

Examining the impact of information technology and IT on independent auditing in Iran

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Abstract

The statistical population in this research includes financial managers, audit managers, audit supervisors, book authors, university faculty members, doctoral students and researchers of the research group of the audit organization in Garmsar Industrial Town, who are researching the topic (the impact of information technology on the qualitative characteristics of accounting information). The results of the regression analysis of the final stage of the path analysis process show that the coefficient of variable effects of investment in information technology is equal to 0.702 and its significance level is equal to 0.000, which indicates the positive and significant effects of information technology on the lack of focus in the decision-making process. It is at the 99% confidence level. The value of the F statistic of the model is 37.8 and its significance level is 0.000, indicating the reliability of the model at the 99% confidence level. The coefficient of determination of the model is also equal to 0.493 and it states that 49.3 percent of the changes in the variable of lack of concentration in decision-making are explained by transitory capital in information technology. In a changing world, reaching such a level of skill is not a dream; Rather, it is a duty. In addition to auditing, the auditor's job includes predicting changes in the direction of information technology and the impact that these changes and their consequences may have on business goals.

Keywords: information technology, independent audit, accounting, auditing
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1 Introduction

In recent years, the phenomena of globalization, solidarity and interaction in the economic environment have been considered. Any event anywhere in the world has a small or large impact on the economic environment around it. Therefore, every company, regardless of its activity, size and field of operation, must have stability, communication capacity and the level of achieving its economic and financial goals. It puts more in the position of competition, to prove [1].

On the other hand, with the expansion of communication and global trade, accounting experts have also faced complex issues that did not exist in the past. Accounting as a business language and information system must adapt to new technology to be of service. The business environment is dynamic and ever-changing. Technology is

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constantly changing and becoming more complex [4]. Companies and organizations are looking for new technologies to improve the efficiency of their business processes and hence information systems have become more complex. The field of auditing is not an exception to this rule and has been heavily influenced by the development of information technology. As more organizations become computerized, decision-makers are more concerned about the accuracy of data or information based on which they have to make strategic decisions. Ron Weber in the introduction of his book titled "Information Systems Auditing" has emphasized that the auditor should be superior to the client in business. In the last decade, when technology has changed the business world, auditors have unfortunately lagged behind this change. Deceiving the auditors with fake documents, fake signatures, false explanations and the like is very easy for the managers of the company or unit under investigation [10].

Today, many accountants and auditors around the world are starting to conduct independent audits by creating organizations of several skilled and experienced accountants and auditors. The actions of independent auditors include auditing operations, accounting services and working with accounting software, preparing and adjusting accounting systems, establishing mechanized electronic systems, consulting in tax affairs or preparing special reports for banks, and dealing with securities or judicial authorities. [4, 10, 12, 11, 3, 7, 8].

Companies use various electronic data processing systems to process accounting information, which is the only way to review and validate information technology audit reports. An IT audit is a systematic process for objectively collecting and evaluating supporting evidence for one or more assertions of an organization's information systems, methods, and operations [12, 11]. The evaluation of the evidence obtained in this audit shows that if the information systems are secure, the data will be stored correctly and the company's operations will be efficient. Information technology service provider, information technology provided by information technology custodians, existing systems and systems, databases, servers, network infrastructure, data centres, information technology operations, how to monitor and maintain information technology, information technology security, IT standards are used and reports such as IT audit report, risk report, operational risks, control report, internal control report and service report are provided. Information technology audit is different from financial audit and operational audit and business processes of the organization, but each of the audit areas shares a series of high-level principles, standards, processes and activities with information technology audit. Based on the new divisions, internal audit in an organization can include four operational, financial, quality and information technology audit departments [3].

So far, access to the two characteristics of relevance and reliability has not been possible simultaneously due to technological limitations, and due to the importance of reliability, the relevance of information has been sacrificed, while the demands and expectations of users are guaranteed access to information related to What happened yesterday or this morning, not a month or two ago. For this reason, traditional periodical and printed reports have not been able to respond to information users to access information in a timely manner due to the lack of timely information, limitations in the fast processing of large data, and the high cost of information distribution [7].

One of the most important tasks of accountants is to provide information to managers in order to improve the quality of decisions made, and information technology can help in this field [8]. Information technology affects the reduction of audit risk through electronic data processing and electronic auditing, which helps auditors reduce the probability of error in the audit work and increase the probability of discovery, which in turn leads to the reduction of audit risk. Proper IT installation can lead to improved internal controls by replacing manual controls with computerized controls. IT-based accounting systems have the ability to cost-effectively handle large volumes of complex business transactions. Computer-implemented controls can reduce the potential for human error by replacing manual controls with programmed controls that apply checks and balances to each transaction processed [9].

In general, in the field of accounting and auditing, the development of information technology has had a great impact, and with the process of computerization of organizations, people and managers are concerned about the accuracy of their organization's data and information, based on which it is important to make the right decision. In fact, new technologies have made it possible to analyze information that could not be processed until now, and based on that, new accounting standards are prepared and compiled, because financial statements alone cannot meet this need. For this, a strategy is needed, which is the main factor of success in businesses. In this regard, if an organization intends to be a leader in global competition, it should go towards strategic management and control various aspects of its business [2].

The main purpose of this research is to investigate the factors affecting the use of information technology in accounting, which was done using a library method, and thus the main question was stated as follows: What are the factors affecting the use of information technology in accounting? To determine the effective factors of the use of information technology in accounting, firstly, a wide review of the theoretical foundations, was formulated to examine the use of information technology in accounting and also their effect. In this article, we concluded that the rapid

changes in information technology, the comprehensive expansion of multi-user systems, and the desire of organizations to prepare and implement new systems and software, have made the use of computers much easier and more frequent. Often than in the past, accounting tasks are also done faster and more accurately than before.

2 Research background

Although various information technologies have been studied using the technology acceptance model (TAM), the study of the acceptance of specific technology features for professional groups that use information technologies, such as internal auditors (IA), has been limited. To address this gap, we extended the TAM to technology adoption among IA professionals and tested the model using a sample of internal auditors provided by the Institute of Internal Auditors (IIA). System use, perceived usefulness, and perceived ease of use were tested with technology characteristics and complexity. Through the comparison of TAM variables, we found that technology features are accepted in different ways by internal auditors. Basic features such as database queries, ratio analysis and audit sampling were more accepted by internal auditors while advanced features such as digital analysis, regression/ANOVA and classification were less accepted by internal auditors. As feature complexity increases, perceived ease of use decreases, thus system utilization decreases. Through the path analysis between TAM variables, the results showed that the magnitude of the path is significantly modified by technology characteristics and complexity. Perceived usefulness had a greater effect on feature acceptance when basic features were used, and perceived ease of use had a greater effect on feature acceptance when advanced features were used [5].

The strong and tangible presence of information technology as a set of tools for producing, processing, storing and exchanging information has led to the creation of information systems, and on the other hand, today most companies use a variety of electronic data processing systems for processing. Accounting information is the only way to review and validate reports, information technology audit. An IT audit is a systematic process for objectively collecting and evaluating supporting evidence for one or more assertions of an organization's information systems, procedures, and operations. The evaluation of the evidence obtained in this audit shows that if the information systems are secure, the correct storage data and the company's operations will be efficient, on the other hand, monitoring of control activities and achieving effective segregation of duties is done by establishing controls. Security in databases is another advantage of using electronic audit programs. Since the main role of auditors is to validate accounting information, it is necessary to provide more extensive and up-to-date auditing services regarding electronic accounting data. And they also turn to this type of audit to collect and test accounting information and increase efficiency in auditing. Information technology audit is a way to ensure the efficiency and effectiveness of information technology tools used in the preparation of financial statements and reliable financial reports in the organization in order to achieve the goals [6].

3 Research methodology

The present study was an applied research. The statistical population in this research includes financial managers, audit managers, audit supervisors, book authors, university faculty members, doctoral students and researchers of the research group of the audit organization in Garmsar Industrial Town, who are researching the topic (the impact of information technology on the qualitative characteristics of accounting information). They have enough familiarity, 96 of them chose and answered the questions of the questionnaire. In order to collect the required resources, archival documents and documents obtained from experimental research were examined and the theoretical foundations and background of the research were identified and used in a library method. The research tool used in this study is a questionnaire consisting of two parts, the main part of which contains questions to measure the variables of investment in information technology, improvement of work processes, lack of concentration in decision-making and organizational productivity.

4 Research hypotheses

- How information technology affects internal control decisions
- How accountants and auditors look at IT information technology
- Investigating types of information technology control in accounting and auditing
- How accountants and auditors use information technology

- Knowing and using information technology by accountants and auditors and influencing their decision making

In order to analyze the data, correlation and linear regression methods were used in SPSS software.

5 Research findings

5.1 Descriptive Statistics

The descriptive information of the respondents is mentioned in the table. The results obtained from the study of the frequency distribution of the service history variable in the statistical sample indicate that 21 members of the sample have less than 5 years of work experience, which is equivalent to 51.2% of the total sample. Also, 8 people from the sample have a work experience of 5 to 10 years, 10 people have a work experience of 10 to 15 years, and only two people have a work experience of more than 15 years, which are 19.5, 24.4 and 4.8 respectively. make up the percentage of the sample volume. The frequency distribution of the level of service records in the organization is shown in the form of a pie chart below.

Table 1: Descriptive information of respondents

Level of education	Frequency	Frequency percentage
Less than 25 years	10	24.4
25-35 years	25	61
35-45 years	5	12.2
45-55 years	1	2.4
Above 55 years	0	0
Level of education	Frequency	Frequency percentage
lower than diploma	0	0
diploma	8	20
Associate degree	13	32.5
Masters	19	47.5
Service history in the organization	Frequency	Frequency percentage
Less than 5 years	21	51.2
5-10 years	8	19.5
10-15 years	10	24.4
15-20 years	1	2.4
Above 20 years	1	2.4

5.2 Descriptive statistics of research variables

The descriptive statistics of each research variable are presented in the table below.

Table 2: Descriptive statistics of research variables

variable	average	standard deviation	crookedness	kurtosis	Minimum	Maximum
Investment in information technology	3.44	0.72	-0.71	0.38	1.38	4.63
Improving work processes	3.61	0.68	-0.87	1.16	1.50	4.75
Lack of focus in decision making	3.61	0.72	-0.27	-0.28	1.75	4.88
Accounting and auditing	3.49	0.70	-0.31	0.35	1.75	4.75

The mean and standard deviation of the information technology investment variable are 3.44 and 0.72, respectively, and its skewness and kurtosis are -0.71 and 0.38, respectively. Also, the average variables of technology improvement of work processes and lack of concentration in decision-making are 3.61 and their standard deviation is 0.68 and 0.72, respectively. These statistics for organizational productivity variable are 3.49 and 0.70 respectively. Checking the normality of the data

H_0 : There is a difference between the observed and expected frequencies (observation distribution is normal).

H_1 : There is a difference between observed and expected frequencies (distribution of observations is not normal).

Table 3: Kolmogorov-Smirnov test

variable	Kolmogorov-Smirnov Z statistic	Probability of the Kolmogorov-Smirnov statistic	result
Investment in information technology	0.780	0.578	Confirmation of hypothesis H_0
Improving work processes	0.727	0.666	Confirmation of hypothesis H_0
Lack of focus in decision making	0.573	0.898	Confirmation of hypothesis H_0
Accounting and auditing	0.567	0.905	Confirmation of hypothesis H_0

The results of the Kolmogorov-Smirnov test for each of the research variables are shown in the table below.

The results of the Kolmogorov-Smirnov test show that the probability of the test statistic for all research variables is more than 0.05, so it can be concluded that at the confidence level of 0.95%, all the research variables have a normal distribution.

Correlation test

Correlation test is used to check the relationship between research variables. In this study, according to the type of scale of the research variables, the pyrosequencing test was used to investigate the relationships between the variables. The results of Pearson's correlation test are shown in Table 4.

Table 4: Correlation between research variables

objects		1	2	3	4
1	Investment in information technology	1	-	-	-
2	Improving work processes	** 0.860	1	-	-
3	Lack of focus in decision making	** 0.702	** 0.764	1	-
4	Organizational productivity	** 0.737	** 0.733	** 0.827	1

The results of the correlation test between research variables show that all variables are positively related to each other at the 99% confidence level. Also, among the variables, the variable of lack of focus in decision-making with organizational productivity has the highest relationship (0.927) with a confidence level of 99% and an error of 5%, which is a direct relationship. Also, the variable of improving work processes has the lowest relationship (0.733) with a confidence level of 99% and an error of 5% with the variable of organizational productivity. In addition, this relationship is positive. Finally, it can be said that; The correlation coefficients for all research variables are more than 0.7 and indicate a very strong relationship between them.

Linear regression

T -statistics and its significance level (sig) are used to investigate the effects of information technology variables, improvement of work processes and lack of focus in decision-making on organizational productivity. According to the results of table 5, the value of the coefficient obtained for the variable of investment in information technology is 0.006, which indicates the direct effects of investment in information technology on organizational productivity. But the significance level of this coefficient is 0.974, which is higher than 0.05 and shows that the effects of investment in information technology on organizational productivity are not significant at the 95% confidence level. The value of the coefficient related to the improvement of work processes is 0.305 and its significance is 0.033, which indicates the significant effects of the improvement of work processes on productivity at the 95% confidence level. The regression analysis shows that the value of the estimated effect coefficient for the variable of lack of concentration in decision-making is 0.608 and its significance is 0.000, which indicates the direct and significant effects of this variable on organizational productivity at the 99% confidence level.

F statistic and its significance level are used for the overall evaluation of the estimated regression model. According to the probability obtained for the F statistic, which is equal to 0.000, it can be concluded that the model is significant at the confidence level of 99%. In total, the results of the regression analysis in the first stage show that the lack of focus in decision-making and improvement of work processes significantly affect the productivity of the organization, and

Table 5: The first stage of path analysis

dependent variable	R^2	F	sig	effective variable	beta	t	sig
Organizational productivity	0.732	33.6	0.000	Information Technology	0.006	0.033	0.974
				Improving work processes	0.305	802/1	0.033
				Lack of focus in decision making	0.608	568/4	0.000

the effects of investment in information technology on organizational productivity are not significant. The coefficient of determination of the regression model (R^2) is equal to 0.732 and shows that 73.2% of productivity changes are explained by information technology variables, improvement of work processes and lack of concentration in decision making. In order to investigate the indirect effects of research variables on organizational productivity, the next stages of path analysis are performed. Considering the significance of the obtained coefficient for the variable of lack of concentration in decision-making, in the second step, the effects of investment in information technology and lack of concentration in decision-making on the improvement of work processes are investigated. The estimation results of the second stage of path analysis are shown in Table 6.

Table 6: The second stage of path analysis

dependent variable	R^2	F	sig	effective variable	beta	t	sig
Improving work processes	0.791	71.8	0.000	Information Technology	0.639	6.133	0.000
				Lack of focus in decision making	0.315	3.027	0.004

According to the results of the regression analysis of the effects of investment in information technology and lack of focus in decision-making on the improvement of work processes, the coefficients obtained for information technology and lack of focus in decision-making are 0.639 and 0.315, respectively, and the significance level Their coefficients are 0.000 and 0.004, respectively, which shows that both variables positively and significantly influence the improvement of work processes. The value of the F statistic of the regression model is 71.8 and its significance level is 0.000, which shows that the regression model and the estimated coefficients are significant at the 99% confidence level. Also, the coefficient of determination of the model is equal to 0.791, which states that 79.1% of the changes in the improvement of work processes are explained by the variables of information technology and lack of concentration in decision-making, and these two variables are able to explain 79% of the changes in the improvement of work processes. . In the final step of the path analysis steps, according to the conceptual model of the research, the effects of information technology on the variable of decentralized decision-making are estimated. The results of the regression analysis related to the final stage of the path analysis are presented in Table 7.

Table 7: The final stage of path analysis

dependent variable	R^2	F	sig	effective variable	beta	t	sig
Lack of focus in decision making	0.493	37.8	0.000	Information Technology	0.702	6.156	0.000

The results of the regression analysis of the final stage of the path analysis process show that the coefficient of variable effects of investment in information technology is equal to 0.702 and its significance level is equal to 0.000, which indicates the positive and significant effects of information technology on the lack of focus in the decision-making process at the level Confidence is 99%. The value of the F statistic of the model is 37.8 and its significance level is 0.000, indicating the reliability of the model at the 99% confidence level. The coefficient of determination of the model is also equal to 0.493 and it states that 49.3 percent of the changes in the variable of lack of concentration in decision-making are explained by transitory capital in information technology.

6 Conclusion

Today, the use of information technology and information systems is discussed in every organization, and the usefulness or necessity of using computers is discussed everywhere. For this reason, managers are always faced with a question regarding the cost or investment in the use of information technology in their organization: "Where is the limit of investment in technology?" It is natural that technology becomes important as a more economical method compared to traditional methods. Therefore, managers should know how useful and effective the use of information technology system is in the organization. In other words, information technology affects the indicators that are all the basic conditions of success for today's organizations. Determining the extent of this realization is one of the important concerns of organizational decision makers. In this research, the effect of using information technology system on the

effectiveness of the organization from the point of view of the users of these systems has been investigated. Among the dimensions of the information technology system, increasing the speed of doing things, increasing the accuracy in doing things, timely retrieval of information, storing more information and increasing the speed of accessing information have been selected. In the form of research aspects, the effect of these dimensions on the effectiveness of an organization that provides optimal services to customers has been investigated.

The review of existing opinions and authentic audit texts shows that the trust in the auditor's certificate, commenting on the quality of information, skill level and audit evidence is directly influenced by information technology, which also affects the self-evident hypotheses of the related audit. . Below are some of these obvious hypotheses:

- "The quality of the information contained in the financial statements cannot be trusted without the approval of independent auditors."
- "The auditor has sufficient skills and experience to confirm the quality of the information contained in the financial statements."
- "The auditor as a professional expert is responsible for the quality of his work."
- "There is sufficient and reliable evidence to support the auditor's opinion about the quality of the financial statements, and the auditor can collect and evaluate this evidence in a reasonable time and at a reasonable cost."

According to the above assumptions, the auditor must ensure that the data contained in the financial statements are free of significant distortions so that the quality of the information contained in the financial statements is worthy of approval and the auditors are qualified (skills and experience). With the development of systems and network technology, it became possible to collect and use information at the same time as they occur. That is, the information of the organization's operation was provided to managers through the network at the moment of occurrence. Later, many of the manual data recording steps were converted to computerized information and automation methods, and some of the staff's work steps were also eliminated. Currently, computer systems provide the possibility of observing and monitoring the functions and informing the employees and managers of the organization about errors and work problems before they occur. Many old manual processes have been fully automated. These developments have caused important changes in the professional and professional structure of personnel. Information technology has led to the development and optimization of internal operations of organizations, reducing internal costs and accelerating production. Reduced opportunity costs make profitability possible even at lower prices for products. Access to profit happens faster with the speed of action in providing the product to the market [13]. Recent developments in the field of information technology and the risk of manipulation of information using it may exceed the ability of the auditing profession and auditors cannot handle it. Computer fraud that affects the quality of audited financial statements is directly relevant to auditors.

Although many audit firms still consider continuing professional education as a mandatory cost, to meet the above-mentioned challenge and improve the level of competence and awareness of audit firms, by encouraging (or forcing) auditors to obtain formal certification. Systems audit. . Materiality-related information is an issue that is strongly related to audit risk. In fact, audit risk is expressed in relation to the possibility of not discovering significant accounting distortions. Therefore, of fundamental importance to auditors when assessing the audit risk of a financial event is at what point does a potential misstatement become material enough to affect the audit's performance and opinion?

In the audit work, there are two factors related to this issue. First, the risk of discovering accounting distortion by auditors (due to factors related to the company's controls and the auditors' level of competence) and second, the quantitative or qualitative issue of the distortion and its effect on the audited financial statements and the audit report. Therefore, the importance should be multidimensional. knew An issue that affects both accountants and auditors. Especially in relation to information whose content affects the judgment of the user. Regarding the concept of materiality in auditing, the clear issue is that materiality has a direct impact on audit decisions regarding the quality of reported financial statements. Materiality affects the relevance and reliability of financial statements. Therefore, the importance should be evaluated by the auditor in relation to its impact on the user's performance and decisions, the honest presentation of the phenomena and, in fact, the issue of management's accountability to shareholders and other stakeholders.

In general, information technology strategic planning for any organization is a document that determines the organization's architecture in the light of strategic considerations such as the organization's mission, goals, and priorities, and determines the necessary implementation plan to achieve the systems and databases in the organization.

he does. organization level. Changing the organization's attitude towards the role of information technology and its managerial and governance position requires the optimization and organization of all layers of the organization including business, information, information systems, infrastructure and technology in order to align the commercial sector. and working with information technology, preventing the isolation of systems and the production of redundant information, upgrading or producing new systems and systems and preparing the information technology platform in the organization, facilitating intra-organizational and extra-organizational interactions and reducing costs, lack of communication between departments Organization. By creating an integrated vision in all layers of the organization, the organization has been able to achieve strategic information technology planning.

Currently, the dominant approach to formulating a comprehensive strategic information technology plan is the organizational architecture approach or information technology architecture.

With the advancement of information technology, all companies and institutions must take steps to survive by investing in this field. And accountants, while training and learning and familiarizing themselves with new technology and using it optimally, reduce its risks with appropriate solutions, because technology and information are everything. Changes. Because of these changes, management has to make another decision. If the purpose of providing accounting information is to help make business decisions, since business decisions are constantly changing, it is natural to expect accounting to change as well. For this reason, accounting should always identify hidden harms and risks while making optimal use of new technologies and seek to eliminate and prevent them.

Suggestions

If accountants know the processes of the businesses they are in, they can better fulfill their role as strategic business advisors. Therefore, in the future, financial managers and accountants should try to be aware of the activities of other units and the general goals of the company in which they are present, in addition to being aware of the duties of the financial unit.

Technology is changing rapidly, and for this reason, financial experts must be able to learn new tools at the same time as these changes and find the ability to use them. In the past, the technologies used by accountants changed roughly every 5 or 10 years. This is despite the fact that in the future all experts and senior experts of financial units should be ready to use a new technology to do things every year or every two years.

It is suggested to use other data collection tools such as interviews with managers to obtain more accurate and reliable information in future research.

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