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Influencing factors on applying of management of information system (MIS) in agricultural organization in Iran

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ABSTRACT

The purpose of this study was to determine effect of factors on applying of management of information system (MIS) in agriculture. The research population consisted of 254 experts in Agricultural organization in Mazandaran Province, Iran. Sample of research were selected using random sampling. The methodological approach of this study was descriptive-correlative. Validity of the instrument was established by a panel of experts consisting of senior faculty members and research committee advisors. Reliability analysis was conducted by using Cronbach alpha formula and result was 0.88. The results showed that 2.1, 20 and 77.9 percent of experts expressed that applying of management of information system were weak, moderate and good respectively. Also the results of the multiple regression analysis (stepwise method) revealed that human factors and organization factors explained a variation of 24.5 percent of applying of management of information system.

Keywords: applying of management of information system, technical, human, management, economical and organization factors

INTRODUCTION

The initial concepts of management of information system (MIS) was to process data from the organization and presents it for the reports at regular intervals. The system was largely capable of handling the data from collection to processing. It was more impersonal, requiring each individual to pick and choose the processed data and use it for his requirements. This concept was further modified when a distinction was made between data and information. The information is a product of an analysis of data. This concept is similar to a raw material and the finished product. What are needed are information and not a mass of data. However, the data can be analyzed in a number of ways, producing different shades and specifications of the information as a product. It was, therefore, demanded that the system concept be an individual- oriented, as each individual may have a different orientation. Towards the information. This concept was further modified, that the system should present information in such a form and format that it creates an impact on its user, provoking a decision or an investigation. It was later realized then even though such an impact was a welcome modification, some sort of selective approach was necessary in the analysis and reporting. Hence, the concept of exception reporting was imbibed in MIS. In fact the term, management of information system (MIS), is used to cover a very broad range of both technical and managerial activities that have an impact on the use of information systems within the organization. Thus, human and political considerations are

also included in this umbrella term. In the context of this study, MIS is defined as the managerial and technical strategies and competencies that significantly improve or add value to the use of information systems within an organization. As such, issues such as senior management commitment [12]; [8]; [3]; [4] and Strategic planning and alignment [5]; [10]; [14]; [15]; [1]; [7]. The reliability of the technology and the systems is the primary objective of information management, although extremely complex systems do not always deliver perfectly [2]; [9].

The management of information system (MIS) function in developing country settings warrants special attention. MIS executives in developing countries could face many issues that are similar to those in developed countries, but they also face certain, distinct, context-specific issues. In developing countries, the government exerts considerable influence over firms and industries, sometimes controlling access to resources and setting costs and prices. Further, the managerial actions are limited by scarcity of technical and management personnel, inadequate physical and information infrastructures, volatile political climate, cultural and social diversities that influence the competitive market dynamics [13].

Järveläinen [7] draws on a framework for business continuity management, and extends it to the context of information systems. The theoretical contribution is to validate the MIS framework statistically. On the practical level, social factors such as committed managers and employees are influential in decreasing negative business impacts. Further research on the embeddings of continuity practices is called for.

Ranganathan and Kannabiran [13] showed in their research seeks to gain an understanding of how Indian organizations are designing their IS functions in order to promote the use of information technology for strategic benefits. It also aims to identify critical parameters that would contribute to effective performance of the IS function in Indian organizations.

Lai [6] indicate that respondents of MIS and non-MIS executives and affiliates of different international involvement levels have different views on the ratings of MIS issues. Our study also confirms that MIS issues can significantly impact the strategic, tactical and operational MIS decisions of affiliates. These findings allow some important implications to be drawn for both practitioners and researchers dealing with MIS issues.

Findings of research of Naranjo-Gil [11] show how the effect of management information system on strategic performance (focused on flexibility) is moderated by top management team diversity.

MATERIALS AND METHODS

In relation to objective, this research is functional, since the results can be employed by programmer and policy makers. In order to reach precise and reliable data we used quantitative method. Because this research simply investigates existed conditions and defines them and there is no possibility to control or manipulate the variables, it is descriptive. Because the gathering of information about the views, beliefs, thoughts and behaviors or group characteristics of a society is statistical and also it is under recognition, so it is measuring. Furthermore, because it investigates and analyzes the relations between independent and dependent variables, it is correctional. Two hundred and fifty four extension experts of Manzadaran Province were selected as the statistical population. Stratified random sampling was used for the purpose of this study. The population includes 16 towns of Manzadaran Province and the cooperating management of extension network of the province. Because, the statistical population was heterogeneous, and their variances were high, so we chosen 145 of 254 peoples. Cochran formula was used for selecting the sample, finally, 145 samples were chosen for data collection. This sample was divided among them according to the magnitude of every class. In order to better understand the procedure for obtaining the appropriate sample. Determine super facial and content validity, several copies of questionnaires were given to some agricultural and management of information specialists in Iran. After receiving, we points necessary modifications, these final modifications and we points were applied and above – mentioned questionnaires prepared to determine the reliability of research tools and to gain variance for sampling , a primary test was carried out . In this test, the above -mentioned questionnaires were given to 30 users who were geographically, economically, culturally and socially similar to the statistical community. After the analysis of this data, coefficient of Cronbach's Alpha was 88 percent for all variables of ranked scales.

The independent variables were: technical, human, management, economical and organization factors. Dependent variable was applying of management of information system. In order to determine the technical factors we measured 5 questions, 8 questions for human factors, 11 for management factors, 4 for economical factors and 8 questions for organization factors (none=0, very low=1, low=2, average=3, high=4, very high=5) . Consequently, the minimal score for technical, human, management, economical and organization factors were zero and the maximal was 25, 30, 55, 20 and 40, respectively.

Table 1: Reliability of research variables

| Variables | Cronbach alpha |
|---|----------------|
| Technical factors | 0.87 |
| Human factors | 0.83 |
| Management factors | 0.88 |
| Economical factors | 0.87 |
| Organization factors | 0.86 |
| Applying of management of information system(MIS) | 0.92 |

RESULTS

Applying of Management of Information System (MIS) in Agricultural organization

The applying of management of information system was measured by 12 questions including: 6 pieces spectrum of likret. Score giving to the mentioned spectrum was as follows: none=0, very low=1, low=2, average=3, high=4, very high=5. Then, the maximum score was 60, and the minimal was zero. Table 2 illustrates the mean (M), standard deviation (SD), coefficient of variance (C.V) and the rank of every applications of management of information system, from the viewpoint of experts. According to the table, Local network for achievement and diffusion of information, Budgeting programs and projects and Planning and control programs and projects are among the most important applications for management of information system.

Table 2: prioritizing the applications of management of information system (n=145)

| applications | M | SD | C.V | Rank |
|--|------|------|-------|------|
| Local network for achievement and diffusion of information | 3.72 | 0.96 | 0.258 | 1 |
| Budgeting programs and projects | 3.79 | 1.04 | 0.274 | 2 |
| Planning and control programs and projects | 3.79 | 1.05 | 0.278 | 3 |
| Communication channels and central processing of information in organization | 3.55 | 1.01 | 0.285 | 4 |
| Establish of administration automation | 3.14 | 0.91 | 0.290 | 5 |
| Recode and classification information | 3.38 | 1.03 | 0.304 | 6 |
| Evaluation of programs and projects | 3.46 | 1.09 | 0.316 | 7 |
| Need assessment | 3.14 | 1.01 | 0.322 | 8 |
| Establish of data bank | 3.26 | 1.15 | 0.352 | 9 |
| Increasing of productivity of staffs | 2.75 | 1.05 | 0.382 | 10 |
| Used of diversity methods for saving information | 3.00 | 1.17 | 0.389 | 11 |
| Used of process of solving problem in organization | 3.23 | 1.26 | 0.391 | 12 |

None=0, very low=1, low=2, average=3, high=4, very high=5

Table 2: situation of applying of management of information system

| Situation | Frequency | % of Frequency | Cumulative % of Frequency |
|------------------|-----------|----------------|---------------------------|
| Very low(0-12) | 0 | 0 | 0 |
| Low(13-24) | 3 | 2.1 | 2.1 |
| Moderate(25-36) | 29 | 20 | 22.1 |
| High(37-48) | 98 | 67.6 | 89.7 |
| Very high(49-60) | 15 | 10.3 | 100 |
| Total | 145 | 100 | - |

M= 40.2

SD=6.5

Table3 shows situation of applying of management of information system in agricultural organization in Iran. According to results, 2.1 percent of participants responded that applying of management of information system was

low, 20 answered that it was moderate and the 77.9 percent answer was appropriate. The mean of applying of management of information system was 40.2 and its standard deviation was 6.5.

Relation of technical, human, management, economical and organization factors with applying of management of information system

Table 3 shows a meaningful level, relation direction and intensity technical, human, management, economical and organization factors with applying of management of information system. There is meaningful and positive relation technical and human with applying of management of information system in 99% level.

Table 3: Determination of relation variables of the research with applying of management of information system

| Variables | Correlation coefficient | significant |
|----------------------|-------------------------|-------------|
| Technical factors | 0.392** | 0.000 |
| Human factors | 0.438** | 0.000 |
| Management factors | 0.067 | 0.425 |
| Economical factors | 0.013 | 0.875 |
| Organization factors | 0.145 | 0.082 |

* $p < 0.05$

** $p < 0.01$

The role of technical, human, management, economical and organization factors on applying of management of information system

In order to predict the role of research variables on applying of management of information system, step – to – step regression was used. Regression analysis provides the Possibility for the researcher to predict the changes of dependent variables through independent variable and to determine the share of each independent variable in the explanation of dependent variable .In the step – to – step method, the strongest variables come into the coefficient equation one by one and it continues as long as error of significant test gets to 5%. According in the table 4, human factors and organization factors enter the equation in steps one and two, respectively. This means that human factors have the highest influence on applying of management of information system. This factor alone explained 19.2 percent of variance in dependent variable. human and organization factors communally explained 24.5 percent of variance in dependent variables, in step two.

Table 4: Regression analysis of applying of management of information system

| steps | R | R square | Adjusted R square | F | Sig |
|-------|-------|----------|-------------------|------|-------|
| 1 | 0.438 | 0.192 | 0.186 | 33.9 | 0.000 |
| 2 | 0.495 | 0.245 | 0.235 | 23.1 | 0.000 |

Table 5: Standardized and non- Standardized coefficients of applying of management of information system

| Variable | B | Beta | t | Sig |
|----------------------|------|------|-----|-------|
| Human factors | 0.62 | 0.48 | 6.5 | 0.000 |
| Organization factors | 0.27 | 0.24 | 3.2 | 0.002 |
| Constant | 20.1 | - | 5.9 | 0.000 |

According to Beta amount in Table 5, regression equation can be written:

$$Y: 0.48x_1 + 0.24x_2$$

X1= Human factors

X2= Organization factors

CONCLUSION

Results from analyzing the Pierson correlation showed that human and technical factors have 99 percent of positive and meaningful relation with applying of management of information system. Results show that the correlation level of so human and technical factors toward applying of management of information system was equal to 0.43 and 0.39, respectively. According to Davis table these correlations were in average level. Furthermore, the results of step- by- step regression illustrated that human and organization factors explained 24.5 percent of variance in dependent variable, through two steps. Results of the researches performed by (Porter & Millar, 1985; McFarlan &

McKenney, 1983; Earl, 1989; Earl, 1993; Heckman, 2003; Moody, 2003; Sabherwal & Yolande, 2001; Venkatraman et al., 1993; Baets, 1996; Järveläinen, 2013; Ranganathan & Kannabiran, 2004).

- For improvement of applying of management of information system we suggest local network for achievement and diffusion of information developed and considering budgeting, planning and control programs and projects.
- For improvement of applying of management of information system we suggest used of specialists in discipline of information technology. Also increasing communication among organization, institute and
- For improvement of applying of management of information system we suggest structure of organizations is improved and to establish institutes of control and evaluation for development information technology.

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