The Impact of Information Technology Methods on Accounting Information Quality: Empirical Evidence From Iran

Amir Najafi   *asdnjf@gmail.com*
Associate Professor, Department of Industrial Engineering,
Zanjan Branch, Islamic Azad University, Zanjan, Iran

Sedigeh Soleimanpur   *soleymanpoor_s@yahoo.com*
PhD student in Accounting, Qazvin Branch,
Islamic Azad University,Qazvin, Iran

Zoheir Morady   *zohier.morady@gmail.com*
Member of Young and Elite Researchers Club,
Zanjan Branch ,Islamic Azad University, Zanjan, Iran

Abstract

Information Technology is a key factor in eliminating the limitations posed by time and location and gives a much better and a faster access to informaition. In other words, technology has revolutionized work methods as a result of which, the paper which was used as a substrate for writing the work upon it has now been replaced by an electronic substrate. The changes created by technology include the use of Blockchain, IoT (Internet of Things), Cloud Accounting and Big Data to do accounting in automated form.The statistical sample of this study is given on the basis of the 171 person Cochran formulae consisting of financial managers, accountants and auditors of the Tehran city. Empirical results show that the use of Information Technology has a very significant role on the quality of Accounting Information and all these factors are influential in the quality of accounting system.
Keywords: Cloud Accounting, Internet of Things, Blockchain, Big Data, quality Accounting Information

1. Introduction

In the recent years, due to the integration of Information Technology and Accounting, new tools and methods have come into use and has resulted in the continuous increase of speed and accuracy and also the omission of the use of paper for office work thereby also saving time and money. Information Technology thus by revolutionizing work methods has become electronized. The rapid development of Information Technology and its extensive uses has prompted every organization to use new softwares which in turn has further inceased the use of computers and the accounting work to be

performed faster and with more precision. The accountant should be able to keep up with the new technologies so that he may be able to give useful information to the users[1]. Implementing digital solutions in accounting is also a product of price reductions in software, internet-based applications and the need for access to information. In addition to this, standardisation of technology and software also resulted in the increase of employees' productivity, increase in the speed of data collection, and also increase in saving of important data[2]. Today the accountancy experts emphasises upon technology development which is one of the most important expectations that has arisen in the field of accounting and its implementation is increasing at a considerable rate which is described as a model that helps this growing trend and the promotion of business having a lasting affect on business procedures. Therefore, the development of technology today in the field of accountancy is more prominent than ever. Although the development of technology is a very wide concept, but it is an important element[3]. Information Technology comprises of skills such as computer operations, databases, accountancy softwares, etc[4]. One of the uncertain aspects of implementing Information Technology in accounting is whether the merits of its implementation outweighs costs of its implementation. The complete replacement of traditional systems and procedures is not feasible at present because the full benefits of Information Technology in not achievable unless there is participation by organized owners and investors[5].

2. Therotical Background

Drives are one of the most common Cloud tools that provide you with an information space on their servers and you can transfer your required files, images and information to these spaces and then have an access to these information from anywhere and anytime just by having an internet connection and username and password. Some of these Cloud platforms allow you to share your files with others also[6]. Because of quick accessibility and no need to install new software on your PC and usability of various tools such as tablet, smartphone, etc, using Cloud systems can help you in many ways. There is also no need to pay for expensive software licences if you use the system[7]. The Internet of Things can simply be defined as the communication between objects that can receive and transmit information through computer networks and act on information received from their sensors or other systems within the network or network administrator. Of course, recently, in order to have ease of use and non-interoperability with the existing networks, specific protocols have been developed, but there are no limitations for using the type of communication network for creating a platform for IoT[8]. Wireless communication between objects is defined as the interaction between units to achieve a common goal. Typically all units have internet connection which generate data from devices such as phones, cameras, and any other data production device, and all are considered as one device. In IoT, all objects in the network platform communicate with each other, and the data are constantly processed by using smart creation devices such as wireless sensor networks, web-based middleware and platforms and the parallel use of Cloud computing to have permanent access to information, as a result of which a tremendous power is created for the

integration of information and the careful monitoring, control and updating of this information for asset management [9].In this structure, each server workstation, PC, laptop, network-connected devices and everything else on the platform of these networks maintains the full version and updates of the entire database. Any new data that seeks to enter the network uses a participant feedback mechanism on the network based on a time/date entry to be recorded as a new event in the general ledger[10]. In short, Blockchain can be considered as a database built on distributed ledger technology. In order to enter new data in this database, permission of the majority of the active users in the Blockchain should be obtained. This database does not have a manager; it is governed by the rules of collective consent. Moreover, in a Blockchain structure, each user saves and maintains a complete copy of the available data of the database. These databases are constantly updated in a concurrent manner[11]. Big data is a huge amount of data that is significant enough to be impossible to analyze manually or using traditional accounting software. Another factor is that Big Data includes both structured and unstructured data, which creates a problem in the analysis process when using traditional software[12]. Big Data consists of large datasets that are not typically analyzed by database management systems or traditional software applications. The reason for the acceptance of this term is the growing volume of information which, with the increasing development of computing technology and remote communication especially internet communication and environmental assessments, are accessible to an extent that various types of data become reachable. Big Data will be having a major impact on financial accounting. Textual information, video, audio and visual information become accessible through Big Data, which can improve financial accounting information and financial reporting methods[13]. [14]studied the impact of the automation process on global accounting services and the results showed that automation technology has a significant impact on individuals and organizations in changing the work time reductions, which can also lead to a reduction in the number of workers. [15] studied environmental technology change and the future of accounting research behavior. The results showed that changes in technology and research and behavioral environments in accounting would occur only when acceptance of changes in the timely development and design of a research approach would take place provided that accounting research moved toward better and standard decision making policy. [16] examined automated accounting in accounting companies: A qualitative study of attitudes. The results showed that consultants' attitude towards automated accounting was positive and this attitude could influence the changes and development of technology in the future of accounting. [17]made the assessment of accounting staff based on computer environment, and the results showed that use of computerized system brings job promotion. All persons in a computerized accounting system can be divided into three categories: 1) persons competent in business; 2) persons competent in accountancy; 3) persons competent in information technology. [18] examined the skill and training needs of accountancy students and accountants for the automation of accountancy. The results of the data analysis showed that there is a significant relationship between the need for technolgy skills and the training of accounting students and automation of accountancy. These skills include software development, computer operations and

analytical ability in automation system. [19] examined information and auditing systems. In fact, security is one of the most important technological issues, and its importance is due to the lack of security in a system for reporting information with sufficient reliability which may prevent reporting of the required information to people inside and outside of the organisation and also may increase the opportunity for forgery, manipulation and cheating. At present due to the lack of sufficient security within the framework of professional accounting in the form of systems and networks, world trade is facing many problems. Fraud and deliberate exaggeration in corporate accounting and other embezzlements have led to an increase in bankruptcies of financial companies. Examples of the collapse of large companies such as Enron, WordCom, Global Crossing in the United States, and others have all severely undermined the credibility of financial reporting and their accountability. Such cases can partly lead to undesirable effects on the economic situation of countries. Moreover, fraudulent activities have had a damaging effect on investment and financial markets, as people argue these problems happen due to the insecurity of the accounting and auditing profession. [20]have undertaken the task of identifying and ranking the challenges of employing information technology in accounting, as defects in accountng system prevents the timely and proper availability of information to the users due to which irretrievable losses are inflicted to them. Accounting has been introduced as a kind of information system whose task is to process raw data and convert it into comprehensible information. However, today in many of the accountancy courses, students get into the position of using accounting information, and in almost none of the courses do they learn where this information comes from.[21], undertook to study the role and effect of knowledge and skill of auditors concerning the fundamentals and methods of information technology and accounting information systems for evaluating internal controls and performance of auditing operations, and this study was performed by distributing questionnaires among auditors, and for the analysis of this data the T-test was used. The results showed that in spite of the correlation between all independent and dependent variables of this research, only four basic factors including knowledge of accounting information systems, knowledge of system security levels, familiarity with data processing and familiarity and working with accounting software had significant effect on evaluation of internal control and performance of auditing operations. [22]have investigated the role of information technology on the development of accrual accounting system in one of the medical sciences universities of Iran (Kermanshah University of Medical Sciences). The results showed that information technology has a very decisive role in the planning and decision making activity of the managers, management of data and information, evaluation of the performance of organizations and employees, improvement of information security, financial reporting, and human resource management, and that all these factors are influential in the advancement of an accrual accounting system, and that an information technology appropriate to that system can be regarded as the key pillar of the influence of these factors.[23], investigated the role and influence of auditors' knowledge and skills on the basics and methods of information technology and accounting information systems on evaluating internal controls, assessing audit risk, and performing audit operations. The results showed

that despite the correlation between all independent and dependent variables of the study, only four basic factors including knowledge of accounting information systems, understanding of system security levels, familiarity with data processing and familiriaty with the usage of accounting software had a significant effect on internal control assessment and the implementation of audit operations; and factors such as familiarity with types of operating systems, knowledge of computer applications and knowledge of programming language have no significant influence on the assessment of internal control and auditing operations. Furthermore, the results showed that the extent of knowledge about security of accounting information systems as well as knowing the electronic data processing facilities of the owner would be effective in more accurate estimation of audit risks. The quality of Accounting Information is an important indicator that shows accurate information related to financial reporting, information about the company's operations especially cash flows expected by the company and the accruals, which help the inverstors to make the right investment decisions.

3.   Hypotheses Development

In the short run, Blockchain technology can be used as a platform for the voluntary disclosure of information by the companies. This is a quality mark which enables the companies to solve the problem of investor confidence[24]. In the long run, this program can have a tremendous effect on financial accounting. This technology can reduce errors in disclosure and profit management effectively and greatly improve the quality of information, reducing information assymetry. Blockchain technology has features such as transparency, security, stability and immutability, as well as the capability of fostering trust among market participants[25]. Effective implementation of Blockchain technology into the accounting ecosystem increases the potential for improving the quality of information that is given in the financial reporting process[26]. Therefore, the first hypothesis of the research is as follows:

Hypothesis 1: Blockchain has a significant influence on the quality of Accounting Information.

Recently, advances in the field of Information Technology in the field of accounting have developed significantly. For example, based on smart contract technology, a systematic framework for collecting information has been created to achieve a holistic approach for personal online behavioral ratings. To improve performance and also the efficiency of smart contracts and IoT technologies, an official language was developed to specify the interaction between bids and requests and a method for negotiation independence of smart contracts[27]. This method investigates the costs and changes needed to reach an agreement[28]. A framework based on smart contract that includes several accessible information control contracts is presented. Better access control of distributed and reliable information for IoT systems is achieved under this framework. However, an understanding of the challenges of IoT usage in Accounting Information quality is also very important[29].Therefore, according to the above mentioned points, the second hypthesis is expressed as follows:

Hypthesis 2: Internet of Things has a significant influence on the quality of Accounting Information.

Organizations that use Cloud accounting need less infrastructure to store their data on the server. Also, these businesses do not require IT specialists to maintain and update software. Cloud accounting is similar to cloud computing. In today's global upheavals and business turmoils, top financial managers must understand the financial delivery patterns of the business in which computational resources are presented as services[30]. This is really an opportunity for companies. With pricing policies that influence profitability, companies should make changes in their accounting and financial systems. The traditional information technology model is different from Cloud computing, and the result is that accounting as an information system with its main feature of providing information at the right time should find its information in Cloud computing[31]. Therefore, the third hypothesis is given as follows:

Hypothesis 3: Cloud accounting has a significant impact on the quality of Accounting Information.

The integrated use of Big Data analytics and Accounting Information is a key factor in improving the main competitiveness of a company [32].Accounting information has qualitative issues such as high cost and poor efficiency. In fact, the present study provides theoretical support for accounting data processing based on Big Data analysis[33]. Analysis of Big Data can perform high level analysis and visual search of Accounting Information[34]. Thus the fourth research hypothesis is presented as follows:

Hypothesis 4: Big Data has a significant impact on the quality of Accounting Information.

4. Research of Model

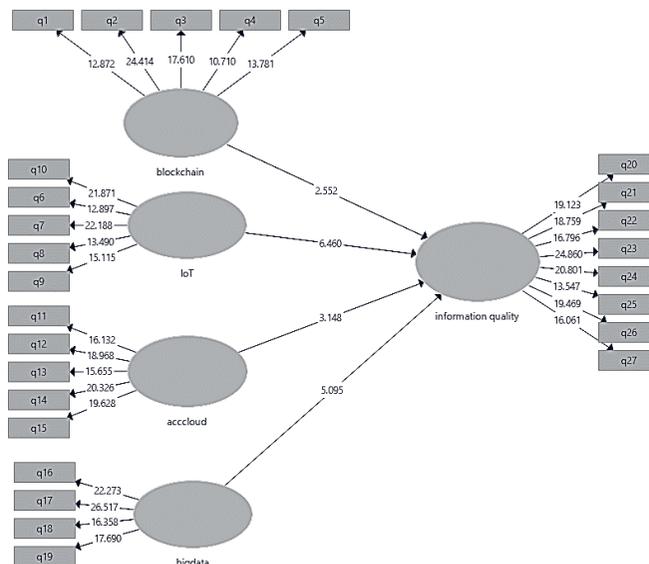Figure 1. Conceptual model of research

5. Research Method

The research method is of applied and descriptive-survey type. In order to collect the theoretical foundations of the present study we used library studies, scientific and research articles and journals. For the survey research, questionnaires and interviews were used as data gathering tools. Therefore, in this study to collect data, the standard questionnaire tool [35].was used, such that, questions 1 to 5 were about Blockchain variable, questions 6 to 10 were about Internet of Things, questions 11 to 15 were about Cloud accounting, questions 16 to 19 were about Big Data and finally questions 20 to 27 were about Accounting Information quality. The statistical team for this study consisted of financial managers (103 persons) and managers of accounting and auditing companies (200 persons) and accounting software providers (109 persons) who were located in Tehran for the month of February 2010, totally comprising of 309 persons. Statistical sample was according to the 171 person Cochran formula. The sample is in the form of random-class such that they were selected from a particular industry and class.

$$n = \frac{\frac{z^{\Upsilon}pq}{d^{\Upsilon}}}{1 + \frac{1}{n}\left(\frac{z^{\Upsilon}pq}{d^{\Upsilon}} - 1\right)} = \text{١٧١} = \frac{\frac{(١.٩٦)^{\Upsilon} \times (٠.٥)(٠.٥)}{(٠.٠٥)^{\Upsilon}}}{1 + \frac{1}{٣٠٩}\left(\frac{(١.٩٦)^{\Upsilon} \times (٠.٥)(٠.٥)}{(٠.٠٥)^{\Upsilon}} - 1\right)} = \text{١٧١}$$

In this formulae, z1.96, p0.5, p0.5, d0.05 and n are the statistics research team. The validity and reliability of this research tool questionnaire based on Cronbach's alpha coefficient is Blockchain variable 0.72. Internet of Things 0.76, Cloud Accounting 0.78, Big Data 0.75, and Accounting Information quality 0.86, respectively. The software used in this study is SPSS26, which is capable of testing hypotheses and providing descriptive and inferential analysis. Descriptive statistics are presented in this research in two sections. In the first section, descriptive statistics of the demographic variables of the respondents to the given questionnaire are provided and in the second section, descriptive statistics of the questions of the questionnaire are given in the form of variables. In the statistics section, inferential statistical tests such as determination of data normality (Kolmogorov-Smirnov test), regression test, and Pearson correlation coefficient are given.

6. Descriptive Statistics

Demographic factors	Type	frequency	Percentage	Cumulative percentage	Average	Standard deviation
Gender	female	68	39.8	39.8	1.60	0.49
	Male	103	60.2	100.0		
Age	Between 31 to 41 years	44	25.7	25.7	1.87	0.60
	Between 41 to 50 years	105	61.4	87.1		
	Above 50 years	22	12.9	100.0		
	Graduate	24	14.0	14.0	2.11	0.61
	Post graduate	104	60.8	74.9		

	Doctorate	43	25.1	100.0		
Work experience (proprietor ship)	Between 6 to 12 years	23	13.5	13.5	2.46	0.92
	Between 12 to 18 years	73	42.7	56.1		
	Between 18 to 24 years	47	27.5	83.6		
	Between 24 to 30 years	28	16.4	100.0		

Table 1. Descriptive statistics of demographic variables of research

As seen in table 1, the descriptive statistics of the demographic variables of the study is most frequent in the gender variable of the statistical population, with 103 being of male gender. The highest frequency of age variable is between the ages 41 to 50 years with a frequency of 105. Furthermore, the highest frequency of education belongs to postgraduate level of education with a frequency of 104, and finally, the highest frequency in proprietorship (work experience) is related to 12 to 18 years work experience group with a frequency of 73.

Accounting Information quality	Big Data	Cloud Accounting	Internet of Things	Blockchain	
171	171	171	171	171	**Number**
0	0	0	0	0	**Lost data**
3.2054	3.2485	3.2702	3.2713	3.3123	**Average**
.61232	.63158	.60292	.58676	.56737	**Standard deviation**
.719	.175	.596	.769	.549	**Skewness**
.524	.430	.344	.368	.109	**Kurtosis**

Table 2. Descriptive statistics of research variables

As seen in Table 2, the descriptive statistics of the research variables had 171 respondents, among which the independent research variables are respectively Blockchain variable with an average of 3.312, Internet of Things 3.271, Cloud Accounting 3.270, and the Big Data variable 3.248. The average of the dependent variable, namely the quality of Accounting Information is equal to 3.205. Among the indices of distribution and symmetry, the Blockchain variable has the lowest kurtosis of 0.10. This index in other variables is respectively, Internet of Things 0.36, Cloud Accounting 0.34, Big Data 0.43 and finally in the research dependent variable it is seen to be 0.52 and so the dependent variable has the highest kurtosis index level.

7. Inferential Statistics

If the alpha coefficient is greater than 0.7, the test has an acceptable reliability, so the above test has a satisfactory reliability. As indicated, the level of significance was significantly greater than the type 1 error at the 0.05 level in all the variables under

study. Therefore, the assumption that the variables under study are normal is not rejected. Also, significant level diagrams show that the indices and variables of the study are independent and dependent on the confidence level of 0.95 with normal distribution.

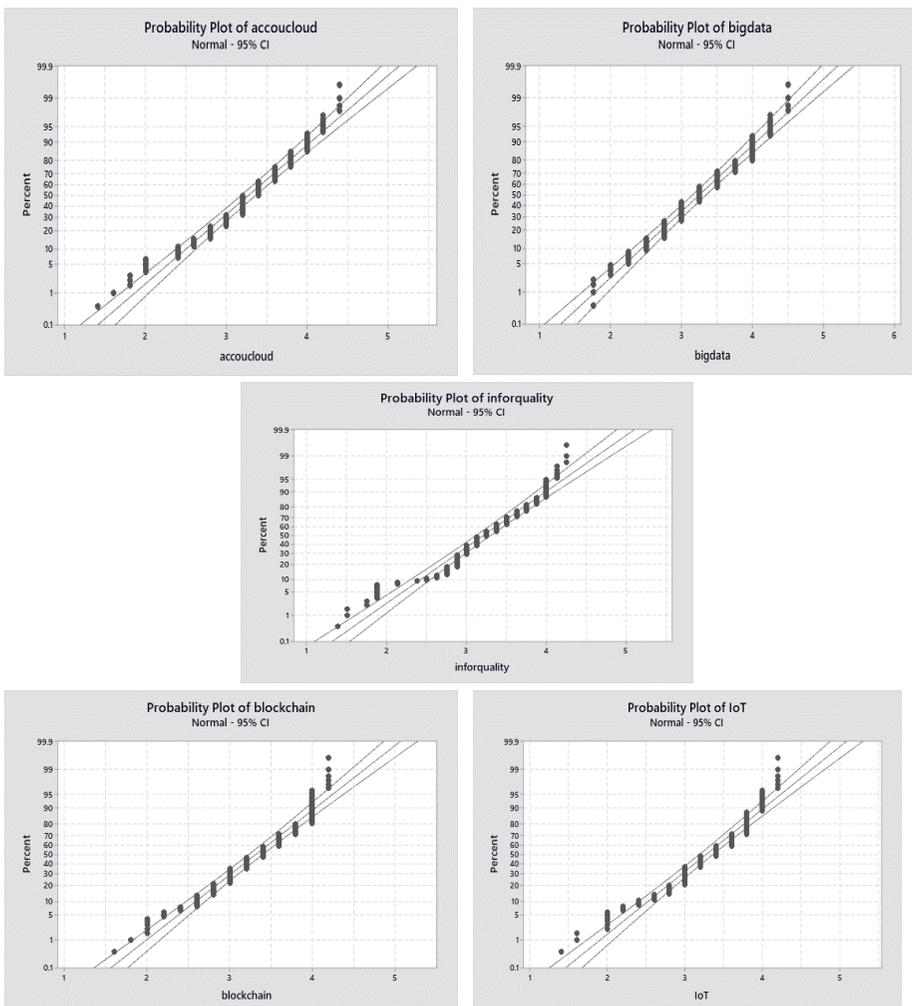| Test	Coefficient	Blockchain	Internet of Things	Cloud Accounting	Big Data	Accounting Information quality
Cronbach's Alpha	Coefficient	0.725	0.766	0.784	0.750	0869
Komogorov-Smirnov	Coefficient	0.103	0.117	0.132	0.108	0.113
	Significance level	0.78	0.72	0.52	0.92	0.61

Table 3. Reliability & normality test results

Figure 2. Probability plots of accoucloud, bigdata, inforquality, blockchain and IoT

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	**Regression**	52.636	4	13.159	196.746	.000[b]
	Residual	11.103	166	.067		
	Total	63.738	170			

Table 4. Test results of research regression

Analysis of regression variance is to investigate the existence of a linear relationship between independent and dependent variables. In other words, it shows whether or not at least one of the independent variables has a linear relationship with the dependent variable[36]. In the present study, as the significance level is less than 0.05, hence it can be concluded that at least one of the independent variables has a linear relationship with the dependent variable.

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	**Std. Error**	**Beta**		
1	**(Constant)**	-.189	.126		-1.503	.005
	Blockchain	.173	.057	.161	3.035	.003
	IoT	.357	.058	.342	6.151	.000
	CloudAccounting	.237	.067	.233	3.553	.000
	BigData	.270	.050	.279	5.373	.000

Table 5. Test results of standard coefficients of the research regression

In the present study, standardized coefficients columns show that Internet of Things with 0.34, Big Data 0.27, Cloud Accounting 0.23 and Blockchain with 0.16 had the highest and lowest impact on the dependent variable, namely the quality of accounting information. Moreover, as the significance level of the regression coefficients equality test is less than 0.05, hence the assumption that the regression coefficients are equal to zero is rejected and it is not necessary to remove them from the regression equation. In other words, these four independent variables affect the dependent variable.

		Blockchain	Internet of Things	Cloud Accounting	Big Data	Information Quality
Blockchain	**Pearson Correlation**	1	.701**	.765**	.682**	.769**
	Significance Level		.000	.000	.000	.000
Internet of Things	**Pearson Correlation**	.701**	1	.795**	.681**	.830**
	Significance Level	.000		.000	.000	.000

Cloud accounting	**Pearson Correlation**	.765**	.795**	1	.760**	.840**
	Significance Level	.000	.000		.000	.000
Big Data	**Pearson Correlation**	.682**	.681**	.760**	1	.798**
	Significance Level	.000	.000	.000		.000
Information Quality	**Pearson Correlation**	.769**	.830**	.840**	.798**	1
	Significance Level	.000	.000	.000	.000	

Table 6. Pearson Correlation Coefficient

As shown in Table 6 of the correlation matrix, the Cloud Accounting variable with a correlation coefficient of 0.840 and a significance level of less than 0.05 has a significant effect on the dependent variable, namely the quality of Accounting Information, whose correlation value is strong. Correlation coefficient of 0.830 and significant level of 0.000 have strong and positive correlation with Accounting Information quality. The variables of Blockchain variable with 0.769 and Big Data variable with 0.798 have strong and positive correlation with dependent variable.

8. Conclusion

In the present study, the impact of using informatin technology methods on the quality of Accounting Information was investigated. As the hypothesis test results show, regarding the hypothesis 1: Blockchain with a correlation coefficient of 0.769 has a strong and positive correlation with the quality of Accounting Information. Hypthesis 2: Internet of Things with a correlation coefficient of 0.830 and significance level of 0.000 has a strong and positive correlation with quality of Accounting Information. Hypothesis 3: Cloud accounting with a correlation coefficient of 0.840 and a significant level of less than 0.05 has a significant effect on the dependent variable, namely the quality of Accounting Information, with a positive and strong correlation value. Hypothesis 4: Big Data with a corelation of 0.798 has a strong and positive correlation with the quality of Accounting Information. Based on the results of this test, it was found that the effect of using Information Technology methods on the quality of Accounting Information has a significant relationship. Therefore, it is suggested that for achieving more accurate results on the impact of using Information Technology methods on the quality of Accounting Information, other factors besides these four variables be taken into consideration. The results of this study show that the use of Information Technology has led to significant changes in accounting and financial reporting. Today, IT with various tools has brought new achievements for the accounting staff. With the increasing utilization of Information Technology in organizations and companies, there have been huge changes in the way things are being done. Information Technology has changed the way of doing things by making it electronic. Due to the speed by which things are changing in the field of IT, the business and economic environments have been greatly influenced by technological

developments. Accounting as a language of commerce and informaton system has to synchronize itself with new technologies. Information Technology is a complementary tool whose usage at the same time provides quick access to the information required for preparing financial reports at a lesser cost, preparing and setting up mid term reports, increasing efficiency and saving costs, and hastening decision making by managers and investors, creating a office system which doesn't use paper anymore as it is no longer necessary or justified in today's world of Information Technology as accounting has to use all or some of the Information Technology techniques to deliver its services and fulfill its tasks. By taking into consideration the swift transformation that is taking place in Informaiton & Communication Technology, it is hoped that even in the field of accounting there will be rapid developments in the future.

References

[1]   Niels B-Andersen a, Benoit R.(2014). The impact of IT over five decades e Towards the Ambient Organization. Elsevier.(45):188-197.

[2]   Adams, M. (2017). Big Data and Individual Privacy in the Age of the Internet of Things. Technology Innovation Management Review, 7 (4), 12-24.

[3]   Alpar, P., & Winkelsträter, S. (2014). Assessment of data quality in accounting data with association rules. Expert Systems with Applications, 41 (5), 2259-2268.

[4]   Alarcon, J.L., & Staut, M.T. (2017). The Internet of Things: The CPA's Role in the New World of Business. Pennsylvania CPA Journal, January 1, 26-31.

[5]   Drew, J. (2017). Real talk about artificial intelligence and blockchain. Journal of Accountancy. Retrieved 12 01, 2017, from https://www.journalofaccountancy.com/issues/2017/jul/technology-roundtable-artificialintelligence-blockchain.html

[6]   Carlozo,L.(2017).What is blockchain? Journal of Accoutancy. Retrieved 01 22,from https://www.journalofaccountancy.com/issues/2017/jul/what-is-blockchain.html.

[7]   Warren, J.D., Moffitt, K.C., & Byrnes, P. (2015). How big data will change accounting. Accounting Horizons, 29 (2), 397-407.

[8]   Cremins, S., Andrzejweski, D., Singhal, M., & Piscini, E. (2017). Taking Blockchain Live: The 20 questions that must be answered to move beyond proofs of concept. Deloitte Development. Retrieved 12 15.

[9]   J. Markendahl, S. Lundberg, O. Kordas, and S. Movin,(2017). ''On the role and potential of IoT in different industries: Analysis of actor

cooperation and challenges for introduction of new technology,'' in Proc. Internet Things Bus. Models, Users, Netw.., pp. 1–8.

[10] Marston, S., Li, Z., Bandyopadhyay, S., Zhang, J. and Ghalsasi, A.(2011). Cloud Computing – the Business Perspective, Decision Support Systems, Volume 51, pp. 176-189.

[11] A. M. Rozario and M. A. Vasarhelyi,(2018). ''Auditing with smart contracts,'' Int. J. Digit. Accounting Res., vol. 18, pp. 1–27. doi: 10.4192/1577-8517-v18_1.

[12] Alsaawi, A. (2014). A Critical Review of Qualitative Interviews. European Journal of Business and Social Sciences, 3 (4), 149-156.

[13] Alshenqeeti, H. (2014). Interviewing as a Data Collection Method: A Critical Review. English Linguistics Research, 3 (1), 39-45.

[14] Arntz, M., Gregory, T., & Zierahn, U. (2017). Revisiting the risk of automation. Economics Letters, 159, 157-160.

[15] Atzori, L., Iera, A., & Morabito, G. (2010). The Internet of Things: A survey. Computer Networks, 54 (15), 2787-2805.

[16] Baddache, F., & Nicolai, I. (2013). Follow the leader: how corporate social responsibility influences strategy and practice in the business community. Journal of Business Strategy, 34 (6), 26-35.

[17] Bach, M.P., Čeljob, A., & Zorojaa, J. (2016). Technology Acceptance Model for Business Intelligence Systems: Preliminary Research. Procedia Computer Science, 100, 995-1001.

[18] Callius, S. (2017). Trendskifte: Nu är flest ekonomer kvinnor. Civilekonomen, [Online] 7 mars. Available via: http://www.civilekonomen.se/aktuellt/trendskifte-nu-ar-flest-ekonomer-kvinnor/. [Retrieved 2018-02-19].

[19] Nematzadeh, Masoumeh, Reza Pourgholi (2019), Investigating Information & Network Security in Accounting & Auditing Companies & Systems, Accounting Research, No. 10, pp: 154-163.

[20] Mousa Khani Ganjeh, Afsaneh, Jamal Barzegari Khaneghah, Alireza Nasser Sadrabadi, (1979), Identifying & Ranking the Challenges of Applying Information Technology in Accounting, Autiting Science, Fifteenth Year, No. 59, pp: 189-210.

[21] Mousazadeh, Seyed Mohammad, Talebtabar Ahangari, Misam, Fatheh, Mohammad Hossein. (2015), Investigating the Impact of Auditors' Knowledge & Skills on the Basics & Techniques of Information Technology on Optimal Performance of Audit Operations. Journal of Modern Research in Accounting, 2 (No.4 (summer 93)), 58-68.

[22] Jamei, Reza, Karamzadeh, Tahereh. (2015). Investigating the Role of Information Technology on Advancement of Accrual Accounting System in Iranian Medical Universities (Kermanshah University of Medical Sciences). Empirical Accounting Research, 4 (1).

[23] Musazadeh, Mohammad, Mohammad Ali Moradi, Hossein Etemadi, (2010), Identifying & Ranking the Chanllenges of Information Technology Application in Accounting, Accounting & Auditing Science, fith year, No.18, pp: 70-89.

[24] Autor, D.H. (2015). Why Are There Still So Many Jobs? The History and Future of Workplace Automation. Journal of Economic Perspectives, 29 (3), 3-30.

[25] Brandon-Jones, A., & Kauppi, K. (2018). Examining the antecedents of the technology acceptance model within e-procurement. International Journal of Operations & Production Management, 38 (1), 22-42.

[26] Cao, H., & Zhu, Z. (2012). Research on future accounting information system in the Internet of Things era. 2012 IEEE International Conference on Computer Science and Automation Engineering, 3, 741-744.

[27] V. Scoca, R. B. Uriarte, and R. D. Nicola(2017), ''Smart contract negotiation in cloud computing,'' in Proc. IEEE 10th Int. Conf. Cloud Comput. (CLOUD), Honolulu, CA, USA, Jun, pp. 592–59.

[28] Y. Zhang, S. Kasahara, Y. Shen, X. Jiang, and J. Wan,(2019). ''Smart contract-based access control for the Internet of Things,'' IEEE Internet Things J., vol. 6, no. 2, pp. 1594–1605.

[29] Brandon, D. (2016). The Blockchain: The future of Business Information Systems? International Journal of the Academic Business World, 10 (2), 33-40.

[30] Chan, D.Y., & Vasarhelyi, M.A. (2011). Innovation and practice of continuous auditing. International Journal of Accounting Information Systems, 12 (2), 152-160.

[31] Alsereihy, H.A., Alnceyoubi, B.A. and El Emary, I.M.(2012). Effectiveness of Knowledge Management Strategies on Business Organizations in KSA: Critical Reviewing Study, Middle-East Journal of Scientific Research, Volume 12, Number 2, pp.223-233.

[32] Carlozo, L. (2017). What is blockchain? Journal of Accountancy, 224 (1), p. 1-2.

[33] Claro, D.P., & Rosa, R.B. (2016). Drivers leading firm adoption of internet banking services. Marketing Intelligence & Planning, 34 (3), 336-354.

[34] Chipangura, P., van Niekerk, D., & Van der Waldt, G. (2016). An exploration of objectivism and social constructivism within the context of disaster risk. Disaster Prevention andManagement, 25(2). 274-261.

[35] Boylan, D.H., & Boylan, C.L. (2017). Technology in accounting: Social media as effective platform for financial disclosures. International Journal of Digital Accounting Research, 17, 93-109.

[36] Du, H., & Cong, Y. (2010). Cloud computing, accounting, auditing, and beyond. The CPA Journal, 80 (10), 66-70.

[37] Alarcon, J.L., & Ng, C. (2018). Blockchain and the future of accounting. Pennsylvania CPA Journal, January 1, 3-7.

[38] Lee, I., & Lee, K. (2015). The Internet of Things (IoT): Applications, investments, and challenges for enterprises. Business Horizons, 58 (4), 431-440.