Evaluation of Iran Pistachio Research Institute Informing in Terms of Farmers and Determine Effective Ways of Informing

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Abstract: The subject of this study is to evaluate Research Institute informing from the perspective of farmers Pistachio and determine the effectiveness of the methods notification. Statistical population included all farmers Rafsanjan Pistachio cultivation that refer to Agriculture Organization Pistachio and Pistachio Research Institute in the study period. The number of sample based on the Cochran formula are 187 farmers. The research data collection tool was a questionnaire. To check assumptions, test results show that the correlation between "mobile phone text messages" and "social networking" with input variables are significant and the direct relationship exists between them. But in other cases there is no significant relationship between the variables. Correlation between the "social networking" and "visiting the Research Institute" with performed variable was significant and direct relationship exists between them. But in other cases there is no significant relationship between the variables. Correlation between the "mobile phone SMS", "website Pistachio Research Institute" and "social networking" whit effects and consequences variable were significant and direct relationship exists between them. But in other cases there is no significant relationship between the variables. One-sample t-test results showed that the notification Pistachio Research Institute at the appropriate level.

Key words: Informing, pistachio research institute, the attitude of farmers, the quality of the message, period

INTRODUCTION

Knowledge level and agricultural skills, are important factors in productivity of agricultural production and economic prosperity of the region. Despite years of research in various fields of agricultural research, we continue to see the continuation of traditional farming methods. In an effort to achieve scientific and modern agriculture, appropriate transfer of research or projects findings to executives has an important role. This issue has always been a challenge among research and promotion sectors. In Iran, since 1371 when Agricultural Research, Education and Extension Organization (AREEO) was established at the central headquarters and provincial capitals, the philosophy of the work was to make appropriate organizational functions and interface between research and extension in knowledge system and agricultural information. This means that a group as some researchers, study the methods to promote agriculture levels and ultimately, try to increase agricultural productivity and other group as promoters, identify and apply appropriate approaches to transfer research findings of these studies from the first group to the end users, i.e., farmers. We hoped that the final result of the activities of these two groups also increase productivity and improve the country's agriculture.

With all these measures and with more than a decade of experience, many researchers and experts negatively evaluated the relationship between research and informing in Iran (Zamani, 2000; Mohammadzadeh, 2001). This issue has always been one of the major problems of agricultural knowledge and information system in Iran, which can be seen in the researchers' reports in most developing countries (Arnon, 1989) (Cole and Sisay, 1999). Of agricultural products in the country, it can be referred to pistachio, pistachio is one of the main non-petroleum exports in Iran. This product is of great importance in terms of farming in areas of the country where other agricultural products cannot be developed, creating jobs in light industries and foreign exchange. And it can remain for years in the list of non-petroleum exports. On the other hand, pistachio cultivation is in dry desert areas of the country. In these areas, rainfall is low and on average it is less than 100 mm per year. In these areas, the climate is marginal (very cold winters and very hot and dry summers). High salinity of agricultural water resources and insufficient amount of water in many

regions are considered as including major limitations in producing this product inrecent years (Sedaghat, 2006). In recent years, due to existing limitations, pistachio productivity has decreased and Iran's share of global market declined (Sedaghat, 2002). Due to conditions in most regions where pistachio is produced,economic production ofother products is not possible and pistachio is as the only opportunity for fundraisers. Hence, paying attention to agricultural sector in the country is very important. Therefore, informing the public about farming methods and increasing product quality in the country are among the most important responsibilities of agricultural research institutions. Thus, determining the effectiveness of methods of transferring research findings as a determinant factor in improving the capabilities of farmers to increase pistachiocultivation performance and agricultural productivity is of an absolute necessity andimportance.

The aim of this study is to answer the following question, how effective is the informing by Pistachio Research Institute?

Literature review: In this section, expressions and theoretical framework are defined and described.

The effectiveness of the informing systems: The first view on the effectiveness was simple. Effectiveness was defined as an extent to which an organization achieve its objectives. Of course, there were many ambiguities in the definition that restricted researchers' evaluation and its use by managers, the questions wereto whom the objectives outlined in the definition of effectiveness belong? Does it conclude long-term or short-term goals? (Shabestari, 2012).

Effectiveness means the size and extend of an effect. Effectivenessis the concept of success in achieving the goals orcarried out missions as the quantitative aspect of the case will not be taken into accountas much as the concept of efficiency is focused. When the manager wants to achieve the desired results and the organization's objectives, effectiveness have been fulfilled. Expression and definition of effectiveness is one of the topics that most management theorists have various ideas about it (Naseri, 2004). Available theories and literature in this area suggests that effectiveness is a multi-dimensional phenomenon as Parsons expressed its dimensions as: achieving goals, system maintenance, components integrity and unity, the ability to adapt and creating change which cannot be measured with one or two factors. Achieving high levels of effectiveness is the ultimate goal of any organization. Although researches on

the effectiveness of has been started few decades ago, the empirical researchhas not yet reached a general theory on the effectiveness (Moadab *et al.*, 2010).

Theoretical framework: Increasing gap between education and research sectors with service-producing sectors in the world today (especially in agriculture), requires us to find the ways to fill this gap. The type of problems that the farmers are grappling with, makesserious problems in their survival. Thus, the need to use efficient and effective methods of informing farmers is important.

To study the informing methods in thus paper,informing models which have been conducted in studies and papers have been examined. Doctor "Nab" introduced an informing model by promoting educational classes in 1903. He used presenting farms as a teaching method which can effectively change farming methods. In his view, the observation of the operating units by research centers and agricultural colleges that were establishedby public expenses, cannot create enoughmotivation to undertake new methods and advanced management (promotion management of Agriculture OrganizationMarkazi Province, 2010). In addition Risdon (1994) stated that using the Internet and designing sites can help in the education and knowledge of farmers. Lippert *et al.* (2000) studied the use of the Internet and in classes to educate farmers. Renchie *et al.* (2004) considered training sessions and using slides effective in raising awareness and educating farmers. In addition, Kashem (2010) considered cell phone in the education and knowledge to farmers. Also, Jim Macnamara has designed a model pyramidin 1992-1993. In this model to evaluate the performance of research institutes, factors such as input data to the organization, the output of organization's performance were considered. Evaluation of the results of the organization's performance includesevaluation and assessment of the organization. Assessing the output of organization's performance include program evaluation and processes. Evaluation of input data to the organization is done by comprehensive research.

Research literature: In this section we shall evaluate internal and external researches on informing evaluation, and determine effective ways of informing in agricultural sector. Among which internal researches can be as the following:

The results of studies by James and Jabala (2010) showed that the specialistshave positive attitudes toward the feasibility of the use of communication tools in the provision of electronic services and education in rural
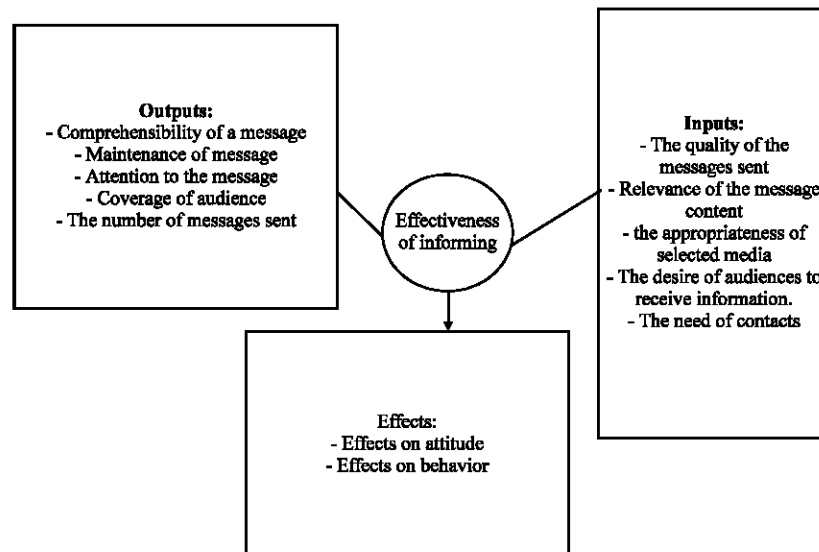
Fig. 1: The conceptual model

areas. Marasi *et al.* (2010) in a research titled"managers' attitudes towards mobile learning in agricultural cooperatives of Zanjan province" concluded that the board members of agricultural cooperatives havepositive and favorableattitude toward the use of mobile learning. In addition, understanding the benefits and limitations of mobile learning, low quality of educational programs and students' interest and motivation toward learning were identified as the most important affectingattitude factors. Forushani *et al.* (2009) in a study in the Khuzestan province, studied Agriculture Organization experts' attitude Organization toward mobile training system. The results showed that experts' attitudes towards mobile learning system is relatively positive and significant relationship exists between attitude towards learning and mobile learning system of farmers with variables of age, work experience, income, educational level, field of study, and ownership ofmobile tool.

Researches has also been done in this regard abroad: using pre-test and post-test, Lippert *et al.* (2000) showedthe impact of applied sciences in agriculture. So that the majority of promoters (55%) believed that education through internetcan be usefulas face to face education in this regard. Determining the effectiveness of educational programs, Renchie *et al.* (2004) found that farmers' skills have significantly increased after completing the program researchers found nosignificant relationship between age, agriculture experience and educational level with goal achievement. The participants thought that the best way of training, were the use of slides, speeches and debate. The findings by Kashem (2010) showed thatthere are a significantrelationship between age, education, annual income, agricultural knowledge, attitude towards the use of mobile phones.

Organizing free phone calls for farmers in regard to questions and answers about agricultural inputs, increasing network towers, building rural information centers to solve practical problems, such as pest and disease diagnosis and control of agricultural products are stated as factors driving the use of mobile phones as a means to inform the farmers.

MATERIALS AND METHODS

The present studyis a descriptive study in terms of data collectionandhypotheses test. In addition, since the results of this study can be applied, this is an applied research in terms of the objectives and nature. In terms of statistics, since sampling and the sample was used to generalize the findings to the community and for inference, this is an analytical study.

In this study, descriptive statistics was used to determine tables, graphs and central indexes to describe the data by using SPSS Software and inferential statistics (Cronbach's alpha test to determine the reliability, K-S test for normality of statistical distributions, Pearson test to determine the relationship between variables) were used. According to carried out studies, the conceptual model is presented below shown in Fig. 1

In addition, according to the conceptual model followinghypotheses are presented:

- The main hypothesis: Informatics provided by pistachio researchinstitute for farmers is effective
The study sub-hypotheses are:

- Informatics provided by pistachio researchinstitute in terms of inputs / messagespreparation is effective

Table 1:	Cronbach's alpha coefficient of research components
Indices	Alpha coefficient
Outcome	0.936
Input	0.929
Implementation	0.891

- Informatics provided by pistachio researchinstitute in terms ofimplementing or informing style is effective
- Informatics provided by pistachio researchinstitute in terms of implications and outcomesis effective

The study population consisted of allpistachio farmers inRafsanjan that visit Pistachio Research Institute of Agricultural Jihad Organization during the period of study. And a sample of 187 people were chosen as samples through Cochran formula, so that the questionnaire was distributed among them.

Data were collected using a questionnaireand demographic variables which was developed by the researcher. In this study, to assess the validity ofquestionnaire, standard questionnaires used in the first attempt and initial questionnaire was developed. The researchers then distributed it among a number of professors and experts and administrators of the studied population. After receiving the feedback, corrective measures had been done in the questionnaire. Also, the reliability (Cronbach's alpha) was obtained from the questionnaire as presented in the Table 1 through SPSS Software:

RESULTS AND DISCUSSION

In this section we test hypotheses by using the comments collected frompistachio farmers of Rafsanjan. 22/46% of respondents were women and 77/54% of them were men. Majority of respondents (33/16%) were between 25 and 35 years old and the lowest (5.35) was over 65 years old. the majority of respondents (35/29%) had Bachelor degree and the lowest degree was (4/28%) associate degree. Work experience of most respondents (32/62%) was between 10 and 20 years and the lowest (6/695was over 40 years. (25/42%) of respondents did not have any contact with research institutes in the country and the lowest (2/14%) knew them for over 20 years. First, sub-hypotheses and then the main hypothesis are explained:

Sub-hypotheses

First hypothesis: Informatics provided by pistachio research institute in terms of inputs/messages preparation is effective: To examine the relationship between informing and inputwith respect to the Kolmogorov-Smirnov test results and data normality, parametric Pearson correlation coefficient was used. The results of this test is presented in the Table 2.

According to the correlation results in Table 2, correlations between the "SMS" and "social networking" with input variables were significant and there was a direct relationship between them. However, in the remaining cases, there are no significant relationship between variables.

Second hypothesis: Informatics provided by pistachio research institute in terms of implementing or informing style is effective.

To examine the relationship between implementation and informing style with respect to the Kolmogorov-Smirnov test results and data normality, parametric Pearson correlation coefficient was used. The results of this test is presented in the table below.

According to the correlation results in Table 3, correlations between the "Visiting the Institute" and "social networking" with implementation variable were significant and there was a direct relationship between them. However, in the remaining cases, there are no significant relationship between variables.

Third hypothesis: Informatics provided by pistachio research institute in terms of implications and outcomes is effective.

To examine the relationship between informing with implications and outcomes with respect to the Kolmogorov-Smirnov test results and data normality, parametric Pearson correlation coefficient was used. The results of this test is presented in the Table 4.

According to the correlation results in Table 5, correlations between the "Visiting the Institute" and SMS" and "social networking" with outcome and implication variables were significant and there was a " direct relationship between them. However, in the remaining cases, there are no significant relationship between variables.

Table 2: Correlation analysis of the effectiveness of informing on input / messages preparation

Index	Number	Correlation	Significance level	Result
SMS via mobile phone	187	0/189	0/009	Direct and significant relationship
The website of pistachio research institute	187	-0/142	052/0	The relationship is not significant
Kttending training courses	187	-0/090	0/219	The relationship is not significant
Social networking	187	0/368	0/001	Direct and significant relationship
Local newspapers	187	0/037	0/618	The relationship is not significant
Rafsanjan radio	187	0/011	0/880	The relationship is not significant
Visiting the institute	187	0/011	0/880	The relationship is not significant

Table 3: Correlation analysis of the effectiveness of informing oninplementation and informing style

Index	Number	Correlation	Significance level	Result
SMS via mobile phone	187	0/129	0/078	The relationship is not significant
The website of pistachio research institute	187	0/102	0/165	The relationship is not significant
attending training courses	187	-0/157	0/032	The relationship is not significant
Social networking	187	-0/333	0/001	Direct and significant relationship
Local newspapers	187	-0/085	0/248	The relationship is not significant
Rafsanjan radio	187	-0/050	0/495	The relationship is not significant
Visiting the institute	187	0/753	0/001	Direct and significant relationship

Table 4: Correlation analysis of the effectiveness of informing onimplications and outcomes

Index	Number	Correlation	Significance level	Result
SMS via mobile phone	187	0/182	0/013	Direct and significant relationship
The website of pistachio research institute	187	-0/158	0/031	Direct and significant relationship
attending training courses	187	0/085	0/246	The relationship is not significant
Social networking	187	0/312	0/001	Direct and significant relationship
Local newspapers	187	-0/023	0/750	The relationship is not significant
Rafsanjan radio	187	-0/025	0/736	The relationship is not significant
Visiting the institute	187	-0/020	0/787	The relationship is not significant

Table 5: Results ofone-sample t test forinforming scoreof pistachio research institute with the value of 3

ÔÇÎÕ	Number	Mean	SD	t-value	DOF	Significance level
Informing scoreof pistachio research institute	174	3.3043	0.95947	4.184	173	0.000

The main hypothesis test: The main hypothesis: Informatics provided by pistachio researchinstitute for farmers is in a desired level.

- The hypothesis H_0: Informatics provided by pistachio researchinstitute for farmers is not in a desired level.
- The hypothesis H_1: Informatics provided by pistachio researchinstitute for farmers is in a desired level.

In this test, due to the significance level which is less than 0/050 shows that informing score of Pistachio Research Institute in the country is desirable.

CONCLUSION

In this study, we investigated the effectiveness of informing in Rafsanjan Pistachio Research Institute. The findings of this study in hypotheses showsthat: to improve the quality of notices and messages it is better to use SMS. And for wider inform, social networks are better tools to be used. The third hypothesis shows that the use of three methods: the website, using social networks and texting can be most effective methods.

In comparing the current results with previous studies on this topic, we can say that: The results of studies conducted by James and Jabala (2010) showed that specialists are in favor of the feasibility of the use of communication tools in the provision of electronic services and rural education. Since the being favorable or unfavorable toward effective technology adoption, this implies a favorable fundamental for the use of electronic information tools to provide services and training to the villagers. The results of this study verifies the results of our study which represents the inclination to use information technology tools.

Marasi *et al.* (2010) in a research titled"managers' attitudes towards mobile learning in agricultural cooperatives of Zanjan province" concluded that the board members of agricultural cooperatives havepositive and favorable attitude toward the use of mobile learning. In addition, understanding the benefits and limitations of mobile learning, low quality of educational programs and students' interest and motivation toward learning were identified as the most important affectingattitude factors. The results of this study can are consistent with the results of our study. In the present study the highest receiving messages were from the informing practices relevant to visiting the Pistachio Research Institute Research Institute (3/02). Participating in training courses and experts' workshops with an average of 2/84 is in second place, visiting the website of Pistachio Research Institute placed at the third ranking with an average of 2.64 and local newspapers with average of 2.44 ranks fourth, Radio Rafsanjan with an average of 2.17 is in the fifth place, SMS with an average of 2.08 and social networks with an average of 1.50 are in the sixth place and the seventh place, respectively. Despite the tendency to use mobile learning technology, reasons such as poor quality of educational programs, the highest messages received were through visiting the institutions.

Risdon (1994) showed that Internet communications services are consideredtools to help promoters in the

dissemination of new technologies. Therefore, to learn how to use most of the services through the setools, one should continually bein touch with a computer consultant. Researches has also been done in this regard abroad: using pre-test and post-test, Lippert *et al.* (2000) showedthe impact of applied sciences in agriculture. So that the majority of promoters (55%) believed that education through internetcan be usefulas face to face education in this regard. The results of this study can are consistent with the results of our study. The results of t test for the score of informing in the studied institute showed a desirable level.

LIMITATION

Like manyfield studies, this paper faced barriers and restrictions as some of these limitations and restrictions are:

- Data collection tool for a questionnaire that has a little ability to predict the behavior of people in real environments
- Another limitation is related to the nature of correlational research. As experts point out, correlation does not prove causality
- Farmers neighborhood to each other at the same time of distributing and collecting the questionnaire and same responses and lack of attention to questions on account of accuracy and accountability
- Being illiterate (a large number of farmers0 and underestimating the issue and the inability to fill out the questionnaire

SUGGESTIONS

Suggestions extracted from the results: Due to the importance of informing the agricultural sector that can waste significant resources orachieve maximum productivity by teaching proper management. Training managers in the relevant institutions are recommended:

After each informing (educational messages)the efficacy of educational information be evaluated by gathering surveys of farmers. And in the event of failure to obtainexpected maximum results, learning be implement by using other tools.

Due to the growth of technology in the IT department and the public use of new communication tools,making films and pamphlets letter, teaching any

subject, be accessible to everyoneat any time. Public use of SMS by farmers, notification by SMS for short warnings be provided according to different seasons for agriculture.

Given the widespread use of social networks and information technology, it is suggested that groups of young farmers be formed social networks faster. Because these groups can inform other farmers through newsobtainedfrom the Pistachio Research Institute. In addition, by providing user-centric website for Pistachio Research Institute informing farmers can be done better.

Suggestions for future research: Given the importance of education, especially in important matters such as agriculture, researchers are suggest to investigate the following issues:

- Identification and prioritizing tools and strategies for improving the quality of education
- Given the fact that farming and gardening are seasonal jobs...

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