Evaluating the Efficiency of Nemad System from the Point of View of Users of Technical and Vocational Colleges of Isfahan in 2014

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Abstract- Introduction: The aim of Nemad system is using computers and communicational equipment to collect, save, process, extract and correlate information of students and management information. Organizations are looking to increase efficiency and effectiveness in a dynamic and competitive environment. To achieve this goal, management information systems attracted attentions significantly and organizations undertook many investments to create and develop these systems. Therefore, understanding the value and performance of management information systems and justifying the investment made in creating and developing these systems is essential. The purpose of this study was to investigate the comment of users on the Nemad system in Technical and vocational Colleges in Isfahan.

Research method: is descriptive-survey and study population includes all users (managers, assistants, experts) of Nemad system in technical and vocational colleges in Isfahan who were 35 people and 32 were selected as our sample according to the table of Krejcie and Morgan. Interview and a researcher-made questionnaire in the form of 5-option liker scale were used for data collection. Face and content validity of the questionnaire were confirmed based on the principles and research background and ideas of system designers and users of Nemad system in technical and vocational colleges. Reliability was calculated using Cronbach's alpha that was 0/84. Data obtained using descriptive and inferential statistics were analyzed with thespss software.

Findings: showed that reduction in resources and costs waste, speed of doing daily activities and reducing and saving human forces are the most important factors in using Nemad system. Effect on the speed of doing services, covering daily activities, flexibility and improvement of system, easy of using system were proper criteria for selecting system and it was investigated from the view point of people under study. The needs of organizations to Nemad system, tendency and willing to use system were requirements of Nemad system deployment. Effective of maintenance services and ease of working with Nemad software were the most important factors in satisfaction with Nemad system. Also improving the quality of services to students, the better use of time and increase in the volume and the number of daily activities were the main indicators of change after using Nemad system from the users' perspective.

Conclusion: after investigating and analyzing data obtained from the point of view of the users (managers, assistants, experts and technicians)of technical and vocational colleges of Isfahan, the importance of using system, different criteria for system selection, requirements for system deployment, satisfaction with system, forecasting the changeability of system status and efficiency of Nemad system were all in a proper status from the view point of the users of technical and vocational colleges of Isfahan. Managers should have a plan and pay attention to develop and equip and promote knowledge and skills of users of Nemad system.

Keywords- *management information systems, mechanization software of higher education institutions and universities (Nemad 1), users' satisfaction, system efficiency*

I. INTRODUCTION

Managers are faced with mane challenges for decision-making in today's organizations. If we accept Herbert Simon's perspective on synonymy of "management" and "decision-making", according to some experts who believe that making good decisions is a decision that is 80 to 90 percent based on information (Movahedi and Asebi, 1998), by clarification of the importance of information, the important role of information systems in organizations are clearly apparent. In this study we sought to investigate and respond to the question that whether Nemad system is able to respond and satisfying users in technical and vocational colleges in Isfahan city? No research has been conducted on the importance of the role of users in the success of Nemad system, but we can say that the human factor, either individually or collectively, playa a decisive role in the success or failure of the system. Therefore, such a study is of particular importance and the purpose of this study was to evaluate the efficiency of Nemad system from the viewpoint of users of technical and vocational colleges in Isfahan city in 2014. The theoretical foundations for evaluating information systems and background studies, research methods and findings and recommendations will be presented in this paper.

II. LITERATURE REVIEW

In today's competitive world, information a par with human resources and capital are considered among the productive factors and as the best relative advantage of business firms. Accordingly, management information systems have been of particular interest to managers for years in industrialized countries and in recent years in our country. Management information systems, not only by eliminating repetitive operations in different units facilitate and ensure correctness of operations, but also support senior managers in planning and making appropriate decisions by the provision of classified and analytical information (Zaheri, 1996).The important application of management information system is to assist managers in solving problems and making appropriate decisions. Since a correct decision includes 85 percent proper and timely information and 5 percent discretion, the importance of the role of management information system in the governance of the organization becomes clear (Erfani, 1997).The researchers wanted to test the validity of their theories on information systems. Since achieving a certain measure of success of a system is usually difficult, many researchers of information system have used the evaluation of users from system as an interface indicator for the success of a management information system. Currently, the predominant criterion used to evaluate information systems id the user satisfaction of information that is related to Bailay and Pearson. This criterion was proposed before 1977, which includes a list of 39 questions with seven certain adjectives like good- bad, high, low, agree- disagree. After presenting this criterion, concerns have been proposed on the theoretical foundations of such a measure in particular and evaluation of its users in general (Mellone, 1990) (Goodhue, 1998) and poor reliability of such measurement tool. However, strict criteria, except one item, have not been designed and presented by Doll and Torkzadeh (Doll and Torkzadeh, 1990).Recently, another view called the appropriateness of the technology with functions has been proposed by Goodhue (1998,1995) and Goodhue and Thompson (1995), which is a conceptual foundation for evaluating user with the aim of measuring information systems in the field of the use of managers from the registered data of the organization for decision-making (Goodhue, 1998). Features such as accuracy, timeliness, usefulness and ease of use of the system are determined by attitude measurement (Bailay and Pearson, 1983).In any case, what can be understood from the research background is that the model of user evaluation criteria for the appropriateness of technology with functions is that information systems are a type of work or task, or set of works or tasks are a tool for measuring appropriateness of value and users reflect their self-evaluation of the information system. Therefore the strong relationship between information systems and functional effects is in terms of communication and correspondence between business needs and system performance (appropriateness of technology with functions).Considering that the aim of Goodhue was measuring users' ideas and comments about the extent to which the information systems meet the business needs of users, an applied model for using information in managers' decision-making can be created and accordingly a questionnaire can be designed. To do this, the three stages, which support information systems and include the identification, acquisition and interpretation, must be distinguished. In the identification stage the dimensions of clutter files, the appropriate level of detail, the location determination and meaning of data elements and in the acquisition stage the dimensions of data access, ease of use of hardware and software, system reliability, and staffs' help and finally in the interpretation stage the accuracy, consistency, presentation, and data being up to date are asked from users. Users were afraid of being unemployed due to machines, which was virtually the same in some cases. Even in some cases the managers do not want to reduce the volume of their manpower due to computerization, because they are afraid of being controlled secretly by management information system and also enter their privacy. A plan should be developed to reduce or eliminate the fear of the managers. Management can reduce the fear of users using the following strategies:

1. Using computers as a means of job promotion

2. Using formal communication to maintain awareness of users

3. Building a trust relationship between users, information professionals and management

4. Determining goals in line with the needs of the users.

The results indicate that 70% of information systems' users believe that investments in these systems do not have return and only 30% of educational institutions have reported their investment in information systems as successful (Romtech, 1989). This has been confirmed in other studies that a high percentage of information systems' projects have little return to gain (Willcocks, 1991). In addition, in many cases the costs spent on this relationship were higher than anticipated (Kearney, 1987).However, in assessing information systems, other models have also been proposed and the basis for the most of these models is the model of DeLone and MacLean that will be discussed in the following. DeLone and MacLean model aims to integrate the researches related to information systems assessment and by reviewing previous researches; they proposed a comprehensive model by combining and organizing the previous researches. The researchers studied 180 previous researches on the success of information systems and finally expressed criteria of different studies in six dimensions including information quality, system quality, system use, user satisfaction, individual impact and organizational impact and, accordingly, in 1992, presented their model. They introduced the success of information systems as the dependent variable and proposed their model for measuring the dependent variable. The relationship between these six dimensions of the model is so that system quality and information quality, either alone or jointly affect the user satisfaction and system use. System use and user satisfaction, directly affect individual impact and finally, these individual impacts have organizational impacts. However, the researchers did not provide a clear relationship between information quality and system quality (DeLone and MacLean, 1992).

A. System quality

In fact, system quality evaluates the information processing system itself (DeLone and MacLean, 1992). In order to assess system quality, researchers proposed criteria such as data

accuracy, response time, reliability of the system, completeness, system flexibility, ease of use (Hamilton and Chervany, 1981)

B. Information quality

Researchers prefer to emphasize information system's output quality, for example, the quality of information that the system produces - and the first kind of it is report –in order to assess the quality of system performance. Criteria such as competence, the ability to understand, avoiding bias, reliability, relevance to decision, measurability and quantity were proposed by the researchers to assess the quality of the information (King and Epstein, 1983).

C. System use

Information systems in use and exploitation can contribute to improving the quality and productivity of individuals, groups, and organizations. Researchers have evaluated system use as compared to the target for which the system is designed (Debrabander and Thiers, 1984).

D. User satisfaction

User satisfaction refers to the reaction of the person using the outcome of the information system (DeLone and MacLean, 1992). For example, Bailey and Pearson have proposed a tool that includes 39 criteria to measure user satisfaction and this tool has been widely accepted by researchers.

E. Personal impacts

Personal impacts are related to the effects resulting from the use of information on the behavior of the person receiving the information (DeLone and MacLean, 1992).Among all success criteria, defining the criteria of "impact" is the most difficult. This criterion is linked to performance and thus performance improvement is due to the positive effect of the information system on people.

F. Organizational impacts

Organizational impacts are related to the impact of information on organizational performance. To assess the effect of information systems on the performance of the entire organization, researchers have considered various approaches. In some studies, the quantitative financial measures and in some other studies qualitative measures have been used (DeLone and MacLean, 1992). In this regard, several researchers have investigated information systems using the criterion of cost / benefit analysis.

III. SOFTWARE SYSTEM FOR UNIVERSITIES' AND HIGHER EDUCATIONAL CENTERS' MECHANIZATION (NEMAD)

This system was designed and imparted in 2005 by senior experts on general department of high schools (technical and vocational) of Ministry of Education in order to improve activities and to update the information and data using specialists, which is now used in more than 200 schools and technical and vocational schools in the areas of education, student affairs, financial affairs, administrative, executive and etc. Features of this system are that it is affordable, ease of support and maintenance, continuous upgrade and update,

meeting the needs of users, realism in the development, meeting the needs of organization and etc. (Molaei, 2014). In this paper, it is tried to analyze and design and implement and develop system with a proper understanding of needs, equipment, resources, human force, costs and IT processes. Software features are such that the manager can set the related tables and plan educational regulations consistent with recent changes (Molaei, 2014). Using conventional technologies such as IVR, WEB, and Short Messaging System (SMS) with the software have made the system fully functional. In all stages of analysis, design, implementation and development, the real and logical applications of system and users (administrators, assistants, specialists and technicians) have been considered.

The main purpose of using this system is making various activities including (training, student, financial, administrative) seamless in all schools and technical and vocational schools around the country. In recent years, with the elimination of deficiencies and bottlenecks of the system and updating, ideal conditions to meet the needs of these centers can be seen.

Nemad Web has a special place in technical and vocational universities and schools because of the sensitivity of the role and tasks that are assigned to them. The use of this system can cause a great development in the financial, administrative, staffing and organizational areas. Thus, the Imen Afzar Company designed Nemad web and put at the disposal of technical and vocational higher education institutions that were users of local NEmad software. Because the utilization of traditional and handheld methods and previous applications did not meet their various needs and due to the increase of students and complexity of the tasks and activities, use of a comprehensive software was one of the requirements of management in these centers and universities (Molaei, 2014). This system has several key sectors that include:

A. The main site

Is in fact the page that provides the general and public information of the university and the university can either use the suggested design of the company or design an independent system. The default main site includes various sections such as: Members log in, circulars, educational rules, contacts, photo gallery, news, announcements and more.

B. Student section

In this section, each student can log in to the system with a unique username and password and can see his information. System administrator can put announcements and news at students' disposal based on their major, grade and level. This system provides a variety of features for students; perhaps the most important ones are course selection, add and drop, online payment of fees, and seeing detail records of grades.

C. Professors' section

Professors can also use different features of the website including: seeing weekly schedule, class list, signing the interim grades, educational calendar, and etc.

D. Management section

According to university policies administrator can specify major and significant settings such as the time of course

selection, stopping course selection, add and drop scheduling, student debt payment, issuance of certificates, news and announcement and reviewing various reports of the site.

IV. ADVANTAGES OF NEMAD WEB

No need for students to be present in the university at the time of course selection and add and drop, saving time and costs of students, such as recording pay-slip, savings in the number of staffs related to students and better use of the staffs, reducing overall costs of students and university due to the use of these facilities, increased speed and accuracy of the university and many other advantages of this system.

V. CONCEPTUAL MODEL OF THE RESEARCH

in this study, five dimensions including: the importance of the need to use the system, different criteria for system selection, deployment requirements, system satisfaction and changes in Nemad system status after the application has been examined.

VI. RESEARCH QUESTION

How much is the efficiency of Nemad system from the perspective of the users of technical and vocational schools in Isfahan city?

The answer to this question requires answering the following sub-questions:

1. What is the level of importance of the Nemad system from the perspective of the users of technical and vocational schools in Isfahan city?

2. How is the quantity and quality of Nemad system from the perspective of the users of technical and vocational schools in Isfahan city?

3. Does the Nemad system deploy the users' requirements from the perspective of technical and vocational schools in Isfahan city?

4. How much is the level of satisfaction of Nemad system from the perspective of the users of technical and vocational schools in Isfahan city?

5. How much is the level of forecasts for changes in Nemad system status from the perspective of the users of technical and vocational schools in Isfahan city?

VII. RESEARCH METHOD

The present study id an applied research in terms of its goal and it is considered as a descriptive survey research in terms of its research method. The population of this research is composed of users who are concerned with Nemad system to perform their job duties. This information system is used in technical and vocational schools. In other words, the population of the study is Nemad system users including users, managers, assistants, specialists and technicians of colleges who use the information contained in this system to perform their duties. The study population included 35 people of which 32 were selected as our sample according to the table of Krejcie and Morgan (1970).

Due to the nature of the research, interview and a researcher-made questionnaire taken from studies conducted were used to collect data. The questionnaire consisted of two parts: The first part contains general information about the users of Nemad information systems and the second part contains the questions of the dimensions under investigation in this study, namely: the importance of the need to use the system, different criteria for system selection, requirements of system development, system satisfaction and changes in Nemad system status. The designed questionnaire is in a five-option Likert scale and has been completed by visiting the respondents. To measure the face validity, the questionnaire was given to a number of experts and their opinions were considered in the final version. To assess reliability, Cronbach's alpha coefficient was used and it was 0.84, which indicates a relatively high reliability.

TABLE I. CRONBACH'S ALPHA COEFFICIENTS FOR DIFFERENT CATEGORIES

Categories	Number of questions	Cronbach's alpha coefficient
The importance of using Nemad system	6	0.78
Selection qualitative and quantitative criteria of Nemad system	10	0.79
(Cultural, educational, technical and personal) requirements of Nemad system deployment	7	0.80
Satisfaction with Nemad system	6	0.79
Forecasting the possibility of changing Nemad system status	5	0.85
The whole questionnaire	34	0.84

In this study, interview and questionnaire were used to collect data and descriptive and inferential statistics, Excel software and SPSS were used for data analysis.

The data obtained for each component was compared with conceptual mean (average) using one-sample t-test. The conceptual mean was obtained multiplying the number of questions of each variable by number 3. Number 3 is the probable median of each item or in other words, it is the median of that item.

In order to generalize the results of the sample to the population, t-tests compared with a fixed number (one-sample t-test) with the help of spss16 software was used. In this test, test value number was considered as the number of items of each component * 3. To evaluate the obtained results, the following criterion has been used (Salimi, 2014).

TABLE II.   THE NORM OF MEAN COMPARISON

The (standard) mean	1 to 2.70	2.71 to 3.3	3.4 to 5
	Improper	Improper	Perfect

VIII.   RESEARCH FINDINGS

The results of descriptive statistics showed that more than 90.6 percent of users, experts, managers and assistants of colleges were men and 9.4 percent were women. From among the users, experts, managers and assistants of colleges, 3.1% had a diploma degree, 12.5% had an associate degree, 65.6% had BA degree, and 18.8% had MA or higher degrees. The highest year of service was 32 years and the lowest was 4 years and the mean of years of service was 22 years. The highest level of age was 32 and the lowest was 22 and the mean was 43 years.

TABLE III.   THE IMPORTANCE OF THE USE OF NEMAD SYSTEM

	The importance of using Nemad system	Very high	High	Average	Low	Very low	The total percentage	Mean
4	Helping management to control and monitor staffs	602	40.6	47	6.2		100	3.47
2	The relationship between different sectors and sections together	15.6	46.9	18.8	15.6	3.1	100	3.56
1	The speed of extracting statistics and reports	9.4	59.3	18.8	9.4	3.1	100	3.63
	Total	15.65	51.52	25.57	9.35	3.10	100	3.75
6	Reduction and saving of human resources	18.9	46.7	28.8	6.2		100	3.78
3	The speed of doing daily activities	21.9	56.2	21.9			100	4
5	Reduction in energy and cost waste	21.9	59.4	18.7			100	4.03

According to the above table, from among the 6 indices that measure the degree of importance of using Nemad system from the perspective of the users of technical and vocational colleges in Isfahan city, the highest percentage of response (51.52) was high and the lowest percentage of response (3.10) was very low. Respondents also evaluated the efficiency of Nemad system with an average of (3.75). From among the question, the questions of reduction in resources and costs waste, the speed of doing daily activities and the level of reduction and saving in human resources were above the total average (3.75) and the questions of the speed of extracting statistics and reports, the relationship between different sectors and sections together and helping management to control and monitor staffs were lower than the total average. From the above data it can be concluded that "the importance of using the Nemad system", according to the table of norm of mean comparison is (3.75) and in the perfect level.

	Selecting qualitative and quantitative criteria of Nemad system	Very high	High	Average	Low	Very low	Total percentage	Mean
15	Stylishness of reports	9.5	50	28.1	6.2	6.2	100	3.5
13	Meeting the expectations of users	9.4	46.9	31.2	12.5		100	3.53
14	Use of new technologies	12.5	59.4	9.4	15.6	3.1	100	3.63
9	Degree of applying specific knowledge	6.2	65.6	18.8	9.4		100	3.69
11	Observing qualitative standards (speed, accuracy, attractiveness, quality)	18.8	50	12.5	18.7		100	3.69
16	The interaction between experts and system	9.4	56.3	28.1	6.2		100	3.69
	Total	14.08	54.37	21.59	8.41	3.88	100.00	3.71
7	Ease of system application	15.6	56.2	18.9	6.2	3.1	100	3.75
8	System's capability for promotion and flexibility	15.6	56.2	22	3.1		100	3.78
10	The degree of coverage of daily activities	21.9	50	25	3.1		100	3.91
12	Effect on the speed of doing services	21.9	53.1	21.9	3.1		100	3.94

According to the above table, from among the 10 indices that measure the importance of different criteria for selecting Nemad system from the perspective of the users of technical and vocational colleges in Isfahan city, the highest percentage of response (54.37) was high and the lowest percentage of response (3.88) was very low. Respondents also evaluated the importance of different criteria for selecting Nemad system with an average of (3.71). From among the question, the questions of the effect of speed on doing services, the coverage of daily activities, System's capability for promotion and flexibility, ease of using system were above the total average (3.71) and the questions of the interaction between experts and system, observing qualitative standards (speed, accuracy, attractiveness, quality), the degree of applying specific knowledge, using new technologies, meeting users' expectations and stylishness of reports were lower than the total average. From the above data it can be concluded that "the importance of different criteria for selecting Nemad system", according to the table of norm of mean comparison is (3.71) and in the perfect level.

	(Cultural, educational, technical and personal) requirements of Nemad system deployment	Very high	High	Average	Low	Very low	Total percentage	Mean
23	Age of users	3.1	56.2	21.9	18.8		100	3.44
20	Having technical experts	12.6	50	31.2	3.1	3.1	100	3.66
19	Culture building user level	15.6	43.8	37.5	3.1		100	3.72
	Total	18.31	52.23	25	7.03	3.10	100.00	3.84
21	The effect of users' education level	15.7	53.1	31.2			100	3.84
22	Applied skills of users	18.8	53.1	25	3.1		100	3.88
18	Tendency and willing to use Nemad system	31.2	50	18.8			100	4.13
17	Organization's needs of Nemad system	31.2	59.4	9.4			100	4.22

According to the above table, from among the 7 indices that measure the importance of requirements of Nemad system deployment from the perspective of the users of technical and vocational colleges in Isfahan city, the highest percentage of response (52.23) was high and the lowest percentage of response (3.10) was very low. Respondents also evaluated the importance of requirements for Nemad system deployment with an average of (3.84). From among the question, the questions of organization's needs for Nemad system, tendency and willing to use Nemad system were above the total average (3.84) and the questions of age of the users, having technical experts, culture making at users level, the effect of users' education level and applied skills of users were lower than the total average. From the above data it can be concluded that "the importance of requirements for Nemad system deployment", according to the table of norm of mean comparison is (3.84) and in the perfect level.

TABLE VI.   SATISFACTION WITH NEMAD SYSTEM

	Satisfaction with Nemad system	Very high	High	Average	Low	Very low	Total percentage	Mean
27	The degree of applying changes in the system's program	3.1	34.4	43.8	6.2	12.5	100	3.09
28	Having instructions for working with system	6.2	31.2	43.8	12.6	6.2	100	3.19
29	The degree of satisfaction with Nemad system	3.1	40.6	34.4	18.8	3.1	100	3.22
26	The quality of output reports of the system	6.2	50	25	6.2	12.6	100	3.31
	Total	6.75	45.30	31.28	8.85	7.82	100.00	3.34
25	Ease of work with Nemad software	12.5	56.2	18.8	3.1	9.4	100	3.59
24	Effectiveness of maintenance services	9.4	59.4	21.9	6.2	3.1	100	3.66

According to the above table, from among the 6 indices that measure the satisfaction with Nemad system from the perspective of the users of technical and vocational colleges in Isfahan city, the highest percentage of response (45.30) was high and the lowest percentage of response (7.82) was very high. Respondents also evaluated the satisfaction with Nemad system with an average of (3.34). From among the question, the questions of effectiveness of maintenance services and the ease of working with Nemad system were above the total average (3.34) and the questions of the degree of applying changes in the system's program, having instructions for working with system, satisfaction with Nemad system and the quality of system's output reports were lower than the total average. From the above data it can be concluded that "satisfaction with Nemad system", according to the table of norm of mean comparison is (3.34) and is in the proper level.

TABLE VII.   FORECASTING THE POSSIBILITY OF CHANGING NEMAD SYSTEM STATUS

	Forecasting the possibility of changing Nemad system status	Very high	High	Average	Low	Very low	Total percentage	Mean
32	The effect of system's outputs on management performance	12.5	53.2	25	6.2	3.1	100	3.66
30	The degree of increase in doing affairs	18.8	56.2	21.9	3.1		100	3.91
	Total	17.54	60.60	18.76	4.13	3.10	100.00	3.92
33	The degree of increase in the volume and number of daily activities	18.8	59.3	21.9			100	3.97
31	The degrees of better use of time	18.8	65.6	12.5	3.1		100	4
34	Improving the quality of services for students	18.8	68.7	12.5			100	4.06

According to the above table, from among the 5 indices that measure the changes in indices after using Nemad system from the perspective of the users of technical and vocational colleges in Isfahan city, the highest percentage of response (60.60) was high and the lowest percentage of response (3.10) was very low. Respondents also evaluated the changes in indices after using Nemad system with an average of (3.92). From among the question, the questions of improving the quality of services for students, the degrees of better use of time and the degree of increase in volume and number of daily activities were above the total average (3.92) and the questions of the degree of increase in the speed of doing affairs and the degree of effect of system's outputs on management performance were lower than the total average. From the above data it can be concluded that "the changes in indices after using Nemad system ", according to the table of norm of mean comparison is (3.92) and is in the perfect level.

TABLE VIII.   EFFICIENCY OF NEMAD SYSTEM

Nemad system efficiency	Very high	High	Average	Low	Very low	Total percentage	Mean
Total	14.44	52.74	24.29	7.97	5.34	100.00	3.71

According to the above table shows the results of the 34 indices that measure the efficiency of Nemad system from the perspective of the users of technical and vocational colleges in Isfahan city, the highest percentage of response (52.74) was high and the lowest percentage of response (5.34) was very low. Respondents also evaluated the efficiency of Nemad system with an average of (3.71).

TABLE IX.   THE SUMMARY OF THE RESULTS OF RESEARCH QUESTIONS

Research question	Mean of respondents' scores	Standard mean	T-statistic value	Degrees of freedom	p-value	Upper limit	Lower limit	result
1. How much is the level of importance of the Nemad system from the perspective of the users of technical and vocational schools in Isfahan city?	22.28	18	7.286	31	0.000	5.47	3.08	Rejection of the null hypothesis
2. How much is the level of selection of quantitative and qualitative criteria of Nemad system from the perspective of the users of technical and vocational schools in Isfahan city?	37.09	30	6.83	31	0.000	6.21	4.97	Rejection of the null hypothesis
3. How much is the level of requirements of Nemad system deployment from the perspective of the users of technical and vocational schools in Isfahan city?	36.87	21	11.57	31	0.000	6.91	4.83	Rejection of the null hypothesis
4. How much is the level of satisfaction of Nemad system from the perspective of the users of technical and vocational schools in Isfahan city?	20.06	18	2.74	31	0.010	3.59	0.52	Rejection of the null hypothesis
5. How much is the level of forecasts for changes in Nemad system status from the perspective of the users of technical and vocational schools in Isfahan city?	19.59	15	9.46	31	0.000	5.58	3.60	Rejection of the null hypothesis
How much is the efficiency of Nemad system from the perspective of the users of technical and vocational schools in Isfahan city?	125.90	104	7.93	31	0.000	27.53	16.27	Rejection of the null hypothesis

In the above table, the significant number of test in all of the questions is 0.05 less than the considered significance level and the null hypothesis is not confirmed in all questions. For deciding about whether it is larger or smaller than the mean value criterion, the sign of the lower and upper limit should be considered. If both limits are negative, the average value is smaller than the criterion and variable is inappropriate. If both limits are positive, the average value is greater than the criterion and the variable is appropriate.

According to the table, the t-test results show that all aspects of the Nemad system are in an appropriate state in this study. Thus, from the point of view of users of technical and vocational colleges of Isfahan the degree of importance of using this system, different criteria for system selection, requirements for system deployment, forecasting changeability of the system status and efficiency of Nemad system were all in an appropriate status.

Summary of the opinions of the interview with managers and assistants of technical and vocational colleges of Isfahan is as follows:

1. What information do you have about "Nemad system"? Please explain.

"Nemad" is educational management software that was prepared by Imen Afzar Company and covers all educational activities such as course selection, registration, financial affairs and student services and fees and has caused accretion of education operations and standardization of technical and vocational colleges' activities and it was an introduction for automation creation in colleges and it has created easy access to information and better use of the capacity of colleges.

2. What are your usages of this system to achieve your job goals?

This system has a fundamental role in the educational process, including the definition of courses, schedules, course

selection, roll call, exams administration and etc. in colleges during the school. Without using this system, management and decision making are almost impossible (like comparing different classes together, evaluating the performance of teachers and instructors, etc.) and each user's performance is visible and controllable by the system management.

3. What other systems do you utilize in the college?

Jargon system and administrative software (view) is used for administration in connection with Tehran and all colleges in the country (National Automation). Feeding automation (restaurants, etc.), text messaging system, payroll, accounting, property and inventory system and etc. are used.

4. What are the advantages and disadvantages (weaknesses and strengths) of Nemad system?

A) Disadvantages: This system is the competitor of Golestan system, but Golestan's power for covering is more than this; it does not have the capacity to support graduates, i.e. after graduation his case is closed and no after graduation service is provided; It can be run both locally and web-based, but if it is just web-based, it's efficiency and management will increase; preparing statistical and comparative charts is impossible, i.e. it is not online and any change in the system needs to send information and observing it on the internet simultaneously with changes in impossible. It has a difference about 1% in calculations and reports that cannot be passed up.

B) Advantages: users are able to send message to each other; information is integrated and activities are organized in all colleges; it meets most of the automation needs in educational section such that educational regulations can be implemented on it and new organizational changes can be implemented on it quickly.

5. Who uses "Nemad system" software in this center?

Management, student, educational, research, administrative and financial assistants and all organizational categories depending on their needs have access to this software such as security, dormitories, administrative, educational and supportive staffs.

6. What are the requirements that must be seen in this system, during the years you have worked with it?

It does not have alumni affairs, facilitate in reporting and automation; support in the course selection of students is essential when there is a huge flood of visitors to the system; finance and tuition that students deposit is not up to date so that students can select course simultaneously, usually information is sent after 12 a.m.; offering services in printing exam papers and remained traditional procedures such as information archive ant etc.; statistical reports and comparative graphs for better program is necessary and not being online is problematic for the system.

7. What are the reasons for satisfaction and dissatisfaction of users working with this system?

There is enough satisfaction in all the sections such as student affairs; all the users are usually satisfied because they have to work with this system; some changes are applied very late that causes dissatisfaction, any change should be done by the designer in Tehran; this system has not got its main position in colleges due to the instability of senior management of colleges and repeated changes of this system; and for preparing reports you have to go to IT correspondent and this causes congestion in requests.

8. Is it easy or difficult to access and use this system?

Access to this system is usually easy as compared to other systems even if it has limitations too. Since the original designers of the system were from colleges, they have been familiar with all the required processes of the organization and this has made this easy.

9. What are the attractions of Nemad system compared to other systems?

Because the system is native, it has a particular attraction for users; it has not much attraction in terms of the color, effects, narration, poetry, and etc.; it is more advanced and complete than the older systems like Dana, but it has not such superiority over Golestan system.

10. What suggestions or criticisms do you have about the function of this system?

Suggestions: Continuous training of users in person and non-person is essential; the graduates' part should be corrected; easiness and simplification of reporting is required and the success of the system depends on the support of top management of the colleges, which prevents the island growth of the system and enhances system integrity and security of the system not to be compromised.

Interviewers were:

Mohammad Reza Abasian and Mohammad Hosein Salimi, and interviewees were:

1. Dr. Moradi, deputy of Education of Shahid Mohsen Mohajertechnical college of Isfahan

2. Mr. Tahmoreth, It correspondent of ShahidMohajer technical college of Isfahan

3. Mr. Taghdisi, deputy of education of Soroosh technical college of Isfahan

4. Mr. Jamdi, It correspondent of Soroosh technical college of Isfahan

IX.   DISCUSSION AND CONCLUSION

This study has evaluated the efficiency of Nemad system from the point of view of the users of technical and vocational colleges of Isfahan in five areas.

In relation to the importance of using Nemad system, the components of reduction in resource and cost waste, the speed of doing daily works and reducing and saving human force; in relation to the importance of qualitative and quantitative criteria for selection Nemad system, the components of effect on the speed of doing services, covering daily activities, flexibility and enhancing system, and ease of system use; in

relation the importance of requirements for Nemad system deployment the components of organization's need to Nemad system, tendency and willing to use Nemad system; and in relation to the satisfaction with Nemad system the components of effectiveness of maintenance services and ease of working with Nemad system; and in relation to the change in indices after using Nemad system, the components of improving the quality of services for students, degree of better use of time and increase in the volume and number of daily activities were emphasized. This is somehow due to the job fields in the population under study and the main focus of technical and vocational colleges is on information management system and thus, the main advantage of Nemad system is better management of information. A similar research was conducted in a hospital in Isfahan with the criteria used in hospital information management system and the results show that the main advantage of using information system in hospital is the increase in accessibility and relation between different parts of data with data collection. Also, in a research conducted by HeyaviHaghighi et al. (2012), the importance of three areas of different criteria for selection, importance of deployment and importance of using information system from the view point of staffs was much to very much and is consistent with this research. In a research conducted by Marashi et al. (2003), users' perspective about computer system of hospital information with five area of different criteria for selection, importance of deployment and importance of using information system, satisfaction with system and changes in system were much to very much and it is consistent with this study.

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