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Short Communication

Factors influencing agricultural extension in public institutions in Erzurum, Turkey

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In order to determine the effectiveness of the agricultural extension staff working in public, a survey was carried out on 131 extension staff employed in the counties and centre of Erzurum city. The data obtained from the survey was analyzed using OLS (ordinary least squares) model in GRETL software. The number of days an extension personnel spends on the land on a monthly base and the average number of farmers interviewed for training purposes were taken as dependent variables to indicate the effectiveness of extension staff. In addition, the factors which were influential on these variables were determined. As a result of the analyses, the following issues were found to be influential on the effectiveness of the extension practices of the extension staff working in the public institutions: regional differences; the age, the marital status, the graduation date of the extension member; whether the member received an extension education; whether the member thought the job he/she was carrying out was appropriate for his/her specialty; the number of the villages served; and whether the member received an in service training. It was concluded that the extension staff employed in public institutions should receive in service training periodically on a constant base, studies should be carried out to limit the number of farmers and the villages an extension member is in charge of, the extension staff should be employed in fields appropriate for their specialty and that they should receive adequate training in agricultural extension regardless of their specialty.

Key words: Agricultural extension, OLS (Ordinary Least Squares), Erzurum.

INTRODUCTION

Successful extension practices have a big impact on the development and utilization of modern technology in agricultural production. A successful application of extension practices can lead to an improvement and increase in the income and the living standards of the farmers. The agricultural extension services implement an important function in boosting the agricultural productivity worldwide (Bernet et al., 2001). The technical information and the results of the researches in agricultural issues are communicated to farmers via the agricultural extension studies. This, in turn, solves the current problems of the farmers or helps farmers adopt innovations (Yurtta , 2000; Yurtta et al., 2000; Yavuz and Atsan; 2003). The basic goal underlying the agricultural extension is to carry out activities in fields from which those working in the rural areas can benefit (Anonymous, 2004). Another goal of the extension in broad terms is to improve the farmer; in other words, help a wide range of farmers progress in a specific direction (enocak, 1967). According to another view, the main point in agricultural extension is to investigate the matters which farmers want to practice and which they can do their best in, and give the farmers opportunities which will lead them to the information and advices in these matters (Kidd et al., 1999). Knowing some features of the extension staff that will carry out the extension studies will increase the success and the effectiveness of the studies as much as knowing the target group well and defining their characteristics will. Therefore, in addition to

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the technical and professional features of the extension staff, they should also have abilities such as solving problems, foreseeing the future, cooperating, developing trust and setting up good relations (enocak, 1967).

As can be seen from the studies, influential agricultural extension activities are important in acquiring agricultural productivity and, therefore, the improvement. One of the aspects of influential agricultural extension activities is the effective performance of the extension staff. Consequently, in the current study, the factors influencing the performance of the extension staff working in the public institutions were examined. It can be said that the outcome of this study can be fruitful in boosting the effectiveness of the agricultural extension programs during the planning process and it can also be helpful for future studies.

MATERIALS AND METHODS

Materials

The data obtained from a survey involving the technical staff working in 20 counties, including the central county, of Erzurum City Agricultural Directorate in 2009 formed the main material of the study. In addition, the studies dealing with the same subject were also used as secondary material.

Methods

Data collection

In the study, the technical staffs working in the Agricultural Directorate of 20 counties including the centre were given a survey based on full enumeration principle. Examining the population one by one and obtaining information from them through measurement, evaluation, observation and questioning. In the studies on agri-cultural economics, a full enumeration should be performed if the population size is small and obtaining the required data is easy and cheap (Güne and Arıkan, 1988). In the pre- study carried out in the study field, the number of the working staff was determined to be 154. As the population was small and easily accessible, the survey was performed based on full enumeration method. The analyses involved 131 questionnaires as 23 of them had missing information. The literature (Sezgin, 2008) and the views of the experts were taken into account during the preparation of the questionnaire form used in the study. A pre-test was carried out to test the intelligibility and the reliability of the questionnaire and some corrections were made accordingly.

Evaluation of the data

The data obtained from the survey were transferred to digital medium and analyzed using OLS (Ordinary Least Squares) model in GRETL software. The results of the analysis are presented in the tables.

RESULTS AND DISCUSSION

In the study, the number of the days an extension personnel spent on the land on a monthly base was taken as a dependent variable to indicate the effectiveness of the extension staff. Accordingly, as the number of the days spent on the land increased, the ef-fectiveness was also expected to increase depending on the one-to-one interviews to supply farmers with useful information. 8 independent variables were used in the regression model to determine the factors influencing the condition which leads the extension staff to work on the land in a month. The results of this model are presented in Table 1. The coefficients of all the parameters were significant. For the regional differences state used as dummy variable, the center and the counties close to the center were assigned 1 and other counties were assigned 0. Accordingly, the extension staffs in the center were found to work on the land more in a month, and this was determined to be statistically significant at 1% level. It can be stated that the extension staff in the central counties group were more effective in extension as they had better transportation possibilities. The age of the extension staff influenced working on the land negatively and this variable was found to be statistically significant at 10% level.

It can be stated that as the age of the extension staff increased, working on the land decreased. Marital status influenced working on the land positively and it was determined to be statistically significant at 5% level. It can be said that married extension staff spent more days on the land and therefore they were more effective. The education state also influenced working on the land positively; however, it was not statistically significant. Attending in service training programs also had a positive effect on the case and it was found to be significant at 10% level. It can be said that attending in service training programs contributed to the effectiveness as they helped the extension staff gain new attitudes and insights about extension such as more appropriate approaching styles towards farmers, utilization of better extension methods and so on. As the graduation date got older, the sate of working on the land decreased. This variable was also found to be statistically significant at 10% level. The positive effect of new graduation can be said to be an expected result. It was found out that those who thought their specialty was appropriate for their business spent more days on the land and that they were more effective. This independent variable was also determined to be significant at 5% level. Another indication of the effectiveness of the extension staff was the number of the farmers interviewed in a month for training purposes. The number of the farmers interviewed in a month for training purposes was used as a dependent variable, and 10 independent variables were used to interpret this model.

The results are presented in Table 2. The coefficients of all the parameters were found to be significant. It was determined that the regional difference, used as dummy variable, positively influenced the number of the farmers interviewed. Age and gender influenced the number of the farmers interviewed in a month negatively. Other

Table 1. The distribution of extension staff regarding working on the land on a monthly base.

Variable	Coefficient	Standard error	P value
Constant	4.0220	1.2036	0.0011***
Regional difference (Central counties: 1, others: 0)	1.6147	0.3008	0.0001*
Age	-0.0861	0.0450	0.0580*
Gender (male: 1, female: 2)	-0.1704	0.4769	0.7215
Marital status (single: 0, married: 1,)	1.0543	0.4687	0.0262**
Education (High school:1, Vocational Higher School: 2, Faculty: 3)	0.2099	0.2297	0.3627
Received agricultural extension training (no: 0, yes: 1)	0.1043	0.0595	0.0822*
The age of graduation date	-0.1197	0.0630	0.0597*
Whether the business was appropriate for the specialty (no: 0, yes: 1)	0.5055	0.2515	0.0466**

Source: Original calculations R^2 =0.98.

Table 2. The distribution of extension staff regarding the number of farmers interviewed on a monthly base.

Variables	Coefficient	Standard error	P value
Constant	22.4167	7.3814	0.0029
Regional difference (Central counties: 1, others: 0)	1.6011	1.8819	0.3965
Age	-0.1641	0.2796	0.5582
Gender (male: 1, female: 2)	-4.6156	2.9271	0.1174
Marital status (single: 0, married: 1,)	2.6371	2.9504	0.3731
Education	0.8520	1.4260	0.5513
Training on agricultural extension	0.3577	0.3626	0.3258
The age of the graduation date	-0.4537	0.3875	0.2439
Whether the business was appropriate for the specialty (no: 0, yes: 1)	0.8607	1.5547	0.5790
In service training (never: 0, once in 2 years: 1, once in a year: 2, twice in a year: 3, three times in a year: 4, four times in a year or more: 5)	2.3609	1.0320	0.0238**
The number of villages served	-2.4135	1.4278	0.0935*

Source: Original calculations.R^2 = 0.95.

variables positively influencing the number of the farmers interviewed in a month were the marital status of the extension staff, education and whether agricultural extension training was received. It was found out that those who thought their specialty was appropriate for their business held interviews with more farmers. In addition, in service training and its frequency also increased the number of the farmers interviewed and the efficiency of the technical staff. This was found to be significant at 5% level. As the number of the villages an extension member was in charge of increased, the number of the farmers interviewed decreased. This independent variable was also determined to be significant at 10% level. It can be stated that as the number of the villages served increased, the time spared for the farmers for training purposes decreased.

RESULTS

It is known that agricultural extension training should be used as an effective means for the improvement of the population living in the rural area of the developing countries and making a living by farming (Bernet et al., 2001; Kızılarslan, 2009). Training the farmers during the agricultural development process may have them adopt the conditions easily. A more effective communication provided by agricultural extension staff will contribute to agricultural development as such communication will enhance the noticing, problem solving, questioning, and comprehension abilities of the extension members (Kızılaslan, 1999). With this respect, the importance of extension regarding the farmer training comes on the scene (Kızılaslan, 1999). On the other hand, training the extension staff is important in providing an effective service for the farmers and gaining success (Kızılaslan, 2009; Hoque and Usami 2008). In this context, the factors influencing the effectiveness of agricultural extension staff were determined and some proposals were made.

In the study, 131 extension staff working in Erzurum city and its counties were given a questionnaire and the data obtained from the survey were analyzed in GRETL software using OLS (Ordinary Least Squares) model. According to the results of the regression analysis, it was

found out that regional difference, used as a dummy variable because of transportation facilities, marital status, agricultural extension training and appropriateness of the job for the specialty influenced the number of days spent on the land positively, which was used as an indicator of the effectiveness of the extension staff. The extension member's age and the graduation year were determined to have a negative effect on the number of days spent working on the land on a monthly base. According to these results, it can be stated that younger and more recent graduates worked more effectively. Another indicator of the effectiveness of the extension staff was the number of the farmers interviewed for training purposes on a monthly base. The factors affecting this dependent variable were also determined. According to the analysis results, this variable was affected positively by attendance to regular in service training programs by extension members and negatively by the number of villages an extension member was in charge of.

In the light of the results obtained, following proposals were made to enhance the effectiveness of the extension staff working in public institutions regarding their extension practices. It was reported in a study carried out by Schwass (1983) that agricultural extension staff were not exposed to professional training and that they were not supported. It was emphasized that one of the items at the top of the list to enhance the effectiveness in extension practices was to eliminate this deficiency. Accordingly, the extension staff working in public institutions should undergo in service training on agricultural extension and some specific subjects periodically. The number of villages and farmers an extension member is in charge of should be limited. To do this, the number of extension staff working especially in the counties should be increased. It was found out that effectiveness also increased when the extension staff thought the job they were carrying out was appropriate for their specialty and when they were assigned to specialty specific jobs. Therefore, the extension staff working in the public institutions should be employed in positions which are most appropriate for their specialty. In addition, whatever the specialty is, the personnel employed in public institutions and holding one-to-one interviews with farmers should be trained about agricultural extension on a satisfying level.

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