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# Smart Government: Analysis of Shift Methods in Municipal Services Delivery: The Study Area: Al-Kut – Iraq

## الحكومة الذكية: تحليل لأساليب التحول في تقديم الخدمات البلدية منطقة الدراسة-مدينة الكوت-العراق

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**Abstract:**

Day after day smart-government applications are increasing and being used in all aspects of life. The growing impact in the future on the reality of the city is expected to lead to the emergence of what could be called an intelligent or smart life that would make it impossible to control the management of cities and deliver services within the traditional concepts without introducing new active components. Cities are experiencing nowadays a new revolution, different from the emergence of urban life or the industrial revolution. It is the smart information revolution.

If some of the traditional approaches are now valid in dealing with the management of cities and municipal services delivery following that the smart government applications have become a reality in urban management in developed countries and have led to increasing the efficiency of cities and facilitated life dramatically, that these communities lived through technical development step by step. All e-government applications were invented technological solutions to problems faced by these communities, which increase the effectiveness of these communities and improve their productivity and provide services more efficiently. But when applying these ideas in our countries (Third World countries), how the response to these techniques would be, will the benefits therefrom will be as efficient as in the country of origin.

Ambiguity of city management and the provision of services in the future as a result of the introduction of technological revolution advances, and shifting to directions that cannot be understood without realizing the impact of this revolution on the various aspects of life represent the issue of this research. Therefore, the research has aimed to investigate or to attempt to predict the role of modern technological electronic developments in shaping the cities of the future and delivering services thereto, as well as their role in the management of these cities and the provision of services. The research assumes that the information and communications technology will help facilitate the provision of information and services, and the increased accuracy will impact in one way or another the human life in its social, behavioral and economic aspects and thus will be reflected on the structure of the city and its spaces similarly to what happened in Western countries.

The study structure consists of two parts: the first part presents the theoretical framework for the smart cities terms and the impact of these technologies on cities and the provision of services. The second part (practical part) has chosen the city of Al-Kut (as a model for Arab cities and Third World cities) and tried to investigate the impact of these technologies looking ahead into the coming twenty-five years through a questionnaire, which included managers, researchers and academics in this specialization who have a clear idea of analysis and prediction regarding this

domain. Through comparing the results of the questionnaire that dealt with the details of the impact of these technologies on all aspects of the city (already in place) with the ideal case, the study is reaching a number of conclusions and recommendations.
**Key words:** *Smart government, future cities, municipal services, urban management*

**المستخلص:**

تتزايد يوما بعد يوم تطبيقات الحكومة الذكية وعلى كافة أوجه الحياة وتوقع تعاظم هذا التأثير في المستقبل على واقع المدينة بصورة تجعل القول بظهور ما يمكن أن يسمى الحياة الذكية التي تجعل من غير الممكن السيطرة على إدارة المدن وتقديم خدماتها ضمن المفاهيم التقليدية دون إدخال عناصر جديدة فاعلة فالمدن تشهد الآن ثورة جديدة تختلف عن ظهور الحياة الحضرية أو الثورة الصناعية وهي الثورة المعلوماتية الذكية.

فإذا كانت بعض المناهج التقليدية صالحة الآن في التعامل مع إدارة المدن وتقديم الخدمات البلدية بعد ان اصبحت تطبيقات الحكومة الذكية حقيقة واقعة في إدارة المدينة في البلدان المتقدمة وأدت الى رفع كفاءة المدن وسهلت الحياة بشكل كبير، ان هذه المجتمعات عاصرت التطور التقني خطوة بخطوة. وكل تطبيقات الحكومة الالكترونية جاءت نتيجة مشاكل واجهتها هذه المجتمعات وابتكرت هذه الحلول التقنية لها، تزيد فاعلية هذه المجتمعات وتحسن انتاجيتها وتقدم الخدمات بكفاءة أكبر. ولكن عند تطبيق هذه الافكار في دولنا (دول العالم الثالث)، كيف ستكون الاستجابة لهذه التقنيات، هل سيتم الاستفادة منها بنفس الكفاءة في بلد الفكرة ام لا.

ان غموض ادارة المدينة وتقديم الخدمات المستقبل في البلدان نتيجة دخول متغيرات الثورة التكنولوجية. واخذها لمناحي لا يمكن فهمها بدون ادراك تأثير هذه الثورة على مختلف نواحي الحياه وهو ما يمثل مشكلة البحث ، لذا هدف البحث الى التحري او محاولة التنبؤ بدور التطورات التقنية الحديثة الإلكترونية في تشكيل مدن المستقبل وتقديم الخدمات لها ، وكذلك دورها في ادارة هذه المدن وتوفير الخدمات ، يفترض البحث ان تكنولوجيا المعلومات والاتصالات ستساهم تسهيل تقديم المعلومات والخدمات وزيادة الدقة فيها ستجد بشكل أو بأخر انعكاسها على حياة الإنسان بجوانبها الاجتماعية والسلوكية والاقتصادية وبالتالي تنعكس على هيكل المدينة وفضاءاته بنفس التأثير الذي احدثته في الدول الغربية.

يتكون هيكل البحث من جزئيين ، الاول يعرض اطار النظري لمفردات المدن الذكية تأثير هذه التقنيات على المدن وتقديم الخدمات، والجزء الثاني (العملي) فقد اختار مدينة الكوت (كنموذج للمدن العربية ومدن العالم الثالث )وحاول التحري عن تأثير هذه التقنيات باستشراق المستقبل لفترة الخمسة والعشرون عاما القادمة من خلال الاستبيان ، الذي شمل المدراء والباحثين والأكاديميين في هذا التخصص ممن لديهم فكره واضحة على التحليل والتنبؤ هذا الاطار، ومن خلال المقارنة بين نتائج الاستبيان التي تناولت تفاصيل تأثير هذه التقنيات على كل جوانب المدينة ( المطبقة بالفعل ) ومقارنتها مع الحالة المثالية سيتوصل البحث الى عدد من الاستنتاجات والتوصيات .

## Introduction:

Human beings are living currently in an era of rapid change towards informatics. This technology has progressed rapidly in the past twenty years at an accelerated pace. Personal computers, mobile phones, e-mail, and the Internet have spread in all walks of life. Industrial productivity has increased and efficiency of services has improved. New ways for society and individuals have been found, bringing easy access to information in all parts of the world. Mobile and wireless communications have become prevalent, terminology such as smart government, smart city, e-commerce and even electronic smart society has multiplied. Amid all this progress in cyberspace, it is rare to find a study on the impact of information and communication technologies on the spatial development as the information revolution has changed our concepts of time and space, concepts that shaped the era of the industrial revolution. Inasmuch as most of the principles of urban planning are associated with the industrial revolution concepts of time and place, so the spatial planning should be reconsidered in accordance with these variables.

### Impacts of technology on cities

Planning aims at the future and to have a successful planning it is necessary to inquire and know the certainties in order to deal with them proactively. The most prominent of these certainties is the technological inevitableness that has imposed itself strongly in the past two decades through the information revolution and communications. Mankind is currently living in an era of rapid change toward informatics. This technology has progressed rapidly during the past twenty years and the pace of development is accelerating very quickly. Personal computers, mobile phones, e-mail, and the Internet have spread everywhere. Industrial productivity and efficiency of services have experienced a remarkable increase. New ways have been found for the community, and individuals

have easy access to information in all parts of the world. Mobile and wireless communications have become a common use. Terminology, such as e-government, e-city, and e-commerce down to online community is taking over the human life.

Figure 1 illustrates the ways the information technology is affecting the form of the neighborhood, as the impact starts from Informatics impact on society and the occurrence of profound changes in its structure. These changes affect in turn the city structure as there is a reciprocal effect between the community and the city; the city takes its urban shape from cultural model references, and when the city structure and form change, this change must affect the form of the neighborhood, being the smallest planning unit in the city, and where the impact of the first change of the city starts.

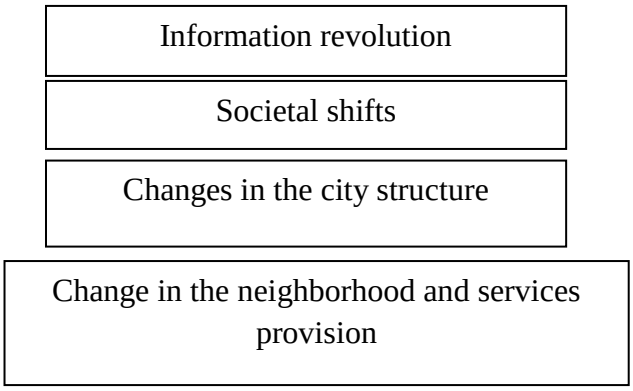



Figure (1) Impact of information technology on the form of neighborhood (the researcher)

## 1. Informatics, human being and societal effects:

Informatics means the quantitative and qualitative revolution in the knowledge that prevailed in the second half of the twentieth century and the recent era, in particular. The term came to be known in general and in appropriation and especially with the end of the twentieth century and the emergence of information and communications systems via the Internet, leading to have this term implying the development in information systems, in a more particular way the development of electronic systems, whether in the form of information or sophisticated devices operating by electronic systems. These techniques have contributed to increase efficiency and economic and administrative effectiveness, improvement of community standards of justice, achieving security, increasing economic growth and raising the efficiency investment funds movement across borders. At the same time, it has lessened different economic costs, besieged the bureaucracy and routine, reduced procedures that waste abilities and time, decreased the pressure on transport networks and congestion on the roads, reduced energy utilization rates and thus extent of pollution, in addition to reduce crime levels and the risk of working in factories and offices. Taking advantage of the technical capabilities in total has led to improved quality of life of various communities and populations. Of course this would not have happened without the dedication of technicians, specialists, academics and executives' efforts, and the allocation of appropriate financing resources to achieve these goals.

Informatics has replaced most of jobs by similar functions performed with digital technology and using the Internet as a primary means of communication, most notably [1]:

A. The delivery of fixed information, such as providing citizens with maps, information about entertainment, commerce, e-shopping, tourism, hotels, reservations, postal services and communications, in addition to the provision of laws and regulations electronically in force when performing services, in order to provide a legal and regulatory framework for all issues of concern to citizens and users of services.
B. Direct services, such as filling out applications and temporary government transactions, exchanges of e-mails, downloading applications, files and software programs from the sites run

by the city, opinion polls, distance education, the collection of receivables and payment of obligations, such as the collection of due fees and taxes through the Internet network.

C. Instant information such weather forecasts, traffic congestion information, information on hospitals, ambulance, rescue services, police and information on capital markets and real estate ... etc.

D. Social services, such as the exchange of social information in particular, or collective interaction such as communities share common interest subjects, such as political opinion groups, support groups, scouts, volunteers and active groups, environmental groups, e- auction sales .... etc.

E. The connection with the outside world, includes the exchange of previous positions with other cities in the same state to which they belong or with other countries, and which is linked to a range of tasks including:

Completion of dealings with government agencies, where electronic data interchange and various documents between diverse public services on the one hand and the rest of other government departments is carried out, in order to better benefit citizens and achieve the best performance of their tasks [7]. In addition, if any department in the city wants to know the general situation of another department, it gets it in a moment or a few minutes electronically directly from its site, which contains all the required data. As well as the presentation of projects and their implementation deals carried out via the Internet, which gives opportunities for everyone to see terms, conditions and variables on the one hand, as well as the possibility for offers of purchase or to accomplish a particular activity electronically at the same moment and thus having the process distant from personal deals, which curbs the manifestations of corruption.

## 2. **Impact of societal shifts as a result of the information revolution on the city structure**

Informatics has drastically affect the society and has led to significant changes in the pattern of social relationships. Social relationships that have adopted the place as the basis that provides social networking has changed and the relationships are occurring far from places and venues. Recently lots of names of modern city dependent on computers and networks have appeared, such as informatics city, wired city, hidden city, smart city, virtual city, connected city, virtual village, and so on, finally it was called the electronic city. Electronic city is a real city, not fictional. All cities that we know have telephone lines, wireless communications, post and telegraph, traffic lights, devices in the streets to indicate time, measure temperature and humidity, electronic signboards, all to serve the residents of the city in the areas of transport, tourism, shopping and other activities of civil society. Professor Helen Couclelis (1992) has defined digital city as "a comprehensive, web-based representation, or reproduction, of multiple aspects or functions of a real city, accessible to all kinds of users". From this definition it emerges that digital city is a city linked to the real place (not in virtual location) [2], and it is a city frequented by ordinary people and not limited to (IT) and computer networks professionals. One of the triggers of electronic city emergence is the acceleration of inventions in the field of computer, information and large scale communications the ripeness of the Geographic Information Systems technology that contributed to facilitate communities' interconnection.

Informatics has seen successive developments on both global and local levels, so the role of planner is affected by these changes, thus the former should follow up and monitor developments in all areas in such a way beyond the mere fact and in a manner that combines integrated boundaries where all disciplines and fields gather. Tax and legislative regulations that have been developed in the world can affect the development, attracting or expelling investments and people from one place to another.

Informatics has impacted the city through the individuals use thereof, and as much as the use of individuals of that modern technology is developed and successful, change in the city's structure in terms of shape, layout and content will be. Informatics introduced new concepts the most prominent of which is cyberspace, which is part of the city, like conventional physical spaces, where they complement each other to form the city system in the future. Human being is first and foremost is a

physical being that must live in a physical entity, the city, and with modern communications and information technology capabilities performing these requirements is available electronically [2], so cyberspace became one of the city wings indispensable for each other, as illustrated in Figure 2.

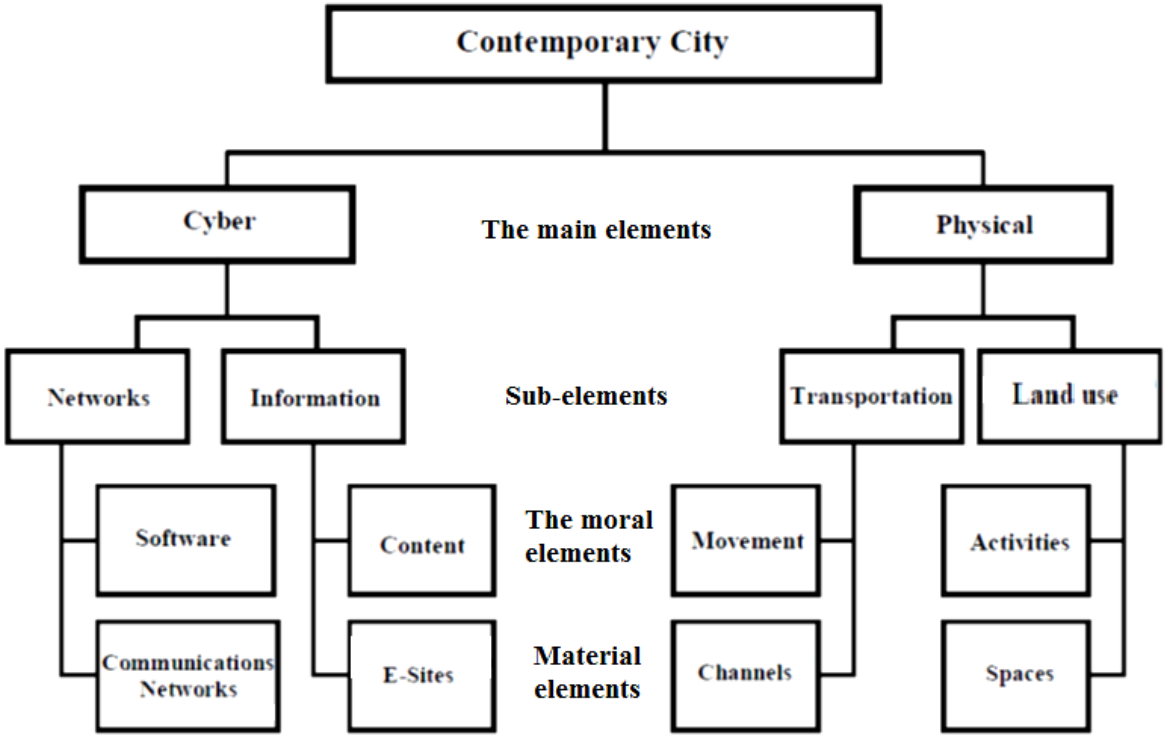



Figure (2) Cyberspace, one of the city wings [3].

The city is moving generally to lower non-residential buildings, and the vast majority of its buildings, flats and areas are residential, interspersed and interfered with some buildings having other functions, but relatively few in number and with little space given the electronic nature of many of the activities with the most important being the e-government, so as to integrate the functions and the lack of need to concrete physical space that has been replaced in part or all by electronic space. The current statistics indicate that there are about 25 million people working from their homes and this figure is on the rise [1].

Those relations that connect each use with the other in terms of strength or weakness, or in terms of attraction and disharmony, such as housing with the industry or trade relationship with industry or housing with services, entertainment and so on, under the e-government, these spatial relationships will change inevitably to other patterns which required reshaping those relations [2].

The most prominent of these effects will be on the land use. There are required standards for each use of the city's Land Budget where these rates and spaces are corresponding to the number of the population in the traditional city. In the case of e-government, these rates will be affected inevitably, as it is with access to multiple administrative and technical services electronically, therefore, the current land use ratios and planning rates for services of all types and levels will be affected.

Informatics also will impact the workplace. Styles of information offices, which appeared at the end of the twentieth century, differed from informatics housing style in the level of utilization of information technology capabilities in the total control of all activities that carried out inside the administrative building. The reason probably is due to the high cost of the techniques used to achieve this purpose. It can be said that the style that appeared in the administrative buildings is closer to the concept of smart administrative buildings where the design of these buildings relies on information networks allowing the control of lighting, ventilation and energy systems in general,

and that through the required balance between inside and outside, according to the state of the internal environment.

As well as the determination of the administrative work style in the next century will have a great impact on the administrative buildings structure. The current statistics indicate that there are about 25 million people working from their homes with this figure is rising and if the current systems of information networks cannot replace integrally the current systems, still they can do many of the current activities, with the development of these systems in the future, their role could be maximized and everything becomes possible. It seems that this is will not be too far away, owing to the actual start in replacing the manual labor with electronic systems. Currently, some institutions possess a one stationary office per two jobs, as Baer says: "with the end of the last era of the twentieth century the companies will plan to design computer terminals within the administrative buildings more than planning parking lots" [3].

On the other side, the process that provides access to the service from home, such as home shopping or distance learning ... etc., which are also known as virtual business centers and virtual universities, will lead to significant changes in the patterns of services buildings and in the size of buildings and the method of providing the service, as well as their situation in the city.

Often the service represents a central location for a department and the scope of serving imposes equitable distribution of services for users, especially if access to that service is on foot. Also, the distribution of top services, which necessitate reaching by car, is linked to the locations of those services from the areas of movement, transport and transportation in a way not causing a kind of traffic confusion. In the case of electronic government, all of these concepts will fade, where users would not need direct access or dealing face-to-face with these services, and therefore their signing will be anywhere without these considerations. Perhaps the economics of the location and the price of land play the main role in the selection of these services locations, and the urban development process, which requires noticing of this force, which will have a great impact in the coming period in the knowledge economy, urban form and functional structure of the city which are determined and shaped by the forces of the global market, and not by the principles of traditional urban planning. Urban standards and principles of regional planning inherited from the twentieth century have become unable to pursuit the rapid changes and urgent challenges of the knowledge economy. The role of knowledge in creating wealth has become an important issue in the cities that deal with the experience of globalization and then the urban departments and planners have to discover new ways to hold on to contemporary opportunities of knowledge production. The knowledge city economy creates value-added products with the use of research and techniques and brainpower. What the idea of urban knowledge development claims, is safe economy on a human scale and is therefore a continuous and sustainable development [4].

These techniques have contributed to the increased economic and administrative efficiency and effectiveness and to improvement of community standards of justice and achievement of security and increase of economic growth and to raising the efficiency of investment funds transfer across borders. At the same time, these techniques have lessened different economic costs and restricted the bureaucracy and routine, shortened procedures that waste capabilities and time, reduced the pressure on the transport and traffic networks on the roads, decreased energy use rates and thus pollution ratios, as well as decreased crime levels and the risk of working in factories and offices. They have led also to benefiting from the technical capabilities in general, to improving the quality of life of various communities and population clusters.

## 2. The second research work Preface

When transferring new ideas from the societies in which they were devised to other communities, the reaction, acquisition and how to take advantage of those new ideas vary. Theories and ideas move through space from the place of the idea where it is the point of origin, the first location (place) where they grew up and there are objective conditions that allow for the transmission of this idea to reach the new environment (place) and in a different time period. These

details are supposed not to be missed by researchers when dealing with the impact of technology on society in general.

In order to identify the effects of the digital revolution and smart government on developing countries, including Arab states, the city of Al-Kut it has been chosen as a model of these cities. A questionnaire detailing the impact of this technology on the city and the provision of services and imports for the next quarter century was prepared. 50 copies of the questionnaire were distributed (Appendix 1) to the specialists in this regard such as researchers, academics and high administrative cadres in local government and who can be considered as the medium carrying the ideas in this area within the objective conditions stage of the idea of Edward Said, for the purpose of exploring the changes that will cast a shadow over the cities of tomorrow.

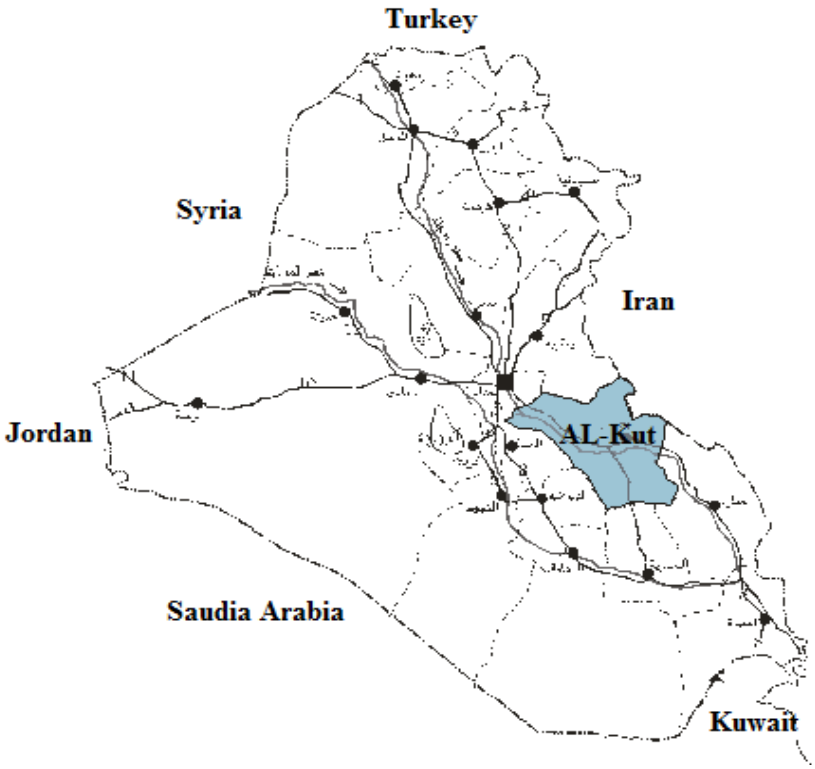
The questionnaire was divided into four themes:

1- The impact of information and communications technology on land use.
2- The impact of information and communications technology on the social aspect.
3- The impact of information and communications technology on the economic aspect.
4- The impact of information and communications technology on the municipal management.

## 2.1. Al-Kut City Description

The built-up area of Al-Kut city covers about 44 square kilometers and is located in an important site on the rivers of Gharraf and Dujaili, a branch off of the Tigris River. In terms of spatial location and its relationship to neighboring areas, Al-Kut is linked to Baghdad, located at about 180 km from the capital city, and is linked, being the province and the district center, to its administrative units and other provinces. This location has made it a city of diverse regional relations.

The geographical significance of the site lies in that it is located within a large agricultural territory, where it is considered one of the important centers for collection of agricultural and animal products, which led to promote trade with the whole province. Its location on roads network that links Baghdad to the southern provinces, especially Al-Basrah being a port, has given the city the capacity of a place active in trade, where the trade promotion within the city has led to its growth in commercial and industrial areas.




Map (1) Wasit province location in Iraq.

## 2.2. Impact of information technology and e-government on the city of Al-Kut for the coming twenty-five years.

### 1- The impact of information and communications technology on land use.

The questionnaire has showed that there is an impact on limiting the spread of the city and this is a positive factor in tune with sustainability requirements, since the combined percentage of the impact (very large, large, moderate) has reached 76% of the total of respondents. Also, the impact on reducing powered trips, where the combined percentage of positive impact was 82%, which is a large percentage and consistent with recent studies of the impact of informatics. One of the main standards of cities and their management success is the efficiency of municipal services distribution, as the percentage of influence was 64% and the proportion of the very large impact was 30%.

The positive impact on sustainable transport was 66% as well as having little impact of 22%, and this is also a very positive indicator of the impact of these technologies on cities because sustainable transportation such as walking and public transport are of main factors contributing to urban sustainability and sustainability in general. The positive impact on the shape of the city was 74% (very large, large, moderate), and there was no sign of negative effects, which is a good sign too. The effects on the mixed-use were 70%, despite the fact that mixed use is one of the most important indicators of sustainability. However, there is no agreement that the information will contribute to its increase, rather there are researches that suggest the opposite. Integration of marginalized groups in the cities and avoiding spatial segregation showed the social aspects of urban planning; their rate was 48%, which an average rate, as the contribution of informatics is bigger.

The overall assessment of the impact of ICT on the social aspect showed a positive impact despite the disparity between the percentage of variables, and the negative effects were very small and negligible.

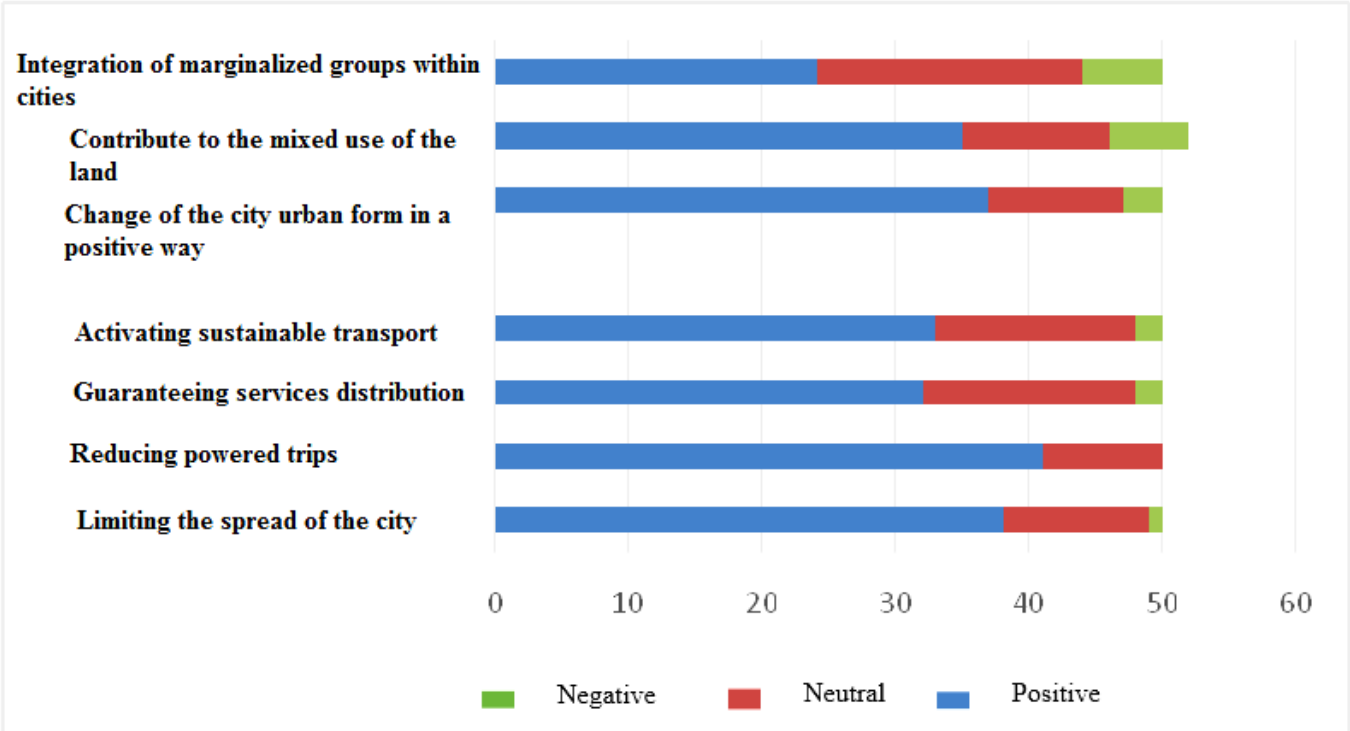



Figure (3) The impact of ICT on land use (the researcher)

**2- The impact of information and communications technology on the social aspect.**

The questionnaire has showed that there is an impact of ICT according to 68% of respondents on achieving social justice and on fair distribution of services according to 66%, with a rate of weak effect of 22%. These percentages were above the average but significant and show that there is a growing role for this technology in the future. The largest proportion was for social networking which showed that the combined rate of impact (very large, large, moderate) stood at 88%, the largest among all the questions in the questionnaire, which is an important work for greater harmony in one city and contributes to the integration, which was at 60%, lower than expected.

Also, the rate of impact is less than expected for Western countries that have applied this technique to provide equal opportunities and crime reduction, as the combined percentages were 58% and 40% respectively, but the percentage of increasing the contribution to public affairs and reducing the red tape was too high and amounted to 76% and 82 %. This is a positive indicator in the activity and vitality of cities and a key basic element of community participation.

An 88% of the study sample confirmed that IT has a very significant impact in providing opportunities for social networking and 76% of the sample showed significant impact in increasing the contribution of local community members in public affairs through exploiting opportunities provided by new technologies to improve community participation in the various municipal services and reducing red tape and bureaucracy, which in turn contributes to the achievement of social justice among the population through equal opportunities for all, across the electronic accesses that do not differentiate between one person and another.

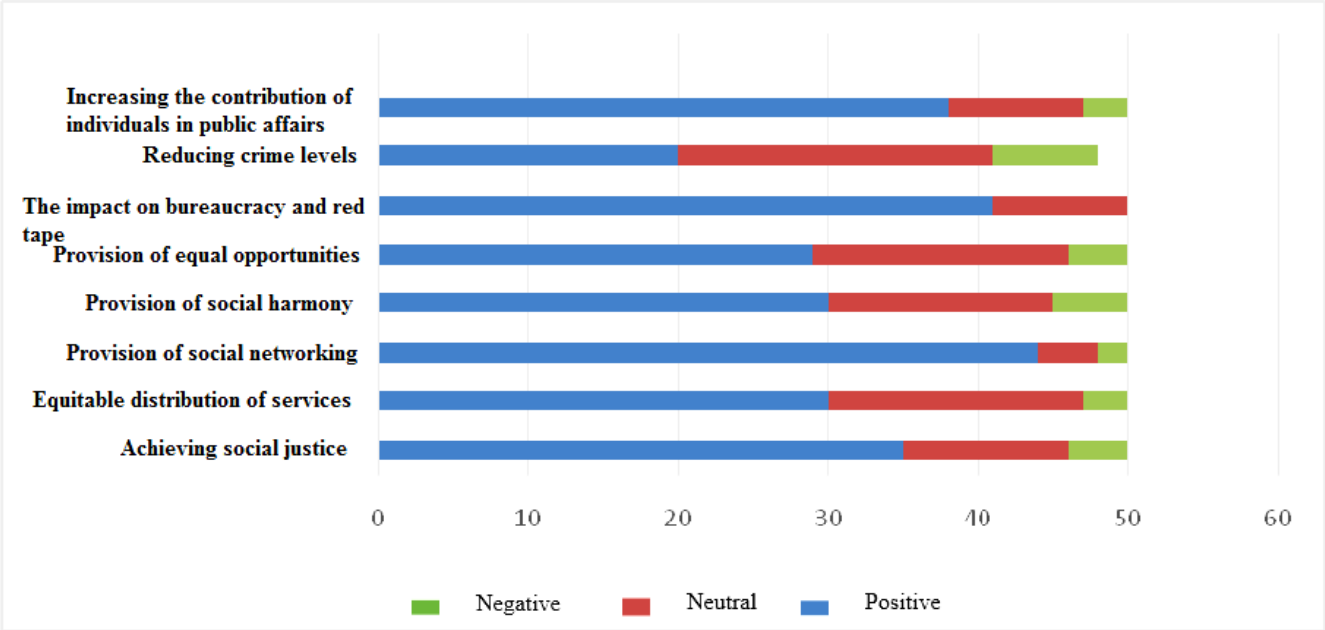



Figure 4. The impact of information and communications technology on the social aspect (the researcher)

**3- The impact of information and communications technology on the economic aspect.**

The overall assessment of the impact of information and communications technology on the economic aspect showed a positive impact despite the disparity between the percentages of variables. The collected results (very large, large, moderate) showed an impact on work opportunities of 64%, on flights cost reduction of 66% and revitalizing the city economy of 54% which are all positive signs and all of them are below the level of impact on the country producing these ideas. This is could be due to that a large part of human development depends on individual efforts and informatics would have a biggest impact and this is what was answered by respondents with a percentage of 86% and this is a positive indicator. As well, ICT has an impact on contribution to reducing the environmental costs, time, and reducing the combined energy

consumption (very large, large, moderate) of 72% and 70%, a significant and positive impact. The negative effects were very small and negligible.

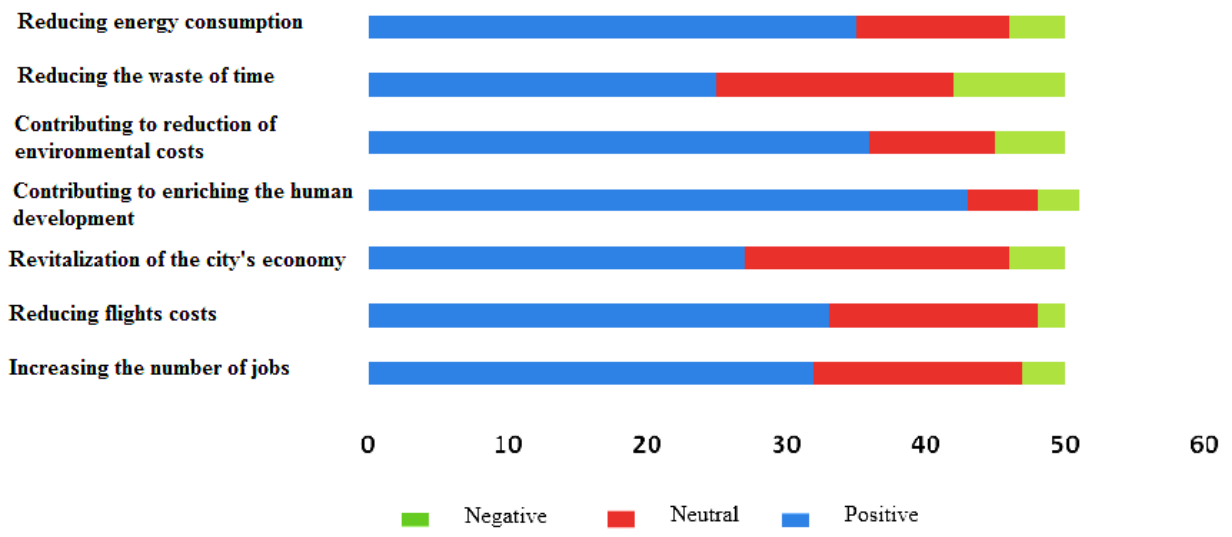



Figure 5. The impact of information and communications technology on the economic aspect (the researcher)

## 4- The impact of information and communications technology on the municipal management.

The most part of the collected study sample (very large, large, moderate) has shown with big percentage (84%) the importance of information technology in accomplishing and facilitating communication between the municipal administration and the citizens and in facilitating ways of submitting complaints and suggestions through modern means available from cyberspace through different media of communication, which contributes to the simplification of works and various municipal services completion, easing work pressure on the staff through the contribution of the local community in finding solutions to the various municipal problems. A proportion of 76% of the study sample has stressed what mentioned earlier, which will provide a wider choice in dealing with the problems, and according to 76% of the sample which is a large percentage points to the importance of this technology in municipal services.

Therefore, this will surely reflect positively on the quality and efficiency of service provided to residents, and will improve the response speed and positive interaction between providers of services and recipients from the local population and promote community participation in the local administration.

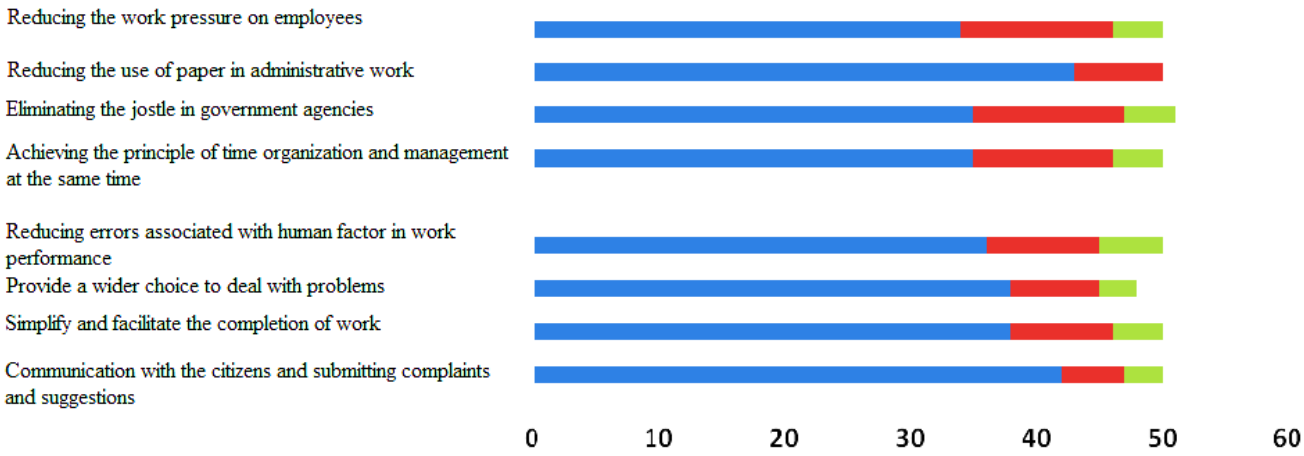



Figure 6. The impact of information and communications technology on the municipal management (the researcher)

## 3. Conclusions and Recommendations

### 3.1. Conclusions

1- The positive results of information impact and communications technology on cities transformation and municipal services delivery shows that the transfer process is going very quickly through multiple channels, notably the citizen and is not limited to the specialists. This facilitates the transition to e-government, but in spite of the speed adopting ICT in society, it cannot be claimed that all members of the community are fully linked to this technology.

2- The lesson is not in the existence of information or communication media in a society, but in the availability of components and fundamentals to invest this information to provide the basics of quality of life, environmental control and support development essentials. The electronic government and communications technology represent a social project challenge that needs financing and planning, not a technical or artistic challenge, and requires first of all a political will to activate it.

3- There is still lack of smart government impacts studies on the city and especially in the Arab bibliography and mostly focus on what it should be and do not attempt to measure its impacts on our diverse societies, which contain various contradictions. This shows the urgent need to fill this gap as soon as possible in order to get a base of theories, views and results that enrich this important topic.

4- Smart government system can be considered as new actor that falls within planning hinges system, and the shift towards smart government applications have become a strategic and ambitious target for most world countries. There is a perception among many researchers about the importance of the shift towards electronic service. Its impacts will contribute to planning decisions, and according to these basis e-government applications add planning and changing guidelines to all parts of the city.

5- Smart government can be applied to any city and at any service level (public, private, mixed), but the difficulty lies in how to apply, to know the right time to start, to determine the quality of services to be provided, and citizen acceptance is what makes it an ongoing and fruitful and that's what resulted from the practical part of the research.

6- There is a digital divide between rich countries of developed world and other countries in the world which taking the way of progress, and even between different rural, urban or desert areas in the same country. The digital divide is between those who have access to information, communications and Internet technology and those who are unable to do so.

## 3.2. Recommendations

1- The need to create an infrastructure is for the government to succeed in performing its work. This is done through the provision of effective communications systems for data and information transmission to and from government departments and services to citizens, enterprises and society civil organizations and vice versa. That should be done through the development of projects compatible with the basic telecommunications infrastructure already available, and by encouraging the private sector to invest in IT and telecommunications to accelerate their use and spread on a large scale, and to train users and manpower on the methods of using and adjusting to the advanced technology and urging them take maximum advantage of it.

2- Provide the right environment for these technologies, including modernization of laws and legislation to legitimize and accept electronic documents and transactions, by taking into account the views of officials in the government departments and services, and consult with them to assess the extent of damage to projects of e-government in case of not repairing or modifying the used legal system, granting legal argument and capacity of all information published by the e-government, and clarifying laws, legislation, and guidance and standardizing them in line with the government work environment.

3- The need to work on reducing the digital divide, by directing smart government programs towards the already isolated and disadvantaged groups from government services, where they are directed towards raising the economic, social and cultural levels of citizens. The digital divide is in the electronic knowledge and ability to access information and government services. Electronic knowledge resides in the ability of e-government programs to assist in establishing educational and cultural opportunities for those who do not have access to advanced technology and are dealing with it. While the ability to access is associated with making e-government projects and programs within the reach of all citizens, including special groups and disabled, by providing universal access through IT centers, clubs or booths, which are spread in various community centers, and urging the private sector and encourage it to donate devices, hardware and software or carry out training activities for citizens, especially low-income people. As well as a focusing on the use of Arabic language and the detailed content of the needs of different communities, each according to its wishes, aspirations and preferences with the creation of access points in small and scattered communities.

4- All society categories must be encouraged about the possibility of accessing smart government, regardless of physical abilities or their whereabouts, through the design and development of applications that suit all groups, including the disabled, such as blind, deaf and mute people. Passing laws and legislation forcing the government to adopt advanced technology to help the disabled, and the formulation of standards of performance and measuring the flow of work in the e-government.

5- Public interest in modern technology and mastering it should be exploited, to combine these sporadic projects in order to establish the electronic cities by stimulating and provoking the interest and awareness of those in charge of cities planning with the idea of e- city (digital) as an independent concept or as part of the concept of e-government.

Dissemination of the culture that supports this trend in youth circles and civil society organizations as an effective tool to combat administrative corruption and mismanagement.

## References

[1] Hassan, Nubi Mohammed, the Arab city and Informatics (challenges of the twenty-first century) Department of Architecture - Faculty of Engineering - Assiut University – Egypt**.**

[2] Abdullah Ahmad El-Erian, “The future modern vision of philosophy of environmental planning management of existing and new cities” seminar ‘New cities in the Arab world and their role in sustainable development’, Agadir, Morocco, 24 to 27 November 1999.

[3] Afifi, Ahmed Kamal al-Din and Yousef, Wael Mohammed - Arab city under the e-Government - e-Government seminar: Reality and Challenges - Arab Institute for Urban Development – Muscat – Oman, 2003
[4] Ali, Abdel Raouf Ali, "Role of technology in building knowledge societies in the Arab world".
[5] The case of the cities of Dubai and Doha, Department of Architecture - University of Bahrain, PO Box 32 038 – Bahrain
[6] Freihat, Haidar, "Planning the electronic city: an analytical study - working paper submitted to the seminar on "e-government: Reality and Challenges" held by the Arab Institute for Urban Development, Muscat, Oman, 2003.
[7] Nasib, Naima. Towards Arab e-city: Potential and challenges, Department of Sociology, University 08 May 1945, Guelma, Algeria.
[8] Yasser Osman Mahjoub, "Architecture in the Information Age", Journal of the construction world, No. 192, Center for Planning and Architectural Studies, Cairo.

**Appendix (1)**
**The questionnaire with the results**
In the name of Allah, the Beneficent, the Merciful
May the peace, mercy, and blessings of Allah be upon you

Dear professors, colleagues, municipal decision-makers and researchers.
This questionnaire aims at developing the service institutions in the city of Al-Kut, within a study entitled "Smart government: analysis of shift methods in municipal services delivery". You are kindly asked to complete the form by ticking the correct box; this data will be used for purely academic purpose, hoping for your cooperation to get the best results. Your response and objectivity in answering this questionnaire will help the precision of this scientific research and to reach the best results and ways to make the city of Al- Kut a better place thanks to your partnership.

I. The impact of information and communications technology on land use in Al-Kut city (the researcher):

| | | Very large | Large | Moderate | Positive | Weak | No impact | Negative weal | Neutral | Negative moderate | Negative large | Negative very large | Negative |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Limiting the city spread | 12 | 10 | 16 | 38 | 7 | 3 | 1 | 11 | 1 | | | 1 |
| 2 | Reducing powered trips | 16 | 16 | 9 | 41 | 8 | 1 | | 9 | | | | 0 |
| 3 | Efficiency of services distribution | 15 | 7 | 10 | 32 | 10 | 5 | 1 | 16 | 1 | 1 | | 2 |
| 4 | Activating means of transport Sustainable transport | 10 | 11 | 12 | 33 | 11 | 3 | 1 | 15 | | 1 | 1 | 2 |
| | | | | | | | | | | | | | 0 |
| 6 | Change urban form of the city in a positive way | 15 | 13 | 9 | 37 | 8 | 2 | | 10 | 1 | 1 | 1 | 3 |
| 7 | Contribute to the mixed use of the land | 12 | 13 | 10 | 35 | 5 | 4 | 2 | 11 | 2 | 2 | 2 | 6 |
| 8 | Integration of marginalized groups within cities | 10 | 9 | 5 | 24 | 15 | 4 | 1 | 20 | 3 | 2 | 1 | 6 |

II. The impact of information and communications technology on social aspect in Al-Kut city (the researcher):

| | | Very large | Large | Moderate | Positive | Weak | No impact | Negative weal | Neutral | Negative moderate | Negative large | Negative very large | Negative |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Achieving social justice | 16 | 9 | 10 | 35 | 5 | 6 | | 11 | 1 | 1 | 2 | 4 |
| 2 | Equitable distribution of services | 11 | 9 | 10 | 30 | 11 | 4 | 2 | 17 | | 2 | 1 | 3 |
| 3 | Provision of social networking | 27 | 12 | 5 | 44 | 3 | | 1 | 4 | 1 | 1 | | 2 |
| 4 | Provision of social harmony | 10 | 8 | 12 | 30 | 7 | 5 | 3 | 15 | 3 | 2 | | 5 |
| 5 | Providing equal opportunities | 12 | 9 | 8 | 29 | 8 | 5 | 4 | 17 | 1 | 2 | 1 | 4 |
| 6 | Impact on bureaucracy and red tape | 14 | 14 | 13 | 41 | 9 | | | 9 | | | | 0 |
| 7 | Reducing crime levels | 1 | 10 | 9 | 20 | 10 | 6 | 5 | 21 | 4 | 2 | 1 | 7 |
| 8 | Increase the contribution of individuals in public affairs | 18 | 11 | 9 | 38 | 5 | 3 | 1 | 9 | 2 | 1 | | 3 |

III.The impact of information and communications technology on economical aspect in Al-Kut city:

| | | Very large | Large | Moderate | Positive | Weak | No impact | Negative weal | Neutral | Negative moderate | Negative large | Negative very large | Negative |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Increase job opportunities | 13 | 11 | 8 | 32 | 7 | 5 | 3 | 15 | 1 | 1 | 1 | 3 |
| 2 | Reduce trips costs | 10 | 11 | 12 | 33 | 9 | 4 | 2 | 15 | 1 | | 1 | 2 |
| 3 | Revitalization of the city's economy | 9 | 11 | 7 | 27 | 11 | 6 | 2 | 19 | 1 | 2 | 1 | 4 |
| 4 | Contribute to enriching the human development | 18 | 14 | 11 | 43 | 4 | 1 | | 5 | 1 | 2 | | 3 |
| 5 | Contribute to reducing the environmental costs | 16 | 11 | 9 | 36 | 8 | 1 | | 9 | 2 | 2 | 1 | 5 |
| 6 | Reduce the waste of time | 10 | 9 | 6 | 25 | 9 | 6 | 2 | 17 | 3 | 4 | 1 | 8 |
| 7 | Reduce energy consumption | 18 | 10 | 7 | 35 | 6 | 5 | | 11 | 1 | 2 | 1 | 4 |

IV. The impact of information and communications technology on municipal management in Al-Kut city:

| | | Very large | Large | Moderate | Positive | Weak | No impact | Negative weal | Neutral | Negative moderate | Negative large | Negative very large | Negative |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Communicating with citizens and submitting complaints and suggestions | 20 | 17 | 5 | 42 | 4 | 1 | | 5 | 1 | 2 | | 3 |
| 2 | Simplify and facilitate the completion of work | 17 | 12 | 9 | 38 | 3 | 2 | 3 | 8 | 1 | 1 | 2 | 4 |
| 3 | Provide a wider choice to deal with problems | 19 | 12 | 7 | 38 | 5 | 1 | 1 | 7 | 2 | 1 | | 3 |
| 4 | Reduce errors associated with the human factor in performing | 11 | 16 | 9 | 36 | 5 | 2 | 2 | 9 | 3 | 1 | 1 | 5 |
| | works | | | | 0 | | | | 0 | | | | 0 |
| 5 | Achieving the principle of organizing and managing time at the same time | 16 | 11 | 8 | 35 | 5 | 4 | 2 | 11 | 2 | | 2 | 4 |
| 6 | Elimination of jostle in government agencies | 15 | 9 | 11 | 35 | 6 | 5 | 1 | 12 | 1 | 3 | | 4 |
| 7 | Reducing the use of paper in administrative work | 17 | 15 | 11 | 43 | 5 | 2 | | 7 | | | | 0 |
| 8 | Reducing work pressure on employees | 17 | 8 | 9 | 34 | 8 | 3 | 1 | 12 | 2 | 1 | 1 | 4 |