Attitudes of the farmers in Duhok Governorate toward the performance of agricultural extension centers, Kurdistan Region of Iraq

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Abstract:

This research aimed mainly at studying the attitudes of the farmers in Duhok Governorate Kurdistan Region of Iraq toward the performance of agricultural extension centers through the sub-objectives , determining the personal and social characteristics of farmers, (Age - Family size - secondary occupation - Educational level - Years of experience in agricultural work - Participation in agricultural extension activities - Satisfaction with agricultural extension center - Social participation - Agricultural information sources - Farmers benefits from participating in agricultural extension activities) in the target area, and determining the attitudes of farmers toward the performance of agricultural extension centers, and determining the correlation between the attitudes of farmers toward the performance of agricultural extension centers and some of social and personal characteristics of farmers, determining the problems and impediments of performance of agricultural extension centers. The research sample consisted of 75% of these centers. Stratified random sample of the farmers surveyed, totaling (284) farmers. In addition, the Cronbach's alpha formula was used for determining the reliability of the attitude scale with the value (0.901). The researcher employed the SPSS18.0 and PAST Programme. The result showed that the majority of farmers 195, accounting for (68.662%) had a neutral attitude towards the performance of agricultural extension centers. Moreover, there was a significant correlation between the attitude of farmers towards the performance of agricultural extension centers as dependent variable and following independent variables (Age, Years of experience, Participation in extension activities, and Satisfactions with extension centers, Social participation, and Farmers benefits from participating in agricultural extension activities). While there was none significant correlation between the attitude of farmers towards the performance of agricultural extension centers and (Family size, Secondary occupation, Educational level, Agricultural information sources).

Keywords. Attitudes, Agricultural extension centers, coefficient contingency (rc)

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1. Introduction

Development aims to provide people's material and social requirements, such as healthcare, food, education, job, and shelter. The main objective of development is to improve the individual's ability to fulfill social and productive responsibilities [1]. One definition of rural development is the expansion of agricultural regions. It is described by the World Bank as "a strategy aiming at the improvement of economic and social living conditions, focusing on a specific group of poor people in a rural area." It helps the most impoverished people who live in rural areas to gain from progress.[2]

Rural development is a multifaceted process that continuously raises the standard of living in rural areas. In this way, the realization of socioeconomic and spatial justice in the rural environment is considered in addition to raising rural incomes, improving education, providing adequate health care, treatment, and nutrition, reducing poverty, protecting the environment, and ensuring equality of opportunities.[3]

Agriculture is a critical component of Iraq's economic development, particularly because it provides raw materials for numerous businesses. Despite the world's rapid scientific and technological advancements, it seems unlikely that an alternative to some of them will be discovered. Achieving food security and increasing agricultural productivity are fundamental goals, and they require significant attention at all levels of the agricultural industry around the world. [4]. One common definition for agricultural extension in FAO publications is that it is a service or system that assists farm people in improving farming methods and techniques, increasing production efficiency and income, enhancing their standard of living, and raising the social and educational standards of rural life. The definition emphasizes on supporting and involving rural communities' own organizations, increasing individual and collective self-reliance, and addressing environmental concerns [5].

For extension program to play an effective role in agricultural and rural development, an appropriate approach must be used to select effective means of communicating the extension message. One of these strategies and means is presence of agricultural extension centers, which are viewed as one of the paths to achieving agricultural and even rural development in terms of their involvement in the more effective dissemination of knowledge and contemporary technology. It serves as a foundation for village-level extension work and plans, implements, and evaluates extension programs in all areas of extension work. It also collaborates and coordinates with research cadres, rural households, and civil and governmental groups working on agricultural and rural development. [6]. The Agricultural Extension Center serves as a "home base" for agricultural extension organizations and aided villages, allowing them to interact directly with farmers. Extension personnel, the operational staff at the agricultural Extension Centers, play an important role in completing their varied responsibilities and are part of the government infrastructure. The Agricultural Extension Centers many operations are designed to actively participate in providing services to the community in accordance with its purpose [7]. Centers of agricultural extension help to discover local community resources and problems, as well as build bottom-up extension programs to solve them. They also train extension agents and local leaders, as well as communicate with rural local organizations to help develop and conduct educational extension projects [8].

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Extension centers are responsible for all parts of agriculture, including preparation, production, marketing, and attention to most aspects of family life, as well as some issues concerning rural women and youth, local rural leadership, and rural resources. A number of key responsibilities have been assigned to extension centers: planning, which involves determining the community's resources, establishing priorities, and organizing activities and programs for agricultural development; supporting, which involves finding local leaders and helping to solve problems in rural agriculture.[6] extension, which involves educating farmers about agricultural advancements and technologies and encouraging their involvement in extension programs; and coordination, which involves working with civil and governmental rural organizations in the context of the extension center's work. [9]. For societies, families, and rural residents, the extension centers are seen as a revitalization of extension work and the educational and extension services they offer, with the goal of bringing about good change toward agricultural and rural progress [6]. Moreover, agricultural extension centers' in education: It describes the processes and actions taken by employees of agricultural extension centers to improve beneficiaries' understanding and assist them in making the most efficient and effective use of rural resources. [10]

Literature review

Agricultural extension center:

Agricultural extension centers they are vital to raising agricultural output and enhancing production effectiveness. Applying the findings of agricultural research, utilizing modern farming methods, and broadening the use of mechanized agriculture are ways to do this. In addition, these centers aid to processing some agricultural products. Alongside this, they boost the competency of extension agents, enabling them to improve their efficacy and efficiency so that they become more field-oriented. They also work on enhancing plant and animal output by transferring scientific achievements connected to crops and adapting them in a manner consistent with their characteristics and future agricultural applications. [11]. The main goals met by the extension centers were to inform farmers about the value of conserving natural resources and shielding the environment from pollution, to communicate the findings of agricultural research and techniques and encourage them to adopt them, and to provide extensions through publications, information, and expertise [12].

Key tasks of agricultural extension centers:

1. Educational Task of Agricultural Extension Center: This refers to a collection of agricultural extension practices and initiatives that staff members at the extension center carry out in order to educate farmers and make them more conscious of the best and most efficient use of the resources that are available in rural areas. The ultimate goal of these initiatives is to increase agricultural productivity while taking into account their social and economic circumstances.
2. Planning Task of Agricultural Extension Center: This entails creating extension programs and rural development projects that are in line with regional requirements while making sure they are founded on reliable data and accessible resources.
3.Training Task of Agricultural Extension Center: In order to accomplish **c**omprehensive rural development goals, this involves agricultural extension activities that

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are designed to improve the knowledge, abilities, and attitudes of farmers, agricultural advisers, and local leaders.
4.Coordination Task of Agricultural Extension Center: In order to improve agricultural extension efforts at the local level, these activities center on promoting collaboration and coordination with pertinent agencies and organizations.
5. Communication task of Agricultural Extension Center: This is a reference to extension initiatives that are intended to help farmers and specialized research organizations communicate effectively. The objective is to guarantee that farmers can promptly communicate their problems to specialists and obtain precise, scientifically supported solutions. [13]

Objectives of the research

The main objective of the research is to determining Farmers' attitudes towards the performance of agricultural extension centers in Duhok governorate, Kurdistan region of Iraq through following sub-objectives:
1. To determine the personal and social characteristics of farmers in target area.
2- To determines the attitude of farmers towards the performance of agricultural extension centers.
3-To determine the correlation between the attitude of farmers towards the performance of agricultural extension centers and the social and personal characteristics of farmers.
4- To determine the problems and impediments of performance of agricultural extension centers.

Study area :

The geographical location of the study is limited to Duhok Governorate, kurdistan Region of Iraq, Seven districts make up the Duhok Governorate: Duhok, Semel, Zakho, Amedy, Sheikhan, Akre, and Bardarsh.This research focuses on the Duhok governorate , which is situated roughly between the latitudes of 37°6'17".89 and 36°48'26".41 and the longitudes of 42°47'49".86 and 43°18'44".13. The elevation of the area, which spans 1014.31 km, ranges from 430 to 1520 m above sea level [14].

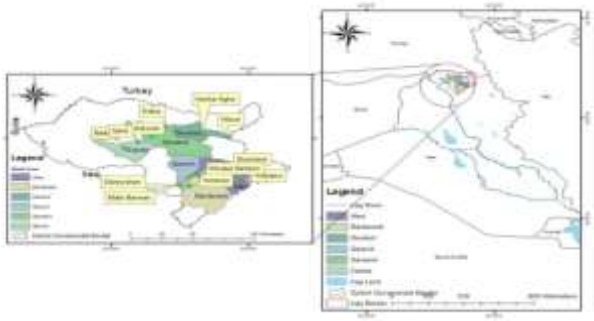

Figure (1) shows the study sample

Material and Methods

The population of the research covered all agricultural extension centers belonging to the Duhok Governorate. The research sample consisted of 75% of these centers in Duhok governorate. Out of 9 extension centers 6 extension centers were selected. From each selected center two villages were chosen. Personal interviews were used to give the questionnaire and gather the data needed for the research. The data was gathered from the farmers in the selected villages randomly from (9/4/2025 to 25/6/2025). The research population include (1421) farmers. For this purpose, stratified random sample was used because of this method is based on stratified divisions of the research population from which the sample is selected. In this method, the research population is divided into categories or main strata based on a specific characteristic. [15] As clear in table (1).

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Table (1): distribution of the sample of surveyed farmers

No	Agricultural extension centers	Village 1	Total number of farmers	Selected farmers	Village 2	Number of farmers	Selected farmers
1	**Bagera agricultural extension center**	Sarki	**40**	20	Bade	**30**	15
2	**Qadish agricultural extension center**	Esfka	**250**	33	Ashewa	**150**	25
3	**Deralok agricultural extension center**	Harika Agha	**51**	23	Hilora	**65**	19
4	**Qasrook agricultural extension center**	Mala barwan	**220**	34	Darweshan	**80**	20
5	**Seesna agricultural extension center**	Susnawa	**165**	25	Khalana	**40**	20
6	**Asmawa agricultural extension center**	Ismawa	**220**	30	Khraba Sahdun	**110**	20
Total number of farmers			**946**	**165**		**475**	**119**

The questionnaire was used for gathering the data needed for the research. The first part of the questionnaire consist of independent variables (Age - Family size -Secondary occupation - Educational level - Years of experience in agricultural work – Participation in agricultural extension activities - Satisfaction with agricultural extension center - Social participation - Agricultural information sources - Farmers benefits from participating in agricultural extension activities). The second part consist of a scale to measure the attitudes of farmers toward the performance of agricultural extension centers, the scale consist of 44 items. The response alternatives were (Agree, No idea, Disagree), the positive statements were given (3, 2, 1) and the negative statement (1, 2, 3) respectively. The score ranging between 44 and 132. And the third part consist of a scale to measure the Problems & impediments of performance of agricultural extension centers, it consist of 18 items against which three alternatives were placed (Great, medium, and low) with assigned values (3, 2, 1) respectively. Cronbach's alpha formula was used for determining the reliability of the attitude scale with the value (0.901). The researcher employed the SPSS18.0 PAST

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Programme. (Kolmogorov-Smirnov test (K-S), Cronbach's alpha (α), Discrimination index, Arithmetic mean, Range, Percentages from frequency, Standard deviation, chi-square statistic (χ^2), and coefficient of contingence (rc).

Research Results and Discussion:

First - personal and social characteristics of farmers:

According to the table (2), the large proportion of farmers surveyed are young. Majority of farmers belong to small and medium-sized families. The majority of the farmers belong to the categories of (illiterate and can read and write). In addition, the large proportion of the farmers have long years of experience in agriculture, moreover. The vast majority of farmers participated in agricultural extension activities. Moreover, the large proportion of the farmers were characterized by a high or medium degree of satisfaction with agricultural extension centers. In addition, the majority of farmers were characterized by low and medium degree of social participation. In addition, the vast majority of farmers have a high or medium degree of use of agricultural information sources, and the large proportion of farmers have a low or medium level of benefits from participating in agricultural extension activities.

Table (2): distribution of farmers according to their personal and social characteristics

Age			
No	**Categories**	**Frequency**	**Percentage (%)**
1	(20-38) years	46	16.197
2	(39-57) years	154	54.225

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3	(58-76) years	84	29.577
Total		**284**	**100%**
Family size			
No	**Categories**	**Frequency**	**Percentage (%)**
1	(2-5) member	88	30.986
2	(6-9) member	164	57.746
3	(10-13) member	32	11.268
Total		284	100%
Secondary occupation			
No	**Categories**	**Frequency**	**Percentage (%)**
1	Have a secondary occupation	137	48.239
2	Do not have a secondary occupation	147	51.761
Total		284	100%
Educational level			
No	**Categories**	**Frequency**	**Percentage (%)**
1	Illiteracy	78	27.465
2	Read and write	55	19.366
3	Primary school	67	23.592
4	Intermediate school	38	13.380
5	High school	15	5.282
6	College or Institute	31	10.915
Total		284	100%
Years of experience in agricultural work			

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No	Categories	Frequency	Percentage (%)
1	(5-23) years	107	37.676
2	(24-42) years	123	43.310
3	(43-61) years	54	19.014
Total		284	100%
Participation in agricultural extension activities			
No	**Categories**	**Frequency**	**Percentage (%)**
1	Participated	256	90.141
2	Did not participate	28	9.859
Total		**284**	**100%**
Satisfactions with agricultural extension centers			
No	**Categories**	**Frequency**	**Percentage (%)**
1	Very satisfied	85	29.930
2	Moderately satisfied	161	56.690
3	Unsatisfied	38	13.380
Total		**284**	**100%**
Social participation			
No	**Categories**	**Frequency**	**Percentage (%)**
1	Low (10-14)	70	24.648
2	Medium (15-19)	155	54.577
3	High (20-24)	59	20.775
Total		**284**	**100%**
Agricultural information sources			

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No	Categories	Frequency	Percentage (%)
1	Low (14-20)	25	8.803
2	Medium (21-27)	219	77.113
3	High (28-34)	40	14.085
Total		**284**	**100%**
Farmers benefits from participating in agricultural extension activities			
No	**Categories**	**Frequency**	**Percentage (%)**
1	Low (14-19)	72	25.352
2	Medium (20-25)	165	58.099
3	High (26-31)	47	16.549
Total		**284**	**100%**

The research result in the table (2) showed that the majority of farmers (54.225%) belonged to the (39-57) age category. majority of farmers (88.732%) belong to the small and medium-sized families. Moreover, (48.239%) of the farmers have Secondary occupation in addition to their agricultural work. And (46.83%) of the farmers belong to the categories of (illiterate and can read and write). The majority of the farmers (43.310%) have long years of experience in agricultural work. The vast majority of farmers (90.141%) participated in agricultural extension activities. In addition, the majority of the farmers (86.62%) are characterized by a high or medium degree of satisfaction with the agricultural extension centers. Moreover (79.225%) of farmers are characterized by low or medium degree of social participation. Moreover, vast majority of the farmers (91.198%) have a high or medium degree of use of agricultural information sources. While (83.451%) of farmers have a low or medium level of benefits from participating in agricultural extension activities.

Second - the attitudes of farmers toward the performance of agricultural extension centers:

The result in the table (3) showed that the majority of farmers 195, representing (68.662%) belonged to the neutral attitude category. And 49 farmers, representing (17.254%) belonged to the negative attitude category. In addition, 40 farmers, accounting for (14.085%) of the total sample belonged to the positive attitude category.

Table (3): shows the attitudes of farmers toward the performance of agricultural extension centers

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Categories	Frequency	Percentage %
Negative	49	17.254%
Neutral	195	68.662%
Positive	40	14.085%
Total	**284**	**100**

Third- determining the correlation between the attitudes of farmers towards the performance of agricultural extension centers and the independent variables.

As clear from the table (4) the correlation between the farmer's attitudes toward the performance of agricultural extension centers and their social and personal characteristics, there is significant correlation between the attitudes of farmers toward the performance of agricultural extension centers and their age , perhaps the reason is that older farmers are more experienced, which may be a factor that helps them express their opinions and determine their attitudes towards everything around them. The findings are in consistent with [16] and [17], [18] and are inconsistent with the finding of [19], [20]) And there is significant correlation between the attitudes of farmers toward the performance of agricultural extension centers and the years of experience in agricultural work, this may be because farmers become more receptive to cooperation and Extension with increasing years of experience, especially when faced with new agricultural problems. The results of the study are consistent with [16], [18], [19] and are inconsistent with [21].

In addition, there is significant correlation between the attitudes of farmers toward the performance of agricultural extension centers and their Participation in agricultural extension activities, may be because effective extension participation increases farmers' understanding and awareness of the importance and role of extension, which leads to more positive attitudes towards extension centers and acceptance of the ideas and recommendations provided by them. this study are in agreement with [22].

And, there is significant correlation between the attitudes of farmers toward the performance of agricultural extension centers and their satisfaction with agricultural extension centers, this may be because farmers who are satisfied with the basic services in their village are more open to the extension centers and thus have attitudes that are more positive towards the agricultural extension center in their area. In addition, there is significant correlation between the farmer's attitudes toward the performance of agricultural extension centers and social participation this may be because social participation leads to raising the level of awareness among farmers and increasing their interest in extension centers, and thus more positive attitudes towards the agricultural extension center in their region. The results of this study are consistent with [21] and are inconsistent with [23].

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Moreover, there is significant correlation between the farmers attitudes toward the performance of agricultural extension centers and their benefits from participating in agricultural extension activities, may be because the more farmers benefit from the activities and programs of the extension center, the more likely they are to accept them and form a positive attitude towards the center. As well as no significant correlation was found between the attitude of farmers toward the performance of agricultural extension centers and the (Family size, Secondary occupation, Level of education, and Agricultural information sources).

Table (4) present the correlation between the attitudes of farmers towards the performance of agricultural extension centers and the independent variables

Attitude / **Independent variable**	**Negative**	**Neutral**	**Positive**	**χ^2**	**rc**
1- Age					
(20-38) year	13 (4.577 %)	29 (10.211 %)	4 (1.408 %)	**14.733**	**0.222***
(39-57) year	30 (10.563 %)	97 (34.155 %)	27 (9.507 %)		
(58-76) year					

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	6 (2.113 %)	69 (24.296 %)	9 (3.169 %)		
2- Family size					
(2-5) members	21 (7.394 %)	56 (19.718 %)	11 (3.873 %)	**5.8525**	**0.142 N.S**
(6-9) members	25 (8.803 %)	113 (39.789 %)	26 (9.155 %)		
(10-13) members	3 (1.056 %)	26 (9.155%)	3 (1.056 %)		
3- Secondary occupation					
Have a secondary occupation	26 (9.155 %)	88 (30.986 %)	23 (8.099 %)	**2.586**	**0.094 N.S**
Do not have a secondary occupation	23 (8.099 %)	107 (37.676 %)	17 (5.986 %)		
4- Educational level					
1- Illiteracy	7 (2.465 %)	60 (21.127 %)	11 (3.873 %)	**10.774**	**0.191 N.S**
	11 (3.873	38 (13.380	6		

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2- Read and write	%) 10 (3.521 %)	%) 46 (16.197 %)	(2.113 %) 11 (3.873 %)		
3- Primary school	9 (3.169 %)	25 (8.803%)	4 (1.408 %)		
4- Intermediate school	3 (1.056 %)	10 (3.521%)	2 (0.704 %)		
5- High school	9 (3.169 %)	16 (5.634%)	6 (2.113 %)		
6-College or institute					
5-Years of experience in agricultural work					
(5-23) years	27 (9.507 %)	70 (24.648 %)	11 (3.873 %)		
(24-42) years	17 (5.986 %)	83 (29.225 %)	24 (8.451 %)	**12.163**	**0.202***
(43-61) years	5 (1.761 %)	42 (14.789 %)	5 (1.761		

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			%)		
6-Participation in agricultural extension activities					
Participated	34 (11.972 %)	182 (64.085 %)	40 (14.085 %)	**32.133**	**0.318****
Did not participated	15 (5.282 %)	13 (4.577%)	0 (0.000 %)		
7-Satisfactions with extension centers					
Very satisfied	2 (0.704 %)	57 (20.070 %)	26 (9.155 %)	**97.624**	**0.505****
Moderately satisfied	22 (7.746 %)	125 (44.014 %)	14 (4.930 %)		
Unsatisfied	25 (8.803 %)	13 (4.577%)	0 (0.000 %)		
8- Social participation					
Low (10-14)	21 (7.394 %)	43 (15.141 %)	6 (2.113 %)	**26.016**	**0.289****
Medium (15-19)	23	116	16		

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High (20-24)	(8.099 %) 5 (1.761 %)	(40.845 %) 36 (12.676 %)	(5.634 %) 18 (6.338 %)		
9- Agricultural information sources					
Low (14-20)	9 (3.169 %)	14 (4.930%)	2 (0.704 %)	**9.384**	**0.178 N.S**
Medium (21-27)	34 (11.972 %)	156 (54.930 %)	29 (10.211 %)		
High (28-34)	6 (2.113 %)	25 (8.803%)	9 (3.169 %)		
10-Farmers benefits from participating in agricultural extension activities					
Low (14-19)	27 (9.507 %)	44 (15.493 %)	1 (0.352 %)	**60.255**	**0.418****
Medium (20-25)	19 (6.690 %)	127 (44.718 %)	20 (7.042 %)		
High (26-31)	3 (1.056 %)	24 (8.451%)	19 (6.690 %)		

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Table (rc)	5%=0.1966	1%=0.2565

Fourth- Determining the problems and impediments of performance of agricultural of extension centers in the villages of Duhok Governorate.

Table (5) shows the ranking of the problems and impediments of the performance of agricultural extension centers, the first three items according to the point of view of farmers in order of ranking, the item (Lack of financial resources of the extension center to address agricultural risks when they occur) with mean (2.968) came as the first item, and the item (Lack of training courses provided by the agricultural extension center for farmers) with the mean (2.940) came as a second item , in addition, the item (Lack of availability of agricultural production supplies at the extension center such as fertilizer) with the mean (2.897) came as a third item. The result of the same table also reveal that the three least items from the point of view of farmers in order of ranking. The items, (Lack of extension publications at the agricultural extension center), (Farmers' Lack of trust in the staff of the agricultural extension center) and the item (Failure of the agricultural extension center to implement essential extension programs to educate farmers), with mean (1.232), (1.338) and (1.514), respectively.

Table (5) shows ranking of items in farmer's attitudes toward the performance of agricultural extension centers in Duhok governorate, Kurdistan region of Iraq

No	Items	Mean	Ranking
1	Lack of financial resources of the extension center to address agricultural risks when they occur.	2.968	1
2	Lack of training courses provided by the agricultural extension center for farmers.	2.940	2
3	Lack of availability of agricultural production supplies at the extension center such as fertilizer, pesticides, seed, and others.	2.897	3
4	Lack of visits by the extension center staff to the farmers' farm to provide guidance on agricultural risk management.	2.718	4
5	Lack of establishing demonstration fields and organize extension seminars for farmers.	2.545	5
6	Lack of financial incentives provided by the extension center to encourage farmers' attendance at extension meeting	2.524	6

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7	Failure of the extension center staff to make personal visits to farmers to address their problems.	2.433	7
8	Lack of availability of extension specialists at the center when farmers need them.	2.200	8
9	The unavailability of transportation means at agricultural extension centers.	2.119	9
10	Lack of qualified trainers at the agricultural extension center.	2.007	10
11	Insufficient number of extension workers at the agricultural extension center.	1.996	11
12	Failure of the extension center to convey the problems faced by farmers to the relevant authorities.	1.947	12
13	Lack of visual aids at the extension center.	1.795	13
14	Lack of attention given to farmers by extension staff during their visits to the extension center.	1.570	14
15	Inadequate location of the agricultural extension center for farmers to communicate their problems with extension center staff.	1.559	15
16	Failure of the agricultural extension center to implement essential extension programs to educate farmers.	1.514	16
17	Farmers' Lack of trust in the staff of the agricultural extension center.	1.338	17
18	Lack of extension publications at the agricultural extension center.	1.232	18

Conclusion

1- The large proportion of farmers surveyed (54.225%) are young. And (46.83%) of the farmers belong to the categories of (illiterate and can read and write), and the majority of the farmers, (43.310%) have long years of experience in agriculture, moreover, the vast majority of farmers (90.141%) participated in agricultural extension activities, and the large proportion of farmers (86.62%) are characterized by a high or medium degree of satisfaction with the agricultural extension centers, and high percentage of farmers (79.225%) are characterized by low or medium degree of social participation, in addition, the vast majority of the farmers (91.198%) have a high or medium degree of use of agricultural information sources, and

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the majority of the farmers (83.451%) have a low or medium level of benefits from participating in agricultural extension activities.

2- The majority of farmers 195, representing (68.662%), had neutral attitude toward the

performance of agricultural extension centers and 49 farmers, representing (17.254%) had negative attitude in addition, 40 farmers, accounting for, (14.085%) had positive attitude toward the performance of agricultural extension centers.

3- There is a significant correlation between the attitude of farmers towards the agricultural extension centers as dependent variable and the following independent variables: Age, Years of experience in agricultural work, Participation in agricultural extension activities, and Satisfactions with agricultural extension centers, social participation, Farmers benefits from participating in agricultural extension activities. While non statistically significant correlation between the attitude of farmers and studied social and personal characteristics: (family size, secondary occupation, educational level, agricultural information sources).

4- The study result reveal that the first three items of problems and impediments of the performance of agricultural extension centers in order of ranking, (Lack of financial resources of the extension center to address agricultural risks when they occur, Lack of training courses provided by the agricultural extension center for farmers, Lack of availability of agricultural production supplies at the extension center such as fertilizer).

Recommendation:

1- It is necessary to establish clear, continuous, and well-integrated cooperation and coordination between agricultural extension centers, scientific research institutions, and various rural development organizations that share or are connected with them in objectives.

2- There is a need to coordinate between agricultural extension centers and local media outlets—including television, radio, and newspapers—to increase farmers' awareness of the agricultural extension centers, their tasks, activities, and roles.

3- Extend agricultural extension centers' activities to encompass all facets of the rural community, including local leaders, farmers, women, and youth.

4- There should be a focus on activating the most effective extension methods for farmers such as, field demonstrations, field day.

5- Increase the number of personal visits by agricultural extension center staff to farmers to address their issues.

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