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ATTITUDES OF MUNICIPALITIES' MANAGERS TOWARD THE EFFECT OF INFORMATION TECHNOLOGY (IT) ON ADMINISTRATIVE DECISION-MAKING EFFECTIVENESS: A CASE STUDY ON JORDAN VALLEY AREA MUNICIPALITIES

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Abstract

This study aimed at illustrating the attitudes of the managers working in the municipalities sector in Jordan toward the effect of the information technology (IT) on the administrative decision-making effectiveness; with an empirical study on the Jordan Valley area municipalities. The study underscored the relationship between the administrative decisions in this sector and the information technology, as well as the extent of the decision-makers in this sector in utilizing the IT for obtaining the required information. The study employed the quantitative tests such as one sample t- test. The study population included all the municipality managers working in the Jordan Valley, through a randomized sample amounted for 10% of the total study population. The study sample consisted of (100) managers who employ information technology in decision making, who are working in (7) municipalities. Data collection was made using a questionnaire specially designed for this purpose. Based on the study hypotheses, the researcher approached many findings, most important is: there is a statistically significant relationship between IT (employed systems, software, communication networks and databases) and the effectiveness of administrative decision-making already employed in the municipalities sector.

Keywords: Jordan Valley Municipalities, IT, Administrative Decision-Making, Statistical Tests.

1.0 Introduction

The world is witnessing a rapid development process, whether in qualitative, quantitative or speed in getting the information, for the purpose of making the best decisions, and strengthen the organizations relations with the surrounding environment (Al-Nathari, 2000: 120). This is quite evident in the increasing importance of the IT and its ability to satisfy the need for information; which made its development and increasing its effectiveness and efficiency one of the age necessities (Mubarak, 2004: 26), (Al-Dahhan and Makhamreh, 1990; 166). Perhaps one of the main factors in the success of administrative decision-making is their reliance on advanced technology, which enables access to the information, and reduction of access costs to a touchable level. It is the technological revolution as some had described (Al-Bayati, 1992), (Cusack, 2005: 106-119) as the greatest influencing phenomenon in the world of economics and business, after the industrial revolution. Thus, IT became a part of the success elements in a world moving toward globalization and speed in information exchange (Mansour, 1999: 148). As a result, the trend is heading toward the development of a relation between the organization that depends on the best utilization of the readily available information, and whoever concerned with the management. This bestowed the strategy character to the IT as a tool capable to create and augment the competitive ability, as well as goal achievement (Mursi, 2005:19). (Al-Shannaq, 1994:51)

Information technology is among the basic components of the success or failure of any organization. It is used as a tool to coordinate and support the administrative process, and decision making, on one hand, as well as an intra-organizations communication means, and with the surrounding environment, on the other. It further gained more importance due to the increasing geographic expansion and spreading, production varieties, marketing, funding, and the need for the human resources and other activities. Therefore, such organizations and firms find themselves face to face with the need to set up a suitable hierarchy for these activities, in a manner that ensures the flow of information from different administrative units, analyzing and making good use of such information in the developing of the work performance, in general, and developing their administrative performance, in particular. The administrative activity in the business firms is strongly and closely tied with the information technology (Al-Hasaniah, 2002:63). The information system is an advanced and powerful means for data processing (Brain, 2003) through the employment of systems, software, networks and databases used to receive , process, store, amend, retrieve and monitor the data (Al-Sharman, 2004). Furthermore, the management information systems (MIS) is an organized group of

processes that provide information for the managers, in order to support the planning and decision making functions inside the organization (Khashabeh, 1987:50). This definition is quite close to the definition of the system provided by Turban (2002) as "a system aiming at producing and providing a number of facts revolving around a definite thing, which were processed by one of the data processing processes". While Lucas (2000) see that "it is a group of people, procedures and manual and mechanical databases, aiming at collecting the required data, transmitting and storing the same for carrying out procedural processes, and providing information needed for decision-making processes." This calls for availing programs, which are a complicated composition of the aims, policies, actions, rules, assignments, and steps that should be implemented, all through the available resources and other necessary components needed for carrying out a certain job (Qtaishat, 2005:71).

Local communities depend on the local management efficiency in providing services in equality, balanced and fair manner. People tend toward the efficiency of the positive role of the local administration (Hill, 1974); as well as to participate and decision making in managing the local administration which executes the works, and which has a positive effect on the development process, and control over the local leaders behavior in attracting people in the decision-making process (Alford, 1969), (Al-Adwan and Al-Ta'amneh, 1996). In this concern, the local governments in the developing countries need advanced methods between the government and the residents, both in the cities or villages (Al-Defer, 1964:109). The decision making in the local governments is built on influential actors and on the integration of the roles in order to approach the targeted accomplishments, which reflects the local government development (Al-Lawzi, 2002), (Flinn, 1970:73). Jordan Valley area had seen the preparation and implementation of the first developmental plan during the period 1973-1975, which was later followed by other plans to focus on the Valley development. There are positive developments realized for developmental indicators about the facts before 1973 until the time of this study. Therefore, the research on the effect of information technology on the effectiveness of the administrative decision-making is an important justification for this study.

1.1 Research Objectives

This research aims at the study of the IT ability effects on the effectiveness of the administrative decision making in the municipalities, being among the new topics in this sector. It also aimed at identifying the attitudes of the managers, working in the municipalities, toward the information technology; identifying the level of the administrative decisions effectiveness, and the extent of the municipalities utilization of IT to obtain the information and providing the same to the internal user in the municipality; and finally, analyzing the extent at which the Jordanian municipalities are using IT for providing the required information for decision making to the parties of the concern.

2.0 Literature Review

Information technology issue and its role in decision making are among the issues being of concern and attendance by researchers. In this regard, Al-Qaryouti (1989) studied the comprehensive role required by the municipality councils and carrying out developmental, productive projects. Yew (1995) concluded that information technology is able to affect the business organizations by changing and developing the organizational hierarchy in the decentralized dimension, and creating new competitive abilities as well attracting new businesses. A study made by Al-Awamleh and Al-Huneiti (1995) defined the standards of the municipal performance, and how to enable the local populate obtain the municipal services, as well as taking the people satisfaction an assessment means of the achieved performance, to motivate the municipal work. Al-Rabab'eh (1995) outlined the role of the joint services councils in the local development in Jordan, and concluded that there are negative attitudes toward the role of these councils in the local development field.

Wilson (1996) concluded that there are positive trends with the decision takers toward computer use in the information systems, with some concerns exited in that trend. Al-Adwan and Al-Ta'amneh (1996) provided a study on the effectiveness of the leading role played by the municipalities' chairmen in Jordan. They found that the weakness of the municipality administrative performance is due to the weakness of the municipality chairman.

Al-A'araji and Al-Ma'azi study (1998) aimed at revealing and analyzing the extent of the local systems response to the satisfaction of the local community needs. Gupta (2000) aimed at the extent of computer use in the Indian governmental offices in the local administration,

both at the levels of state and central government, concerning the ideal use of IT in providing distinguished services to the public.

Lucas (2000) defined the rapid, low costing and available information and IT with the firms, which are sufficiently displayed, in well-known groups with an easy access thereto; and that are able to support and increase the competitive ability of the firm. Al-Nathari study (2000) was made to identify the effect of technology and communication employment on the educational efficacies possessed by the teachers and students of the exploratory schools in Jordan. The study concluded that there is a positive effect of the information technology employment in the educational process on the educational teaching efficacies of the teachers and learning efficacies of the students. A study by Kumar and Plavia (2001) showed that the use of information by higher management provides required information for the managers at the executive levels in the decision making process.

Bal'arabi study (2002) about the relationships between the determinants of the organizational hierarchy and the performance of the local administration at the governate of Irbid Greater Municipal, concluded that the lower financial support provided to the municipality leads to inability to meet the obligations and carry out the projects, and weakens the administrative decision making. He related such deficiencies to the meagerness of the organizational hierarchy of the municipality. Al-Momani (2002), in his study, showed that the remedy of the local regime in Jordan should be an important priority, as well as reconsidering the mechanism and method of the municipality functionality. Otherwise, there will be a gap with the changes that take place in other organizations. Qatanati (2002), was interested in studying a number of the variables connected with the effect of the information technology and advanced communications in attaining the competitive advantage, and he found a relationship between them.

Vanags (2003) shed lights on reformation of municipalities in the Baltic states (Estonia, Latvia and Lithuania) in the field of local regime. Mubarak (2004) aimed at the development of the relation between IT and each of the strategy, organizational hierarchy and performance. Al-Qaisi (2004) defined the role of IT in the improvement of the administrative decision making process in Jordan. Abdel-Jawad (2005) concluded that the use of IT positively affects the performance of the workers in the governmental systems. Al-Husban, (2005) examined the different relations affecting the provision of the municipal services to the public, and finding developmental projects. Al-Khawaldeh (2005) aimed at identification

of the effect of the use of IT with its various dimensions on the administrative innovation in the public institutions in Jordan.

Al-Adwan (2006) studied the extent of the differences in the effect of the information characteristics on the effectiveness of administrative decision-making, that may be ascribed to the personal and occupational variables such as (gender, age, educational qualification, occupational position, and work experience). Al-Ghammas (2006) explored the effect of the use of information technology on the quality of the services in the Jordanian ministries, through focusing on both the higher and middle managements in the public sector, which conditions and capabilities are different from those of the private sector. He concluded that there is a positive relation between such use and the existence of the service.

Al-Atawi study (2008) aimed to identify the reality of IT utilized in the organizational development in the Saudi Arabian ministries, and the level of IT, for the purpose of engendering an organizational development with these ministries. Others, (e.g. Bergval & Others, 2009) relied on defining certain indicators in the municipality work to assess the extent of its endeavor in the development and progress processes as well as initiation of a new network of work values, and new styles of the nature of the municipality work. Ajaz (2010) defined the method of building the abilities in the municipalities and their functions and work performance, so that the municipality will be turned into an effective institution carrying out its functions with approximation and continuation in the local dimension, in which the municipality is founded as a developmental service institution.

It is noticeable that the previous studies dealt in different aspects of the effect of information technology and effectiveness of the administrative decision-making in the various organizations and firms. Still some other studies explored the municipalities' topic through different dimensions. Meanwhile, the Jordanian studies emphasized the administrative and financial roles, measurement of the councils performance, both financially and administratively, or illustrating the satisfaction degree about the municipalities performances. Most studies relied on the questionnaires to recruit the study sample. However, the current study is complementary of the other studies in terms of being unique in exploring the municipality institution that provides services designated by the law; but it is different with respect of the new role of the municipality institution as a developmental unit; namely focusing on identifying the attitudes of the managers, working in the municipalities sector in Jordan Valley area, toward the effect of information technology on the effectiveness of administrative decision-making, and the extent of the clarity in the role of the municipalities

in local development in the shade of orientations toward a developmental municipality. Accordingly, this study is the first of its kind in Jordan dealing in this topic. i.e. in this developmental service sector.

3.0 Research Model and Hypotheses

For the purpose of this study, Figure (1) illustrates the relationship between the independent and dependant variables.

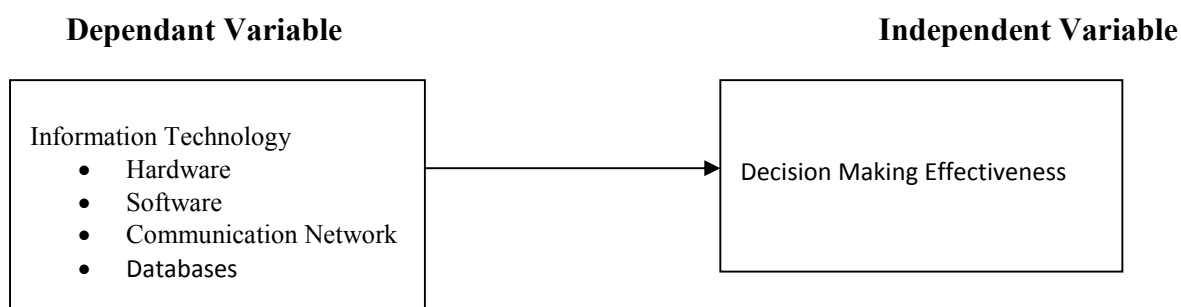


Figure (1): Study Model

The research based on hypotheses in their null form stating:

- Ho1: There are no positive attitudes with the managers working in the municipalities sector toward availability of the hardware (systems) in the effectiveness of the administrative decision-making
- Ho2: There are no positive attitudes with the managers working in the municipalities sector toward availability of the software in the effectiveness of the administrative decision-making
- Ho3: There are no positive attitudes with the managers working in the municipalities sector toward availability of the Communications network in the effectiveness of the administrative decision-making
- Ho4: There are no positive attitudes with the managers working in the municipalities sector toward availability of the databases in the effectiveness of the administrative decision-making

4.0 Research Methodology

The researchers used the analytic, descriptive method in conducting this study, for the purpose of approaching an analysis of IT and explaining their relationships with the administrative decisions making, using the one sample (t) test. In addition, the researchers employed the means, standard deviations and hypotheses testing and reaching the set off objectives, at ($\alpha=0.05$) level, which is equivalent to (95%) reliability level to interpret the results of the tests.

4.1 Study Population and Sample

The study population comprised the managers of the study area municipalities, namely seven municipalities. They are affiliates of three administrative units (districts): North Jordan Valley district within Irbid governorate, and Dair Alla and South Shoona districts within Balqa governorate. A random stratified sample was equally taken at the rate of (10%) of the total study population (n=997 manager), working with these municipalities who are permanent classified staff, not under contracts, or temporary work basis. Thus the study sample consisted of (100) people. The questionnaire comprised a number of questions that could be generally divided into two sections. The first section includes the personal and occupational information of the respondents in the light of the demographic variables (gender, marital status, age, years of experience, occupation, educational degree). Meanwhile, the second section includes a number of statements that measure the effect of IT on the effectiveness of administrative decision-making. The study also employed the SPSS (statistical package for social sciences) for the purpose of analyzing statistically the study to verify the validity of its hypotheses. The study will rely on one sample t- test.

4.2 Characteristics of the Study Sample

Table (1) show that the vast majority of the study sample were males (63%), meanwhile females were only (37%); most of the computer, networks, software and databases users in the municipalities were of the educated people (e.g. 52% BA holders); (42%) of the study sample were between (20-39) years; highest percentage of the sample (48%) were with (6-10) years of experience; (48%) of the sample are receiving monthly salaries between (201-400) Jordanian dinars; and that 24%) of the sample were receiving monthly salaries over (401) JD's.

Table (1): Characteristics of the Study Sample

Variable	Category	Frequency	Percent
Gender	Male	63	63%
	Female	37	37%
Age Group	20-29	37	37%
	20-39	42	42%
	40-49	21	21%
	50- More	10	19%
Years of Experience	5 years- less	17	17%
	6-10 years	48	48%
	11-15 years	18	18%
	16 years- more	17	17%
Monthly Income	Less than 200 JD	15	15%
	200-400 JD	48	48%
	401-600 JD	24	24%
	601 JD- more	13	13%
Education	High School or less	8	8%
	Diploma	25	25%
	Bachelor	52	52%
	Master	12	12%
	Doctorate	3	3%

4.3 Construct Reliability

Reliability analysis was performed in order to ensure the internal consistency and stability of items used to measure the independent and dependent variables. For the purpose of this study, a minimum internal reliability coefficient or alpha value of 0.7 was adopted. According to Hair, Anderson, Tatham and Black (1998), value of 0.7 can be considered adequate if the study is exploratory in nature as in this case. The alpha values for all items were 0.746 and thus considered reliable. Table (2) shows the reliability analysis result.

Table 2: Reliability Statistics

Cronbach's Alpha	Number of Cases	Number of Items
0.746	100	16

Table (3) represents the mean and standard deviation, among the study variables. It can be inferred that respondents have a positive attitude regarding the use of information technology in decision making.

Table 3: Mean Scores and Standard Deviation of Study Variables (n = 100)

Variables	Mean	Std Deviation
Information Technology	3.49	0.587
Decision Making	3.70	0.567

4.4 Results of the Hypotheses Test

H01: There are no positive attitudes with the managers working in the municipalities sector toward availability of the hardware in the effectiveness of the Administrative Decision-Making.

Table (4) indicates that the p-value is less than ($\alpha=.05$) determined level, which means the rejection of the null hypothesis providing that there are no positive attitudes with the managers working in the municipalities sector toward the availability of the hardware on the effectiveness of the administrative decision-making. As a result, we have to accept the alternative hypothesis providing that there are positive attitudes with the managers working in the municipalities sector toward the availability of the hardware on the effectiveness of the administrative decision-making. Further the general mean is higher than the standard mean, i.e. (3), which was (3.2100), meaning the clear effect of the information technology on the administrative decision-making through the available systems inside the municipalities.

Table (4) one sample t-test of the items concerned with the First Sub-hypothesis

Calculated T	Tabulated T	Sig. level	Mean Score	Hypothesis result
46.576	1.960	0.000	3.210	Rejection

Ho2: There are no positive attitudes with the managers working in the municipalities sector toward availability of the software in the effectiveness of the Administrative Decision-Making

Table (5) indicates that the p-value is less than ($\alpha=.05$) determined level, which means the rejection of the null hypothesis providing that there are no positive attitudes with the managers working in the municipalities sector toward the availability of the software on the effectiveness of the administrative decision-making. In addition, the general mean is higher than the standard mean, i.e. (3), which was (3.3467), meaning that the information technology has an effect on the administrative decision-making inside the municipalities through the software.

Table (5) one sample t-test of the items concerned with the Second Sub-hypothesis

Calculated T	Tabulated T	Sig. level	Mean Score	Hypothesis result
32.905	1.960	0.001	3.346	Rejection

Ho3: There are no positive attitudes with the managers working in the municipalities sector toward availability of the Communications network in the effectiveness of the Administrative Decision-Making

Table (6) indicates that the p-value is less than ($\alpha=.05$) determined level, which means the rejection of the null hypothesis providing that there are no positive attitudes with the managers working in the municipalities sector toward the availability of the communications network on the effectiveness of the administrative decision-making. As a result, we have to accept the alternative hypothesis providing that there are positive attitudes with the managers working in the municipalities sector toward the availability of the communications network on the effectiveness of the administrative decision-making. Further, the general mean is higher than the standard mean, i.e. (3), which was (3.7360), meaning the clear effect of the information technology on the administrative decision-making inside the municipalities, through the available communications network.

Table (6) one sample t-test of the items concerned with the Third Sub-hypothesis

Calculated T	Tabulated T	Sig. level	Mean Score	Hypothesis result
25.571	1.960	0.000	3.7360	Rejection

Ho4: There are no positive attitudes with the managers working in the municipalities sector toward availability of the databases in the effectiveness of the administrative Decision-Making

Table (7) indicates that the p-value is less than ($\alpha=0.05$) determined level, which means the rejection of the null hypothesis providing that there are no positive attitudes with the managers working in the municipalities sector toward the availability of the databases on the effectiveness of the administrative decision-making. In addition, the general mean is higher than the standard mean i.e. (3), which was (3.6767), underpinning the effect of the information technology on the administrative decision-making used inside the municipalities through the available databases.

Table (7) one sample t-test of the items concerned with the Fourth Sub-hypothesis

Calculated T	Tabulated T	Sig. level	Mean Score	Hypothesis result
24.237	1.960	0.002	3.6767	Rejection

5.0 Results and Recommendations

5.1 Results

The study found that there are statistically significant differences between the availability of the utilized systems and the effect of information technology on the effectiveness of the administrative decision-making at (95%) reliability level and ($\alpha= 5\%$), as (sig=0.000).

There are statistically significant differences between the availability of the software and the effect of information technology on the effectiveness of the administrative decision-making, as (sig=0.001) which is much lower than ($\alpha= 5\%$).

There are statistically significant differences between the availability of the communication networks and the effect of information technology on the effectiveness of the administrative decision-making, as (sig=0.000) at ($\alpha= 5\%$) and (95%) reliability level.

There are statistically significant differences between the availability of the databases and the effect of information technology on the effectiveness of the administrative decision-making, as ($\text{sig}=0.002$) at ($\alpha= 5\%$) and (95%) reliability level.

There is a positive effect of the information technology on the effectiveness of the administrative decision-making, as the general mean of the items concerning (systems, software, communication networks and databases) is higher than the standard mean.

5.2 Recommendations

Building on the study findings, the researcher recommends that it is necessary to expand the use of the information technology (IT) with its different components (systems, software, communication networks and databases); upgrade their roles in the municipalities within the study sample; raise the efficiency of the IT users of the study sample and further develop their skills through training on the use of whatever new of technologies and software; municipalities should be in line with the technological developments; update the systems and software as well as communication systems; increase attention to the use of the information technology which helps in decreasing the response-to-work time.

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