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Modeling the Educational Needs of the Rice Cultivating Women in Sari, a township of Mazandaran Province, using Borich's Model

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ABSTRACT: The main objective of this study was to assess the educational and training needs of rice cultivating women, which used a descriptive – inferential approach. The population in this study comprised the rice cultivating women in Sari (N=1677) of whom eventually 240 questionnaires were collected and analyzed (n=240). The face validity of the questionnaire was approved using the comments and corrections given by experts in Agricultural Extension and Education. The reliability of the questionnaire using the Cronbach's Alpha, sequential Theta and combined reliability test was 0/816, 0/803, 0/760, respectively. To assess the educational and training needs of rice cultivating women, Borich's educational and training needs assessment model was used. For this purpose, 38 professional qualifications obtained from research literature review were ranked considering rice cultivating women's weighted mean difference scores (WMDS) among which the factors affecting the spread of diseases in rice, understanding the symptoms of rice, understanding on how to fight diseases ranked first to third in educational and training needs of rice cultivating women in Sari. The results of multiple regression analysis on the effects of independent variables on educational-extension needs of women indicated that 43% of the variance in educational-extension needs of women in Sari is explained by their participation, the number training courses, marital status and the importance of economic factors. The highest effect on the educational and training needs of women in Sari is determined by the participation with the coefficient path of 0/423.
Keywords: educational and training needs, Borich's model, rice cultivating women, Sari

INTRODUCTION

One of the main features of a good socio - economic development program is that the program serves the real needs of the people and their welfare and prosperity. Thus, the agricultural development programs must provide the welfare and prosperity of the farming community. In fact, the agricultural extension and education are one of the main prerequisites for the realization of this goal in the development of agriculture. If the training programs are based on a need assessment and they are implemented and designed based on the precise problem, they can directly or indirectly affect the general welfare of rural households and farmers. Therefore, the educational and training needs assessment is the first step that must be taken in designing the educational and training programs and agricultural extension, and the process has its own principles and specific methods required to achieve it (Ansari, 2006). As a result, considering the subject of the research which focuses on educational and training needs of rice cultivating women in Sari, for the efficacy of training for these individuals, we should be aware of their needs, thereby, increasing their technical knowledge on planting, cultivating and harvesting rice to further develop this product both in terms of quantity and quality.

The concept of needs is one of the broadest and most widely used terms that are common in various fields of education and training and social services. In fact, such a concept is complicated with many different dimensions that we cannot find any unique definition which is widely accepted and its understanding depends on the fact that what branch of science applies it and what we use it for. Various disciplines addressed the need concept with their own approach. For example, the physiologists stressed the physiological aspect, the psychologists emphasized the psychological aspect and sociologists focused on the social needs and economists studied the customers' request (Mokhtari Abkenari, 2003). Need is a deficiency or absence of something in a person which must be approved in order to be completed or reach a better situation (Malek

Mohammadi, (1993). The need covers the gap between what is needed, the current situation, and what should be, the ideal situation.

For this study, the data on the facts such as attitudes, knowledge, people's living conditions, production levels and other physical factors are collected and analyzed. Also, "what it can be" is usually reflected in the results of researches. In many cases, the need envisages an ideal situation which may not be achievable by most people (Ray, 1991). According to what was said, it can be concluded that the concept of the need can be attributed to an attempt to reduce the existing discrepancy between current and desired future conditions (Fahimi, 2004). Due to the fact that education and training remain an important definition of the extension applied by researchers and scholars, it is best to add the education to extension and refer to it as educational extension (Blackburn, 2001).

Educational - extension programs can be successful when the foundations are based on the needs and interests of the audience, otherwise, besides wasting the budget, time and energy of extension employees, the desire, motivation and willingness of farmers to participate in educational - extension activities will decrease (State, 2002).

In fact, educational need is a fact that a person or people for their profit and community are required to learn so that their performance, skills, their limited knowledge or unfavorable attitudes could be modified (Kheiri 2004). Educational need also refers to the needs arising in the cognitive, skills and attitudes areas and are solved through education and training which could be improved through education. Therefore, the extension with the development of education and training programs has a high ability to solve these needs (Chizari et al, 1998).

Rural women, besides the participation in agriculture and rural crafts, dramatically play an important role in rural service sector. In our country, in cases where there are no mechanized procedures, women involved in planting the crops up to %100. And in some parts of the country where there are local markets, marketing and selling of their product is on their shoulder, as well.

The value of women's work in rural areas, not only is not less than that of men’s in the service work, but also in many cases it makes more senses. Even the value of rural women's work in agricultural work is higher than that of men’s in husbandry since men's working on agriculture and livestock is completely dependent on living conditions prepared by rural women. Therefore, the assessment of the education and training needs of rural women is one of the most important issues that must be considered greatly. Planning to meet the education and training needs of rural women is a systematic and organized process. Hence, training needs assessment method should be of sufficient value and validity (Edward & Briers, 1999). Undoubtedly, the most comprehensive model to assess the educational and training needs is Borich's model (Conklin et al, 2003). Borich defined needs training and education as the distance between the objective and function. Borich's model is a self-assessment model to evaluate the ability of the professional judgment of educators relying on both aspects of importance and ability. He also stated that the educational program can take advantage of this model in two ways: what is there? (The current situation), and what should be there? (The ideal situation) and the existing gap (which is considered as the need) can be used as an important index to evaluate the effectiveness of educational and training programs (Borich, 1980). In current models, when respondents are asked to voice their educational and training needs, they may prefer to express their educational and training needs based on the orientation that may lead to reduction in the programs. But in this model, given that the respondents expressed their educational and training needs indirectly; training needs assessment has a higher accuracy due to the fact that the researcher decides on the training needs through mathematical calculations (Borich, 1980). Quoting from Albert, George emphasizes this fact as the Borich's model strength. He also makes certain that in Borich's model, different levels of knowledge, importance and ability are anticipated for each qualification, and with a mathematical analysis of these three factors, more accurate and more appropriate educational and training needs will be estimated (Greeg, 2002).

Accordingly, the aim of this study is to prioritize educational and training needs of rice cultivating women so that the most important ones are covered in the planning of courses.

Pierre-andre et al, (2010) in a study evaluated the educational and training needs of farmers in Cameron. To do this, a questionnaire was distributed among fifty people. Based on the training needs of farmers, the planting materials, harvesting techniques, careful preparation and improved agricultural techniques were accounted. Results showed that there was a significant relationship between age, education, social status, economic status and educational and training needs expressed by farmers.

Adesoji et al (2006) in their study concluded that farmers in such factors of chemical control of pests, proper use of chemicals and plant nutrition mechanism need training and such a need has a negative relationship with years of training and has a significant positive relationship with the family size and diversity of cultivated land.

Salahi Esfahani (2011) in a study entitled as "the application of PRA in determining the educational and training needs of watershed owners in Noshveh, Markazi province” considered an ideal class as the class

which practices the scientific tour and opted to focus on the courses which are held by the Department of Natural Resources and Agriculture and choose villagers to be the teachers and trainers.

Shafie (2011) in his study entitled as the "training needs of rural women in traditional husbandry to produce healthy milk in Bam" showed that there are significant positive relationship between the age, education level and experience in livestock and husbandry with the educational and training needs of females in relation to healthy milk production; and regarding the extension variables, there was a significant positive correlation between class participation and visiting best husbandries and reading the extension publications and journals with educational and training needs of farmers working in dairy husbandries.

Mohammadi et al (2009) in an article titled as "Wheat growers' educational needs to reduce crop losses in five climatic zones of (too cold, hot and dry, cold and temperate, warm and temperate, cold and temperate)" considered the first step to reduce waste and increase the productivity of wheat growers to be determining the farmers' training needs and enhancing their technical knowledge including planting, caring and harvesting.

Ghaedi and Hosseininia (1387) in a study entitled as "farmers' educational and training needs in the farm management and economy" concluded that there was a significant positive relationship between education level and educational and training needs in selling agricultural products. There was also a significant negative relationship between the size of a production unit and the amount of training required in agricultural production and the total amount of education and training, economics and farm management

Khiari (2012) in a study entitled as " studying the olive growers' educational and training needs in Rudbar" came to the conclusion that there was a significant relationship between age, education and training, and community involvement and the olive growers' educational and training needs. There were also significant differences between gender and participation in educational and training programs and the educational and training needs.

Alibaygi and Pouya (2011) in a research conducted on" the need assessment of agricultural graduate student on sustainability using stepwise multiple regression" showed that four features of agriculture students including previous experiences in agriculture, rural commitment to sustainable development, gender and finally interest in teamwork or partnership were statistically significant.

Ango etal (2011) conducted a research on "the educational and training needs assessment and its impact on business performance of agricultural extension agents" stated that there was a significant difference between gender and type of education and the respondents' educational and training needs.

Motamed etal (2011) in a study entitled as " evaluating the tea growers' educational and training needs in Gilan Province" concluded that there existed a negative relationship between tea growers' education level and their social status. There is also a positive relationship between tea growers' dependence on the location and their educational and training needs. Based on Pearson's test, there is a significant relationship between tea growers' educational and training needs and the age, the use of communication channels, applying extension and training classes, dependence on local leaders, the dependence on the maintainer, the use of television and radio and extension journals and magazines. In addition, regarding the Mann-Whitney test, there was a significant difference between the educational needs of the tea growers and their participation in organizations and cooperatives. There was also a significant difference between tea growers' educational needs and participation in extension activities.

Ghimire and Martin (2011) in a study as "the need assessment of the extension agents" using a step by step analysis concluded that there was a meaningful relationship between gender, education and educational needs.

Research objectives

The overall objective of this study is to assess the educational and training needs of rice cultivating women in Sari and the specific objectives of this research are:

reviewing the theoretical foundations on educational and training needs,

Identifying and determining various personal, social, economic, educational and professional characteristics of rice cultivating women in Sari

Ranking the educational and training needs of rice cultivating women using Borich's model, and

Assessing the impact of various factors on the educational and training needs of rice cultivating women in Sari.

MATERIALS AND METHODS

This study is a descriptive survey because it provides a way to describe the variables and, on the other hand, the extent and type of relationship between the variables can be determined. The study population included all rice cultivating women in Sari in the farming year of 2012-2013. A questionnaire was used as the data and information collection tool in this study which is based on the Borich's educational and training needs assessment model. The subjects' level of educational and training needs in the areas of providing seedlings,

planting, harvesting and storage based on the two dimensions of ability and importance was considered and was ranked based on the five-scale Likert format (1 = from very low to very high in range = 5).

For ranking and determining the educational and training needs, the weighted mean difference scores (WMDS) was calculated. To do so, the "difference score" and "difference score weight" were calculated for each step.

In the end, the total difference scores weight divided by the number of individuals, the weighted mean difference scores was calculated and then rated.

In this study, those variables that had WMDS more than 4, were considered as the educational and training needs.

I - C = the difference score

I (I-C) = difference score weight

Weighted mean difference scores $\sum = \frac{I(I-C)}{n}$

It is noteworthy that in the above equations, “I” is the importance level,

“C” is the ability and “n” is the number of rice cultivating women.

Total population of women in Sari was 1677. 240 subjects, using Cochran's test, completed the questionnaires and were studied.

The validity of the questionnaire was approved using the comments and corrections given by experts in Agricultural Extension and Education. To determine the reliability coefficient, 30 questionnaires were given to a group out of our circle of the study (it was distributed among rice cultivating women in Ghaemshahr). After collecting the questionnaires, the reliability coefficients were obtained using Cronbach's alpha test, SPSS14 software, sequential Theta and combined reliability.

The face validity of the questionnaire was improved using the comments and corrections given by agricultural education and extension experts and professors. The reliability of the test using Cronbach's alpha test, sequential Theta and combined reliability were 0/816, 0/803, 0/760, respectively.

To assess the educational and training needs of rice cultivating women in Sari, the Borich's training needs assessment model was used. Therefore, when reviewing the literature, 38 professional qualifications based on the weighted means difference scores (WMDS) were obtained and ranked for the subjects.

RESULTS AND FINDINGS

The results show that 90/4% of women in the study were married and the rest were single.

Studies show that 223 subjects that is 92/9% of those surveyed with the highest frequency have stated that there were no rice production cooperatives for rural women in their region and only17%, that is 1/7 of the subjects have pointed that there were rice production cooperatives for rural women in their region.

Regarding the demand for support facilities (such as loans, agricultural inputs, equipment and facilities, etc.), 178 (74/2%) of the subjects stated that they did not use the support facilities, however, 62 subjects (25/8% of women) expressed that they used support facilities such as loans, agricultural inputs, equipment and facilities, and other facilities.

Studies indicate that about 86/7% of participants have attended 1 to 5 training courses. Moreover, 13/3% of the subjects participated in 6 to 10 educational and training classes and 150 subjects did not attend any training classes or no training classes were held in the area, thus, they did not respond to the questions.

Considering Table 1, it was shown that from the subjects' perspective, providing practical training in the paddies had the first priority with a variation coefficient of 26/54%.

Table 1. Prioritizing the suitability of educational-extension strategies

The suitability of educational-extension strategies and resources to get information	Mean	Standard Deviation	Variation coefficient	Priorities
Providing practical training in the rice paddies	3/73	0/99	26/54	1
Attending training classes	3/60	0/98	27/22	2
Rice cultivating women's meetings with experts and with one another	3/49	0/95	27/22	3
Showing performance comparison in different varieties of rice	3/59	1/04	28/96	4
Extension agents' presence in rice paddies	3/69	1/07	28/99	5
Displaying rice planting methods	3/60	1/08	30	6
Using local trustees' advice	3/53	1/11	31/44	7
Broadcasting the educational programs by the media	3/39	1/08	31/85	8
Applying the school trainings on the field	3/58	1/15	32/12	9
Rice association activity in extension training	3/46	1/12	32/36	10
Face to face talks with extension agents in their workplace	3/93	1/14	33/62	11
Using educational- extension magazines and journals	3/33	1/12	33/63	12
Experimenting rice planting methods	3/56	1/22	34/26	13

Based on Table 2, it was found that from the subjects' perspective, the commitment made by the government in the purchases of rice with a variation coefficient of 22/20% had the first priority.

Table 2. Prioritization based on the economic factors importance

Economic factors importance	mean	standard Deviation	coefficient variation	Priority
Government commitment to buy Rice production	4/40	0/89	20/22	1
The government preparation to provide the inputs required in rice production	4/38	0/92	21	2
Providing the required input	4/29	1	23/31	3
Focusing on financial problems and providing appropriate solutions by government agencies	4/15	1/06	25/54	4
Easy access to paddy land insurance	4/05	1/18	29/13	5
Easy access to credit and facilities	3/92	1/18	30/10	6
Optimal services by paddy lands insurance	3/40	1/31	38/52	7

Considering Table 3, it was determined that from the viewpoint of the subjects, being involved in harvesting rice with variation coefficient of 28/65% had the first priority.

Table 3. Prioritization based on the rice cultivating women's participation

Participation rate	Mean	Standard deviation	Variation coefficient	Priority
Participating in harvesting rice	3/63	1/04	28/56	1
Participation in transplanting the seedlings to the field	3/51	1/17	33/33	2
Rice cultivating women's participation in public welfare affairs	2/92	1/11	38/01	3
Rice cultivating women's involvement in other women's religious services	3/04	1/21	39/80	4
Participation in the preparation of the nursery	3/11	1/25	40/19	5
Participation in marketing and selling of the product	2/35	1/25	53/19	6
Participation in rural cooperatives	2/18	1/29	59/17	7

Based on Table 4, it is observed that the identification of the effective factor on rice diseases spread with the weighted score of 6/36 had the top priority. Understanding the disease symptoms of rice, being aware of how to fight the diseases, being familiar with the common pests of rice in the region, identifying the consistent varieties in the region, being familiar with seedbed soil preparation, understanding the seeds sterilization methods, being familiar with the fighting mechanism with rice pests, being familiar with the strategies to prevent the potential loss of the product were ranked from the second to eighth in their priorities. Other priorities are given in the chart below.

To test the research hypotheses, we have used the Spearman correlation coefficient the results of which are given in Table 5. The correlation coefficient results show that there was no significant relationship between age, number of dependents, rice farming records, the annual performance and the level of economic problems and educational-extension needs. In contrast, there was a meaningful relationship between the amount of land under cultivation, income, access level to urban areas, the rate of participation, the importance of economic factors and the attendance frequencies in training courses.

Table 4. Rice cultivating women's educational needs prioritization in Sari based on Borich's model

Educational needs	Importance mean	Ability mean	Weighted mean difference scores	priority
Identifying the effective factors in rice disease spread	4/19	2/75	6/63	1
Understanding the disease symptoms of rice	4/15	2/84	6/04	2
being aware of how to fight the diseases	4/17	2/88	6/01	3
being familiar with the common pests of rice in the region	4/07	2/77	6/01	4
identifying the consistent varieties in the region	4/29	2/99	5/95	5
being familiar with seedbed soil preparation	4/28	2/98	5/91	6
understanding the seeds sterilization methods	4/28	3/02	5/75	7
being familiar with the fighting mechanism with rice pests	4/13	3/87	5/70	8
being familiar with the strategies to prevent the potential loss of the product	4/17	3/01	5/47	9
being familiar with the common rice diseases in the region	4/14	3/01	5/44	10
Learning how to fight pests at the time of rice storage	4/01	2/89	5/40	11
Being familiar with seedlings in boxes preparation and nursery management	4/19	2/99	5/40	12
Knowing different varieties of rice	3/99	2/87	5/13	13
Being familiar with the methods of proper weed control	4/07	2/97	4/91	14
Knowing the selection criteria for suitable varieties	4/10	3/09	4/91	15
Understanding the environmental factors (temperature, location, lighting, water and soil)	4/01	3/02	4/72	16
being familiar with traditional and covered nurseries	4/24	3/28	4/59	17
Knowing the standardization process and Product Ratings	3/80	2/80	4/46	18
Learning how to prepare the ground for planting seedlings	4/42	3/58	4/07	19
Familiar with the planting methods	4/09	3/25	4/05	20
Identifying suitable sites for seedlings	4/30	3/47	4/03	21
being familiar with proper product transfer methods	3/82	2/99	3/98	22
Understanding the proper time for seedling preparation	4/25	3/48	3/91	23
Learning how to fight pests at the time of rice storage	3/98	3/20	3/87	24
Being familiar with time of transplanting the seedlings to the main field	4/30	3/49	3/80	25
Knowing the exact time of transplanting the seedlings	3/93	3/12	3/75	26
Knowing the proper principles of rice storage	4/08	3/29	3/70	27
Identifying and evaluating consumers' needs	3/69	2/92	3/63	28
Understanding the time and quality of proper irrigation system	4/15	3/37	3/52	29
Being familiar with the tools and equipment needed to harvest the product	3/94	3/30	3/19	30
Being familiar with the correct way of planting seedlings in the field	4/23	3/60	3/10	31
Being familiar with advertising mechanism	3/55	2/95	3/03	32
Being familiar with protecting and preserving methods of the seedlings in the field	4/01	3/42	2/95	33
Knowing how to clean the rice clusters	3/99	3/34	2/87	34
Knowing the product sale location	3/55	3/10	2/85	35
Knowing the right time to harvest	4/04	3/52	2/76	36
Knowing the harvesting operation process	4/02	3/49	2/60	37
Being familiar with the main harvesting methods	5/53	3/93	0/02	38

* and **: Likert scale : very low (1), low (2), moderate (3), high (4), very high (5)

Table 5. Summary results of the Spearman hypothesis

Hypotheses no.	Independent variable	Dependent variable	value r	Sig value
1	Age	educational-extension needs	0/015	0/814
2	Number of dependents	educational-extension needs	0/275	0/059
3	Rice farming records	educational-extension needs	-0/109	0/093
4	The amount of land under cultivation	educational-extension needs	0/195**	0/002
5	The annual performance	educational-extension needs	-0/094	0/147
6	Income from planting rice	educational-extension needs	-0/218**	0/001
7	access level to urban areas	educational-extension needs	0/173**	0/007
8	Social features	educational-extension needs	-0/432*	0/000
9	Having difficulties with economic factors	educational-extension needs	-0/047	0/469
10	Economic factors importance level	educational-extension needs	0/288**	0/000
11	Frequency of the participation in the training classes	educational-extension needs	0/373**	0/000

* = Significant at 5% level ** = Significant at 1%

The results of multiple regression analysis on the effects of independent variables on educational-extension needs of rice cultivating women in Sari indicated that 43% of the educational-extension needs

variance for rice cultivating women in Sari is explained by women's participation rates, number of training courses, marital status and the importance of economic factors (Table 6).

Table 6. the educational and training needs multiple regression of rice cultivating women in Sari

Variables	B	B Standard error	Beta	T	Sig
Participation rate	-1/480	0/286	-0/449	-5/177	0/000
The importance of economic factors	1/569	0/327	0/403	4/806	0/000
Number of training courses	-0/386	0/120	-0/285	-3/223	0/002
Rice cultivating women' s Marital Status	-1/809	0/860	-0/175	-2/103	0/038
Fixed value	4/859	1/866	-	-	-

R=0/ 675 R2=0/ 456 Adjusted R Square= 0/43 F= 17/791 Sig = 000

Table 7. Educational and training needs of rice cultivating women due to lack of participation in training courses

Hypotheses no	Dependant variable	Independent variable	Significance	Chi-square	DF=k-1
12	Educational-extension needs	Reason for lack of participation in training courses	0/312	5/939	5

Comparing the given values in the table, it is proved that there is no significant relationship between the educational-extension needs of rice cultivating women and their reasons for not attending the training courses. The educational and training needs model of rice cultivating women in Sari is shown in Figure 1.

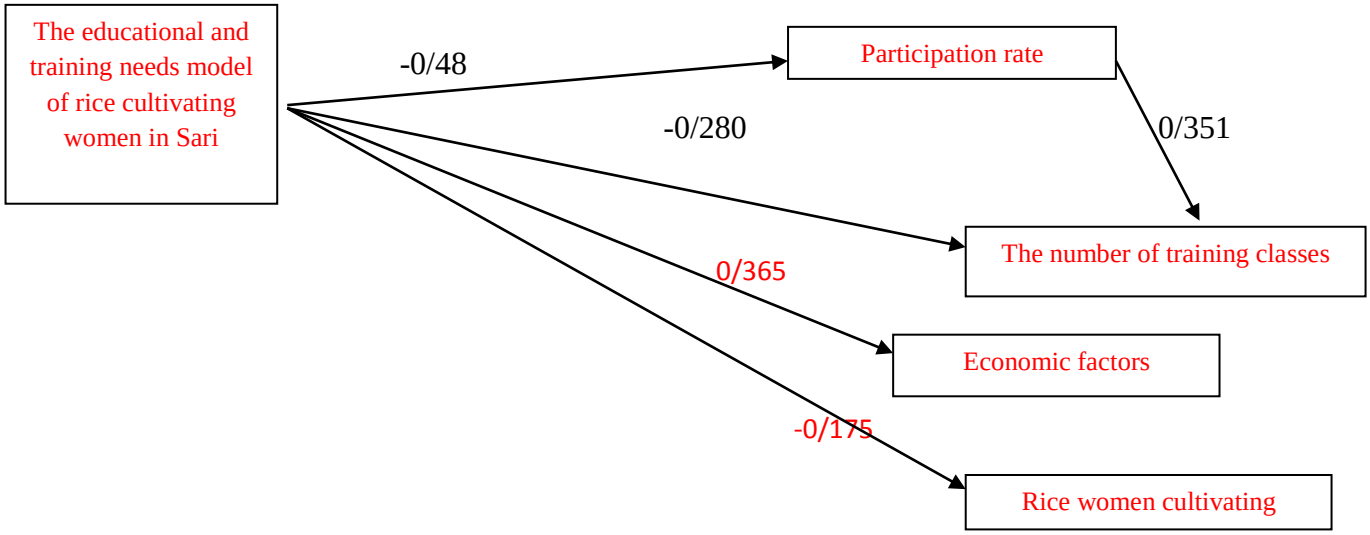

Figure 1. The educational and training needs model of rice cultivating women in Sari

According to Table 8, the highest effect on the educational and training needs of rice cultivating women in Sari was attributed to the participation rate with coefficient path of -0/423.

Table 8: direct, indirect and total effects on path analysis of the educational and training needs of rice cultivating women in Sari

Path analysis	Direct effect	Indirect effect	Total effect
From the participation rate to the educational and training needs of rice cultivating women in Sari	-0/484	-	-0/484
From the economic factors importance to the educational and training needs of rice cultivating women in Sari	0/365	-	0/365
From the number of training courses to the educational and training needs of rice cultivating women in Sari	-0/280	-0/17	-0/45
From the marital status of the womens to the educational and training needs of rice cultivating women in Sari	-0/175	-	-0/175

RESULTS AND DISCUSSION

The results show that 90/4% of the subjects were married and the rest were single. Women's average age was equal to 43/86 years which showed that the majority of the subjects were middle aged.

Studies reveal that 223 subjects that is 92/9% of those surveyed with the highest frequency stated that there were no rice production cooperatives for rural women in the region and only17%, that is 1/7 of the subjects have pointed that there were rice production cooperatives for rural women in their region.

Regarding the demand for support facilities (such as loans, agricultural inputs, equipment and facilities, etc.), 178 (74/2%) of the subjects stated that they did not use the support facilities, however, 62 persons (25/8) of women expressed that they used support facilities such as loans, agricultural inputs, equipment and facilities, and other facilities.

Studies indicate that about 86/7% of participants have attended 1 to 5 training courses. Moreover, 13/3% of the subjects participated in 6 to 10 educational and training classes and 150 subjects did not attend any training classes or no training classes were held in the area, thus, they did not respond to the question.

The reasons for not attending training classes were examined. Based on the results, 47 percent of the subjects stated that they were not aware of the training classes or they have been notified behind schedule. Moreover, the lack of transportation facilities with 31/1%, inappropriate time of the training courses with 15/9%, the lack of interest in the educational and training subject with 2%, inappropriate educational and training location with (4%) and lack of interest in training with 3% were the other reasons cited by participants in the study. Meanwhile, none of the subjects stated that their lack of participation was due to lack of teachers' skills and expertise.

Regarding the prioritization of the suitability of educational-extension strategies, providing practical training in the paddies had the first priority with a variation coefficient of 26/54%.

In relation to women's participation in social activities, 43/8% of the subjects with the highest frequency had an average level of involvement in this field. From the subjects' perspective, participating in the crop harvest had the top priority with variation coefficient of 28/65.

Regarding the importance of economic factors, approximately 38/3 % of the subjects with the highest frequency have pointed to the great importance of economic factors.

Considering the subjects' perspectives, government's preparation in supplying the required inputs with variation coefficient of 30/35 had the first priority and the government's commitment to purchase the rice with the variation coefficient of 20/22% had the next priority.

The results of the correlation between age and educational and training needs of women suggested that there is no significant relationship between these two variables. Researches by Kheiri (2004), Zabihi Tari (1997) and Shafie (2011) showed that there is a positive relationship between age and educational and training needs which is not consistent with the present study results.

The correlation coefficient between the number of people being sponsored by rice cultivating women with educational-extension and training needs of these women indicated that there is no significant relationship between the two variables. Research conducted by Kheiri (2004) indicated that there is a positive relationship between the numbers of dependents and educational- extension needs of the women which are not supported by the present study.

Evaluating the correlation coefficient between the two variables of rice cultivating women's working records and their educational-extension needs showed that there is no meaningful relationship between these two variables. The results of the studies by Shafie (2011) and Mousavi and Chizari (2007) shows that there is an inverse relationship between working records and the educational and training needs which has not been confirmed in the present study, but the study by Shokrollahzadeh (2005) approved it. Thus, considering the working records of the women, their educational and training needs should be measured that is the lower their working records, the higher their need for education.

The results of the correlation coefficient between the area under cultivation and educational-extension needs of these women indicated that there was a significant positive correlation between these two variables. It means the greater the extent of the land under cultivation, the higher their need for the educational-extension programs. Studies conducted by Shokrollahzadeh (2005), Nasseri (2005) and Ansari (2006) showed that there is a positive relationship between the extent of the land under cultivation and the educational-extension needs of these women which is also confirmed by the results of the present study.

The correlation coefficient between the annual performance of rice cultivating women and their educational- extension needs indicates that there is no significant relationship between these two variables. The study conducted by Shokrollahzadeh (2005) and Mousavi and Chizari (2007) show that there is a positive relationship between the annual performance of rice cultivating women and their educational-extension needs the opposite of which is shown in this study.

The results of the correlation between income levels and educational and training needs of rice cultivating women indicated that there was a significant negative correlation between these two variables. Studies conducted by Zabihitari (1997) and Tabatabaifar (2002) shows that there is no relationship between income levels and educational and training needs of these women which is not consistent with the results of the present study. And studies conducted by Charmchian and Chizari (2006) showed that there was a relation between income levels and educational and training needs of rice cultivating women which is also confirmed in the present study.

The results of the correlation coefficient between the access to urban areas and educational and training needs of rice cultivating women indicated that there was a significant positive correlation between these two variables, that is, the greater the women's access to urban areas, the higher their needs to educational-extension programs. Studies conducted by Ansari (2006) indicated that there is a relation between the access to the urban areas and the educational and training needs of these women which is consistent with the results of the present study.

The correlation coefficient between participation rates and educational- extension needs of women indicated that there was a significant negative correlation between these two variables. Studies conducted by Charmchian and Chizari (2006) proved that there was a relation between the social characteristics (participation) and the educational and training needs of rice cultivating women which is also approved in this study. The higher the rate of participation (social characteristics) and also the higher the women's participation in the activity, the less educational training they need.

The results of the correlation between economic factors and educational- extension needs of the women indicates that there is no significant relationship between these two variables.

The results of the correlation between the degree of economic factors importance and the educational and training needs of rice cultivating women indicated that there was a significant relationship between these two variables.

The results of the correlation between frequency of participation in the training classes and the educational and training needs showed that there was a significant relationship between these two variables.

The results of the Kruskal-Wallis test on the mean difference of the educational and training needs of rice cultivating women based on their not participating in the training classes showed that there was a significant difference between educational and training needs in terms of education level.

Regarding the results of the path analysis, the rate of participation had the highest effect on the educational needs based on which the higher the social characteristics, the lower the need for the educational programs.

Suggestion and implications

Regarding the appropriateness of educational approaches, it is recommended that attention to provide practical training in the rice paddies, holding training classes, having face to face talks and discussions among women and also with the experts, showing the performance comparison of different varieties of rice, and extension agents' presence in the paddies should be considered.

Considering the results of the study, participation rate has the highest effect on the educational needs, that is, the higher the participation rate, the less the need for the educational programs. Therefore, considering the priorities, participation in the harvest, participation and involvement in transplanting the seedlings to the main field and cooperating with other women in public affairs should be considered.

Based on the results of the research, the number of training courses has effects on the educational needs; therefore, it is recommended that the number of training courses for the rice cultivating women increase. Given the fact that the economic factors importance has effect on the educational and training needs; therefore, factors such as the governments' commitment to purchase rice and governments' preparing the grounds for supplying the required inputs for rice must be considered.

To meet the demands of the educational-extension needs of the rice cultivating women in Sari, it is suggested that factors such as Understanding the disease symptoms of rice, being aware of how to fight the diseases, being familiar with the common pests of rice in the region, identifying the consistent varieties in the region, being familiar with seedbed soil preparation, understanding the seeds sterilization methods, being familiar with the fighting mechanism with rice pests be considered.

Regarding the women's reasons for not attending in the educational- extension courses such as being unaware of the class time, lack of transportation services and inappropriate courses time must be considered.

Considering the point that the existence of rice production cooperatives for rural women in the region, marital status and support facilities have effects on the educational-extension needs, therefore, to meet the demands of the women, it is recommended that these factors should be considered in the educational and training needs program.

Finally, to meet the educational needs of these women in Sari, the proposed model is a model which mainly focuses on their participation in rice farming, stresses the number of training courses that they can attend, emphasizes the economic factors shared by the government and points to their marital status.

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