The Effect of Information Technology on Financial Performance of Jordanian Industrial Companies

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Abstract

This study aimed to identify the relationship between information technology and Jordanian industrial company's financial performance listed on Amman Financial Market (AFM). To achieve the objectives of the study the researcher followed the descriptive and analytical statistical techniques. The research population includes Jordanian industrial companies which have been used computer- software programs and implementing new technology. The participants of the study were company's managers, financial managers, and IT managers. One hundred & twenty questionnaires were distributed; One hundred questionnaires were returned and valid for statistical analysis. The results indicated that there was positive relationship between the Jordanian industrial company's financial performance and information technology.

Keywords: Information Technology, Technology & Accounting, Effect of Technology on Accounting

1. Introduction

Accounting is the system a company uses to measure its financial performance by recording and classifying all the transactions like sales, purchases, assets, and liabilities in a manner that adheres to certain accepted standard formats. It helps to evaluate a Company's performance. A nother definition of accounting is the art of recording, classifying, and summarizing transactions and events in significant manner which are of a financial character and interpreting the results thereof.

Advances in information technology (IT) have transformed many firms in professional service industries, but perhaps none as much as those in the public accounting industry (Elliott 1998).

Technological changes and their associated impacts on businesses have necessitated discussion on the contents of the effect of information technology on accounting. Everyone knows that Information technology has had significant effect on accounting; accounting is the language of business. There have been many changes throughout time that eventually lead to accounting technology. Accounting technology has not only made accounting easier than before, but it also improved the overall performance of organizations.

With the introduction of technology, there has been an improvement in the accounting systems. Computers and other digital technologies have facilitated rapid exchange of documents, research, and data collection. Nowadays it is hard to find someone doing traditional manual accounting with paper and pencil; this is due to the advanced in information technology online, information technology and its marketing relationship becoming increasingly important to the businesses.

For most firms, the information technology (IT) represents a major element in the overall firm, and IT decisions often have significant operational and strategic impacts on the business processes in the firm's value chain. Computers, servers, the Internet, wireless and personal digital devices have forever transformed the way companies conduct business. Software packages have also improved traditional operations and production processes. Accounting has seen tremendous advancements.

Accounting software automates the traditional paper ledgers and accounting books. These software packages may come with a variety of specialized features or a generic program that can be customized to current business operations. Companies usually choose accounting programs based on the size of their operations and the number of users accessing the system. Large companies may choose system-wide software packages, such as an enterprise resource planning system.Information technology (IT) has created significant benefits to accounting departments. IT networks and computer systems have shortened the lead time needed by accountants to prepare and present financial information to management and stakeholders. Not only has IT shortened the lead time required to present financial information, but it also has improved the overall efficiency and accuracy of the information.

The biggest impact that (IT) has made on accounting is the ability of companies to develop and use computerized systems to track and record financial transactions e.g. QuickBooks program. IT networks and computer systems have shortened the time needed by accountants to prepare and present financial statements and information to management for decision making. This system allows companies to create reports quickly and easily, increased functionality, improved accuracy, faster processing, and better external reporting.

2. Study Problem

Before using information technology, the entries were done manually, which took a lot of time and also lead to many mistakes. Mistakes mean hours of recalculation and time consuming, and its known that time is money in businesses. These mistakes require rechecking again and again in order to find the errors, which is not only a hard working, but time-consuming as well. Also if anyone inquires about any accounting information, it will take long time to search for it manually. In addition, there is the possibility of losing data because there isn't any backup. Using information technology is a strategic decision a firm should make. The Study plan can be summarized in the following questions:

1) Is there any relationship between financial performance of Jordanian industrial companies and its use of information technology (IT)?
2) Is there any relationship between financial performance of Jordanian industrial companies and methods and procedures used of information technology (IT)?
2) Is there any difference between employee's knowledge on the importance of using information technology (IT) and financial performance of Jordanian industrial companies?

3. Objective of the study

The Objective of the study is to identify the relationship between financial performance of Jordanian industrial companies listed on Amman Financial Market (AFM) and information technology as it's measured by Knowledge of Information Technology, Software Programs, Performance Measurement, and Human Resources; the objectives of the study can be stated as follows:

1. Identify the relationship between financial performance of Jordanian industrial companies and its use of information technology (IT).
2. Identify the relationship between firm's financial performance method and procedures used of the information technology (IT).
3) Identify the difference between employee's knowledge on the importance of using information technology (IT) and financial performance of Jordanian industrial companies.

4. Theoretical framework

The development in information technology has affected the whole life, business, and firm's financial performance. information technology which is the area of managing technology and extend wide variety of areas such as process, information systems, programming languages, data construct, computer hardware, and computer software. Business organizations use business processes to get things done, these processes are a set of structured activities that are performed by people, machines, or both to achieve a specific goal.

Key decisions and information needed often come from these business processes. The value of IT is valuable when the benefits exceed the costs of gathering, maintaining, and storing the data. Business organizations conduct business transactions between internal and external users, whereas information technology captures the flow of information between internal and external users for the various business transactions. Thus, transactional data is collected and stored into meaningful information from which business decisions are made and provides adequate controls to protect and secure the organizational data assets. Well designed information technology can add value through effective and efficient decisions, having effective decisions means quality decisions, having efficient decisions mean reducing costs of decision making (Romney & Steinbart, 2006).

Information technology is influenced by an organization's strategy; strategy is the overall goal the organization hopes to achieve maximum profitability. Once an overall goal is determined, an organization can determine actions needed to reach their goal and identify the informational requirements necessary to measure how well they are doing in obtaining that goal (Romney & Steinbart, 2006).

IT is currently important to satisfy the information requirements of the decision makers. Accordingly, there are six interrelated components of the Accounting information system: people, procedures and instructions, data, software, information technology infrastructure, and internal controls and security measures (Romney & Steinbart, 2018).

Jeffery & Leliveld (2004) demonstrated the best ways to manage IT investment, they state that there is a need to balance return and risk. In addition, Wang & Alam (2007) addressed IT intangible Value, They pointed out that IT capability adds to a firm's market valuation and it related to increased variability of future earnings.

IT Infrastructure Library framework (ITIL) is initially developed in the UK by the Office of Government Commerce. ITIL is established to assist enterprises in managing IT service by providing them with consistent and comprehensive documentation of best practice for IT Service Management (ITIL, 2009). It is very useful in improving the infrastructure to provide ongoing services through service management (Brown & Nasuti, 2005).

IT is a senior management concern (Johnson, 2005; Read, 2004; Hardy, 2002), and describes who make decisions about obtaining and deployment of IT resources and competencies (Brown & Nasuti, 2005). IT includes IT processes, IT resources, information, business and legal issues, and all interested parties such as stockholders, top management, auditors, lenders, and suppliers. IT offers a framework for evaluating processes and technologies to provide the appropriate levels of access and exclusion (Lurie, 2004).

Strategic effort is needed to reduce the widening gap between skills provided by accounting education and those needed in the real implementation when evolving information technology based business environment (Chandra, Cheh, and Kim, 2006). Successful information technology can deliver resources in support of the new roles and functions of workers as a result of redesigned and tightened business processes (Rockart, Ear, and Ross, 1996; Herath and Herath, 2014).

Globalization and the advances in information technologies have changed the recording of accounting information, processing, and reporting (Nieschwietz, Pany, and Zhang, 2002). Database and information technology controls have been identified as essential skills (Callaghan, Peacock, and Savage, 2001). While a deficiency in database skills among accounts is a cause for concern (Stoner, 2009).

5. Previous Studies

Technological changes and the developments in information technologies have significantly changed work environments and the management of businesses. Information technology is widely recognized as important to firms' survival and growth (Farhanghi, Abbaspour, & Ghassemi, 2013). The impact of information technology on work life has been one of the most talked about issues over the recent years. Chief executive officers spending millions of dollars on information technology face the critical issue of assessing the impact of this technology on work.

(Penalba Juan et al, 2015) The study focused on "The Effect of Information and Communication Technology in Innovation Level: The Panama SMEs Case". The essential objective of this research work is to analyze existing effects between information and communication technologies in the level of innovation in small and medium-sized enterprises, using a sample of (615) micro, small and medium-sized enterprises in Panama. The information and Communication technology play an essential role in the development in the level of innovation in Enterprise, not only large corporations, but also micro, small and medium-sized enterprises, they also facilitate the growth and development of the organizations in a highly, globalized and competitive world, as the one that characterizes the current century. The results obtained show that information and communication technologies have significant positive effects in innovation activities of companies.

(Tanaka & Sithole, 2015) The study showed the impact of "Information Technology Knowledge and Skills Accounting Graduates Need" The research investigated accounting graduates (IT) skills and knowledge relevant to their roles in providing competent and professional services. Data was obtained from employers on 10 (IT) skills and knowledge areas applicable to accounting graduates. Results of the survey research suggest that students are better trained in word-processing and knowledge of communications software skills, yet employers expect entry level accounting graduates to possess accounting packages knowledge and spreadsheet competencies. The results provide useful information for academics and administrators that are making changes to their curricula.

(Saban & Efeoglu, 2015) Their study focused on" An Examination of the Effects of Information Technology on Managerial Accounting in the Turkish Iron and Steel Industry" The objective of the study was to examine the effect upon managerial accounting and managerial accountants in the iron and steel businesses, which closely follow and adopt the information technologies and operate in Turkey. The study examined the technological developments that have led to changes in managerial accounting and the extent of these changes. Examining the effects upon the managerial accounting applications and managerial accountants theoretically, a field work was performed using the survey method.

These changes were determined using the responses to surveys that had been administered to managerial accountants in Turkish iron and steel production companies.

(Chevers & Jacqueline, 2014) The study analyzed "The Impact of Information Technology Material Weakness on Corporate Governance Changes in Family-Owned Businesses" the Research has demonstrated that information technology (IT) has a direct effect on corporate governance and also that IT is a driver of firms' performance.

As a result, firms have been making huge investments in IT, especially in the area of internal controls in an attempt to promote good corporate governance. However, it is believed that many executives are not placing sufficient attention to the critical role played by IT, especially with respect to internal control material weaknesses. This has led to numerous incidences of financial mis-statements and collapse of organizations in both developed and developing countries. However, firms in developing countries usually have weak governance structures, especially family-owned businesses (FOBs). They are characterized as having less capacity to re-bounce from such incidences and as such, need to strengthen their governance structure in an attempt to achieve good performance. Hence, the purpose of this study is to develop a research model to assess the impact of IT material weakness on corporate governance changes in family-owned versus non-family businesses (NFBs) in a developing country context. It is hoped that the findings will encourage business executives to incorporate IT as a means of internal control in an attempt to achieve good corporate governance which can improve firms' performance.

(Ahmad, 2011) The study discussed the "Impact of Information Technology on Banking Accounting System "A Case Study of State Bank of India (Rajasthan)". Data collected from the financial statement of the State Bank of India (SBI) have been analyzed with the help of different accounting and statistical tools. The techniques used are Trend analysis and ratios analysis to record the performance of SBI particularly during pre and post Introduction of IT. The results study conclude that the use of (IT) in the State Bank of India has a positive impact on the total income because it is increasing continuously and more rapidly than earlier years as has been shown through the available data of the selected period of study, and the result obtained by this study, it is quite clear that the increase in the State Bank of India's profit is not only due to increase technology which creating new possibilities of profitability improvement.

(Bawaneh, 2011) His study focused on **"Does using computer technology improve students' performance? Evidence from a management accounting course"** The study provided empirical evidence on the effect of using computer technology in teaching a management accounting course at a state university in Jordan. It develops a base model for predicting students' performance in the course and expands it to incorporate a variable capturing the use of computer technology in presenting the materials of this course to the students. In the base model, students' performance in the mid-semester was found to be a good predictor for performance in the final examination.

There was no evidence that the performance in an introductory course or the role of gender may lead to better students' performance in the final examination. In the expanded model, there was evidence that using computer technology in teaching management accounting course improves students' performance in the final examination relative to both the performance in the mid-semester examination and the grade in the introductory accounting course.

6. Study Hypotheses

6.1 The First Hypotheses

HO1: There is significant difference between financial performances of Jordanian industrial companies based on business people' knowledge on the importance of using information technology in these companies according to demographic factors such as age, gender, education and working experience.

6.2 The Second Hypotheses

HO2: There is significant difference between financial performances of Jordanian industrial companies based on business people' knowledge and its use of information technology (IT).

6.3 The Third Hypotheses

HO3: There is significant relationship between financial performances of Jordanian industrial companies in relation to software programs and its use of information technology.

6.4 The Fourth Hypotheses

HO4: There is significant relationship between financial performances of Jordanian industrial companies in relation to accounting performance and its use of information technology.

6.5 The Fifth Hypotheses

HO5: There is significant relationship between financial performances of Jordanian industrial companies in relation to human resource performance and its use of information technology.

7. Research methodology

To achieve the objectives of the study the researcher followed the descriptive and analytical statistical techniques.

7.1 Study model

Based on the research objectives and literature review, this researcher has developed a model of the study, as shown in Figure 1. This figure shows the independent variables as a function of dependent variable which is the financial performance of Jordanian industrial companies listed on AFM.

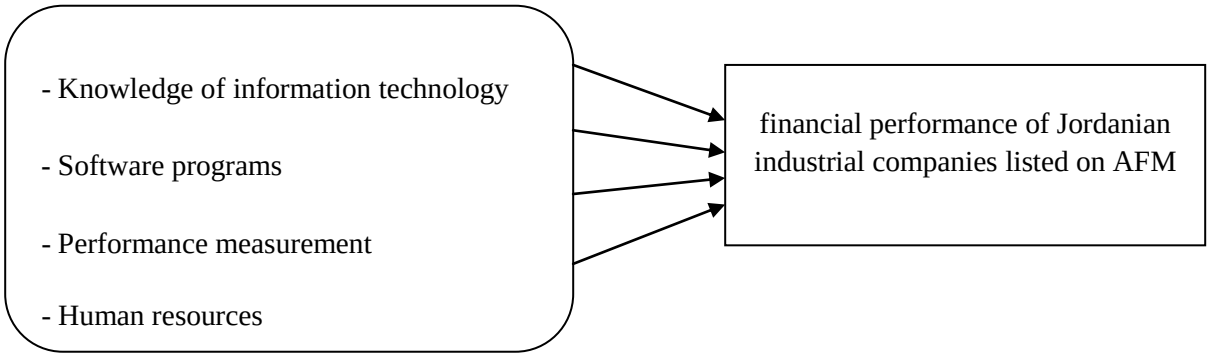

Figure 1: Research Model

7.2 Research Population and sample

The research population includes Jordanian industrial companies that are listed on the Amman Financial Market. The companies chosen have been used computer- software programs and implementing new technology. The participants of the study were company's managers, financial managers, and IT managers. One hundred & twenty (120) questionnaires were distributed to company's managers, financial managers, and IT managers; One hundred (100) questionnaires were returned and valid for statistical analysis, with the response rate of 83%.

7.3 Data Collection

The researcher depended on gathering primary and secondary data. Secondary sources were literature review such as journals, books, and internet. The instrument used for the collection of the primary data was a questionnaire. The questionnaire included four dimensions, which are: Knowledge of information technology, Software programs, Accounting performance, Human resources. A Likert five-point scale ranges from "strongly disagree" to "strongly agree" was used to examine participants' responses to questionnaire statements.

7.4 Measuring Instrument

The researcher followed the descriptive and analytical statistical techniques were applied in the analysis by using mean, standard deviation, percentage and frequency, T-test was applied to test the study hypotheses. A Likert five-point scale ranges from "strongly disagree" to "strongly agree" was used to examine participants' responses to questionnaire statements, and answers were ranged between strongly agree, agree, somewhat agree, disagree, and strongly disagree. The reliability test was applied to examine the internal consistency of the research instrument. The questionnaire was piloted with a similar sample of respondents selected from Jordanian industrial companies. The aim was to assess the applicability of the questionnaire and the readability of its items. The internal consistency reliability of each of the dimensions was assessed by Cronbach's alpha test. The alpha values for all dimensions vary from (0.81) to (0.92), which are considered acceptable and confirms the reliability of the questionnaire as its shown in table (1), (Sekaran, 2003).

Table 1: Cranach's Alpha for the Scale

Variables	Cranach' Alpha
Knowledge of information technology	0.92
Software programs	0.89
Accounting performance	0.85
Human resources	0.81

8. Primary Statistical Tests

The primary statistical test has been done to insure that multicollinearity correlation doesn't exist between independent variables.

8.1 Multicollinearity Test

In general, if the correlation coefficient between independent variables more than (80%) it suggests problem of multicollinearity.

Table (2) presents that the highest correlation is between Knowledge of information Technology and Software programs which is (0.50). It is noticeable that the correlations between other independent variables less than (0.50), this means that there isn't any problem of multicollinearity correlations between independent variables and the dependent variable.

Table 2: MulticollinearityTests

Covariance Analysis: Ordinary				
Sample: 2019				
Included observations: 100				
Correlation				
	Knowledge of information Technology	Software programs	Accounting performance	Human resources
Knowledge of information Technology	1.00			
Software programs	0.50	1.00		
Accounting performance	0.08	0.15	1.00	
Human resources	0.10	0.08	0.07	1.00

8.2 Autocorrelation

Autocorrelation is the connection between random errors calculated from the regression model. Autocorrelation is done by Durbin-Watson test (D-W) , its compared with two values taken from the table at level of significance (α), the numbers of observation (n) and the number of variables (k).The are two values; minimum value (d_l), and maximum value (d_u). If (D-W) is greater than (d_u) this means that there isn't problem of autocorrelation, but if it's less than that there is a problem of autocorrelation, and if (D-W) between (d_l) and (d_u) indifferent decision within this area (Montgomery *et al*, 2001).Table (2) presents the result of this test. It is noticed that (D-W) values for the variables are greater than (d_u), therefore the study's hypothesis doesn't have any problem of autocorrelation.

Table 3: **Autocorrelation**

hypothesis	D-W	d_l	d_u	Results
H01	1.892	1.675	1.851	No autocorrelation
H02	1.871	1.675	1.832	No autocorrelation
H03	1.833	1.670	1.754	No autocorrelation
H04	1.815	1.672	1.742	No autocorrelation
H05	1.798	1.671	1.715	No autocorrelation

8.3 Data Analysis Method

Table (4) shows the distribution of the sample according to their gender, age, education, working experience. The table illustrates that 79% of the respondents were males, while the highest percentage of the respondents age was between 41- 50, with a 52 %, the respondents held a bachelors' degree in accounting was 57 %, and 53% had working experience of 21 - 25 years. In general, the previous results suggest that respondents are able to absorb the questionnaire and provide reliable information.

Table (4): Descriptive Statistics (Demographic Characteristics)

Independent Variable	Type of Independent Variable	Frequency	Percentage
Gender	Male	79	79 %
	Female	21	21%
Age	Less than 30	5	5%
	30 - 40	18	18%
	41 - 50	52	52%
	Above 51	25	25%
Education Level	Diploma Degree	15	15%
	Bachelors Degree	57	57%
	Master Degree	28	28%
Working experience	Less than 15 Years	17	17%
	15 - 20	15	15%
	21 - 25	53	53%
	Above 26	5	5%
Total	Each Type of Independent Variable	100	100 %

9. Results and Discussion

9.1 Testing the hypothesis

To achieve the study objectives, the first hypothesis One Way Anova test was used including Post Hoc tests (Sheffe, and Dunett's C) to test the degree of homogeneity presented in table (5). Results showed a positive significant relationship for the gender variable for F was (5.4) at a significant level of (0.02), and results showed that the females were more realizable of the effect of the information technology than the males; for the females the mean was (4.13), and (3.79) for the males.

Table (5): One way Anova of the Descriptive Statistics

Independent Variable	Type of Independent Variable	Mean	SD	F	Sig
Gender	Male	3.79	1	5.4	0.02
	Female	4.13			
Age	Less than 30	3.89	4	1.3	0.48
	30 - 40	3.69			
	41 - 50	4.51			
	Above 51	4.14			
Education Level	Diploma Degree	4.21	3	0.9	0.38
	Bachelors Degree	3.83			
	Master Degree	4.09			
Working experience	Less than 15 Years	4.15	2	4.51	0.03
	15 - 20	3.88			
	21 - 25	3.51			
	Above 26	4.59			

*Significant at a level of 0.05

Working experience also showed that a positive significant relationship, for (F) was (4.51) at a significant level of (0.03) and that employees with more than 30 years' experience were more realizable than the others. Results in table (4) showed that there was no significant relationship between age and education level variables and the information technology, so the first main hypothesis was accepted except for the two variables gender and educational level.

Table (6) used both the mean and standard deviation to show the degree of effect of the use of information technology on the Jordanian industrial companies performance, which was relatively high in total in accordance to the descriptive statistics.

Table (6) Descriptive Statistics (mean and Standard Deviation)

Type of Variable	Mean	Standard Deviation
Knowledge of information technology	4.39	0.9602
Software programs	4.17	1.0455
Accounting performance	4.28	1.1258
Human resources	4.14	1.1035

The hypotheses of the study were tested and the results indicated that there were significant relationship between financial performance of Jordanian industrial companies and its use of information technology at level of (0.05).

Table (7) shows that the information technology (IT) has a positive direct effect on the Knowledge of information technology with a value of (0.75123), followed by the direct effect of Software programs with a value of (0.73238), then the direct effect of accounting performance with a value of (0.70115),and finally the direct effect of Human resources with a value of (0.71987).

Further, the usefulness of information technology had a positive correlation with company's financial performance. It should also be noted that the total effects of Knowledge of information technology, Software programs, and Human resources were greater than their simple correlations with the Accounting Performance. It is clear from the above results that the hypotheses of the study were supported.

The results of the study indicated that there was positive relationship between independent variables: information technology as it's measured by Knowledge of information technology, Software programs, Performance measurement, Knowledge of the Human resources in industrial companies in Jordan in relation to the dependent variable; performance of the Jordanian industrial companies.

Therefore, these results prove that the Jordanian industrial company's performance influenced by information technology as it's measured by Knowledge of information technology, Software programs, Performance measurement, and Knowledge of the Human resources.

Table (7) The effects of IT on Company's performance

Endogenous Variable	Exogenous Variable	Total Effects	Correlation
Information Technology (IT)	Knowledge of information technology	0.75123	0.69665
	Software programs	0.73238	0.68558
	Performance measurement	0.70115	0.58925
	Human resources	0.71987	0.55125

10. Conclusions and Recommendations

The objective of this study was to identify the relationship between the financial performance of Jordanian industrial companies and information technology as it's measured by Knowledge of information technology, Software programs, Performance measurement, and Human resources. Results indicated that there was positive a relationship between the financial performance of Jordanian industrial companies and information technology as it's measured by Knowledge of information technology, Software programs, Performance measurement, and Human resources.

This result can be especially important to top management as it provides valuable insights into the role of information technology in enhancing the usefulness of information technology, which is presented in the financial statements, and improving the ability of the IT to produce high quality information. Such insights suggest that the top management should be adhered to the proper implementation of information technology. The findings of the research provide an empirical evidence for the positive relationship between IT and financial performance of Jordanian industrial companies. Since the Jordanian industrial companies work in a competitive market they should look for implementing new and up to date technology that may help the company stay in such a market, and pay more attention on technology improvement to take advantage of such changes in order to ease its work in relation to knowledge of information technology, software programs, performance measurement, and human resources.

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