Original Article

Assessment of success of financial information system in educational, health, and medical centers affiliated to Isfahan University of Medical Sciences

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Abstract:

BACKGROUND: Financial information system is one of the subsystems in management information system that is very important in health institutions. The use of financial information system creating effective and efficient information flow will greatly assist the management in decision-making, so that it can achieve institutional goals easier. This study is endeavored to assess the success of financial information system in Isfahan University of Medical Sciences.

MATERIALS AND METHODS: This descriptive-correlational study was performed on the research population consisting of financial information system users in educational, health, and medical centers affiliated to Isfahan University of Medical Sciences during 2018 that were studied by the census method ($n = 108$) because of a small number of these users. The data were collected using a questionnaire. The content validity of questionnaire was confirmed by pooling the ideas of five academic members of the health information management and two financial information system users. The reliability of questionnaire was also estimated by Cronbach's alpha. Then, the AMOS software was used to analyze the gathered data.

RESULTS: The result shows that system quality was positively correlated to the use and user satisfaction whereas use and user satisfaction was positively correlated to net benefit ($P < 0.05$). Furthermore, the information quality was positively correlated to the user satisfaction ($P < 0.05$).

CONCLUSIONS: As per the finding of this study, to improve user's intention to use the financial information system and their satisfaction toward the system, managers need to develop useful, easy-to-understand, easy-to-learn, and easy-to-use information systems.

Keywords:

Assessment, Delone and Mclean model, financial information system, information systems

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Introduction

Health institutions have considered various information technologies (ITs) as a possible solution to provide timely and accurate information to accomplish the administrative works and enhancing the operational effectiveness and efficiency within a reasonable budget. There are many IT products developed and implemented in

health center to help physicians, nurses, or managers increase their productivity and automate their daily work tasks.[1-3] Financial information system is one of the subsystems in management information system that is very important in health institutions. The use of financial information system creating effective and efficient information flow will greatly assist management in decision-making, so that it can achieve institutional goals easier.[3-5] The financial

information system is defined as a system that analyzes the financial data and provides the information needed to make the right decision for the organization's managers.[6]

To succeed in the implementation of information system in order to give more significant benefit to the government, an assessment of information system achievement is required.[7]

Several models have been presented in the field of information system success, including Delone and Mclean's model, in which the success of information systems is assessed as a dependent variable. However, some other models have been presented in this area that most of them utilized the Delone and Mclean models as their basis.[7]

Delone and Mclean (1992) information system success model explains that there are six factors that form the basis of the success of information systems, such as system quality, information quality, use, user satisfaction, individual impact, and organizational impact. The following is shown in Figure 1 about the information system success model of Delone and Mclean.[8,9]

Delone and Mclean (2003) updated the Delone and Mclean information system success model based on suggestions from researchers. Renewal of the information system success model of Delone and Mclean includes incorporating service quality variables, changing individual and organizational impact variables into net benefits, and improving and increasing their measurements [Figure 2].[8,9]

- System quality: The desirable characteristics of an information system such as system flexibility, system reliability, and response time[8,9]
- Information quality: The desirable characteristics of system output such as accuracy, completeness, and currency[8,9]
- Service quality: The quality of the support that users receive from the information system organization and IT support personal[8,9]
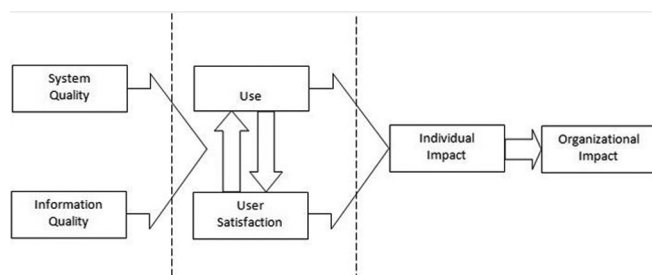- Use: The degree and manner in which users utilize the capabilities of an information system[8,9]

- User satisfaction: User satisfaction is the user's response to the use of information system output[8,9]
- Net benefit: The extent to which information systems are contributing to the success of individuals, group, organizations, industries, and nations. Net benefits are benefits felt by individuals or organizations after implementing information systems. The choice of where impacts should be measured will depend on the system or systems being evaluated and their purposes. Individual impact including effectiveness, efficiency, and performance as net benefits were surveyed in this study.[8,9]

Considering the same model of Delone and Mclean (2003) as the base, due to the comprehensiveness compared to other models, the present study assessed the success of financial information system in educational, health, and medical centers affiliated to Isfahan University of Medical Sciences.

Based on the conceptual framework, the hypotheses proposed in this study were as follows:

- H1: There is a significant positive relationship between the information system quality and higher level of system intention to use by the user
- H2: There is a significant positive relationship between the information quality and higher level of system intention to use by the user
- H3: There is a significant positive relationship between the service quality and higher level of system intention to use by the user
- H4: There is a significant positive relationship between the information system quality and increased user satisfaction with the system
- H5: There is a significant positive relationship between the information quality and increased user satisfaction with the system
- H6: There is a significant positive relationship between the service quality and increased user satisfaction with the system
- H7: There is a significant positive relationship between increased user satisfaction and increased intention to use the information system
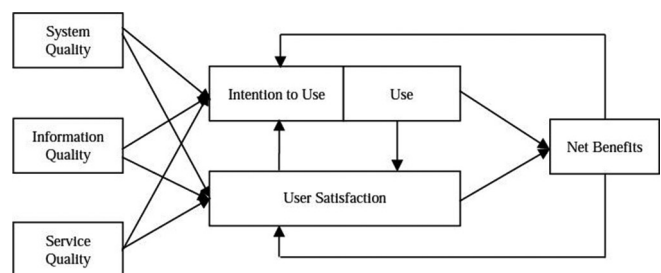

Figure 1: Delone and Mclean information system success model (1992)

Figure 2: Updated Delone and Mclean information system success model(2003)

- H8: There is a significant positive relationship between the user's intention to use and level of net benefit
- H9: There is a significant positive relationship between user satisfaction with the information system and net benefit.

Materials and Methods

The present study is an applied research in terms of the purpose and a descriptive correlational in terms of the method. The research population consisted of users of financial information system in educational, health, and medical centers affiliated to Isfahan University of Medical Sciences (108 persons). The data needed for this study were gathered using a researcher-made questionnaire adapted from the previous research[10-20] related to six criteria of system quality, information quality, service quality, utilization rate, user satisfaction, and net benefits according to Delone and McLean model. The data were gathered through the users of financial information system in educational, health, and medical centers affiliated to Isfahan University of Medical Sciences. The content validity of questionnaire was confirmed by pooling the ideas of five academic members of the health information management and two financial information system users. The reliability of questionnaire was also estimated by Cronbach's alpha, where the results of each of the variables are provided in Table 1.

The AMOS software was used to analyze the data based on descriptive statistics and correlation coefficients between the variables.

Results

The men comprised the majority of the population with 60.2% and the mean age of 39.23 years, with a standard deviation of 7.68, and the most frequency is related to the bachelor's degree.

The results of the calculating correlation coefficient, significance level, and coefficient of determination for each of the research hypotheses are summarized in Table 2.

The results indicate that except H2, H3, and H7, other hypotheses were significantly supported.

Discussion

This study assessed success of the financial information system in educational, health, and medical centers affiliated to Isfahan University of Medical Sciences. According to the results of the present study, there is a significant relationship between the two variables of information system quality and user intention to use the information system. This finding is in line with the results of some previous studies.[11,13] However, this finding is not in line with some other studies.[1,12,14] This implies that for organizations to encourage the continued use of implemented information systems, the system quality, in terms of ease of use, flexibility, and functionality, must be given utmost attention.

Investigating the second hypothesis shows that there is no significant relationship between the two variables of information quality and user intention to use the system. This result is consistent with those of similar studies.[7,14]

Furthermore, by examining the third hypothesis, it has been found that there is no significant relationship between the two variables of service quality and user intention to use the system which some previous studies have reported similar findings[1,14] others have not.[1,12]

By examining the fourth hypothesis, it is found that there is a significant relationship between two variables of

Table 1: Cronbach's alpha of the assessed variables

Variables	Number of questions	Cronbach's alpha coefficients
System quality	18	0.855
Information quality	17	0.905
Service quality	6	0.966
Intention to use	11	0.922
Satisfaction	5	0.957
Net benefit	13	0.895
Total	70	0.97

Table 2: Correlation coefficients, coefficient of determination, and significance level of research hypotheses

Research hypothesis	Significance level*	Correlation coefficient	Coefficient of determination	Remark
H1	0.039	0.376	0.141	Supported
H2	0.151	0.215	0.046	Not supported
H3	0.077	0.148	0.02	Not supported
H4	0.0001	0.646	0.41	supported
H5	0.0001	0.380	0.14	Supported
H6	0.044	0.12	0.014	Supported
H7	0.392	0.114	0.012	Not supported
H8	0.0001	0.334	0.11	Supported
H9	0.0001	0.646	0.41	Supported

*The significance level for accepting the hypothesis <0.05

information system quality and satisfaction. This result is consistent with those of similar studies.[1,11-13]

By examining the fifth hypothesis, it is found that there is a significant relationship between two variables of information quality and user satisfaction with the system. This finding is in line with the finding of previous studies carried out in similar contexts.[1,10-14] This implies that organizations should strive IT division to provide the information system that is capable of providing the output information that is accurate, timely, relevant, complete and easy to use. When users can utilize this information to support the completion of its work, they will be satisfied.

Studying the sixth hypothesis shows that there is a significant relationship between two variables of service quality and user satisfaction. This finding is in line with the findings of previous studies carried out in similar contexts.[10,13,15]

It is found by studying the seventh hypothesis that there is no significant relationship between the two variables of user satisfaction and intention to use the system. While some previous studies have reported similar findings,[7,11] others have not.[1,12,13]

It is found by studying the eight hypotheses that there is a significant relationship between two variables of user intention to use the system and net benefit. This result is consistent with those of similar studies.[1,11-13] Therefore, it follows that a financial information system to attain success, as perceived via net benefits, the system must be in continued use.

It is found by investigating the ninth hypothesis that there is a significant relationship between the two variables of user satisfaction with the system and net benefit. This result is consistent with those of similar studies.[1,11-14] Therefore, user satisfaction has found to have a positive impact on a user's job to improve performance and to increase productivity and effectiveness.

Conclusions

This study investigates the assessment of success of financial information system in educational, health, and medical centers affiliated to Isfahan University of Medical Sciences. This result shows that the information quality becomes the factor that most influence user satisfaction and user intention to use. Satisfaction with the system and intent to use affects the net benefits. To improve user's intention to use the financial information system and their satisfaction toward the system, managers need to develop useful, easy-to-understand, easy-to-learn, and easy-to-use information systems. In addition, the manager must also provide systems that have good information quality such as accuracy, easy to understand, complete, reliable, and up to date. The support of the service providers is also crucial for the success of the system.

Conflicts of interest
There are no conflicts of interest.

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