The Information , Communication Technology And Its Relationship To Human Development In Saudi Arabia - An Analytical Study

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Abstract :

According to the researches in the field of economic development and information systems, The aim of this study is to search for a better understanding of the relationship between ICT capabilities within the digital economy environment. Saudi Arabia and used to develop a theoretical model describing the relationship between these variables. to test the generalizability of the model, data were collected from the economy in the Kingdom of Saudi Arabia on the research variables.

An introduction

The subject of information technology is one of the important topics that has captured the attention and thinking of many writers, researchers and managers of organizations, as information technology has become the distinguishing feature of contemporary organizations today, because the use of this technology through devices, communications and software provides a service for managing organizations represented by providing information and delivering it to the beneficiaries in order to Making and taking various decisions in the organization, and based on the foregoing, this study tended to reveal the reality of the use of information technology and the determinants affecting it through the theoretical framework of the study and its practical framework that took place in the Kingdom of Saudi Arabia.

The research problem :

There are many reforms in the countries of the world, and new areas and directions have opened before them, and new rules have emerged in the knowledge-based economic competition, as it has witnessed wide openness to local and foreign investments with regard to the adoption of the competition system as a means to try to achieve recovery for this sector, and to provide the infrastructure for electronic communications to obtain The benefits of the information revolution and the trend towards the digital economy and bridging the digital divide between developed countries and developing countries, in order to achieve human development, and based on the foregoing, the following problem can be posed:

What is the role of information and communication technology in achieving the dimensions of sustainable development in Saudi Arabia?

The research importance :

The information and communication technology have a prominent importance in promoting knowledge , innovation and its impact on wealth accumulation, as encouraging investment in this field and providing advanced infrastructure will have a significant impact on achieving economic and social development and preserving the environment.

The research hypothesis:

There is a positive reciprocal relationship between information , communication technology and human development indicators, as information and communication technology affects and is affected by human development.

The Research objective:

The research attempts to shed light on the components and indicators of information and communication technology, as well as presenting and analyzing the most important indicators of human development in Saudi Arabia, and trying to know the impact of information and communication technology in enhancing human development indicators.

The research Methodology:

The research adopted the descriptive approach in the use of books, magazines, periodicals, annual bulletins and the analytical method in dealing with ICT indicators and human development indicators.

The research structure: The research divided into three sections, the first section dealt with information and communication technology and human development (theoretical and conceptual foundations).

The first topic: Information and communication technology and human development in Saudi Arabia: a theoretical and conceptual framework:

The information technology, with its advanced tools, is a great importance in all aspects of life. Nothing has affected human life since the industrial revolution as it has been affected by information technology. What the world is witnessing is an accelerating technical transformation and successive developments in the field of computer hardware, software, communication devices and their means, and this huge amount of information that It grows and moves easily and easily between countries of the world, which has made information technology an important tool in modern business organizations. In it, information technology plays the role of the carriers of this progress, which has become a distinctive sign of this era.[1]

This technology has gone through several labels, it was described in its first appearance as modern technology, then the word modern was deleted from the label to become information and communication technology (NTIC) for information due to the demise of modernity after its appearance since the mid-seventies of the twentieth century through the first marketing and then the beginning of the use of the Internet In the nineties of the same century, a computer known as "ALTAIR" appeared recently, some of the literature whose authors use the acronym information technology

The revolution in communications technology means those developments in the fields of communications that occurred during the last quarter of the twentieth century, which

were characterized by speed, spread and effects extended to the masses within the same society or between societies, and it includes three main areas:

1. The information revolution or that huge knowledge explosion, represented by the huge amount of knowledge.

 Janod Véronique, "L'Impacte des innovations technologiques et organisationnelles sur les performances des entreprises: une évaluation non paramétriques", 2004, p2. Adresse Internet: http://atom.univ−paris1.fr/documents /janod_ATOM.pdf.

2. The revolution in the means of communication represented in modern communication technology, which began with wired and wireless communications, ended with satellites and optical fibers.

3. The revolution of electronic accounts that mixed with the means of communication and merged with the Internet.

As for the information technology, it refers to all types of technology used in the operation, transmission and storage of information in electronic form, and it includes the technologies of automated accounts, means of communication, interconnection networks, fax machines and other equipment used in the field of communications ([1]).

Through all this, we noted that the communication technology revolution has run parallel with the information technology revolution, it is not possible to separate them, as the digital system combined them, to which communication systems have developed, communication networks have been intertwined with information networks ([2]) to be information and communication technology, which represents "the sum of different techniques, tools, means or systems that are employed to process the content or content that is intended to be communicated through the mass, personal or organizational communication process, which Through which information and data are collected audio, written, pictured, drawn, audio-visual, printed or digital (through electronic computers), then this data and information is stored and then retrieved in a timely manner, then the process of publishing these communication materials, messages or audio content or audio-visual, printed or digital, transferring it from one place to another, and exchanging it, and that technology may be manual, mechanical, electronic or electrical, according to

the stage of historical development of the means of communication and the areas covered by this development (^{3})   The most important challenges in this field are:

1 -Maali Fahmy Haider, Information Systems An Introduction to Achieving Competitive Advantage, University House, Alexandria, 2002, p. 253

2- Sherif Darwish Al-Labban, Communication Technology: Risks, Challenges and Social Impacts, The Egyptian Lebanese House, Cairo, 2000, p. 102

3- Saeed Amir, Information and Communication Technology, an incentive or an obstacle to the rehabilitation of Arab enterprises, the International Forum on the Requirements for the Qualification of Small and Medium Enterprises in the Arab Countries, Chlef University, February 17-18, 2006

First : Weak ICT infrastructure :

These challenges emerge in the Arab regions because the information and communication technology environment is characterized as old and backward and cannot meet the requirements of this type of education, and thus its weak ability to provide support for electronic business networks. And that the control of Arab governments over the telecommunications sector in most of these countries, whose companies provide telephone communications packages through copper wire technology, which is an old technology, and that the development of this technology requires investment, large capital and high costs, and the provision of high-quality and fast Internet also requires high costs

Second: Economic Challenges:

These challenges are embodied through a network of knowledge and equipping educational institutions with information and communication technology, providing operating and maintenance costs while providing the necessary contents for educational operations, and the Arab governments' monopoly over these networks, delaying their maintenance and attention to them, and also the increase in these costs relative to per capita income.

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[1]-Somaya Abbas Majeed, 2006, Technology and its Relationship to Raising Organizational Performance Levels, Analytical Study, Baghdad Library Journal for Economic Sciences, No. 17. 106

Second: The Economic Challenges:

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During the year (2003) there was a significant shortage of computers as it was at a rate of (18 computers / 1000) compared to the global average at the time of (3/78) computers / 100 people, and this by its nature constitutes a challenge to education.

Third: Social and Cultural Challenges:

With the advent of the Internet, a new civilization emerged called (the cyber), or the world of the Internet, which was influenced by a special formula that is mainly determined by three main elements:

1 - North American civilization for its emergence there.

2 - The English language for the adoption of the Internet.

3- The culture of information and communication technology, engineers and technicians who developed it.

 Thus, these three elements have a significant impact on the cyber civilization, which has taken in line with the civilization of North America and intersects with European and Arab civilizations as well as the Middle East, and this, by its nature, constitutes another threat to Arab education by adopting information and communication technology, and for the purpose of avoiding these challenges it must be . There will be interaction between

these civilizations because education through these technologies will regulate the programming of minds and generations and may lead to an examination of the cultural characteristics that have a connection with Arab cultures and nationalities. and developing countries ([2])

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(1)Somaya Al-Fayoumi Majeed, 2006, Technology and its Relationship to Performance Evaluation, Journal of Baghdad College of Economics, Volume 26, Issue 72

(2)Imad Abu Al-Rub, Laila Rashid Hassan, 2003, The Quality of Electronic Services for Business Organizations in the Light of Globalization, Faculty of Science and Information Technology, Zarqa University, Jordan

Fourth: Legislative and Legal Challenges:

For the purpose of regulating the dynamics of e-learning in line with the rapid technical developments, it is of interest to Arab countries, and there must be a legal framework for the protection of intellectual property as well as for the generation and acquisition of knowledge in accordance with legal frameworks that included educational programs implemented in a virtual education method and the consequent recognition of this type . This is what happened in many Arab countries, including the UAE, Egypt, Jordan, and Syria, as an encouraging environment was created for the use of information and communication technology in education and the introduction of a law for dealing and virtual education. Through it .([1])

The second topic: Information and communication technology in the Arab world:

The volume of spending on information and communication technology is an indicator of the country's interest in this vital sector, and in the United Arab Emirates it was the first in this field to be the second Arab country in the field of spending on information technology at (126.3) million dollars for the year 1994 and comes after the Kingdom of Saudi Arabia In order and as presented in Table No. (1).

Table No. (1)
The volume of spending on the information and communications sector in some Arab countries for the year 1999

Countries	Spending on information and communication technology

Saudi Arabia	158.2 million dollars
UAE	$126.3 million
Egypt	$95.5 million

Source: Variation in Expenditure on Information and Communication Technology, Arab Organization for Education, Culture and Science, 1999, p. 155

In a study conducted by the (International Telecommunication Union, 2000) on telecommunications revenues and the number of fixed and mobile phone lines, as shown in the table below, which shows that the United Arab Emirates ranks second among the Arab countries in this aspect.

1-Somaya Abbas Majeed, 2003, previous source, p. 6

Table No. (2)
Number of fixed and mobile telephone lines, number of subscribers and telecom revenue for the year 2000

States	Fixed lines/100 citizens	Mobile phone/thousands	Telecom Revenue/Million Dollars
Jordan	9	71	244
UAE	39	494	1381
Bahrain	25	93	337
Algeria	6	19	252
Saudi Arabia	15	628	3327
Kuwait	24	250	345
Morocco	6	117	684
Yemen	2	30	67
Tunisia	9	39	352
Syria	10	–	1359
Oman	6	103	319
Palestine	9	40	23

Qatar	39	65	241
Lebanon	25	500	268
Libya	6	91	235
Egypt	15	91	1056

We note from Table No. (2) that the United Arab Emirates is at the forefront of Arab countries in terms of adopting fixed lines, which creates a clear gap between it and the rest of the Arab countries, especially with regard to telecom revenues, which amounted to (1381) million dollars to be in the second level after Saudi Arabia. , It also comes in the third level in the field of mobile phone subscription.

There is an amount of disparity between the Arab countries in substituting the mobile phone for the fixed phone in the Arab countries, as shown in Table No. (3) as follows:

Table No. (3)
The telecommunications sector in some Arab countries for the year 2000

Statement	Saudi Arabia	Lebanon	UAE
Landline / 100 citizens	14	18	41
Number of mobile phone lines (thousands)	1200	750	900
Telecom sector revenues (billion dinars)	3.5	1.5	1.7
Internet subscribers (in thousands)	150	300	16

We note from Table No. (3) that there is a digital gap between these countries, as the fixed phone coverage in the United Arab Emirates is (41/100 citizens), while we find such coverage does not exceed (14/100 citizens) in Saudi Arabia, and this is due to the density Population (UAE = 3 million people), (Saudi Arabia = 20 million people).

When we return to the early beginnings of the Internet Union at the level of the Arab world at the end of the last century, we find there are clear differences between these countries, as illustrated by Figure No. (1) below.
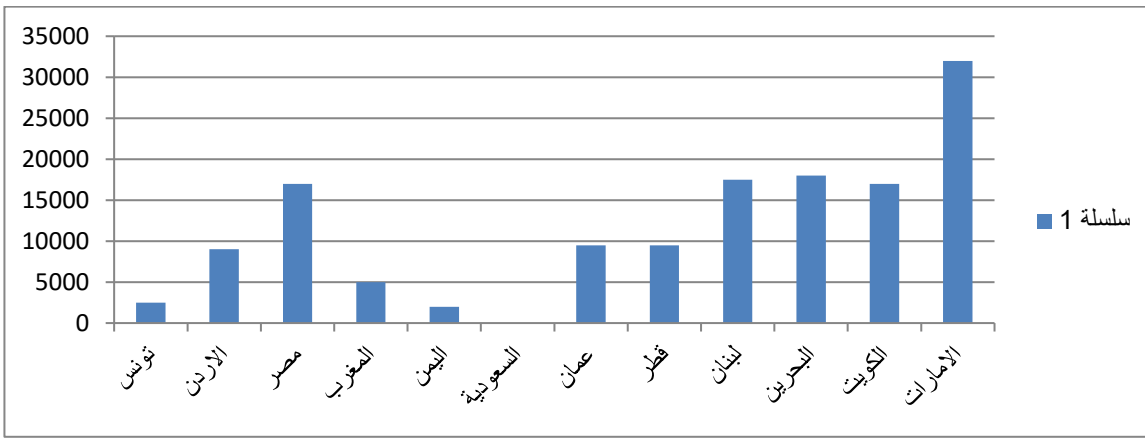
Figure No. (1)

The number of Internet subscribers at the end of the last century

That is why we find that the distinctive nature of the Arab Gulf states is the presence of oil, minerals and other wealth, and at the level of participation in the Internet in some developed Arab countries, we find there are large gaps shown by the following table No. (4):

Table No. (4)
Number of Internet subscribers for the year 2000

State	Number of subscribers per (thousands)	Users (thousands)
Egypt	55	440
UAE	160	400
Saudi Arabia	100	300
Tunisia	22	110
Kuwait	40	100
Jordan	25	87.5
Morocco	15	52.5
Oman	20	50
Qatar	18	45
Bahrain	15	37.5
Syria	4	20
Algeria	/	20
Yemen	3	12
Sudan	2	10
Libya	1.5	7.5

Source: Al-Iktissad Wal-Aamal Magazine, Arab Communications, Sami Lahoud, The Lebanese Distribution Company, 2000, p. 53

The number of Internet subscribers and users at the end of the last century shows these numbers, which are definitely not adopted for comparison purposes. For the purpose of calculating the ratios of these numbers to the population, specifically for every thousand citizens, we find these percentages are as follows:

Table No. (5)

Percentages of Internet subscribers or users per thousand citizens in some Arab countries for the year 2016

Level	Country	Number of internet users/1000 citizens
1	UAE	150
2	Qatar	61
3	Bahrain	60
4	Lebanon	57
5	Kuwait	50

Human Development Index 2016 p. 34.

On this basis and as presented in the previous table No. (5), we find that the United Arab Emirates achieved the first level in the number of Internet users per 1000 citizens at the end of the last century, which recorded the first precedent for the development of information and communication technology in it.

The third topic: Analyzing the impact of information and communication technology and human development on the Saudi model .

The Kingdom of Saudi Arabia seeks to find a strong and flexible telecommunications infrastructure, and it has made significant investments to develop this sector over the past years, especially with regard to the deployment of fifth generation technologies, and this is a result of the country's future and strategic vision in looking towards relying on other non-oil projects and diversifying its economies. To build a more sustainable future and improve the life and well-being of the citizen, and this can only be done by creating a knowledge-based economy as an alternative to the oil-based economy, and this is part of the strategy set by the country that extends to 2030.

The Kingdom's investments were large in the field of information and communication technology, as its total investments during the year 2020 amounted to (122) billion Saudi riyals, and these investments resulted in net profits of (2.8) billion Saudi riyals, noting that the Saudi Telecom Company was established in 1998, and is based on This company has a number of activities:([1])

1- Establishing, managing, operating and maintaining the infrastructure of fixed and mobile communications.

2- Delivering communications services and information technologies of all kinds to customers.

3- Preparing plans for the development of communication technologies and working on their implementation and follow-up.

4- Work to find expansion plans in information and communication technologies and infrastructure.

5- Find solutions for comprehensive information and communications technology and benefit from its services.

6- Working on providing data based on customer information and providing means of transporting Internet services.

7- Working in the field of wholesale and retail trade, buying, importing, exporting, selling and designing communication network devices and equipment, doing contracting work and developing fixed and mobile networks.

1Saudi Telecom Company, financial statements for the year 2021

8- Real estate investments, buying, selling, renting, managing, developing and maintaining.

9- Benefiting from loans and owning existing and fixed assets and others.

10- Providing administrative and financial services to its affiliated companies.

11- Working to provide solutions for decision support, business intelligence and data investment.

12- Providing logistical services and other logistic services.

13- Finding and developing digital payment services.

14- Working on creating cyber security.

15 - erecting telecommunications and radar stations and towers, and working to repair them.

16 - The right to own shares or to partner with other companies inside or outside the country.

This company achieved a profit per share of (1.41) during the year 2021, as the number of shares in it amounted to (1.997.017), knowing that the dividend distribution policy is subject to change according to a certain variable:

1- When there are strategic changes in the company's business, including changes in the external environment in which it operates

2- When the laws, regulations and legislation of the private sector in information and communication technologies change.

3- When there are obligations or commitments to financial institutions or meet certain requirements.

The number of subscribed lines increased from (29.1) million lines in 2014 to (29.7) million lines in 2017, with an increase in the spread of broadband services through mobile communications networks, and the number of subscriptions to broadband services decreased from (3.3) One million in 2014 to (2.5) million in 2017, and the number of Internet users in the country increased during that period from (19.6) million subscribers in 2014 to (26.1) million.

In the year (2007-2008) the Kingdom occupied the record at the world level, at (52), and ranked (37) in the world in the field of information and communication[1] technology price basket.

The growth in the corporate sector for telecommunications in Saudi Arabia has reached a rate of (12%) and is expected to reach (14%) in the next year. It is also expected that telecommunications companies will move further by moving towards value-added chains through participation with technology and business partners.

There are leading companies in the field of technologies and communications working alongside the Saudi Telecom Company, and these companies are ([2]):

1- Etihad Etisalat Company (Mobily):

This company is working to fix the repercussions of the accounting issues that occurred in 2014, which results in a reputation that results in a decline in market share and a loss of credibility with investors. With these circumstances, we find that this company enjoys the workforce in the Kingdom and achieves high revenues, and its management works to achieve stability in the operations of declining returns The mobile phone is profitable from the investments of optical mechanisms, taking advantage of the uncovered corporate market as an alternative to the mobile phone.

2- Mobile Communications Company (Zain Saudi Arabia)

This company raises the slogan (win through advertising) with its adoption of the approach (provide your best) in the telecommunications sector in the Kingdom of Saudi Arabia with a reduction in the rate of mobile phone termination with stronger pricing for data that is consistent with the strategy of improving customer experience through the network and customer points to enhance Communication, and this led to improving performance, as this company won the win in 2015 due to the expansion of its customer base subscribed to the mobile phone service to include (12.4) million subscribers with the improvement of its networks through the rate of mobile phone service termination and license extension.

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[1]-International Telecommunication Union, Measuring the Information Society, Telecommunication Development Sector (iTv-D), 2010

[2]-The Saudi Telecom Sector, Report Starting Coverage, 2016, pg. 4

The General Authority for Communications and Information Technology in the Kingdom has set the year 2020, and new challenges for communications and information technology have been identified, which will continue to be addressed during the next five years in order to fill the gaps in the sector and meet the requirements of the Kingdom's vision in 2020, and that the most important of these challenges is the deployment of broadband infrastructure for this purpose A set of special initiatives have been adopted that are compatible with this purpose and achieve the relevant aspirations of this sector. The authority has started implementing these initiatives through:

1- Evacuating the frequencies for the provision of telecommunication services by completing the implementation of the National Frequency Spectrum Plan, and the completion rate has been achieved (50%).

2- Establishing an organizational framework between the implementers and the municipalities to run the service dissemination activities and to overcome the operational difficulties, and a completion rate of (20%) has been achieved.

3- Working on developing indicators of the quality of broadband services and publishing them to the public to change and motivate service providers and improve their quality. The achievement rate was (90%).

4- Work on developing the technical standards for the infrastructure of information and communication technologies inside the buildings and to be able to take advantage of the existing infrastructure, and the completion rate was (100%).

The Telecommunications Authority has prepared for the period (2016-2020) a strategic plan that takes into account the comprehensive development in the country and the current conditions of the information and communications technology sector and regulatory frameworks in accordance with global or international practices. The digital national prepared by the Ministry of Communications and Information Technology to organize the efforts of the Ministry and all its affiliates, and the focus of the Public Communications Authority in the strategy of development in the sector was on the achieved regulation of global competitiveness, distinguished service for subscribers and an environment that stimulates investors, by working on the following axes:([1])

1-Annual Report, 2017, CITRA, Vision: 2030, p. 18

figure number (2)

Public Communications Authority Modernization Strategy

Source: Communications and Information Technology Commission, Kingdom of Saudi Arabia, Annual Report 2017, p. 19.

The first requirement: analyze the features and developments of human development indicators in the Saudi economy

Looking at the reality of human development in the Kingdom of Saudi Arabia leads to identifying, with a holistic view, the prospects and challenges of human development in particular, as well as human development in general.

The average life expectancy of the individual recorded a level of (72.4%) within the ranking (74) out of (179) countries, as the indicators of human development in the Kingdom are after Colombia and before Jamaica, and the individual perception index recorded a level of (14.3%) within the ranking (78) of the The origin of (179) countries to be after Gabon and before Iran, and the knowledge index also recorded (76% level) to be in the order (80) out of (179) countries, after Tunisia and before Honduras, and the per capita GDP recorded an amount of (22,053) US dollars Annually for the Kingdom to rank (35) out of (179) countries, to be after South Korea and ahead of the Czech Republic. In general, human development in the Kingdom has obtained a percentage of (84%) in the Human Development Index to be in rank (55) out of (179) A country that was subject to evaluation, after the Seychelles and before Bulgaria, and these indicators recorded a growth relative to the past period ([1]) .

We conclude from all of the above:

1- The educational and economic aspect of the Saudi individual is one of the solid aspects that can be invested in the comprehensive development process during the subsequent period and is classified within the high category.

2- The educational and health aspect of the citizen requires more investment than others because it is classified within the middle category.

Accordingly, the matter requires the development of the Saudi individual from all economic, educational, educational and health aspects in order to achieve comprehensive development through which all future development opportunities can be invested in a way that leads to comprehensive development by seizing all opportunities.

The economy of the Kingdom of Saudi Arabia is considered one of the largest (20) global economies, the first at the Arab level and in the Middle East, and a leader of the Group of Twenty countries. It has the second largest Oil reserves, and be the largest source of oil in the world, as it has the fifth largest reserves of natural gas and thus be a great power in the field of energy, but the Kingdom launched a strategy to diversify its sources of income and this led to raising the economic growth rate from (1.8%) in 2019 to reach (2.1%) year2020, all of this was a strong base for the launch of human development at a high pace.(2)

In the field of sustainable human development, there is an agreement in the Gulf Cooperation Council, Article 8 of which, signed in 2001, states: "Member states shall adopt the necessary policies to achieve an integrated development process for the GCC states in all fields and to deepen coordination between the activities included in the national development plans, including the implementation of the strategy Comprehensive long-term development during the period (2010-2025), the population strategy of the Gulf Cooperation Council countries for the year 1998 and the social development strategy for the year 2016, and that the focus on the Gulf citizen is the basis for real sustainable development in the national plans of the Gulf Cooperation Council countries and its main objective ([1]).

Figure No. (3) shows the performance of the Gulf Cooperation Council in the field of sustainable development index

Bahrain 65.9%	
Oman 63.9%	Qatar 60.8%

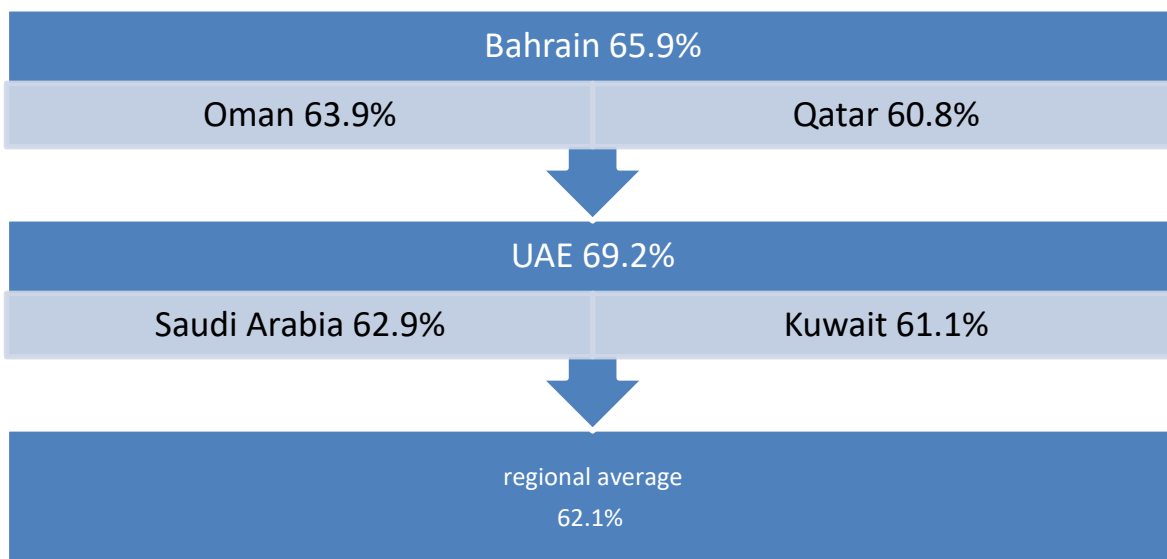| UAE 69.2%	
Saudi Arabia 62.9%	Kuwait 61.1%

regional average 62.1%

Figure No. (3)

The performance of the Gulf Cooperation Council countries in the global sustainable development index for the year 2018

The Kingdom has developed special programs to address and eliminate poverty. These programs are:

1- The initiative of the Ministry of Housing to provide private housing for the citizen.

2- Protecting the citizen from the direct or indirect impact of economic reforms.

3- Approval of charitable societies under the supervision of the Ministry of Human Resources and Social Development.

4- People with special needs and enabling them to obtain suitable job opportunities and education that guarantee their independence and integration as active members of society.

5- The Kingdom's support for the poorest countries and organizations concerned with combating poverty through:

A - Aid and relief projects and foreign aid through the King Salman Center for Relief and Humanitarian Works.

B - The United Nations Relief and Works Agency for Palestine Refugees (UNRWA).

C- The United Nations Development Program and the United Nations Industrial Development Organization.

d- The Arab Gulf Program for the Support of United Nations Development Organizations.

C- The United Nations Children's Fund.

The Kingdom has launched the National Transformation Program, which aims to develop the necessary infrastructure, achieve excellence in government and private sector performance, develop economic partnerships, and ensure the sustainability of vital resources. The program was launched in 2015, which is based on a set of dimensions:

1- Improving health care.

2- Improving living standards and safety.

3- Ensuring the continuity and permanence of vital resources.

4- Enhancing community development and the development of the non-profit sector.

5- Achieving excellence in government performance.

6- Enabling social groups to enter the labor market and increasing its attractiveness.

7- Contribute to empowering the private sector.

8- Developing the tourism sector in the country and the national heritage.

Indeed, this program contributed in the previous period to the achievement of many percentages of achievement through the development of government systems and the improvement of services provided to citizens in terms of developing justice services and health care and improving urban aspects with the development of the country's

infrastructure and organizing the labor market with the development of digital expansion and the development of the tourism sector, and still This program seeks to improve community development, ensure the sustainability of resources, and support digital transformation in the field of information and communication technologies, while developing strategic partnerships through private sector development.

The Kingdom has worked to fight corruption in order for justice to prevail, and Table No. (6) shows the Kingdom's rank among other countries and my agencies: (The point 100 represents the most honest countries and zero the most corrupt countries)

Table No. (6)

Ranks in the corruption ladder for the countries of the Middle East and North Africa for the year 2022

Country	Corruption Index (0 - 100)
United Arab Emirates	71
Qatar	63
Kingdom Saudi Arabia	49
Jordan	48
Amman	44
Tunisia	42
Morocco	40
Kuwait	39
Bahrain	36
Algeria	33
Egypt	32
Lebanon	24
Libya	17
Yemen	16
Syria	13
Somalia	13
Sudan	11

Source: Transparency International, Corruption Perceptions Institutions, 2022

The United Nations has classified and defined human development indicators at the world level, as shown in Table No. (7) as follows:

Table No. (7)

Human development index for global and Arab countries and their levels for the year 2022

States	Notification
Norway	1
Ireland	2
Switzerland	3
Arab countries	Notification
The United Arab Emirates	30
Kingdom Saudi Arabia	40
Bahrain	42
Qatar	45
Amman	60
Kuwait	64
Algeria	91
Lebanon	92
Tunisia	95
Jordan	102
Libya	105
Palestine	115
Egypt	116
Morocco	121
Iraq	123
Syria	151
Comoros	156

Source: United Nations World Human Development Indicators Report for 2022, p. 23.

The second requirement: the impact of information and communication technology on human development indicators in Saudi Arabia:

The Kingdom of Saudi Arabia is trying to take advantage of information and communication technology in all aspects of human development and in all sectors, including education, health and employment by creating job opportunities and agencies:

1: The impact of information and communication technology on the education sector

The Kingdom has sought for a long time to introduce the computer since 1986 as the basic subject in education, and in 2000 a computer lab was established for girls' schools in the secondary stage throughout the Kingdom, and in 2002 all countries of the developed world started using e-learning applications at all stages Education, and this is what put the government of the Kingdom of Saudi Arabia to keep pace with this progress and rapid development through the development of a national plan for communications and information technology and its optimal employment of these technologies in all aspects of education and training, as mentioned by the goal of (the national plan for communications and information technology) and the Kingdom has developed a plan to implement e-learning With a budget of (56) million Saudi riyals, as a pilot plan in the beginning, and this budget was increased later, so that the Queen can keep pace with this development. Thus, the country has attached great importance, whether in education or higher education, to the development of education through the adoption of information technology and communication technology, which are: ([1])

1- Circulating for all aspects of the Ministries of Education and the need to use different computer applications in the classroom with the adoption of the textbook.

2- Providing an internet service for schools, as about 90% of schools have an internet service with the availability of computer lab services so that the student has the opportunity to access various scientific resources via the web, exchange information and solve problems he faces.

3- Care and attention to digital education in open universities and distance learning for students who find it difficult to commit to university hours, especially universities outside the country.

All this led to the development of the educational process and the creation of technological means and resources, which may change from time to time and on an ongoing basis. The Kingdom has been keen on giving education the utmost importance, as education received the largest share of the budget of 2018 and its aftermath, as its allocations amounted to about (192) billion riyals with Formation of a national committee to follow up on the implementation of the sustainable development plan with the development of several programs([2]) :

1- A program of summer campaigns to raise awareness and eradicate illiteracy in remote areas.

2- Prince Sultan Bin Abdulaziz Center for Support Services and Special Education.

1-Narges Qasim Marzouq Al-Olayan, Using modern technology in the educational process, Journal of the College of Basic Education, Babylon University, February, 2019, p. 286.

2-General Authority for Statistics, Sustainable Development Goals in the Kingdom of Saudi Arabia, 2018, p. 41

3- The initiative of independent schools to convert (25) public schools to be operated by the private sector.

4- Lifelong Education Initiative (Sustainability).

5- The national strategy document for the education of people with disabilities.

6- Develop a practical framework to ensure compatibility between university outputs and work needs.

7- Cooperation project between the Ministry of Higher Education and the General Authority for Investment and Employment and training of individuals.

And that all of these programs were for information and communication technologies the largest share in the implementation and follow-up of them on a continuous basis.

2: The impact of information and communication technology on the health sector:

The Saudi health sector is a huge sector in all its assets relative to the Gulf health sector, with expenditures amounting to (48%) of the total Gulf expenditures on this sector, and with a budget of up to (40) billion dollars. The Kingdom's vision came in 2030 about involving the private sector in the health sector In addition to other transformations such as institutional transformation and e-health by adopting information and communication technologies and building new mechanisms for obtaining health services and working on the quality of health and treatment services, and among the most important things that the Kingdom focuses on in the health sector are:

1- Using information technology and digital transformation to improve the efficiency and effectiveness of the health sector.

2- Increasing the share of the private sector to be 35%.

3- Work on the optimal investment of the available resources.

4- Introducing training and development programs.

5- Development of primary health care.

6- Improving infrastructure and safety standards in the health sector.

Digital health is one of the most important programs managed by the Vision Realization Office in the Ministry of Health, which aims to improve public health, which aims to provide better care and raise the value of these services.

The Kingdom has worked on developing a comprehensive plan in accordance with the 2030 vision that works to provide a digital health strategy through Providing full functionality and wide operational capability by receiving remote treatment and diagnosis by providing full functionality and creating expanded operational capabilities.

This system includes receiving remote health services with creating cyber security and licensing advanced systems, including artificial intelligence, analytics and care models. Technology has a fundamental and important role in supporting the vision of digital health and the implementation of this effective strategy, by providing the appropriate capabilities to expand the ecosystem of the digital health program of the Ministry of Health. ([1])

The goal of the health care system in the Kingdom is to transform the way health care is provided by expanding the application of technology and then providing health care that is safe, efficient and effective for the Saudi society.

The Kingdom of Saudi Arabia has developed the E-Health Program for the purpose of supporting information requirements and separators for other work streams, particularly with regard to enabling the primary health care system methodology that is based on the educational health care system, and includes: ([2])

1- Unified outcome measure and smart measurement of resource costs, which are divided according to population groups.

2- Global classification of data, including lands and population groups.

3- Finding the operational compatibility between the different systems.

4- Entering therapeutic results data in the systems that doctors adopt in their daily work, such as electronic records with an easy-to-use interface to reduce the effort of data entry.

5- Finding electronic mechanisms to link different patient data with databases.

3: The impact of information and communication technology on the volume of employment

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1-Unified National Platform, Healthcare, . SA GOV .

2-Health Transformation Strategy, Ministry of Health, Vision 2030, p. 27.

The Kingdom of Saudi Arabia seeks to implement major investments in the field of cellular technology and fifth generation networks to build digital infrastructure, as creating a digital infrastructure in the country for information and communication technology will be necessary to support economic development in the country and achieve the ambitions of smart cities in a manner that ensures the safety of cities and enhances their resilience through completing a number of systems such as reporting accidents and the immediate response to emergencies, especially by integrating Internet technologies with artificial intelligence, machine learning and data analytics, all of which will affect the volume of employment in the country.

In the field of health care, the fifth generation technologies will develop various health services, including conducting operations, and this will open up a wide field for wide applications in the health field.

Information and communication technology works to provide an ideal and integrated solution to compensate for the shortage of skilled technical and administrative cadres, which is in high demand in the field of energy. In the oil and gas institutions, although information and communication technology is also working to restructure the basic lines of work in these facilities, both in terms of traditional offshore and onshore platforms, whether electronic digital platforms, building smart oil fields or managing the flow of information from fields and wells areas to the facility's offices on time ([1]) Saudi Arabia achieves great revenues from information and communication technologies, as shown in the following table:

Table No. (8)

Revenues of the Kingdom of Saudi Arabia from information and communication technology according to the international classification out of (209) countries for the year 2018:

States	Notifications
Egypt	89
Kingdom Saudi Arabia	81
Tunisia	71
Lebanon	69

Source: Euler-Hermes, 2018, Indicators of Digital Empowerment in the Arab Countries.

Table No. (9) also reviews the digital empowerment indicators for the years, 2017, 2018:

Table No. (9)

Digital Empowerment Indicators 2017, 2018

State	2018 Digital Empowerment Index Ranking	2017 Digital Empowerment Index Ranking
Saudi Arabia	50	52
Jordan	64	65
Kuwait	65	61
Lebanon	78	77
Morocco	77	76
Egypt	80	83
Tunisia	83	82

Source: Euler-Hermes, 2018, Indicators of Digital Empowerment.

It is noted from Table No. (9) that the Kingdom of Saudi Arabia was the first in the field of the Digital Empowerment Index (EDI), and this indicates that the communications and information technology sector in Saudi Arabia is getting stronger at a rate that

exceeds its neighboring countries, and it has improved by (2) over the previous year. 2017), which amounted to (52) to drop to (50) in (2018), and thus the Kingdom of Saudi Arabia has achieved an innovative and developed business environment, as shown in Table No. (10).

Table No. (10)

Business and innovation environment for the years: 2017-2018

States	Notifications
Kingdom Saudi Arabia	25
Cyprus	36
Jordan	38
Turkey	43
Lebanon	49

Source: World Economic Forum, 2018, Global Competitiveness Report, 2017-2018.

The Conclusions and recommendations

The Conclusions:

1. The Kingdom of Saudi Arabia has worked to find a strong and flexible telecommunications infrastructure, and has made large investments to develop this sector during the past years, especially with regard to the deployment of fifth generation technologies, and this is a result of the future and strategic vision of the country looking towards relying on other non-oil projects. And diversify their economies to build a more sustainable future and improve the lives and well-being of citizens.

2. In the Kingdom of Saudi Arabia, the average life expectancy of the individual recorded a level of (72.4%) within the ranking (74) out of (179) countries, as the indicators of human development in the Kingdom are after Colombia and before Jamaica, and the individual perception index recorded a level of (14.3%) Within the ranking (78) out of

(179) countries to be after Gabon and before Iran, and the knowledge index also recorded (76%) to be in the rank (80) out of (179) countries.

3. The economy of the Kingdom of Saudi Arabia is one of the largest (20) global economies, the first at the Arab level and in the Middle East, and a leader of the Group of Twenty countries. It is also a permanent member and leader in countries OPEC also possesses the most valuable resources in the world with a total value of (35) trillion dollars, and it owns the second largest oil reserves, and it is the largest oil exporter in the world. It also has the fifth largest reserves of natural gas, and thus it is a great power in the field of energy.

4. Saudi Arabia launched the National Transformation Program, which aims to develop the necessary infrastructure, achieve excellence in government and private sector performance, develop economic partnerships, and ensure the sustainability of vital resources. The launch of the program was in 2015.

5. The Kingdom of Saudi Arabia worked to fight corruption so that justice would prevail among all members of society and to get rid of corruption.

6. The Kingdom of Saudi Arabia has long sought to introduce the computer since 1986, the basic subject in education. In 2000, a computer lab was established for girls' secondary schools in all parts of the Kingdom. In 2002, all countries of the developed world began using e-learning applications. All levels of education.

The Recommendations:

1. Iraq can benefit from the experience of Saudi Arabia in the field of infrastructure development, especially as it suffers from destruction and in various aspects. The Kingdom launched the National Transformation Program, which aims to develop the necessary infrastructure, achieve excellence in government and private sector performance, develop economic partnerships, and ensure the sustainability of vital resources.

2. The urgent need in Iraq is to fight corruption of all kinds in the country, which is spreading in all aspects of life, and that is through benefiting from the Saudi experience, as the Kingdom has worked to fight corruption so that justice prevails among all members of society and to get rid of corruption.

3. Iraq can benefit from the Saudi experience by adopting the technological aspects. The Kingdom of Saudi Arabia has sought for a long time to introduce the computer since 1986, the basic subject in education.

4. The Saudi experience in the field of health can be benefited from by increasing the allocations prepared for this purpose, as well as by increasing reliance on information and communication technologies.

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