

## **The Effect of Information Technology on the Quality of Accounting Information**

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**Abstract.** This study aimed to investigate the impact of information technology on the quality of accounting information was made in 2014. A survey of 425 executives of listed companies in Tehran Stock Exchange, using the Cochran formula simple random sampling method, 84 managers of these companies as the sample size was considered. Methods of data collection based on questionnaire information technology some of the questions of the impact of information technology was standardized questionnaires and the questions were designed according to existing components. After the distribution and collection of questionnaires, data analysis and hypothesis testing using structural equation modeling Smart PLS2 and software measurement model and the structure was conducted in two parts. In the first part of the questionnaire technical characteristics including reliability, validity, convergent and divergent validity for PLS has been checked and in the second

part, application no significant coefficients were used to examine the research hypotheses. The results showed that IT and its dimensions (timeliness, relevance, accuracy, adequacy, and the actual transfer rate) affect the quality of accounting information of listed companies in Tehran Stock Exchange influence.

**Keywords:** Information Technology, Information Quality, Accounting, Transfer Speed.

## 1. Introduction

The electronic and computer technology in the past few years have caused the phenomenon of data explosion and it is certainly an important influence on the direction of the community and will pass the information they require, today, not only senior managers and executives, but all segments of society, such as researchers, scientists and businessmen are forced to use the information. Users of information systems as a source of valuable information to both capital and labor work their stones. Because the important information and valuable basis for the activities of the organization should be on the feet produce high-quality information and manage them. The ultimate goal of such systems ensures accuracy, reliability and validity of the information available at the time required and the like can be used. The central role of information technology in all areas of a company plays. IT is generally considered as a valuable resource and increases the ability of managers and staff feasibility and effectiveness of the organization's goals with increased efficiency enables (Goli, 2012). Overall, analysts' consensus on the fact that ICT is the main engine of growth in the past three decades has played all over the world and some have even taken a step further and called information age era of human life (Hosseini et al., 2008). In the third millennium, a variety of organizations and tasks of data management and efficient use of the resources they use. At the age of full acceleration, the use of new technologies in various areas of life throughout the world has become a matter of routine. So the IT technology to keep pace with the various performance indicators including quality of accounting information is very important. The use of information technologies in the country seriously raised and governmental and non-governmental organizations to move rapidly

implement it in their programs and on the other hand, the government would be TKFA design (development and application of information technology) organizations and their institutions are required to provide written plans for the use of information and communication technologies (Safari Mehr and al-Badawi, 2008). In this study we sought to evaluate the impact of information technology on the quality of accounting information listed companies in Tehran stock exchange deal.

## **2. Literature Review**

IT refers to the aspect of information technology systems, including hardware partitioning, database, software, networks, and other tools used. Another definition of the term in information technology, information systems as well as technological aspects of several information systems, users and administrators are considered (Torben and Viderb, 2004). Definition of how to use IT and IT-related equipment, the use of technology to business processes, data collection and generate valuable information for managers (Travyna and Cronin, 1995). Finally, it seems that the use of IT in business and industry. In other words, for the information technology, electronic or mechanical equipment in production and to build effective systems are used. Evolution of IT technology, including the administrative, computer technology and communication technology: In the first period, employers were trying to create an environment that is separate from the factory issues and the general environment of the factory, all administrative, staff and the business done. The most prominent feature of this period, studies on housing and office space for the environment. In fact, in the course of trying separate the administrative activities of the production activities finally, the location of the headquarters of the administrative units apart. It was thought that such an environment would be better for Administrative Affairs where most of the computing time, such as accounting, payroll and finance. In the second period, in terms of computer technology, with the arrival of a small computer with speed and precision, managers decided to use this equipment and your computer the speed and accuracy of computer work time reduction and eliminate human error using and the consequence of this move is that computer users to perform daily activities as well as helped. In the third

period of communications technology, with the increasing expansion of computer technology and comprehensive and the use of accessories and integration and integration of each system at each other there. In fact, today, office systems and global systems their main task is to create relationships and improve communication. Typically, the communication of business information is of great importance. Another characteristic of the period in which I live is that organizations and companies have realized the true value and quality information at in today's complex markets, lack of information sources out of the organization and the means to obtain accurate and high quality communication and the means and mechanisms for coordination and organization of the environment and being responsive to changes (Etemadi et al., 2010). Where IT is applied to at least one of the following operations are performed, and in most cases a combination of them: The data conversion means converts data from one form to another (for example, scan a document and convert it to a file). Storage: for example, stored on a CD or save the sound financial information. The information processing: for example, to calculate payroll or providing financial balance and calculate the required items to purchase. Exchange of information, such as sending one or more files from one computer to another. Data Analysis software such as intelligent design and construction industry. Disposal Information: add unnecessary information, such as the removal of a computer (Holandr, 1999). Information technology is a key element in eliminating the constraints of time and place, better and faster access to information and the date, etc. (Boroumand, et al., 2012). It actually looks kind of effects are timeliness Information Technology, relevance, accuracy, adequacy, and the speed is real. The different definitions, accounting, art recording, classification, summarization and reporting of financial information is expressed in quantifiable numbers. Accounting was implemented initially in a way that only the income or expense was recorded. But over time, the two sides were completed which takes into account both the debtor and the creditor. With regard to the four main elements of accounting (registration, classification, summarization and reporting) are seen the complexity of the bilateral system is much more than a one-way system that the introduction of information technology in the field of

Accounting Part of this complexity is removed (Goli, 2012). Economic growth and complexity of the activities of businesses with rapid progress in recent decades, the need for relevant and reliable financial information provided by businesses has intensified. Accounting and financial reporting purposes require that such information be disclosed that access to this information for all possible (Kordestani and Ebrahimi, 2013). Raising awareness of the role and impact of accounting policies on financial events and accounting information has caused serious efforts to identify factors related to the information and how it comes to financial and capital markets. The data quality can influence decision-making and forecasting. Usually, it is the higher the quality of the data, forecasts and decisions taken (brothers Hassanzadeh et al., 2013). On the other hand, the purpose of reporting and accounting principles requires accounting provides information on the characteristics of qualitative approach to investment decisions and creditors and other users to be effective. This feature is called the qualitative characteristics of accounting information include: The relevance of including timeliness, usefulness in predicting the usefulness of evaluation. Reliability: includes verification, validation (for completeness, correctness of form and content preference) and being impartial. Comparability: The consistency and adequate disclosure (Elahi and Rajab Zadeh, 2003). Reviewing the literature on the subject from various sources such as universities research centers and the provision of resources, confirms the fact that Iran is little research done on the subject, but research has found similar which is to say that the debates about the impact of information technology on the quality of accounting information like many other issues in the scope of humanities and social sciences are therefore, in each of their differences and similarities, studies on the topic have been conducted and the results are also used in certain time and place, which include: Parker (2012) the effect of the application of information technology on organizational learning quality was studied. The results showed that the optimal use of new technologies and ICT tools and software and sites for training can significantly increase the quality of education from the perspective of employees and managers. Gerald and Alavi (2008) the effect of Information technology on teaching and learning organization studied. In this study, several government agencies

have used the statistical community their results indicate that this new technology information and communication can be substantial and significant impact on the quality of the education process to help it pass. Stewart et al (2007) the effect of Information technology on management and development of the organization studied. They reported that the increase in the development of information technology, management performance has improved, activity and service can be enhanced and cannot serve more customers in less time. Kazemi and Babaei (2008) studied the use of e-learning in the organization. They also describe the characteristics of e-learning in their study, the use of e-learning in the organization and its position in the policies of the organization, challenges facing the use of e-learning in the organization studied. They concluded that the new technologies of information and communication facilities are provided they can learn to use the organization to reduce costs. Rezaeian and Taghizadeh (2007), the impact Information technology on quality management services in the Library, Museum and Documentation Center of Astan Quds Razavi studied. Their results showed that the size of the IT system, tweaking things, increase the accuracy of doing things, timely retrieval of data, more data storage and speed up access to information obtained under the impact of technology. Mashayekhi and et al (2005) Key factors affecting the application of Information technology in education, government agencies have been examined. Based on this study, a total of 37 factors in success and failure in the application of Information technology in government agencies have identified key. According to the literature data demonstrate the listed companies in Tehran Stock Exchange's annual financial losses and an immaterial amount of non-accounting information quality has suffered in its different levels and therefore the issue as a major disadvantage and challenges in its development strategy document deal and decided to do a research and teaching to the pathology of the above and provide scientific solutions to solve the challenges of the IT organization is using. In this paper, after reviewing the literature study sought to examine this issue whether it is on improving the quality of accounting information and information technology plays a role? In this regard, primary and secondary research hypotheses are proposed as follows:

Information technology is affecting the quality of accounting information.

Data transfer rate is affecting the quality of accounting information.

- Timeliness of information is affecting the quality of accounting information.
- Relativeness Information is affecting the quality of accounting information.
- The accuracy of information is affecting the quality of accounting information.
- Sufficient information is affecting the quality of accounting information.
- The actual data is affecting the quality of accounting information.

This conceptual model is presented in the Figure 1:

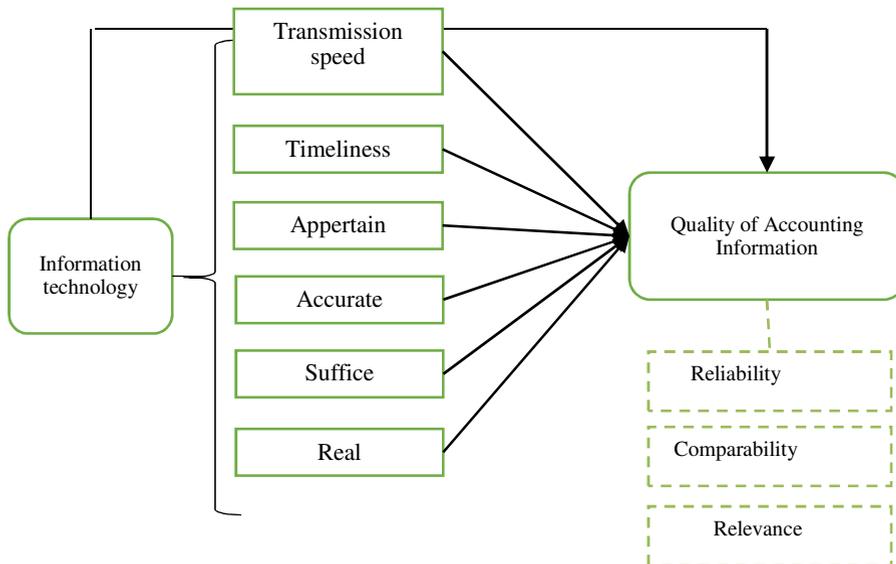


Figure 1. the conceptual model

### 3. Method

The method used in this study is based on the purpose of the application and the data collected is descriptive and causal. Also based on the type of data collected is of little in this regard questionnaires for managers and companies listed in Tehran Stock Exchange in 2014 was distributed

and the results have been published. Since in this research study is a causal relationship, method of causal relationships between variables is the conceptual model for comprehensive evaluation of structural equation modeling was used. This model is the best tool for exploratory analysis revealed that the variables are measured with error and complicated relationships between variables. Using this method you can use one hand carefully visible indicators or variables to be measured and the relationships between latent variables and the variance reviewed. A structural equation model of the measurement model and the structural model is composed of variables in the model and reveal hidden variables can be divided into two categories. The information technology and accounting information quality and size of each hidden variable are significant variables that are obvious. The study sample consisted of 425 managers from companies in Tehran Stock Exchange is using Cochran's formula, to determine the sample size for the population as possible. Cochran formula for its assumptions should be considered.

Assumptions include Cochran formula:  $P = q = 50\%$  (based on a probabilistic approach); z-statistic is standard normal distribution at 95% is equal to 1.96; d is the maximum allowable error of 5% is considered and N is the number of directors of listed companies in Tehran Stock Exchange. Sample size (n) based on Cochran formula is calculated according to formula (Sarai, 2010):

$$n = \frac{z^2 pq N}{Nd^2 + z^2 pq} \quad (1)$$

Therefore, using the formula (1), according to the 425 people, based on a sample size of 84 subjects was randomly selected. To collect data from a questionnaire was used to assess the impact of information technology on the quality of accounting information some of the questions on the questionnaire information was and the questions were designed according to existing components questionnaire based on the key components such as timeliness, Appertain, accurate, adequacy, and the actual transfer speed of 35 questions is designed. The 35-question questionnaire with Likert scale from strongly disagree to strongly agree to 5 are investment grade level. To measure the reliability of the data obtained from the questionnaires using statistical software Spss SmartPLS 2 and the

reliability was calculated. In the method, PLS, reliability combined with measurement of the stability and reliability of the measurement Spss method Cronbach's alpha is a measure 0.7 In the case of these two criteria show that high levels of reliability is acceptable. In this study the results of these two criteria are summarized in Table 3 as is evident, all values are greater than 0.7, indicating good reliability of the questionnaire.

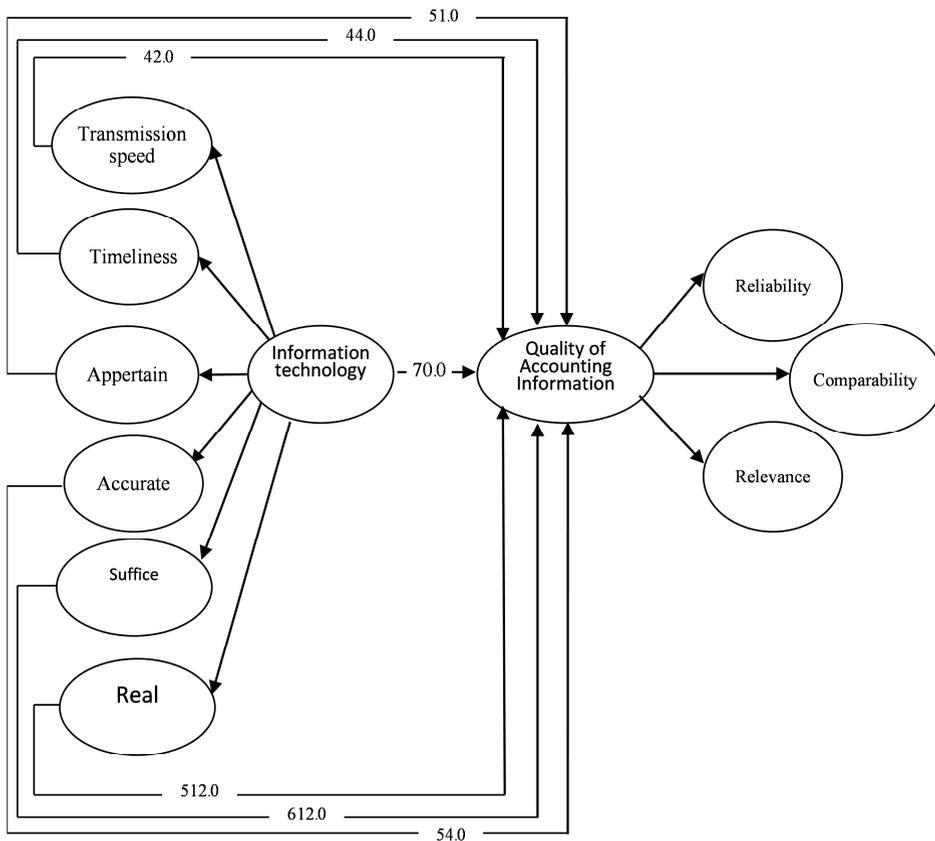
**Table 1.** The values of Cronbach's alpha and the combined

| Variable             | Dimensions of Information technology |              |              |              |              |              | Quality of Accounting Information |               |              |
|----------------------|--------------------------------------|--------------|--------------|--------------|--------------|--------------|-----------------------------------|---------------|--------------|
|                      | Transmission speed                   | Timeliness   | Appertain    | Accurate     | Suffice      | Real         | Reliability                       | Comparability | Relevance    |
| Dimensions variable  |                                      |              |              |              |              |              |                                   |               |              |
| Cronbach             | <b>0.798</b>                         | <b>0.821</b> | <b>0.759</b> | <b>0.804</b> | <b>0.714</b> | <b>0.744</b> | <b>0.849</b>                      | <b>0.832</b>  | <b>0.801</b> |
| combined Reliability | <b>0.735</b>                         | <b>0.840</b> | <b>0.774</b> | <b>0.812</b> | <b>0.804</b> | <b>0.787</b> | <b>0.851</b>                      | <b>0.841</b>  | <b>0.823</b> |

Validity by both convergent and divergent validity criteria specific to structural equation modeling, the study found. The convergent validity of the criteria AVE (average variance extracted) was used. The criteria for the acceptance AVE, 0.5 is (Hulland, 1999). Findings indicated, all amounts AVE related structures of more than 0.5 and this shows the acceptable concurrent validity of the questionnaire. The divergent validity, the difference between the structural parameters of the model is compared with other structural parameters. It works by comparing the square root of AVE for each construct was calculated with the correlation coefficient between the structures. It should consist of a matrix of the values of the main diagonal of the matrix square root of AVE for each construct are coefficients diameter low and high values of correlation coefficients between each other building structures. Results showed that the square root of AVE for each construct (main diagonal values) of the structural correlation with other structures (both row and column values) is more this suggests that the divergent validity of the structure is acceptable.

#### 4. Findings

The causal relationship between the effects of information technology on the quality of accounting information is measured in terms of the structural model. As shown in the figure below, the impact of information technology on the quality of accounting information is significant and positive.



**Figure 2.** Effect of causal model coefficients research

In Figure 2, the coefficient of impact of causal models and the role of the main variables (of Information technology) and the dimensions of the quality of accounting information displays. PLS output proves assumptions and hypotheses sub-study is presented in Table 2 indicate.

Since all t values are above 1.96, the hypothesis is confirmed.

**Table 2.** Research hypothesis

| Hypothesis   | Standardized coefficients | Value and t-value | Result   |
|--|---------------------------|-------------------|----------|
| Information technology<br>← accounting information quality | 0.70                      | 17, 98            | Accepted |
| Timeliness<br>← accounting information quality             | 0.44                      | 13.46             | Accepted |
| data transfer rate<br>← quality of accounting information  | 0.42                      | 13, 05            | Accepted |
| Relevance<br>← quality of accounting information           | 0.51                      | 16, 11            | Accepted |
| Accurate<br>← accounting information quality               | 0.54                      | 15.67             | Accepted |
| Adequate<br>← quality of accounting information            | 0.612                     | 16.98             | Accepted |
| Actual<br>← quality of accounting information              | 0.512                     | 16.34             | قبول     |

## 5. Discussion and Conclusions

Overall, today's world is full of complexities accounting system as well as the companies listed on the Stock on growth and development is faced with many problems and managers at all levels as planners, organizers and leaders are faced with many challenges.

Due to certain limitations in our society, it is more difficult to use information technology to overcome the problems and obstacles in the way of quality IT can help. In the later part of the data in the study and research to test each hypothesis, the following results were obtained with each of the above assumptions, trying to interpret the results are accurate. The first sub-hypothesis: Data transfer rate is affecting the quality of accounting information. The findings confirm the quality of accounting information is an effective data transfer rate no doubt due to the high speed data transfer by Information technology companies and credible information updated as soon as they are received and according to the managers of these companies decide to take action. The findings confirm the timeliness of information on the quality of accounting information effectively. Today, in the age of communication and

information of the third millennium is the time to increase the flexibility of corporate accounting information to be changed and gives companies a valuable dimension. The lack of information on the requirements due to the failure of companies is especially the timeliness of accounting information is more important. The findings confirm Appertain information on the quality of accounting information effectively. Information technology helps to purify and analyze accounting information should be made and the essential information needed by managers to take decisions for unbiased information in addition to having utility in some cases, companies are misleading. The findings confirm accurate information on the quality of accounting information effectively. Because of the use of Information technology and computer systems to be more precise the inhumane practice of processing this factor makes the quality of accounting information and corporate executives are available. The findings confirmed the adequacy of information on the quality of accounting information effectively. Information technology analysis of the large volume of data on the needs of companies and accountants with sufficient information and requirements to them because of the volume of information is causing confusion and problems for companies. The findings confirm the reality of information on the quality of accounting information effectively. Information technology Due to the machine with no human intervention to provide the information required for the interference and abuse of various factors on accounting information helps and the quality of accounting information to the relevant persons alike. The results show that the use of information technology, significant changes in accounting has the ability to derive information, in particular, an increase in the quality of accounting information which mainly arises from the timeliness of information. The results reflect this topic despite the benefits Information technology for financial reporting, reliable information is reduced. Comparability of financial information of the Company (the analysis of financial condition and results of operations, changes in it) increases while the comparability of data between different companies reduced. Finally, with regard to the concept and definition of the quality of accounting information and information technology as described above, despite the complexity and breadth that we Events and

financial operations without the benefit of Information technology to solve our own needs from conception and where it is reasonable to maximize profits and reduce costs and increasing customer satisfaction is the most important objectives and policies of the organization; the main advantage of using information technology to reduce costs (including the cost of personnel, supplies, production planning, etc.) will be considered, but there are some that might be taken to reduce costs, increase it but since they are part of the main goals of the organization (such as the provision of timely and useful financial reports which leads to increased satisfaction of Financial Statements and the impact of Information technology on the subject as described in the text) cannot ignore it. According to the author, and it can be collected and enjoying the benefits of Information technology on the quality of accounting information of listed companies in Tehran Stock Exchange causes of development despite the general belief in progress and will be equal to the change from the old system to the new system, there is always resistance but if the benefits have been proposed to explain the career and professional manner transparent and free of bias. The pervasive use of technology can improve the accounting. At the end of the notes in connection with the use of Information technology in accounting, like other economic activities should be considered to increase cost-benefit.

According to the research, IT companies listed in Tehran Stock Exchange can facilitate access to high quality accounting information. Intense competition in Information technology companies should be at the company's size and infrastructure. And between the different units and the choice of Information technology systems in accordance with its accounting system productivity and the proper performance of their company and the level of institutionalization is favorable. Because Information technology has a significant impact on the quality of accounting information, information technology qualitative characteristics of accounting information on the impact of cassava leaves through reporting will apply. In fact, Information technology reporting to the financial reporting will lead to the type of reporting, provides information with different characteristics given the increasing development Information technology is expected reporting and consequently its impact on the qualitative characteristics of accounting

information to improve day to day (more positive). On the one hand, the use of information technology, not only are more relevant information; It is expected to enhance the reliability and comparability of data. On the other hand, according to the information needs of users and disadvantages of the current reporting model is characterized reporting to the financial reporting model that ultimately led to the end? Therefore, it is recommended that the accounting firms operating in Tehran Stock Exchange is a step in this direction. That system of accounting and auditing in accordance with the design and development of new technologies and comprehensive accounting and financial reporting and disclosure to the pace with rapid changes in the world of business.

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