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A model for examining the role of effective factors on the performance of organizations

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A model for examining the role of effective factors on the performance of organizations

Abstract

The goal of the current paper is to propose a new model to investigate the effect of organizational culture, Information Technology (IT), and employees' satisfaction on the performance of the organization. The model is also applied to evaluate the relationships between these variables and organizational performance. This will demonstrate how the three key factors impact the performance, then the managers can plan ahead to make appropriate strategies to evaluate practical developments and suggest improvements in the organizational performance. Also, the paper tries to validate and assess the proposed model in related variables. Sixteen measurements inside three factors are examined. The data have been gathered from the employees of an agriculture organization. By using discriminate validity, the reliability of measure, item loadings, and convergent validity, the model is assessed. The Structural Equation Modeling (SEM) technique is also utilized for model assessment and for checking the dependability as well as its legitimacy. Smart PLS 2.0 was utilized in this paper to survey the estimation and basic models. Path coefficients index, R^2 value, T-values and the GOF index of the model are also examined and the obtained results demonstrates the validity and reliability of the model. Finally, it is found that IT, organizational culture, and employees' satisfaction play important roles in enhancing of the performance of the organization.

Keywords: Information technology; organizational culture; employees' satisfaction; organizational performance; agriculture organization.

1. Introduction

Organizational performance is a tool for measuring efficiency which can be achieved through gained knowledge from the Information Technology (IT). Organizational top performance is one of the most important components for managers as the ultimate objective of the organization (Chan & Chao, 2008; Cooper, 2001; Damanpour, 1991; Shahzad, Xiu, & Shahbaz, 2017; Soriano, 2010). Therefore, the organizations try to use unique methods to enhance the organizational performance and set themselves apart from competitors (Oyemomi, Liu, Neaga, & Alkhuraiji, 2016).

On the other hand, sharing data and information has been facilitated through web services and Internet (Alamir, Alamir, Navimipour, & Navimipour, 2016; Ashouraie & Jafari Navimipour, 2015). Also, in spite of

different types of companies, there is an increase in the use of IT for work processes (Arcilla, Calvo-Manzano, & San Feliu, 2013). In a previous couple of decades, IT has helped organizations to perform the transformation, reduce costs and enhance efficiency (Brynjolfsson & Hitt, 1996; Hazratzadeh, Jafari Navimipour, Ramage, Chapman, & Johnson, 2016; Luo, Fan, & Zhang, 2012). Some researchers have found that IT influences business processes and through these processes, it can improve the general performance of the firms. Instead of just studying whether IT affects performance in different businesses or not, recently, researchers have tried to discover the way that IT helps organizations to improve their performance (Luo et al., 2012; Melville, Kraemer, & Gurbaxani, 2004). IT resources are able to make new capabilities and positively influence the performance (Bharadwaj, 2000; Malaquias, Malaquias, & Hwang, 2016; Santhanam & Hartono, 2003). It can be useful in augmenting the performance of a firm and its human resources (Jabbouri, Siron, Zahari, & Khalid, 2016). So, the first important factor which can influence the organizational performance is the IT.

Secondly, performance, attitude, and motivation of employees are influenced by environment's conditions (Parker et al., 2003; Putthiwanit, 2015; Zareie & Jafari Navimipour, 2016). Since organizational condition is closely tied to innovation in organizational performance improvement, some researchers have tried to find the main factors by which innovation can be improved (Koc & Ceylan, 2007). It seems that organizational culture has the most influence on innovation in firms (Büschgens, Bausch, & Balkin, 2013; Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2015). Therefore, since the behavior of employees is highly influenced by organizational culture, workers may accept innovation as an organization's essential worth and steep themselves in it (Dulaimi & Hartmann, 2006). Organizational culture influences organizational performance through its dimensions. It is important to manage the organizational culture to achieve better business outcomes (Kao, Tsaur, & Wu, 2016; Muafi, 2009). Therefore, the second important factor which can influence the organizational performance is the organizational culture.

Moreover, human resources of each organization are so vital to realize its goals (Fouladi & Navimipour, 2017; Jafari Navimipour, Rahmani, Habibizad Navin, & Hosseinzadeh, 2015; Navimipour, 2015). Fulfillment of organization tasks is the main duty of its personnel and their performance has a great effect on the organizational performance (Jafari Navimipour et al., 2015; Soltani & Navimipour, 2016). Organizations should know that the human resource is the most critical component which can lead them to peak organizational performance (Charband & Navimipour, 2016). Human resources and their satisfaction help to enhance the performance of the organization which leads to their own improvements (Dehaghi & Rouhani, 2014). Therefore, the third

important factor which can influence the organizational performance is the employees' satisfaction.

Since organizational peak performance is so important for organizations (Chan & Chao, 2008; Cooper, 2001; Damanpour, 1991) and most of the researchers are studying the motivation and technology, there is limited research exploring the impact of IT, organizational culture, and employees' satisfaction on the organizational performance. Employees are the imperative resources of associations and assume a huge part in their prosperity (Navin, Navimipour, Rahmani, & Hosseinzadeh, 2014). In some researchers' point of view, forceful reactions or positive feelings are indicated as satisfaction; whereas in others view, satisfaction is the difference among the actual and the expected achievement (Tsai, Yen, Huang, & Huang, 2007). Also, the satisfaction of employees is known as reactions which are positive and negative due to some factors (Islam, 2014), and it is characterized as an employee's pleasing enthusiastic condition about the supervisor, environment of the workplace, and the organization as a whole (Yeh, 2014). To know how successful an organization executes in its employee's training and offering additional insights due to maintenance endeavors, we must measure the employees' satisfaction (Ahmad & Tarmudi, 2012). Satisfaction of employee is the positive feelings that an employee experiences during working in a company (Rollinson, 2008). Therefore, research model of this study adopts satisfaction of employee as a non-autonomous reliant variable involving motivation, attitude, the flexibility of organization, reward, and benefits for assessing the influence of indirect and direct effects on organizational performance. Therefore, the research question is: do IT, organizational culture, and employees' satisfaction impact the organizational performance? So, the remainder of this paper will explain this question and it will be presented as a framework for studying organizational performance. The framework then will be applied to evaluate the relationships between the three variables and organizational performance. This will demonstrate how the three key factors impact the performance, then the managers can plan ahead to develop answers to the question and make suitable strategies to evaluate practical developments and suggest improvements in the organizational performance. To attain this objective, agriculture organization's employees[1] of Urmia-Iran have been studied. The major objectives of the current research are given below:

- Proposing a model and structure to specify the factors which influence the organizational performance.
- Evaluating the impact of IT, organizational culture and employees' satisfaction on the organizational performance.

[1] http://www.*waaj.ir/*.

- Using Structural Equation Modeling (SEM) to analyze and assess the validity of the proposed model.
- Exploring the future challenges of the organizational performance.

The previous research, related literature, and factors influencing organizational performance are presented in the next section. An exploration configuration in light of a proposed coordinated model is described and analyzed in the third section. Data analysis is presented in Section 4. Finally, Section 5 includes conclusions and future works. Also, commonly used abbreviations in this paper are given in Appendix A.

2. Related work

A framework has been proposed by Otley (1999) to analyze the management control systems' usefulness. The framework consists of the essential issues which are related to aims, policies, and plans about their information feedback loops, reward and incentive structures, target-setting, and attainment. He believes that if the framework is used in analyzing other cases of the practice of management control systems, then it would be more developed because of its use. An outline framework has been also provided in the study that comprehending the context of work will be facilitated by researchers and managers. But, the outlined developments cannot serve as technical matters, so one cannot analyze them from an economic viewpoint.

Furthermore, Bannister and Remenyi (2000) have presented different strands of thought for evaluation such as supportive, composite and Meta approaches. They have stated that the IT improves firm results by providing the services at lower costs. The results show that organizations should use IT besides other important and effective factors such as strategy, clients, and services. But, it is difficult to change some properties of organizations.

Also, Goh (2002) has proposed a compacting framework to discover the main factors that influence knowledge transferring ability as a significant field of knowledge management. Also, he has discussed why knowledge transfer leftovers a problem for many organizations. Organizations need to consider some important factors which help them to effectively develop knowledge transfer such as leadership, problem-solving behaviors, support structures, absorptive and retaining capacity, and types of knowledge.

Moreover, Santhanam and Hartono (2003) have tested the usefulness of the Resource-Based View (RBV) framework by replacing, generalizing, and extending the framework of previous studies. It has been shown that compared to normal industry performance, firms which have a higher capability of IT, their current performance is much better and have better future performance,

even subsequent to confirm for impacts of earlier firm performance. In any case, firms' prior economic performance due to IT's future capability must be studied. Further, they have suggested that there is a desire to use developed multidimensional measures of IT ability to have the capacity to apply the RBV approach.

Camisón-Zornoza, Lapiedra-Alcamí, Segarra-Ciprés, and Boronat-Navarro (2004) have applied the meta-analytical methodology to inspect the found results from research review about innovation and size relationship. The findings have shown that the association between size and innovation is positive and important, although effect with average size is not very high and meta-analysis' results also have demonstrated that sample choice significantly affects the size–innovation connection.

By use of collected data through manufacturing firms in Turkey, Yilmaz and Ergun (2008) have examined crucial mission, adaptability, consistency, involvement, and organizational culture traits' influence on measures of effectiveness of firm. The study results have shown that, due to promoting the growth of market share and sales, and due to an overall firm performance from the four traits, the mission trait is the most important. In addition, involvement trait determines the satisfaction of employee. Finally, imbalanced blends of specific sets of social attributes apply the normal negative consequences for execution pointers, others appear to have constructive outcomes. This review has given bits of knowledge with respect to the adjusted culture speculation, but it is difficult to change attitudes.

Furthermore, Brudan (2010) has investigated the performance management as a trait and has proposed an integrated performance management model. He has intended to explain what performance management is and how it roses as a train by following its development at the key, operational and singular levels. Three developing ways to deal with execution administration have been introduced as potential impetuses: frameworks considering, learning and mix. But, it draws on the consultancy and research understanding of the author. The produced model is generally reasonable and should be tried. Additionally, examination on the historical backdrop of performance management and the integration approach between organizational levels are required.

Tabatabaei, Ghaneh, Mohaddes, and Khansari (2013) have investigated the relationship between job satisfaction and demographic variables using descriptive statistics, correlation coefficient, t-test and multi-variable regression (step-by-step). The outcomes have demonstrated that there is a relationship between representatives' employment fulfillment and some of the statistic factors (like sex, age, training and so on.) and with a couple of authoritative

components (for example, work circumstance, work movements and hours). There are discovered huge contrasts in occupation fulfillment of men and women (α=0.005), single and wedded (α=0.036), formal and contract enlistment tests (α=0.001) and between gatherings with various pay rates (α=0.001). Such reviews can give appropriate data to workers/managers to advance the hierarchical efficiency.

Furthermore, K.-E. Huang, Wu, Lu, and Lin (2016) have analyzed the relationships among organizational performance, the capability of information management, management of quality, technology creation, and innovation. The analyses have demonstrated that a fuzzy-set qualitative relative examination can effectively recognize suitable conditions for effective outcomes of organizational performance. The outcomes have shown that a fuzzy-set subjective relative investigation outperforms a Multiple Regression Analysis (MRA). But, only a particular type of firm management in Taiwan was addressed.

Melián-González and Bulchand-Gidumal (2016) have employed a purposive sampling that included five four-star hotels. They have displayed four paths through which IT can affect hotel performance and, for each one, the exact components that cause these impacts. Also, they have introduced a latest complete model that demonstrates the particular courses that IT can follow with a specific end goal to upgrade hotel organizational performance. But, they have studied only the similar samples.

Finally, there are many proofs that small firms started to use IT to make capabilities with unique features, and they could indirectly have their conditions improved to meet Corporate Social Responsibilities (CSR). By taking this scenario into consideration, Malaquias et al. (2016) have adopted the Confirmatory Factor Analysis (CFA) before hypotheses testing. SEM was used to test the formal hypotheses. They have analyzed the impact of IT usage on the small firms' CSR. They have also examined the connections between the builds utilizing corroborative component investigation and basic condition displaying, with a database included 173 Brazilian small firms and the outcomes have demonstrated a positive and huge connection among utilization of IT and the four classes of CSR. It was understood that IT adds some advantageous to organizations, and furthermore influences participant individuals as workers in these endeavors. The aftereffects of the paper develop the examination of IT advantages to organizations and to society. But, it is limited to the small firms.

3. Methodology

Firms need to upgrade their association and arrange their organizations in order to positively implement a competitive advantage. Thus, business, the structure of organizational performance, and strategies should be changed. Organizational performance is the main practical wellspring of preferred standpoint, so, administrators must connect their center ability to various sorts of techniques crosswise over time (K.-E. Huang et al., 2016). This section recognizes basic elements affecting organizational performance and with a specific end goal, quantify the viability of those variables. A new model is presented in Fig. 1. In the rest of this section, we have described the tools of measurement, component model, hypotheses of research, target population, and model of measurement, respectively.

3.1. Measurements

We have outlined a questionnaire (Appendix B) to measure the proposed model's components. Questionnaire's core is a set of items which are related to issues that we have proposed in the literature to affect the organization performance. Experts (including practitioners and researchers) have read and proved the questionnaires. To inspect the questionnaire's validity, reliable and standard resources after the revision are used which are distributed in March 2017. The respondents show their understanding or conflict with the above things utilizing a five-point Likert scale (Likert, 1932) with 1 showing extreme disagreement and 5 indicating extreme agreement.

Also, the agricultural organization has many important responsibilities which are very vital for the country and people. It is a source of information and knowledge with the help of which developing countries improve and modernize food security for all, guarantee good nutrition, do forestry and fisheries practices, and agriculture. It has been a few years that IT-based systems have been used by this organization to perform various tasks; so we found this organization important to study. Therefore, the case study of this research is the agriculture organization of Urmia in Iran. The SPSS software is employed to inspect descriptive statistics about education, age, and gender. Analytical results indicate the studied sample includes 78% men and 22% women; 82% of respondents are B.A graduates and 43% of the respondents are between 35 and 45 years old. Value of Cronbach's alpha was 0.71. Thus, this questionnaire has satisfactory reliability. The questionnaire had 22 questions and they were about the effects of three variables that were IT, organizational culture and employees' satisfaction influence on performance. For questionnaires' statistical analysis, SPSS 22 and SMART-PLS 2.0 software package were used.

Based on the previous studies (Ashouraie & Jafari Navimipour, 2015; Brynjolfsson & Hitt, 1996; Putthiwanit, 2015), we designed a new framework to guide this study. We have discussed sixteen dimensions within three variables which have been provided later in the current section. These variables are IT,

organizational culture, and employees' satisfaction. Under the three variables which we have identified previously, sixteen dimensions are involved. For IT variable, those factors are ease of use, the popularity of IT usage, the speed of the Internet, and IT using culture. Organizational attitude, environmental forces, job characteristic and individual factors are organizational culture variables. Finally, motivation, attitude, organizational flexibility, reward, and benefits are the employees' satisfaction variables. Past researchers have discussed these variables and have covered almost organization performance's all aspects; however, they have never been combined into one framework subject to examine for approval. In the current research, we have developed such a framework including those variables which is appeared in Fig. 1.

3.2. Research hypotheses

Sixteen measurements inside three factors are exhibited and examined in the previous section. In the current section, we have presented three hypotheses for testing the connections among the framework's dimensions. As in the following, specific and general study hypotheses are shown:

H1: IT influences the organizational performance.
H2: Organizational culture influences the organizational performance.
H3: Employees' satisfaction influences the organizational performance.

3.3. Participants

This study's target samples are agriculture organization's employees in Urmia-Iran. The total number of employees working in is 400 people. We have chosen the target population according to Morgan table (Appendix C). Thus, 196 cases are selected randomly. The employees were requested to answer the questions honestly because the questions were clear so there was not any necessity to explain them, but they did not return 8 of the questionnaires. 188 questionnaires were returned; 9 questionnaires were not usable (they were not complete) which resulted in 179 questionnaires to be analyzed.

Fig. 1. The proposed conceptual model

3.4. Measurement model

By using discriminate validity, the reliability of measure, item loadings, and convergent validity, the measurement model is assessed. If an item's loading is greater than 0.7, then it's reliability is proved. Average Variance Extracted (AVE) is used to assess the convergent validity, AVE must be higher than a standard minimum level of 0.5 (Fornell & Larcker, 1981). Through Cronbach's alpha and composite reliability, measurement's reliability is checked. Generally, 0.7 is considered as composite reliability's minimum value (Nunnally, 1978), and also 0.7 is taken as the minimum value of Cronbach's alpha (Cronbach, 1951). By use of the latent variable correlations and the square root of average variance extracted, we evaluate the discriminate validity. Each construct's square root of average variance extracted ought to surpass the relationship shared between one construct and the model's different constructs (Y.-M. Huang, Huang, Huang, & Lin, 2012). Tables 1 and 2 show the measurement model's results where all of them are acceptable since their values met the standard.

The proposed criteria assessment estimation by Fornell and Larcker (1981) is used: (1) the Cronbach's alpha ought to be significant and greater than 0.7; (2) the Composite Reliability (CR) should be greater than 0.7; (3) the AVE should be greater than 0.5. The results show that the Cronbach's a coefficient of each dimension is greater than 0.7, including IT (0.92), organizational culture (0.86), employees' satisfaction (0.86), and organizational performance (0.80), confirming to the high reliability required by Cronbach (1951). It is indicated that this study's measurement variable items are coincident. 0.86-0.94 are the CR's values which are greater than 0.7. The values of AVE are within 0.51-0.73 which are greater than 0.5. Therefore, this study's three conditions are coincident with good convergent validity.

Table 3 presents AVE values of every construct and the square of the assessed connections for each match of constructs. Because qualities of the AVE are higher than the squared estimated correlations, this data affirms the presence of segregated legitimacy between the constructs.

Table 1. The convergent reliability and validity of measure for the measurement model

Table 2. The discriminant validity of the measurement model

4. Results and discussion

Incomplete least squares approach is utilized in this study to dissect the survey information since the sample measure is small. The PLS is an approach

called segment based which surveys develop dependability and legitimacy and appraisals the connections among constructs (Cheng & Yang, 2014). The fractional slightest squares approach is as often as possible utilized as a contrasting option to SEM. As opposed to the SEM, the incomplete slightest squares are fit for treating a small sample (minimum sample size = 20). In this way, halfway minimum squares were along these lines received to lead data analyses. Smart PLS 2.0 was utilized in this paper to survey the estimation and basic models (Y.-M. Huang et al., 2012). At the remainder of this section, we will discuss and describe the structural model (path coefficients index, the R^2 value, The GOF index, and results of T-test).

Table 3. Hypothesis test and results' summary.

4.1. Structural model

The SEM examination system is connected in two phases in view of related observable investigation and corroborative element investigation particular to measurements and things. The second stage involves a check of all suppositions of the review by use of SEM (Chen & Tseng, 2012). PLS 2.0 is used in this research to apply and analyze the maximum likelihood method for the structure model and measurement model assessment. Three main indexes are evaluated to assess the fit of the model including path coefficients index and the R^2 value, T-values and the GOF index.

4.1.1. The R^2 value and path coefficient index

For hypotheses verification, the structural model is used with coefficient and R^2 value. The R^2 was used to assess the model's ability to clarify the variance in the dependent variables (Chin, 1998). For assessing the hypotheses' statistical significance, the path coefficient was employed (Chin, Marcolin, & Newsted, 2003). Fig. 2 shows structural model's results.

As considering the defined effect sizes for R^2 by Chin (1998), we can classify the effects as 0.67 for large, 0.33 for medium, and 0.19 for small. The probability of transformation for the selected model is (R^2 = 0.95), so it shows that there is a solid match between independent variables. We have shown the three path coefficients in Fig. 2. The institutionalized path coefficients uncover the relative quality of the impact of every precursor. To begin with, the path coefficient between IT and organizational performance is 0.49, which shows organizational performance is significantly positively influenced through IT. Second, the path coefficient between organizational culture and organizational performance is 0.35, by which it is shown that organizational performance is significantly and positively influenced by organizational culture. Third, the path coefficient between employees' satisfaction and organizational performance is 0.29, which indicates that employees' satisfaction significantly and positively

influences organizational performance. It is also shown that all 3 hypotheses are confirmed.

4.1.2. The GOF index

Recently, a global fit measure for PLS path modeling has been recommended, GOF ($0 < GOF < 1$), defined as the geometric mean of the average communality and average R^2. GOF_{small} = 0.1, GOF_{medium}= 0.25, and GOF_{large}= 0.36; these may serve as baseline values for confirming the PLS model globally (Wetzels, Odekerken-Schröder, & Van Oppen, 2009). Claculation of GOF index is as follow:

$$\text{GOF} = \sqrt{\overline{AVE} \times \overline{R^2}} \qquad (1)$$

For calculation of the AVE average value, Eq. (2) is employed:

$$\mu_{AVE} = \frac{1}{n}.\sum_{i=1}^{n} x_i \quad (2)$$

$$\mu_{AVE} = \frac{AVE_{IT} + AVE_{OC} + AVE_{ES} + AVE_{OP}}{4}$$

$$\mu_{AVE} = \frac{0.73+0.51+0.53+0.51}{4} = 0.57$$

$$\mu_{AVE} = 0.57$$

Baseline model's results, which employs an inner model path weighting scheme, show a substantial R^2 of 0.95 for organizational performance. The R^2 average value is calculated as follows:

$$\mu_{R^2} = \frac{1}{n}.\sum_{i=1}^{n} x_i \qquad (3)$$

$$\mu_{R^2} = 0.95$$

When (2) and (3) are substituted into (1), the value of GOF will be obtained as follow:

$$\text{GOF} = \sqrt{0.57 \times 0.95} = 0.73$$

As you see, the result of GOF value is 0.73, which is larger than the cut-off value for large effect sizes of R^2 and we can say our that our model, compared to the baseline values, achieves well. So, model's structure and data fit each other.

Fig. 2. Organizational performance's structural model.

4.1.3. Results of the T-test

Our concern is that if IT, organizational culture, and employees' satisfaction can provide better results in organizational performance. To analyze the results of the questionnaire we have used PLS statistical software. Results of Paired t-test in Fig 3 indicates that IT, organizational culture, and employees' satisfaction yield better organizational performance. A significance level of loadings is at 99%. It is confirmed by the results that IT, organizational performance, and employees' satisfaction improved the effectiveness of organizational performance.

4.2. Discussion

By taking the past studies into consideration (Al-Qirim, 2007; Byrd & Marshall, 1996; Fink, 1998; Kannabiran & Dharmalingam, 2012; Malaquias et al., 2016; Ongori & Migiro, 2010; Salmeron & Bueno, 2006; Tso, Yau, & Cheung, 2010), IT is able to i) reduce double efforts in organization; ii) increase transactions' dependability and speed; iii) improve organization to customer communications; iv) improve the management efficiency; v) advance internal process; vi) make easy access to external and internal information; and vii) play the role of employees selection. On the other hand, work environment condition also affects performance, motivation, and attitude of employees (Parker et al., 2003; Putthiwanit, 2015). Moreover, organizations should know that human resource is the most critical component which can lead to peak performance. So, we can conclude that organizational performance improvement in the 21st century is mainly depended on IT, organizational culture, and employees' satisfaction. Therefore, a research model was presented and assessed to inspect the effects of the key elements of organizational performance. The model was assessed via a questionnaire which was administered to employees of the agriculture organization of Urmia in Iran. The questionnaire's goal is to understand the IT, organizational culture, and employees' satisfaction influence on organizational performance. In detail, as expected, IT, organizational culture, and employees' satisfaction are found to be important variables influencing performance. In this section, we evaluate the factors which have significant impacts on the performance in comparison to the other classical approaches. As indicated in Table 3, path coefficient and sample t-test's results imply that IT has a positively and significantly influences organizational performance (T-value = 5.88, path coefficient = 0.49). The most considerable related work have proved that IT has major effects on the performance(Arcilla et al., 2013; Malaquias et al., 2016; Melián-González & Bulchand-Gidumal, 2016; Santhanam & Hartono, 2003). additionally, organizational culture and performance interdependence effect is nd positive significant (T-value = 7.92, path coefficient = 0.35). Many studies indicate that performance is influenced by organizational culture (Büschgens et al., 2013; Denison, 1984; Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2016; Putthiwanit, 2015). Furthermore, employees' satisfaction positively and significantly influenced the organizational performance (T-value = 3.35, path coefficient = 0.29). We can

indicate some of the research which has investigated the effects of satisfaction on the performance. For example (Callan, 1993; Dehaghi & Rouhani, 2014; Tabatabaei et al., 2013). The difference between our study and the previous studies is the dimensions which we selected to evaluate the effects IT, organizational culture and employees' satisfaction on the performance.

At the first stage, the popularity of IT usage, ease of use, the speed of the Internet, and IT usage culture influence IT and IT can increase organizational performance. At the next stage, organizational attitude, environmental factors, job characteristic, and individual factors can affect organizational culture which significantly influences organizational performance. Also, motivation, attitude, organizational flexibility, rewards, and benefits can affect employees' satisfaction which is one of the key elements that can increase organizational performance. Furthermore, more important, results reported in the previous literature about IT, organizational culture, and employees' satisfaction influence on organizational performance are supported by a number of studies.

Fig. 3. T-test results.

5. Conclusions and limitations

In this study, we explored the relationships among IT, organizational culture, employees' satisfaction, and organizational performance. The experimental results provide moderate support to the suggested research framework and hypotheses. The findings show that IT, organizational culture, and employees' satisfaction are drivers of organizational performance. These findings are reliable with previous studies that IT is an indicator of organizational performance (Barua, Kriebel, & Mukhopadhyay, 1995; Bergeron, Raymond, & Rivard, 2004; Matthyssens et al., 2008). Findings indicate that using IT by the organizations lead to higher level of performance. Furthermore, organizational performance is significantly affected by an organizational culture which included decisions about organizational attitude, environmental factors, job characteristic, and individual factors. There are several other studies related to organizational culture influence on different performances of the organizations (Bontis, Crossan, & Hulland, 2002; Matlay, Khandekar, & Sharma, 2006). It is constantly demonstrated that organization performance is strongly influenced by organizational culture (for example, Denison, 1990). The results of this study also support this view. In addition, the obtained results have shown that the effect of employees' satisfaction variable (motivation, attitude, organizational flexibility, rewards, and benefits) on organization performance is significant and positive. It is clear that satisfied employees work better and increase the performance. A comprehensive model includes all of these factors. The proposed model’s generalizability gives a typical structure to the close investigation of results from different research. In this paper, the identified

variables with organizational performance have also been analyzed. In the current research, organizational performance related factors have been examined. An essential commitment of our work is to have in facilitated our comprehension of how to characterize, and survey organizational performance and give a model and structure to evaluate IT, organizational culture, and employees' satisfaction influence on organizational performance. The estimation of the organizational performance had been given by methods for three research speculations bolstered by a careful investigation.

The main limitation of this review is that the example of the review is restricted to one organization. Leading the review in various foundations would be restrictively expensive and tedious. Also, this study's another limitation can be the non-standard questionnaire, since we cannot directly compare the results to other studies. Therefore, we urge future research to gather a far-reaching test, which may reveal other essential components driving high authoritative execution. We likewise support bigger examples for directing cross-approval of the model, with the goal that generalizability can be guaranteed. Finally, we present the managerial implications of current study which is of five implications.

(1) The whole process, exploring the factors which impact organizational performance and confirming the three vital effective factors related to organizational performance, can be tested in some other organizations.

(2) Proving new IT-based platforms and developing the structures in organizations will help organizations to achieve the top performance.

(3) Current research's results indicate that industries which have high capability will manage operational issues efficiently. Information systems which are integrated have many functions, such as the organization performance and application of IT. Then, firms are able to strengthen the information management capability and collaboration diversity among members of the team.

(4) It is constantly demonstrated that organizational performance is strongly influenced by organizational culture. Also. the changes to cultural traits will directly influence the effectiveness and efficiency. The results of this study support this view. So, according to the results, correcting and developing the organizational culture can improve organizational performance.

(5) Satisfied employees are more eager to work and this eagerness facilitates job performance. Satisfied employees are more confident and they can control the task of their job, which in turn affects their performance and enhance it. So, managers should try to keep their employees satisfied in order to achieve the best organizational performance.

Appendixes

A. Table of Abbreviations

Table 4. Current paper's used common abbreviations.

B. Questionnaire

Please check the answer by ticking or coloring the desired item after carefully reading the questions. Options are from 1 to 5. So, the number 1 represents completely disagree. Number 2 represents disagree, number 3 represents no idea, number 4 represents agree and number 5 completely agree.

Information technology

Row	Questions	Options				
		1	2	3	4	5
1	The easily using of information systems plays a significant role in increasing the performance of organization.					
2	The use of information technology is improving the performance of organization.					
3	The speed of Internet effects the use of information technology and information system.					
4	The culture of using information technology plays a role in improving the performance of organization.					
5	Increasing the speed of Internet persuades employees to use it.					
6	I've got the training for using information systems.					

Organizational culture

Row		Options

	Questions	1	2	3	4	5
1	Organization culture (an integrated view of ideas formed in the minds of the staff of organization) effects the organization performance.					
2	Environmental factors such as culture (individualism collectivism) effect the organization behavior.					
3	The organizational positive attitude improves the performance.					
4	Individual factors (hope, motivation, and sense of cooperation) play a significant role in improving the organization performance.					
5	Personalizing the work environment and flexibility improve the employee's job performance.					
6	Occupational limits (responsibilities, work practices and feedback) as fast as possible making job satisfaction.					
7	Individual factors (level of educations and specialization, job knowledge, work experience and job talent) effect the work performance of employees and the organization.					

Staff satisfaction

Row	Questions	Options				
		1	2	3	4	5
1	Staff satisfaction is effective in improving the organization performance.					
2	Rewards and benefits increase motivation of employees.					

3	The organizational positive attitude improves the performance.					
4	The type of attitude of the staff to the organization has a great effect on their satisfaction.					
5	Employee motivation play's a significant role in improving the organization performance.					
6	A person, team or flexible organization has the ability to respond and adapt to new developments and situations.					
7	Organizational flexibility leads to employee's satisfactions and innovation.					
8	I am interested in my work.					

C. Morgan Table

Table 5. The Morgan table.

References

Ahmad, M. A., & Tarmudi, S. M. (2012). Generational differences in satisfaction with e-learning among higher learning institution staff. *Procedia-Social and Behavioral Sciences, 67*, 304-311.

Al-Qirim, N. (2007). A research trilogy into e-commerce adoption in small businesses in New Zealand. *Electronic Markets, 17*(4), 263-285.

Alamir, P., Alamir, P., Navimipour, N. J., & Navimipour, N. J. (2016). Trust evaluation between users of social networks using the quality of service requirements and call log histories. *Kybernetes, 45*(10), 1505-1523.

Arcilla, M., Calvo-Manzano, J. A., & San Feliu, T. (2013). Building an IT service catalog in a small company as the main input for the IT financial management. *Computer Standards & Interfaces, 36*(1), 42-53.

Ashouraie, M., & Jafari Navimipour, N. (2015). Priority-based task scheduling on heterogeneous resources in the Expert Cloud. *Kybernetes, 44*(10), 1455-1471.

Bannister, F., & Remenyi, D. (2000). Acts of faith: instinct, value and IT investment decisions. *Journal of information technology, 15*(3), 231-241.

Barua, A., Kriebel, C. H., & Mukhopadhyay, T. (1995). Information technologies and business value: An analytic and empirical investigation. *Information systems research, 6*(1), 3-23.

Bergeron, F., Raymond, L., & Rivard, S. (2004). Ideal patterns of strategic alignment and business performance. *Information & Management, 41*(8), 1003-1020.

Bharadwaj, A. S. (2000). A resource-based perspective on information technology capability and firm performance: an empirical investigation. *MIS quarterly*, 169-196.

Bontis, N., Crossan, M. M., & Hulland, J. (2002). Managing an organizational learning system by aligning stocks and flows. *Journal of management studies, 39*(4), 437-469.

Brynjolfsson, E., & Hitt, L. (1996). Paradox lost? Firm-level evidence on the returns to information systems spending. *Management science, 42*(4), 541-558.

Büschgens, T., Bausch, A., & Balkin, D. B. (2013). Organizational Culture and Innovation: A Meta-Analytic Review. *Journal of product innovation management, 30*(4), 763-781.

Byrd, T. A., & Marshall, T. E. (1996). Corporate culture, related chief executive officer traits, and the development of executive information systems. *Computers in Human Behavior, 12*(3), 449-464.

Callan, V. J. (1993). Subordinate–manager communication in different sex dyads: consequences for job satisfaction. *Journal of Occupational and Organizational Psychology, 66*(1), 13-27.

Camisón-Zornoza, C., Lapiedra-Alcamí, R., Segarra-Ciprés, M., & Boronat-Navarro, M. (2004). A meta-analysis of innovation and organizational size. *Organization studies, 25*(3), 331-361.

Chan, I., & Chao, C.-K. (2008). Knowledge management in small and medium-sized enterprises. *Communications of the ACM, 51*(4), 83-88.

Charband, Y., & Navimipour, N. J .(2016) .Online knowledge sharing mechanisms: a systematic review of the state of the art literature and recommendations for future research. *Information Systems Frontiers, 18*(6), 1131-1151.

Chen, H.-R., & Tseng, H.-F. (2012). Factors that influence acceptance of web-based e-learning systems for the in-service education of junior high school teachers in Taiwan. *Evaluation and program planning, 35*(3), 398-406.

Cheng, H.-H., & Yang, H.-L. (2014). The antecedents of collective creative efficacy for information system development teams. *Journal of Engineering and Technology Management, 33*, 1-17.

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research, 295*(2), 295-336.

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information systems research, 14*(2 .217-189 ,(

Cooper, R. G. (2001). Winning at New Products: Accelerating the Process from Idea to Launch (Создание успешных продуктов: ускорение процесса от возникновения идеи до выхода на рынок).

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *psychometrika, 16*(3), 297-334.

Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of management journal, 34*(3), 555-590.

Dehaghi, M. R., & Rouhani, A. (2014). Studying the Relationship between the Effective Factors on Employees' Performance in Iran's University and the Students' Satisfaction with regards to Employees' Performance. *Procedia-Social and Behavioral Sciences, 141*, 903-908.

Denison, D. R. (1984). Bringing corporate culture to the bottom line. *Organizational dynamics, 13*(2), 5-22.

Dulaimi, M., & Hartmann, A. (2006). The role of organizational culture in motivating innovative behaviour in construction firms. *Construction innovation, 6*(3), 159-172.

Fink, D. .(1998) Guidelines for the successful adoption of information technology in small and medium enterprises. *International journal of information management, 18*(4), 243-253.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 39-50.

Fouladi, P., & Navimipour, J. N. (2017). Human resources ranking in a cloud-based knowledge sharing framework using the quality control criteria. *Kybernetes, 46*(5).

Goh, S. C. (2002). Managing effective knowledge transfer: an integrative framework and some practice implications. *Journal of knowledge management, 6*(1), 23-30.

Hazratzadeh, S., Jafari Navimipour, N., Ramage, M., Chapman, D., & Johnson, M. (2016). Colleague recommender system in the expert cloud using features matrix. *Kybernetes, 45*(9).

Huang, K.-E., Wu, J.-H., Lu, S.-Y., & Lin, Y.-C. (2016). Innovation and technology creation effects on organizational performance. *Journal of Business Research, 69*(6), 2187-2 .192

Huang, Y.-M., Huang, Y.-M., Huang, S.-H., & Lin, Y.-T. (2012). A ubiquitous English vocabulary learning system: Evidence of active/passive attitudes vs. usefulness/ease-of-use. *Computers & Education, 58*(1), 273-282.

Islam, A. N. (2014). Sources of satisfaction and dissatisfaction with a learning management system in post-adoption stage: A critical incident technique approach. *Computers in Human Behavior, 30*, 249-261.

Jabbouri, N. I., Siron, R., Zahari, I., & Khalid, M. (2016). Impact of Information Technology Infrastructure on Innovation Performance: An Empirical Study on Private Universities In Iraq. *Procedia Economics and Finance, 39*, 861-869.

Jafari Navimipour, N., Rahmani, A. M., Habibizad Navin, A., & Hosseinzadeh, M. (2015). Expert Cloud: A Cloud-based framework to share the knowledge and skills of human resources. *Computers in Human Behavior, 46*(C), 57-74.

Kannabiran, G., & Dharmalingam, P. (2012). Enablers and inhibitors of advanced information technologies adoption by SMEs: An empirical study of auto ancillaries in India. *Journal of Enterprise Information Management, 25*(2), 186-209.

Kao, C.-Y., Tsaur, S.-H., & Wu, T.-C. E. (2016). Organizational culture on customer delight in the hospitality industry. *International Journal of Hospitality Management, 56*, 98-108.

Koc, T., & Ceylan, C. (2007). Factors impacting the innovative capacity in large-scale companies. *Technovation, 27*(3), 105-114.

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of psychology*.

Luo, J., Fan, M., & Zhang, H. (2012). Information technology and organizational capabilities: A longitudinal study of the apparel industry. *Decision Support Systems, 53*(1), 186-194.

Malaquias, R. F., Malaquias, F. F., & Hwang, Y. (2016). Effects of information technology on corporate social responsibility: Empirical evidence from an emerging economy. *Computers in Human Behavior, 59*, 195-201.

Matlay, H., Khandekar, A., & Sharma, A. (2006). Organizational learning and performance: Understanding Indian scenario in present global context. *Education+ Training, 48*(8/9), 682-692.

Matthyssens, P., Kirca, A. H., Pace, S., "Bryan" Jean, R.-J., Sinkovics, R. R., & Kim, D. (2008). Information technology and organizational performance within international business to business relationships: a review and an integrated conceptual framework. *International Marketing Review, 25*(5), 563-583.

Melián-González, S., & Bulchand-Gidumal, J. (2016). A model that connects information technology and hotel performance. *Tourism Management* .37-30 ,53 ,

Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Review: Information technology and organizational performance: An integrative model of IT business value. *MIS quarterly, 28*(2), 283-322.

Muafi, M. (2009). The effects of alignment competitive strategy, culture, and role behavior on organizational performance in service firms. *International Journal of Organizational Innovation (Online), 2*(1), 106.

Naranjo-Valencia, J. C., Jiménez-Jiménez, D., & Sanz-Valle, R. (2015). Studying the links between organizational culture, innovation, and performance in Spanish companies. *Revista Latinoamericana de Psicología*.

Naranjo-Valencia, J. C., Jiménez-Jiménez, D., & Sanz-Valle, R. (2016). Revista Latinoamericana de Psicología. *Revista Latinoamericana de Psicología, 48*(1), 30-41.

Navimipour, N. J. (2015). A formal approach for the specification and verification of a trustworthy human resource discovery mechanism in the expert cloud. *Expert Systems with Applications, 42*(15), 6112-6131.

Navin, A. H., Navimipour, N. J., Rahmani, A. M., & Hosseinzadeh, M. (2014). Expert grid: new type of grid to manage the human resources and study the effectiveness of its task scheduler. *Arabian Journal for Science and Engineering, 39*(8), 6175-6188.

Nunnally, J. (1978). Psychometric methods: New York: McGraw-Hill.

Ongori, H., & Migiro, S. O. (2010). Information and communication technologies adoption in SMEs: literature review. *Journal of Chinese Entrepreneurship, 2*(1), 93-104.

Otley, D. (1999). Performance management: a framework for management control systems research. *Management accounting research, 10*(4), 363-382.

Oyemomi, O., Liu, S., Neaga, I., & Alkhuraiji, A. (2016). How knowledge sharing and business process contribute to organizational performance: Using the fsQCA approach. *Journal of Business Research*.

Parker, C. P., Baltes, B. B., Young, S. A., Huff, J. W., Altmann, R. A., Lacost, H. A., & Roberts, J. E. (2003). Relationships between psychological climate perceptions and work outcomes: a meta-analytic review. *Journal of organizational behavior, 24*(4), 389-416.

Putthiwanit, C. (2015). Exploring the impact of organizational culture on employees in multinational enterprise: A qualitative approach. *Procedia-Social and Behavioral Sciences, 207*, 483-491.

Rollinson, D. (2008). *Organisational behaviour and analysis: an integrated approach*: Pearson Education.

Salmeron, J. L., & Bueno, S. (2006). An information technologies and information systems industry-based classification in small and medium-sized enterprises: An institutional view. *European Journal of Operational Research, 173*(3), 1012-1025.

Santhanam, R., & Hartono, E. (2003). Issues in linking information technology capability to firm performance. *MIS quarterly*, 125-153.

Shahzad, F., Xiu, G., & Shahbaz, M .(2017) .Organizational culture and innovation performance in Pakistan's software industry. *Technology in Society, 51*, 66-73. doi:https://doi.org/10.1016/j.techsoc.2017.08.002

Soltani, Z., & Navimipour, N. J. (2016). Customer relationship management mechanisms: A systematic review of the state of the art literature and recommendations for future research. *Computers in Human Behavior, 61*, 667-688.

Soriano, D. R. (2010). Management factors affecting the performance of technology firms. *Journal of Business Research, 63*(5), 463-470.

Tabatabaei, S., Ghaneh, S., Mohaddes, H., & Khansari, M. M. (2013). Relationship of job satisfaction and demographic variables in pars ceram factory employees in Iran. *Procedia-Social and Behavioral Sciences, 84*, 1795-1800.

Tsai, P. C.-F., Yen, Y.-F., Huang, L.-C., & Huang, C. (2007). A study on motivating employees' learning commitment in the post-downsizing era: Job satisfaction perspective. *Journal of world business, 42*(2), 157-169.

Tso, G. K., Yau, K. K., & Cheung, M. S. .(2010)Latent constructs determining Internet job search behaviors: Motivation, opportunity and job change intention. *Computers in Human Behavior, 26*(2), 122-131.

Wetzels, M., Odekerken-Schröder, G., & Van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS quarterly*, 177-195.

Yeh, Y.-P. (2014). Exploring the impacts of employee advocacy on job satisfaction and organizational commitment: Case of Taiwanese airlines. *Journal of Air Transport Management, 36*, 94-100.

Yilmaz, C., & Ergun, E. (2008). Organizational culture and firm effectiveness: An examination of relative effects of culture traits and the balanced culture hypothesis in an emerging economy. *Journal of world business, 43*(3), 290-306.

Zareie, B., & Jafari Navimipour, N. (2016). The Effect of Electronic Learning Systems on the Employee's Commitment. *The International Journal of Management Education*.

Table 1. The convergent reliability and validity of measure for the measurement model.

Factor	AVE	CR	Cronbach's Alpha
IT	0.73	0.94	0.92
Organizational culture	0.51	0.89	0.86
Employees' satisfaction	0.53	0.89	0.86
Organizational performance	0.51	0.86	0.80

Table 2. The discriminant validity of the measurement model.

Factor	Organizational culture	IT	Organizational performance	Employees' satisfaction
Organizational culture	0.71			
IT	0.41	0.85		
Organizational performance	0.67	0.92	0.72	
Employees' satisfaction	0.41	0.97	0.91	0.73

Table 3. Hypothesis test and results' summary.

Variables	***β***	**T-value**	**significance Level**	**Effect**
IT → Organizational performance	0.49	5.88***	Significant	Strong
Organizational culture → Organizational performance	0.35	7.92***	Significant	Strong
Employees'	0.29	3.35***	Significant	Strong

satisfaction → Organizational performance				

*** $p < 0.001$., "→ " shows path hypothesis., β: path coefficient.

Table 4. Current paper's used common abbreviations.

Abbreviations	State
Ave	Average Variance Extracted
CSR	Corporate Social Responsibilities
ES	Employees' Satisfaction
fsQCA	fuzzy-set Qualitative Comparative Analysis
GOF	Goodness of Fit
IBM	International-Business-Machines
IT	Information Technology
OC	Organizational Culture
OP	Organizational Performance
PLS	Partial Least Squares
RBV	Resource-Based View
SPSS	Statistical Package Social Sciences
SEM	Structural Equation Modeling

Table 5. The Morgan table.

N	S	N	S	N	S	N	S	N	S
10	10	**100**	80	**280**	162	**800**	260	**2800**	338
15	14	**110**	86	**290**	165	**850**	265	**3000**	341
20	19	**120**	92	**300**	169	**900**	269	**3500**	246
25	24	**130**	97	**320**	175	**950**	274	**4000**	351
30	28	**140**	103	**340**	181	**1000**	278	**4500**	351
35	32	**150**	108	**360**	186	**1100**	285	**5000**	357

40	36	**160**	113	**380**	191	**1200**	291	**6000**	361
45	40	**170**	118	**400**	196	**1300**	297	**7000**	364
50	44	**180**	123	**420**	201	**1400**	302	**8000**	367
55	48	**190**	127	**440**	205	**1500**	306	**9000**	368
60	52	**200**	132	**460**	210	**1600**	310	**10,000**	373
65	56	**210**	136	**480**	214	**1700**	313	**15,000**	375
70	59	**220**	140	**500**	217	**1800**	317	**20,000**	377
75	63	**230**	144	**550**	225	**1900**	320	**30,000**	379
80	66	**240**	148	**600**	234	**2000**	322	**40,000**	380
85	70	**250**	152	**650**	242	**2200**	327	**50,000**	381
90	73	**260**	155	**700**	248	**2400**	331	**75,000**	382
95	76	**270**	159	**750**	256	**2600**	335	**100,000**	384

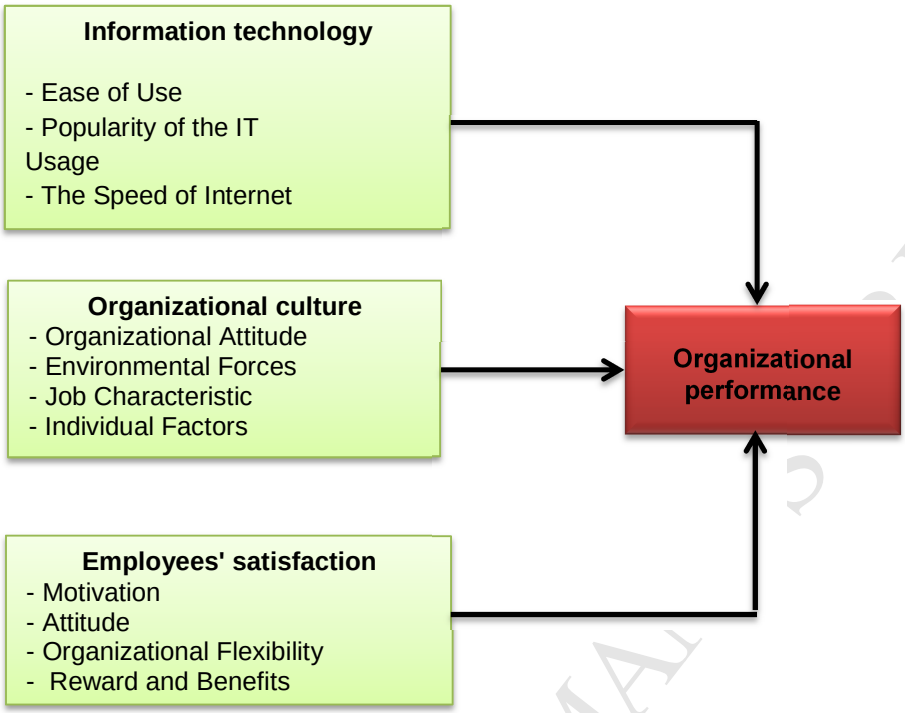

Fig. 1. The proposed conceptual model

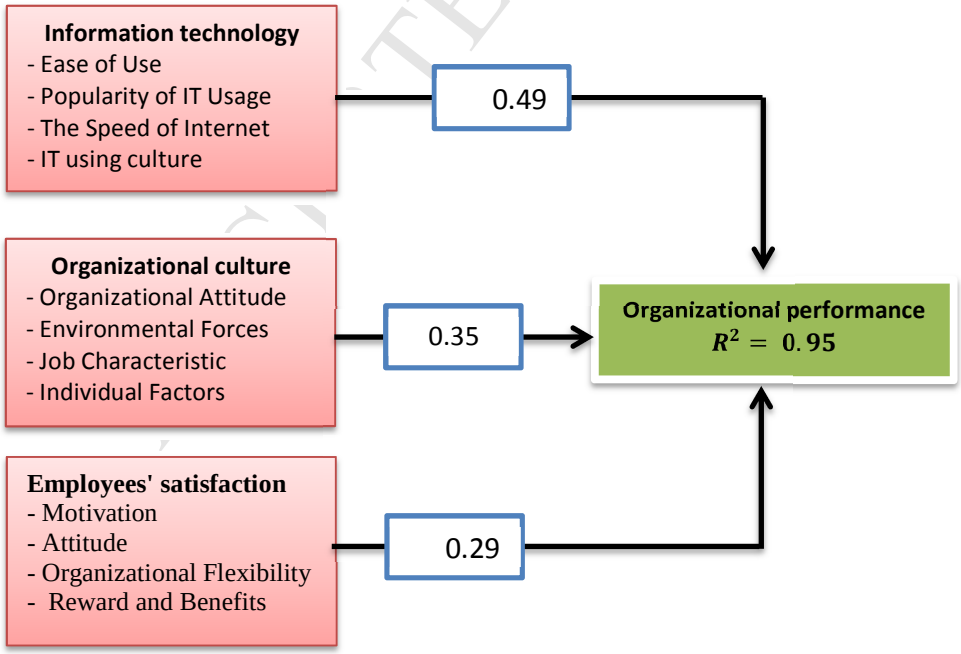

Fig. 2. Organizational performance's structural model.

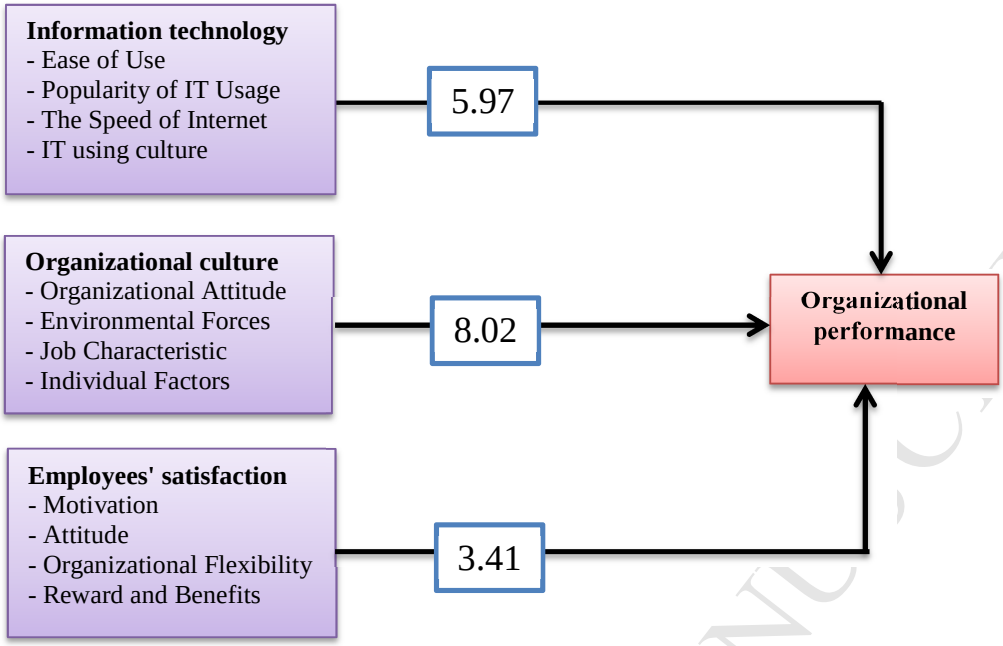

Fig. 3. T-test results.

- Providing a model and framework for determining the effective factors on the organizational performance.
- Evaluation of the impact of IT, organizational culture, and employees' satisfaction on the organizational performance.
- Using Structural Equation Modeling (SEM) to analyze the proposed model.
- Exploring the future challenges about the organizational performance.