



# The Experience Of Investing In Smart Cities And Its Role In Enhancing The Steps Of Sustainable Development

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## ARTICLE INFO

## ABSTRACT

Today, the world lives as the product of the technical revolution, which has included all aspects of life, and from which the environment has a share in the development of scientific cooperation in the field of stimulating investment in smart cities supporting the environment, which aims to decrease. An environmental damage to the industrial progress of humanity. A highly secreted threatened human life, a problem. Research in Iraq is still far from environmentally friendly activities at a time when it comes into contact with an urgent need to enhance local efforts to adopt economic activities reinforced for sustainable development. The research aims to identify the importance of investing in smart cities, and how it can support the environmental impact and improve human life, while trying to develop future foresight. For Iraq, the research hypothesis is that the adoption of investment in smart cities enhances the ability of the economy to implement sustainable development plans and support the environmental impact of the population. The research concluded that the experience of smart cities has achieved many advantages for the countries that they applied towards a clean, healthy and good environment, and the research recommended the importance of Iraq benefiting from this experience through future anticipation in a way that reduces the environmental danger and guarantees a decent and clean life for the population.

**Keywords:** investment, smart cities, sustainable development.

## 1. Theoretical aspect of investing in smart cities

The knowledge and technological development witnessed in the world has secreted a transformation in the patterns of societies from traditional societies to civilized societies based on knowledge and technology, so the countries of the world seek to keep pace with this development through resorting to building smart cities, by relying on the digital economy that depends on information and communication technology. Considering that investing in smart cities is one of the main economic variables that will contribute to achieving the development process of all kinds and enhancing the growth rates of development activities, and therefore this topic deals with the theoretical framework investing in smart cities and goals and characteristics of smart cities.

### A. The concept of smart cities

The term smart cities appeared for the first time in 1994 at the European Conference on Digital City, and it was known at that time as cities that bring the city, industry, and citizens together to improve life in urban areas through more sustainable integrated solutions, including better applied and planning innovations, and a more participatory methodology and greater energy efficiency. Better transportation solutions and smart use of information and communication technology (Karima, pg. 45) (Bouinot Jean) defined them as cities that are a center for technical skills, knowledge and modern technologies 1. Some researchers believe that they are those cities that include a set of systems that depend mainly on creativity, invention and innovation, and links between institutions, bodies and knowledge activities in order to address the challenges and

problems that cities suffer from. 2. While others define them as those innovative cities that use information and communication technologies to improve the quality of life of urban generations with regard to environmental, economic, social and cultural aspects. Accordingly, they are cities that aim to invest in human and social capital and the traditional infrastructure that nourishes sustainable economic growth and quality of life.

### **B. Smart cities goals**

The goals of smart cities are generally summarized in the following 3: Achieving economic growth, improving the quality of life of individuals, stimulating sustainable societies, modernizing the city as an important element for stimulating sustainability, developing infrastructure, relying on information technologies and making them available to all individuals. Achieving harmony between individuals and groups, - Paying attention to green areas and the environment, and working to expand green lands, - Developing industries that specialize in knowledge and multimedia by benefiting from the outputs of information technology, - Optimal utilization of natural resources, especially energy, by rationalizing its consumption, - Reducing Emission of pollutants and toxic and harmful gases such as carbon dioxide to reduce global warming.

### **C. Characteristics of smart cities**

Smart cities are characterized by a set of characteristics that distinguish them from traditional cities, which are as follows: 4

smart environment, smart economy, smart society, smart government, smart life, smart transportation.

## **2. UAE experience in smart cities**

The UAE is at the forefront of the Arab countries in adopting contemporary technical development packages in the structure of the local economy in order to enhance the structure of the national economy, as the UAE was distinguished by the launch of several initiatives targeting the inauguration of the smart cities system, especially smart investment by financing smart projects with about (500) intelligent advanced service project, Such as the Silicone Park project, at a cost of (\$ 300) million dollars, and the 2016 smart palm trees adopted in the source of its energy on solar energy 5.

The UAE has directed many investments towards the field of communications, information and innovation, which is the primary building block in the establishment and development of smart cities, as the UAE has allocated an integrated financing program for the implementation of these investments, starting from the Fund for Technology Finance Technology and Information Technology that targeted the financing of development projects, scientific research, training and field education, He urged the competent authorities to develop scientific research 6.

- A. Smart e-Government: The UAE government initiated the Smart e-Government project in 2001 in order to transform all government services provided to citizens in the form of an electronic system with the development of the use process to become a high-quality smart service that shortens the time and effort in completing transactions. As the project targeted its main axes, which are (readiness, media and communication technologies, information system infrastructure) 7.
- B. Smart government applications: In 2014, the UAE launched another smart project, which is a project (Smart Government App Store) in order to quickly access all government applications, through multiple electronic platforms according to mobile phone systems. The project aimed to provide several services from them) to pay public service bills, Traveling, student services, emergency services and others), as the number of electronic services in Emirati Abu Dhabi reached about (600) services 8, as well as the launch of the Federal Electronic Network program to be complementary to the government's endeavor with its national plan for the year 2021 in the field of smart electronic technologies, in addition to linking All the authorities with each other in a unified database all over the country 9.
- C. Smart Health: In the health field, the UAE launched a health strategy based on artificial intelligence in order to provide advanced health services for medical and technical cadres, especially in the field of diagnosing diseases and developing appropriate treatments for them 10, and the Emirate of Dubai launched a smart health project based on qualitative innovation in providing the best health services For citizens, through the use of electronic platforms in smartphones 11, and the UAE government has allocated in its federal public budget items that support smart health technologies in order to achieve sustainable economic development 12.
- D. Smart Education: In terms of education and education, the UAE launched the smart schools project for (50) schools selected for primary education, which adopts the latest innovative technologies in the means of education and interactive lectures, as well as modern means of communication and the use of computers with high technical capabilities, and preparing an electronic library Comprehensive 13, as the UAE seeks to achieve a compound growth rate in the field of education of (10.3%) at the end of 2023 14.
- E. Clean energy: The UAE has embarked on directing investment in energy towards environmentally friendly projects to reduce the manifestations of environmental pollution and radiation to preserve human existence in the future. Dubai aims to cover 5% of its energy needs by 2030 through clean energy, and the Emirate of Abu Dhabi seeks to cover 7% of clean energy by 2030 15.

F. One of the most prominent clean energy projects is the Masdar City Project, which is the first carbon-free city in the world, as it depends on wind, water and sun energy, and the Mohammed bin Rashid Al Maktoum Solar Complex project in the Emirate of Dubai, which depends on photovoltaic energy. As well as the concentrated solar energy project through which the UAE seeks to provide (1000) megawatts in 2030.

**Table (1):** The stages of implementation and project of the Mohammed bin Rashid Al Maktoum Solar Energy Compound in the Emirates for the period (2013-2030)

Stages	Part	Power (M.W)	Year of Service Entrance	Technique of Used	Electricity Price
First		13	2013	F. Voltage	-
Second		200	2017	F. Voltage	5.84
Third	One	200	2018	F. Voltage	2.99
	Two	300	2019	F. Voltage	
	Three	300	2020	F. Voltage	
Fourth		700	2020	Solar energy	7.3
Future		3287	2010-2030		

Source: Muhammad Sabah Hassan, Investing in Smart Cities and its role in achieving sustainable development with the possibility of Iraq to benefit from it in light of selected Arab experiences, Master Thesis, Al-Qadisiyah University, Iraq, 2020, p. 55.

### ***The possibility of Iraq benefiting from the experience of smart cities***

Iraq faces a very weak investment environment due to the instability of the political and economic system, which caused the deterioration of the output structure and poor macroeconomic performance. Iraq still relies mainly on oil revenues to finance its daily activities and events, in conjunction with the decline in private sector activity in light of the flourishing of administrative and financial corruption. And the recovery of the shadow economy. Most of the projects that were planned and implemented do not rise to ambition and the reality of the devastated economy. According to Table (2), Iraq requires it to make more efforts in order to achieve the level of investments that achieve the targeted growth of its productive sectors.

According to table (2), the target growth rate for the agricultural sector is (8.4%), and the estimated investments in accordance with the investment plan ranged between (1280.8) million dinars in 2018 and (1768.5) million dinars in 2022. The manufacturing sector is dependent on it a lot. The growth rate was determined by (10.5%) despite the limited investments directed to it, while the other sectors were approximately (49.5%) of the total estimated investments. However, the gap continued between what is planned and actual due to the unstable political and economic conditions that pushed the discreet investment companies from investing in the local economy.

**Table (2):** Estimated volume of investments to achieve the required growth rate for some economic sectors in Iraq for the period (2018-2022) (billion dinars)

Sectors		2018	2019	2020	2021	2022
Agriculture	8.4	1280.8	1388.4	1505.0	1631.5	1768.5
Oil	7.5	14579.5	15673.0	16848.5	18112.1	19470.5
manufacturing industries	10.5	687.2	869.9	961.2	1062.2	1173.7
Electricity and water	6.0	3591.1	3806.5	4034.9	4277.0	4533.7
building and Construction	6.8	2135.8	2281.1	2436.2	2601.8	2778.7
Transportation and communications	7.0	6883.0	7362.8	7880.3	8431.9	9022.1
Services	4.5	6803.0	7109.5	7429.4	7763.7	8113.1

Source: Republic of Iraq (Presidency of the Council of Ministers), National Investment Commission, Investor's Guide to Iraq, 2019, pg. 24.

Iraq is still witnessing a state of underdevelopment in its various economic sectors, especially the education sector through the weakness of its outputs and its inability to adapt to the labor market, which witnesses the latter a state of structural imbalance in the demand for work due to the absence of legal methods of work contracts and the commitment of employment to social responsibility with workers, Research centers and the weak interest of the government in scientific research, innovation and technical creativity, and the absence of the ability of the economy in its public and private sectors to take advantage of the innovative scientific results of scientific research produced by the discreet Iraqi universities. The same applies to the health sector, which is witnessing a dark state of unprecedented professional monopoly and corruption in the history of Iraq. Which prompted most patients to resort to health centers and hospitals outside Iraq to receive advanced health services that have become rare in light of the mostly illegal healthy environment as a result of the outbreak of financial corruption and collusion between health cadres, beneficiaries, the private sector and other bad manifestations that have distorted economic activities away from their endeavors National, in light of the revolution of ignorance and the spread of illiteracy, even among the learners mostly due to their weak skills in reading and self-development.

Smart city projects are still shy in Iraq despite Iraq possessing the basic ingredients for them, from primary materials and clean energy (solar energy and others) and a working hand, as they were not trained in an active manner, they are relatively cheap, have technical skills and a quick ability to adapt and learn from the external environment. His educational abilities are not mobilized towards him and others. Perhaps the smart village project is the only project launched by the National Investment Authority near Baghdad International Airport in the capital, Baghdad, which includes the use of advanced information technologies and special halls to rehabilitate and train workers and increase their skills in the field of modern technologies, as well as shopping, advertising and electronic promotion.

Also, there are some completed projects that are hoped to raise smart projects in the future, foremost of which is the residential city. According to modern agricultural techniques, for smart and environmentally friendly gardens, they can contribute to clean energy or offer agricultural crops with advanced and smart technologies and other things.

Projects of visitors to visitors in the holy province of Karbala, which were taken by applying clean energy technologies in some of them, and applying smart technologies in maintenance, monitoring and lighting services 15, but within the framework of the electronic government project, despite the application of several electronic programs in government services (such as the passport, the unified card, etc.) But the government is still suffering from a severe weakness in the field of adopting a unified database linking all governorates and ministries with each other, which constitutes a major challenge that causes draining huge funds of wages and salaries for workers in the government sector in the absence of real statistics to prepare workers, as well On the absence of accurate statistics in the field of financial allocation and actual exchange aspects of all ministries, which promotes urgently by adopting smart systems to control all the details of government procedures and services and prepare workers in them. In addition to the underdevelopment of the infrastructure necessary for the launch of smart cities projects, especially scientific innovation employee in local projects, trained cadres and actual rehabilitation operations for such projects that need real mobilization of science, innovation and development.

### CONCLUSIONS

- 1- Iraq has the elements of establishing smart cities from initial materials and clean energy sources, but a complete absence of desire at the government and private sector levels to adopt and develop such projects.
- 2- The idea of establishing mysterious smart cities is removed from many decision makers, despite the possibilities of benefiting from the experience of the leading smart cities in the United Arab Emirates.
- 3- Iraq possesses some cities that are supposed to be developed to rise to smart cities such as the city of Bassmaya in Baghdad and the cities of visitors in the holy Karbala, which could be the true launch of smart cities projects.

### RECOMMENDATIONS

- 1- Adopting a national strategy for environmentally friendly smart city projects in order to alleviate the severity of the dangerous environmental pollution that lives in the capital, Baghdad, and many Iraqi provinces.
- 2- Smart city projects will be the link in the science and technology sector between Iraq and the countries of the world.
- 3- Establishing and developing smart cities by allocating financial in the public budget and mobilizing the capabilities of the private sector towards accessing such a kind of important projects in the Iraqi economy, which contributes to increasing value added, increasing operation and providing adequate housing for the population.

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