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Examining the Effect of Electronic Information System's Use on Time Management in Jordanian Banks

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Abstract

The world is rapidly changing with new developments which have changed the manner, process or procedure of operations and activities in the business world. Electronic information system is one element that has introduced new trends in the way companies conduct their business activities especially in time management. However, whether this phenomenon has been examined in Arab world context is a question arising in the current dispensation due to limited literature existing. Thus, this study examined the effect of electronic information system on time management in Jordanian banks. Data were collected through questionnaires distributed to the employees in the banks in Jordan in which 452 were obtained back. Structural Equation Modelling was used to model the relationship between the variables using AMOS 24. The findings revealed that electronic information system has a positive direct effect on time management. This shows the readiness of the banking sector to keep abreast with the current trends in the market by adopting new processes for betterment of its services to the customer.

Keywords: *Electronic Information System, Time Management, Banking, Information System, Employees' Performance*

Introduction

In light of the growing development of institutions, the importance of the information system has become increasingly significant. The method of collecting information and knowledge has become increasingly relevant in pursuing the organisation's objectives. The information has become a strategic resource on which decision makers can rely as there is no aspect of the institution's work that has not been affected by information technology (Belqasem, 2014). Essentially, electronic system is one of the phenomenon on which modern management depends on solving most problems. For an appropriate system that is considered the most important

element to the success of the information system and the achievement of the organisation's objectives, there must be employees with the right competencies in order to analyze, design and operate the systems as well as use the results extracted from it. One of the vital functions of information systems is providing the necessary information for all levels of management from their current and past state, and to forecast by collecting, storing, analyzing and putting together information in a way that helps to answer important strategic, and operational questions (Al-Waleed, 2009).

Although many administrative agencies have been able to acquire advanced IT systems and systems, however, most are still unable to make full use of the potential of these devices and systems which serve as an effective tool in the development of information resources (Yusuf, 2003). Studies conducted regarding the use of this technology in various third world countries, including the Arab countries, gather that these countries face a number of constraints and obstacles that impede the effective transfer of advanced technology and its use in bringing about real development (Yusuf, 2003).

More so, it has been observed that in practice, there is a huge gap between the expected benefits that IT systems are supposed to provide and the benefits already gained. The first instance is that information system has been introduced into administrative units of organisations without any changes made in organizational structures or operational procedures. The use of information system has been primarily aimed at automating existing manual procedures. And secondly, IT is being introduced into every government department, and among other departments, and there is rarely an interdepartmental policy for the implementation and use of information in administrative bodies (Burhan, 1994).

However, in most Arab countries, interest remains limited in the process of formulating a unified technical strategy that will help to unify the concepts and foundations of the use of this modern technology and the best use of its potential. The dominant trend observed in the organization is gathering as much of these technologies, regardless of the extent to which different administrations can benefit from it, thereby resulting in loss and waste in these public resources (Kandilji, Al-Samerai and Fadel, 2002). The huge gap between the IT professionals and the users of the technology makes communication and understanding between these two groups weak. As a result, systems that do not meet the needs of the beneficiaries are designed which in most cases indicated wasting more time and resources (Kandilji, Al-Samerai and Fadel, 2002).

However, time management is a unique resource from which organizations should learn how to manage their time. The practice of time management can usually be learned. Management activities had been linked to time, either work time or private time, through which an ongoing process of planning analysis and continuous evaluation of activities in a process is designed to create high efficiency in exploiting this time available to the desired goals and that time management is not limited to management alone. However, despite the significance of this variable, but studies that examined the relationship of electronic information system on time management have not been sufficient, as well as limited of studies done in Arab world especially in Jordan.

Hence, it is an important aspect to investigate on, that is why this study intends to determine the effect of electronic information system on time management in Jordanian banks.

Literature Review

The Concept of Information System

Information system is a set of data related to a particular subject which constitutes facts, concepts, performance, conclusions and beliefs. These data constitute calculated experience and knowledge of perceived value in current or expected use, and obtained information as a result of processing data through tabulations, classification, analysis, and organization in a customized manner (Sharabi, 2008). Information is data transferred to be useful and this conversion varies according to people's information needs (Burhan, 1997).

Similarly, information is defined as all forms of knowledge that are communicated, relating to a particular fact or event in itself or knowledge gained through communication, research, education and other sources of knowledge, culture and work. Information is the interpretation of events leading to accurate prediction of what may happen in the future. Thus, management can maximize its ability to make contacts and make decisions, draw appropriate plans, and control various aspects of activity (Al-Masri, 2008). Information system is an organized set of resources "materials, programs, individuals, data" and procedures to assist in the acquisition, processing, storage and communication of information in the form of "data, texts, images, voices" in organizations (Reix, 2002). Information systems include a homogeneous and interrelated set of work, elements and resources that collect, operate, manage and monitor data for the purpose of producing and delivering useful information through a network of channels and communication lines, and information systems must also ensure that decisions of command systems are converted to action (Germak & Marca, 2008).

More so, information systems are also defined as a set of standard procedures that include the collection, operation, storage, distribution, dissemination and retrieval of the information needed by the organization to strengthen decision-making and oversight within the organization and the administrative process that supports the organization by providing information to achieve its objectives (Hussein, 2006). Therefore, information system is a set of inputs that represent data and data processed to reach a set of outputs for better results than the criteria for measuring interest or yield (Belqasem, 2014).

Concept of Time Management

Time management is a conscious act or process of controlling the amount of time spent on specific activities, with the aim of increasing efficiency or productivity. Time management has helped economic institutions through a set of skills, tools and techniques used to accomplish specific tasks for projects and objectives (Rezq, 2013). Time management can be defined as making people get more work in less time and with better results (Lussier, 1997). Equally, time management can be defined as the process of managing the execution of tasks and activities according to the priorities and objectives planned and defined in advance, using the available financial resources and the human resources available within the official time limit for the work (Al-Sarayra, 2010). Whereas, Alian, (2007) also defined time management as the art and science of the using the time wisely and the science of investing time efficiently.

Additionally, time management can be defined as self-management and job management to ensure that the organization achieves the best results at a specific time, a continuous process that requires the desire for improvement, improvement, analysis, planning, follow-up and re-analysis (Al-Ajami, 2008). Time management is to accomplish the most planned tasks in the

estimated time in the way planned before the beginning of the implementation and also that it is the process that effectively allocates time between the various work to achieve them in a timely and specific time (Abdullah, 2006).

Importantly, time management aims at preventing a lot of stress and enable individuals to achieve their goals and increase production and balance the needs of the individual, the goal of time management is to think about how to exploit the current time in the future best possible exploitation and that thinking about how to exploit time in the future is the same It reduces surprises, crises and damage and helps solve expected problems (Ar-Rab, 2005).

Relationship between Information System and Time Management

In this section, literature from empirical evidences conducted in previous studies related with the variables of information system and time management that are used in the study are presented to note the relationship existing between them.

There were studies such as Faiconer and Hodgett (2003) who examined the difference in the planning of strategic information systems used in Australian companies and compared with other developed countries. The study used e-mail survey to 1,115 Australian business organizations from a sample consisting of three categories of organizations: small organizations with 20-99 workers. Medium-sized organizations employing 499-100 workers and large organizations with 500 or more workers. The study found that the implementation of strategic planning in information systems is expensive and some companies have successfully adapted the theory of strategic planning for their information systems while others have not recognized the importance of information as a strategic source.

Abu Zaid and Alian (2014) identified the effectiveness of time management on employees and its impact on their performance in Jordanian universities libraries. The results of the study showed the effect of time management on the performance of the job directly and indirectly through time-sensitive control. It also showed the staff are highly skilled in time management, which indicated the presence of the effect of time-awareness control over the job performance..

While, Shakshak (2014) study studied the effect of time management on the productivity of the organization in the bank. The survey found that the workers are committed to the work schedules at a very high rate and the time management is used in a manner that meets the required requirements. The research showed that there is a significant statistical relationship between the time management and the productivity of the organization. Ghazzawi (2012) examined the impact of time management on workers and the level of performance in the Northern Region of Jordan. Therefore, 181 questionnaires were distributed to all employees in the Civil Experimentation Department in the Northern Region. The study showed there was a statistically significant effect of the level of application of time management on the level of performance of the employees as a whole and the absence of statistical effect of all time management domains on the speed of performance except for prioritization and resource utilization.

Similarly, Abu Ziada (2012) investigated the impact of time management and overall quality on job performance in Palestinian commercial banks. The study also showed a relationship between the dimensions of total quality management and the effectiveness of time management and effectiveness of job performance. Equally, the study of Melhem (2010) analytical study of the relationship between the implementation of time management and performance of workers in public and private institutions in Palestine. Using a simple random sample of 223 employees from

public and private institutions, the results of the study showed that there was an effect of the elements of time (time planning, time analysis, commitment follow-up) on the performance level of the workers.

Al-Khatib (2009) determined the effect of time management on the level of performance of employees in cellular communications companies in Jordan. A simple random sample was used to select 1,400 employees in the cellular communications companies in Jordan. The results of the study showed that the elements of time (time control, time management, time planning) were at high level with the level of the performance of the workers.

Mohammad (2009) investigated the extent to which using time management could deal with administrative problems at the technical institute in Basra and found that a correlation exists between the time allotted to the activity and the nature and volume of the activity, and the use of time for creative thinking in order to innovate in an attempt to get rid of the waste of time. So, also, Al-Agha (2003) identified the factors and variables that affect the management of the time of the management staff Palestinian universities in the Gaza Strip. The results of the study showed statistically significant differences in the reality of time management among the Palestinian universities due to personal factors such as gender, age, job type, academic qualification, years of administrative work experience, and training of workers.

Al-Fahdawi and As-Sarayra (2004) examined the relationship between the performance of the system of operations (planning, organization, direction, supervision) through the efficiency and effectiveness of development of time management. However, there was no statistically significant relationship between the performance of the administrative processes (planning, organization, direction, control) and the effectiveness of time management.

Furthermore, studies on the electronic information system consist Al-Qaisi (2016) who explored the extent to which the application of electronic technologies and their positive results on evaluating the management of human resources in private Jordanian universities using a sample of 177 employees. The study proved there was a significant effect of the electronic technology such as machines, programs, security and usability on the management of human resources in the private universities in Jordan.

Al-Shamayleh (2012) studied the the effect of the use of information technology (devices, programs, security, and usability) on the effectiveness of administrative decisions in human resource management in service ministries in Jordan. Hence, a statistically significant relationship between the use of information technology (machines, programs, security, and usability) and the effectiveness of administrative decisions in human resource management. Similarly, Al-Malaheem (2012) examined the effect of information systems on evaluating the quality of e-government websites and e-trust in the Jordanian ministries consisting of a sample of 342 employees. The study found that level of awareness of employees in the ministries and the electronic trust through the website was high and the information system had significant impact on the evaluation of the quality of e-governance sites.

More so, Al-Buwareed (2012) study of 426 employees in Petra, Jordan found the use of information management system technology was quite high, while their perceptions of administrative transparency was moderate, and found the impact of the use of IT technology on administrative transparency. Al-Zahrani (2011) study using a sample of 318 employees in the Kingdom of Saudi found that the perceptions of the employees towards information system and its effect on human resources management functions was at a high level. Al-Enizi (2011) study

consisted of 670 employees in the University of Tabuk and found the impact of information systems techniques on the quality of services provided. Similarly, Al-Sakeny and Awawdeh (2011) study revealed that there is general agreement among the respondents in the study about the exposure of the accounting systems in the companies and the operational risk to a large extent. Alavi and Wheeler (2010) examined the effectiveness of using new IT technology of (teleconferences) in supporting distance learning in the university, and found that students who use teleconferencing are more committed and attractive than their counterparts of local students who work face-to-face. Equally, Ryker and Nath (2010) determined the satisfaction of 232 individual users of information systems in a number of companies, and found that the satisfaction of the user about the devices, operating procedures and personnel working in the maintenance of the information system is increasing the overall satisfaction of users about the system.

Al-Amaj (2010) examined the role of management information system in decision making during crisis consisting 229 border guards in the Kingdom of Saudi Arabia and affirmed that they strongly agree on the information needs and that there are obstacles that limit the role of administrative information systems in making decisions during crises. Al-Dhafiri (2010) indicated that there is an effect on the use of administrative information systems on planning, guidance, organization and control. on the level of job performance of employees in institutions and government departments in the eastern region of the Kingdom of Saudi Arabia.

Al-Haidari (2008) study of 700 employees in the Yemeni telecommunications sector identified a positive relationship between computerized management information systems and creativity of the workers. Meanwhile, Tartarah (2006) study which consisted of 206 director and head of department in public institutions in Jordan found that there is a statistically significant impact on the efficiency of the employees in the functions of human resource management (polarization, recruitment, training and performance evaluation) by the computerized information systems, the quality of the equipment used, and the suitability of computerized information system.

Al-Mahasneh (2006) used a sample of 250 employees in in the Customs department and found the significant effect of the efficiency of the administrative information systems on the decision-making process. Further, Strasser (2004) study on five US government showed that the relationship between management performance is higher than that of investment performance in information technology, and IT management is much more important to federal agencies than IT investment. However, the study of Holm (2004) examining the relationship between the strategy used in information technology and the performance of work study IT strategy was linked to a positive relationship with the performance of work.

Hence, from the reviewed literature, the study could not find any study that examine the relationship between electronic information systems use on time management in Jordanian banks despite its significance to the industry. Hence, this study proposed the hypothesis that:

There a statistically significant direct effect of electronic information systems use on time management in Jordanian industrial companies.

Methodology

The population of the study consisted of employees in the departments of the 27 banks of Jordan, while six operating banks were chosen which are (Jordan Islamic Bank, Jordan Commercial Bank, Jordan Kuwaiti Bank, Bank of Jordan, Cairo Amman Bank, and Al- Ahli Bank). The total number

of employees in the departments were 4088 employees, and based on simple random sampling, 491 employees were selected. Consequently, questionnaires were distributed to these respondents from which 461 of the questionnaires were retrieved, while after sorting out, 452 of the questionnaires made it for analysis. The questionnaire measurement for the instrument was adopted from previous researchers: time management was adopted from Shakshak (2014); Melhem (2010) and Al-Khatib (2009). In addition, the measurement used to develop the instrument for electronic information system was based on Al-Qaisi (2016) and Al-Shamayleh (2012).

The data analysis is conducted using Structural equation model (SEM) technique to reveal the relationships between electronic information systems independents variables and time management as a dependent variable. AMOS v24 is used to assess the measurement and structural model for this study. Eventually, the result of the Exploratory factor analysis (EFA) based on the value of Kaiser Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity showed significant values which according to Kaiser (1970) was a value above 0.5 and a significant value of Bartlett's test of sphericity. See able 1 below:

Table 1: Results of EFA (KMO & Barlett's Test of Sphericity)

		Electronic Systems	Information	Employees' Performance
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.954		0.956
Bartlett's Test of Sphericity	Approx. Chi-Square	3487.416		4790.775
	df	105		190
	Sig.	0.000		0.000

Subsequently, at the measurement model assessment, a confirmatory factor analysis (CFA) is performed to validate the measurement model before the hypotheses testing (structural model) because valid measurement affect the validity of study conclusions (Hair et al., 2006). Hence, that could be validated by checking the goodness-of-fit statistics to assess how accurately the model explains the observed data. Eight common model-fit measures were used to assess the model's overall goodness-of-fit as shown in Table 2 below:

Table 2: Measurement Model Fit Indices

Fit Indices	Recommended value*	Indices Value
Chi-square/degree of freedom (χ^2/df)	≤ 3.00	1.69
Adjusted goodness of fit (AGFI)	≥ 0.80	.843
Comparative fit index (CFI)	≥ 0.90	.941
Incremental Fit Index (IFI)	≥ 0.90	.942
Tucker-Lewis index (TLI)	≥ 0.90	.937
Root mean square error of approximation (RMSEA)	≤ 0.06	.039
Root mean square residual (RMSR)	≤ 0.10	.018
PCLOSE	≥ 0.05	.981

*Source: Lia et al, 2007

After that, some tests were carried out on the measurement models to determine their validity and reliability. The first one was composite reliability to measure the internal consistency which was signified by values above the threshold of 0.70 for all constructs as suggested by Nunnally (1978). Whereas, 0.873 was the lowest value for composite reliability in the result and is apparently larger than the recommended value of 0.7, signifying good reliability. More so, convergent validity was assessed by checking the Average Variance Extracted (AVE) from the measures. Meanwhile, for AVE, if a score of 0.5 was found, it indicates acceptability (Fornell and Larcker 1981). Therefore, the AVE ranges from 0.521 to 0.694 that attests that there was convergent validity. Also, the Cronbach's alpha for all constructs are above 0.70, which implies a high reliability of the measures. Table 3 below details out the facts.

Table 3: Composite Reliability and AVE for Internal Consistency

	Cronbach's Alpha	CR	AVE	R SQUARE
Electronic Information System	0.929	0.938	0.521	0.34
Time Management	0.929	0.938	0.521	0.69

The Cronbach's alpha for the constructs weight above 0.70, which implies a high reliability of the measures. Equally, the standardized factor loadings for all items are above the suggested cut-off 0.60 in Table 3 and are all significant, showing strong evidence of convergent validity. All items are significant with high loadings, which are above the recommended value of 0.60, therefore demonstrating convergent validity.

The Structural Equation Modeling Results

Using AMOS for the analysis, the structural model was evaluated by using the R-square (R^2) for dependent variable, size, t-statistics and significant level of structural path coefficient. Meanwhile, the bootstrap re-sampling procedure was used to estimate the t-statistics. The structural model results are illustrated shows the path coefficients along with their respective t-statistics. See Table 4 below:

Table 4: Direct Effect: path coefficient and t-statistics

Paths	Direct Effect		
	Path Coefficients	T-Value	P-value
electronic Information System → Employees Performance	0.294	5.30***	0.000

*** $p < .001$, ** $p < .01$, * $p < .05$, based on two-tailed test; $t(p < .001) = 3.29$; $t(p < .01) = 2.58$; $t(p < .05) = 1.96$.

Furthermore, in Table 5 below, the squared multiple correlation (R^2) for each construct was given. The R^2 value for this particular model from the SEM result is 0.69, which signifies that more than 69% of the variance in time management of is explained by electronic information system which

offers concrete evidence for the strength of the model in explaining and predicting time management.

Table 5: R²

Construct	R Square
Electronic Information System	0.65%
Time Management	0.33%

Consequently, it was revealed that electronic information system has a positive direct effect on time management. This hypothesis is verified (with the path coefficient = 0.294; t-statistic = 5.30 and p-value < .001). This result shows that the higher the ability of the organization to use and apply procedures, tools and material means, which include the collection, operating, deployment and retrieval of information more efficiently, the higher its ability to take advantage of the time and the personal talents available to achieve the important goals that we seek while maintaining the balance between the requirements of work and private life and the needs of the body and spirit and mind. Therefore, the hypothesis is thus accepted.

Discussion of the Findings

Many studies have shown that using the Internet can actually lead to an improvement in the working life of managers especially with regard to time management (Guan et al., 2002).

The literature has supported the findings of this study. For instance, Alian, (2007) averred that the impact of computers, information technology, communication networks and the Internet in our lives has made electronic time management a reality, because IT includes computers, software and a variety of ways that interact with each other and they provide us with important advantages that can be used to effectively manage time. So also, Al-Far (2003) believes that the use of information systems in the field of management allows for better management and optimal use of all the resources available to the organization at all levels, where managers of these organizations can save a lot of time, effort and money through the use of information systems in the implementation of administrative work (Jaradat et al., 2009).

Similarly, Bahi and Gad (2007) have asserted that computer use in the organization aims to save time and effort and improve the level of administrative services. The computer can also be used in time management through various software programs. Equally, Al-Salami et al. (2009) stated that "time management applications" are the manager's schedule management programs, where appointments are stored in days, hours, notes, phone book storage. Al-Hudhoud (2002) added that databases help the administration to reduce the time in search of operations or to respond to some inquiries for customers, as well as helps to send files and exchange data with different parties. Nasrallah (2006) equally reiterated that IT can be used to help manage time, develop and increase knowledge, skills and events by using e-mail to communicate with a large number of partners. And, Girgis (1999) noted that the use of information technology and internet in management can save time and effort by encouraging communication and exchange of information among employees.

Conclusion

In conclusion, the study was able to reveal that electronic information system has a positive direct effect on time management. It could deduced that the level of application of electronic

information systems used in Jordanian banks is high among the employees. This is logical because of increased competition in the banking sector both from within and outside, the widespread availability and low cost of information technology in Jordan, compared to other countries, as well as the government initiatives encouraging the use of technology in different sectors. Hence, the banking sector in Jordan should adopt a formal approach to the use and application of IT in all areas of the company's business. Equally, disclosure, dissemination and facilitation of access to information by all employees should be made through establishment of an information department that provides the employee with the information needed to perform their functions as quickly as required. Internal electronic correspondence should be adopted instead of paper, which will significantly reduce financial and administrative expenses and speed the completion of work.

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