and raising the level of production.

Third // Pillars of the Knowledge Economy :

The knowledge economy relies on four main pillars essential for its success: (Amer Omran Al-Maamouri et al., 2018, p. 155(

1- A Group of Educated and Skilled Individuals : These individuals contribute to the creation, use, and efficient sharing of knowledge. Education is essential for achieving technological growth, especially in scientific and engineering fields. A more educated society is usually more technologically advanced, which helps increase productivity and output
2- . An Economic and Institutional System : The system must provide incentives that encourage the efficient use and allocation of existing and new knowledge. This contributes to supporting policy changes. The economic environment should also have sound policies conducive to market processes, such as foreign direct investment and a move towards free trade.
3-
4- An effective innovation system : An effective system must be created for many entities, including: ((companies, research centers, universities, think tanks, consultants, and other organizations)) that apply global knowledge and adapt it to local needs to produce new technology. It is worth mentioning that technical knowledge helps increase productivity growth**.**
5- Vital Information Infrastructure: This facilitates information processing, technology, communication, and dissemination, helping to reduce the costs of business procedures. It also helps increase the flow and spread of information and knowledge worldwide, enhancing communication and productivity.

Fourth // Characteristics of the Knowledge Economy:

The knowledge economy is characterized by a set of features that distinguish it from the traditional economy. It is well-known that the knowledge economy is built on the foundation of technological and informational development, increasing the risks associated with growth. Opportunities for renewal, innovation, and creation have become significantly greater. Among the most prominent of these characteristics are the following: (Sharif Kamel Shaheen, 2014, p. 79(

1- Knowledge intensification relies on investment in human resources, which are considered intellectual and cognitive capital.
2- It depends on continuous learning, training, and retraining, ensuring that employees keep pace with developments in the fields of knowledge.
3- It activates research and development processes as an engine for change and growth.
4- Knowledge creators earn higher incomes as their qualifications and the diversity of their skills and experience increase.
5- It possesses the ability to innovate and generate new intellectual and knowledge-based products previously unknown to the market.
6- The need for it and the demand for its knowledge-based products, which are involved in every activity, are constantly renewed.
7- Economic and financial risks: The technology sector experienced significant growth in the 1990s and early 2000s, resulting in unemployment rates exceeding 13% of the workforce on average. This has become a phenomenon affecting all economies, whether developed or developing.
8- Human concerns: Anxiety about the present and future arises because increased opportunities have broadened possibilities and risks. The spread of the internet accelerated the dissemination of both good and bad ideas, thus expanding business opportunities. A successful business is built on a good idea.
9- Lack of loyalty to others due to increased competition for fame, career, or wealth, and a lack of loyalty to products or services due to the diversity available in the market and rapidly changing tastes. Consumers can change the content of their purchases for two reasons: quality and price. The expansion of markets through e-commerce has given consumers faster and more effective marketing capabilities, granting them greater freedom. Thanks to the new economy, competition has intensified, benefiting consumers and making it more difficult for investors, who must constantly innovate to retain their customers and markets. 10- Increased working hours and decreased leisure or free time. Success in life requires working more both during and outside of official working hours, which are no longer sufficient.

Fifth // Indicators of the Knowledge Economy:

The knowledge economy has indicators that determine its prevalence in a given economy and demonstrate the degree of success in its transition. This allows for comparisons between countries to determine their level of economic development. These indicators measure knowledge inputs, stocks, networks, dissemination, outputs, and management. Examples include: (Hilal Joudah Symposium, 2016(

1- The percentage of the knowledge component in the price of goods, services, and products.

2- The country's trade balance with respect to knowledge trade (knowledge exports and knowledge imports), including the balance of payments for technology according to the type of technology.
3- Indicators of the move towards an information society, such as infrastructure indicators (telephones, computers, networks, including the internet), digital content, and the progress in implementing information and communication technology applications in the fields of trade, government, and education.
4- The number of patents and intellectual property rights, including trademarks.
5- The number of years of schooling and training relative to an individual's age.
6- The number of technology parks, research centers, and science parks, as well as the number of technology incubators, has made the new knowledge economy a tangible reality, even if some still perceive it as still in its formative stages. It has surpassed all other economies in an unprecedented way, both quantitatively and qualitatively. The individual is the cornerstone of the new knowledge-based economic system. Therefore, individual skills, creativity, and innovation are not only sources of wealth and drivers of economic growth, but also factors of production.
Generally, many indicators demonstrate the success of the transition to a knowledge economy, allowing for comparisons between countries to determine their level of economic development.

((Third Section))

Indicators of the Knowledge Economy in Iraq After 2003

First // An Overview of the Iraqi Economy:

Iraq is a rentier state that relies primarily on oil. Its oil reserves in 2018 were estimated at 140 billion barrels, representing 8% of global reserves and 11.9% of OPEC production. These reserves were projected to remain at the same level in 2022. Furthermore, Iraq possesses abundant natural resources, a rich cultural and historical heritage, and a strategic geographical location, all of which facilitate access to significant potential within the various indicators of the knowledge economy.
After 2003, the Iraqi economy, under occupation, experienced unstable conditions such as wars and extremism that dominated its sectors. Oil exports once again constituted over 90% of Iraq's total exports, as did its financial revenues. Therefore, attempts and programs were implemented to regulate economic activity, revitalize various economic sectors, and increase their contribution to the GDP. The new governments sought to raise The economic sanctions imposed on the Iraqi economy, the liberalization of politics, and the shift towards a market economy aimed at increasing and improving knowledge-based economy indicators and opening up to the outside world, among other things, have resulted in several key characteristics of the Iraqi economy (Ahmed Barhi Ali, 2011, p. 38):
1- High production costs in the industrial and agricultural sectors, stemming from increased input prices, which have diminished their competitiveness due to the unjustified openness to imported goods.
2- A significant increase in demand for foreign currency to cover imports and settle external payments, which are financed solely by oil sales.
3- Constant exposure to disruptive shocks resulting from large fluctuations in oil prices.
4- Insufficient public participation in financing public revenues, particularly from profits generated by the business sector or from household income, due to lax tax collection.

Second // The development of the ratios of scientific research centers in Iraq:

These centers contribute to the production of knowledge and the increase of its stock, as well as the increase in its use, although the sources of funding for research and development in Iraq are very limited compared to developed countries and developing countries on the path to growth. We find that there is a close relationship between this indicator and the knowledge economy, which consequently leads to the development of the country's economy. We find that the ratio of total spending on the volume of research and development to the volume of spending on higher education is one of the most important sub-indicators of research and development. It is considered a positive indicator that is concerned with higher education institutions, which creates a suitable environment for moving towards the knowledge economy, as shown in Table No. (1).

Table (1)

Index of Research and Development Spending as a Percentage of GDP in Iraq for the Period (2022-2004)

(million Iraqi Dinars)

Year	Gross Domestic Product at Constant Prices (1)	Expenditure on research and development as a percentage of GDP(%) (2)
2004	101845.3	0.04

2005	**103551.4**	**0.04**
2006	**109389.8**	**0.04**
2007	**111455.7**	**0.04**
2008	**120626.4**	**0.03**
2009	**124702.1**	**0.05**
2010	**132687**	**0.04**
2011	**142700.2**	**0.04**
2012	**162578.5**	**0.03**
2013	**174990.2**	**0.03**
2014	**178951.4**	**0.04**
2015	**183616.4**	**0.04**
2016	**208932.1**	**0.04**
2017	**201059.3**	**0.04**
2018	**202776.3**	**0.04**
2019	**211789.8**	**0.05**
2020	**195402.5**	**0.04**
2021	**198344.3**	**0.04**
2022	**213495**	**0.04**

Source: Republic of Iraq, Annual Statistical Bulletin of the Ministry of Planning, Central Statistical Organization, various years.

Column (2) World Bank data, available at: https**://data.albankaldawli.org**

In the years (2004-2022), there were varying percentages of spending on research and development activity as a percentage of output, ranging between (0.03%-0.05%). This is attributed to the political circumstances and the size of the general budget, which is subject to global oil prices. During most of this period, investment in research and development collapsed, and only a small percentage of the general budget was allocated to this activity. Moreover, there is no link in Iraq between industry, academia, and research institutes through investments in research to enhance and improve the ability to increase economic growth. Rather, that growth remained linked to the oil sector, and we note this from the preparation of the country's general budget based on global oil prices.

Secondly// Research and Development Outputs:

A patent is a document issued by the state that grants legal recognition to the inventor for their scientific invention and gives them the right to dispose of the invention. They can monopolize or exploit the invention. Due to the previous regime and the unstable political situation, which negatively impacted scientific innovation, as shown in Table (2), (13) patents were registered for residents and (1) for non-residents in 2004. Due to the security situation in Iraq in 2005, no patents were registered. Then, (14) patents were registered in 2006, The increase in patents continued, reaching (80) for residents and (56) for non-residents in 2012, bringing the total number of patents for that year to (136). However, in 2015, this number declined to -86.4, a negative figure resulting from the absence of consistent and stable plans and programs for the research and development organization and the lack of a future vision to encourage patents.

This decline was also due to weak spending on the sector, as the Iraqi budget was unable to allocate sufficient funds for research and development because Iraq still relies on a traditional budget and has not yet transitioned to a realistic budget. The total number of patents subsequently increased to 782 in 2020.

It helps in tracking developments in science and is what drives science forward. The fields of publication have multiplied, especially after the emergence of information technology, which is represented by the development of types of computers, means of communication, and various printing and publishing technologies. The development in the forms and means of publication came as a result of the increasing attention given by scientific projects responsible for this aspect. Hence, the impact of Iraqi universities and research centers in producing and publishing information

has become prominent, because their goals are educational and research-oriented at the same time. This is what has led to an increase in the number of scientific and technological journals published in Iraq, especially after 2003, from (91) in 2004 to (8556) in 2020. Furthermore, patents related to high-tech knowledge economy sectors are among the most prominent indicators of research and development outputs, complementing each other in measuring the extent of knowledge investment .

Table (2)
Patents granted to residents and non-residents in Iraq for the period (2004-2020)

Year	Popular scientific and technological journals	Patents		
		Patents for residents	Patents for non-residents	the total
2004	91	13	1	14
2005	141	---	---	---
2006	244	14	---	14
2007	241	14	2	16
2008	319	28	1	29
2009	408	26	3	29
2010	554	13	1	14
2011	640	52	5	57
2012	826	80	56	136
2013	839	100	140	240
2014	866	130	239	369
2015	894	22	28	50
2016	1236	---	---	---
2017	2259	613	101	714
2018	6073	653	77	730
2019	7782	698	61	758
2020	8556	720	62	782

Source: Central Organization for Standardization , Industrial Property Department, on the Internet, dated 11/30/2015, at the following link: www. cosqc.gov.iq /Patent /Default.aspx

Third // Education and Training Indicators:

Education and training play a crucial role in the knowledge economy, as they ultimately lead to the availability and growth of human capital capable of producing and investing in knowledge. Furthermore, they raise awareness of the importance of the knowledge economy in development and the role of individuals and institutions within it.

Economic activities rely heavily on human resources, aiming to develop and enhance them within the knowledge-based economy. The role of human resources extends beyond economic and social aspects, becoming a fundamental pillar of development. The education and training indicator and its responsiveness to labor market needs are critical factors in determining the requirements of this market . as illustrated in Table (3).

Table (3)
Index of Education Spending as a Percentage of GDP in Iraq for the Period (2004-2019)
(Million Iraqi Dinars)

Year	Gross Domestic Product at Constant Prices (1)	Spending on education at fixed prices (2)	Spending on education as a percentage of GDP (3(
2004	101845.3	1408.89	1.38

2005	**103551.4**	**870.03**	**0.84**
2006	**109389.8**	**1027.18**	**0.93**
2007	**111455.7**	**1187.62**	**1.06**
2008	**120626.5**	**1628.03**	**1.34**
2009	**124702.1**	**2206.35**	**1.76**
2010	**132687**	**2358.27**	**1.77**
2011	**142700.1**	**2723.92**	**1.90**
2012	**162587.4**	**2405.24**	**1.47**
2013	**174990.2**	**2698.46**	**1.54**
2014	**178951.3**	**2828.22**	**1.58**
2015	**183616.2**	**3685.08**	**2.00**
2016	**208932.1**	**4463.51**	**2.13**
2017	**201059.3**	**4016.54**	**1.99**
2018	**202776.2**	**3598.75**	**1.77**
2019	**211789.8**	**4570.13**	**2.15**
2020	**195402.5**	**39918.2**	**2.04**

Source: Republic of Iraq, Statistical Bulletin of the Ministry of Planning, Central Statistical Organization, Annual, Various Years.

Column (3) is calculated

As can be seen from Table (3), a percentage of GDP spending on education as has witnessed remarkable growth despite the fluctuating GDP growth rates in Iraq during the period (2004-2020). This has driven the Iraqi economy to increase spending as a percentage of GDP, reaching approximately (2.04%) in 2020, although this percentage is low due to the COVID-19 pandemic, the decline in oil prices, and the reduction in public expenditures resulting from decreased public revenues.

Fourth // Information and Communication Technology Index:

This index is of great importance given the convergence of current realities, namely the convergence of a suitable technological base with a knowledge-based economy. This, in turn, fosters a partnership between the dissemination of new and available technologies and the flourishing of intensive knowledge-based and production activities that have significant economic impacts. This is achieved through :

1- Developing the latest technology within the available information, which is represented by various means of trade, electronic spreadsheets, and others..

2- The ability to generate productivity gains, particularly in the areas of information processing, storage, and exchange.

3- The encouragement of optimal utilization of resources through the adoption of sound organizational models (Corin Cohen, 2004, p. 66).

A set of indicators has been developed to facilitate capacity building . This is based on a set of criteria that enable decision-makers and policymakers to formulate appropriate policies and develop future action plans.

((Fourth Section))

Economic Intelligence Strategies and Their Role in Enhancing the Knowledge Economy in Iraq :

In reality, the economic situation in Iraq has not been conducive to the advancement of economic intelligence due to several factors that have contributed to the deterioration of the country's economy and hindered economic development . Most economic analyses indicate that economic intelligence enhances the competitiveness of countries' economies and their economic superiority.

First // Proposed Strategies for Economic Intelligence in Iraq:

The process of supporting and driving economic development requires following important recommendations that will fulfill the strategy adopted to ensure the utilization of economic intelligence in Iraq. These recommendations include the following:

1- **Supporting Dissemination with Transparency**: Processing the vast amounts of available data intelligently is the responsibility of public administrations and economic projects. This includes extracting the various hidden knowledge that characterizes different behaviors and phenomena, and working to disseminate information relevant to the public across all segments in an economical and purposeful manner. Emphasis should be placed on cooperation between institutions and encouraging it to eliminate various phenomena, including the withholding of information and its use as a source of power. (Ministry of Trade and Industry, 2005)

2- **Developing Pedagogical Programs**: In order to increase methods of searching for, evaluating, and utilizing the best means of information, universities, higher education institutions, and vocational training centers must develop and improve their pedagogical programs according to the requirements of the project environment. This should ensure that

these programs are open to knowledge and Quality education, as practiced in many advanced countries, is essential for implementing various methods.

3- **Enhancing the role of the state's economic interests through chambers of commerce and various professional and trade union bodies and associations:** These bodies possess vast amounts of information and the means to improve efficiency and quality, while playing an active role in restructuring and developing their members. This positions them as a crucial link in the investment chain for those interested in economic, social, and geographical information.

4- **Networks of international financial institutions and banks**: These networks possess the capacity to finance, partner in, and provide financial support for economic intelligence projects, facilitating entry into new markets and acquiring clients that increase the institution's profits.

5- **Investment Support and Development Bodies:** They are characterized by their administrative nature, aiming to provide the actual assistance that investors need at the various stages of completing productive investment projects.. (Fouad Haidar, 139, 1990)

Second // Requirements for Transitioning from a Capital-Based Economy to a Knowledge-Based Economy:

The knowledge economy forms the solid foundation from which various fields of development emerge. It serves as a driving force for the sustainability and continuity of this economy, thus achieving the fundamental goal of propelling overall economic development in developing economies and stimulating economic growth within an integrated process whose means and end is the human element in all societies. To benefit from the concept of economic intelligence in improving knowledge-based economy indicators in Iraq, the transition from a capital - based economy with to a knowledge -based economy is necessary. (Mohammed Fathi Abdelhadi, 2019, p. 164):

The effects of this transformation have become clearly visible at the level of countries, companies, individuals, and societies. At the individual level, as individuals are the nucleus of the societies that constitute nations .

For countries to transition from a capital-based economy to a knowledge economy, they must give sufficient attention to the education system through the following: (Amer Omran Al-Maamouri et al., 2018, p. 95)

1- Education policies must be developed to ensure that all students are able to use information and communication technologies from an early age, and that knowledge and information literacy and computer skills are part of the state's priorities.

2- Teachers, without exception, should be required to receive mandatory computer skills training and be provided with all the necessary equipment to develop their abilities and skills in various technological fields.

3- The number of workers capable of participating in knowledge-based industries should be increased.

4- The capacity to engage with the knowledge economy should be developed, which requires providing.

Conclusions

1- Economic intelligence is a crucial tool for developing and expanding the knowledge economy and achieving sustainable development goals.

2- Economic intelligence contributes to accelerating various development processes through diverse tasks, including making economically intelligent decisions, as well as collecting and protecting information.

3- There is a reciprocal relationship between knowledge, research and development, education, , which leads to the improvement of the knowledge economy.

4- Economic intelligence is linked to competitiveness, small and medium-sized enterprises (SMEs), and developing both the public and private sectors.

5- Further development of economic sectors is needed to facilitate interaction with the e-government mechanism, as both rely on knowledge and information.

Recommendations

1- Integrating the concept of economic intelligence into curricula is crucial within the framework of the knowledge economy across all educational institutions. This integration should involve familiarizing students with the concept, developing it further, and advocating for its adoption to accelerate and sustain development.

2- Establish the infrastructure for transitioning to a knowledge economy by encouraging investment in various sectors, particularly the information and

3- Encourage diverse investments in human capital, with a focus on expanding lifelong learning and various e-learning methods in governmental institutions and agencies.

4- Governments and businesses should rely on economic intelligence in formulating economic policies, such as anticipating crises and disruptions, directing investments, and setting research and development priorities.

5- The need to link the results of economic intelligence with scientific research policies, which are represented in funding projects with high feasibility based on market analysis and building a knowledge society that depends on innovation, not imitation.

6- Formulate new strategies to reduce the marginalization gap in utilizing skills necessary for advancing the knowledge economy and ensure their adoption by central authorities to achieve the highest levels of development and innovation.
7- Accelerate various investment strategies in economic intelligence to lay the foundation for projects that support economic diversification and reduce dependence on the oil sector.

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