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ROLE OF AGRICULTURAL EXTENSION IN THE IMPROVEMENT OF THE AGRICULTURE SECTOR IN IRAQ

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SUMMARY

The study aimed to determine the role of workers' comprehension level in agricultural extension centers through their knowledge of administrative processes when providing agricultural extension services in some central governorates of Iraq, as well as, some of the respondents' characteristics and the relationship between the studied independent variables. The research area has 220 employees, with a sample of 50% selected in four governorates (Babylon, Anbar, Baghdad, and Salah al-Din) using simple random sampling. A number of agricultural extension workers selected from each of the studied governorates came from outside the research sample as a pretest to express the opinion of the sample members regarding the provision of agricultural extension services to these centers. Their number reached 25 agricultural extension workers. The reliability coefficient was 0.89 degrees, and the respondents provided data in October 2022. The arithmetic mean, standard deviation, percentage, simple and multiple correlation coefficients, and frequency distribution tables helped analyze and interpret the research results. The findings indicated that 44.55% of respondents had no knowledge about extension centers' instructional, planning, and promotional roles in agricultural extension services. It also appears from the results that there is a weakness in the role of the respondents in the processes studied, namely, planning, coordination, communication, training, and education. The research suggests holding extension meetings to inform extension workers of their role in understanding the administrative processes of agricultural extension centers while providing extension services and the importance of that to them, as well as, training workers in their roles and using their knowledge to understand the administration.

Keywords: Role of workers, agricultural extension centers, administrative operations, extension service

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Key findings: In light of the results, 44.79% of the workers surveyed had low knowledge of the role of extension centers. Outcomes revealed the sample members' low educational role (50%), planning role (46.36%), and a direct and significant association between agricultural extension centers' extension services and their staff's unique traits. The results indicated that 49.09% of the sample members do not know the counseling extension center's coordination role, while 44.80% do not know its training role.

INTRODUCTION

The development process is an immense concern in the thinking of the contemporary generation of economists, whether from developed or developing countries, and this importance is more evident in developing countries. The biggest problem facing development in these countries is the extended stagnation and the difficulty in getting out of it in light of the current economic conditions; human impact is significant in the development process (Daoudi, 2008). The agriculture sector is one of the chief economic activities that contribute to the national economy, achieve food security, alleviate poverty, improve the trade balance, and attain movement for most sectors directly and indirectly related to it (Al-Qaisi, 2018). It gives farmers an effective way to preserve, improve, and use their natural resources more efficiently; that is, it maintains resource efficiency and works to achieve their effectiveness (Qeshta, 2012).

Agricultural extension is a continuous process by professionals to help farmers in their rural environments understand and apply modern agriculture techniques appropriate to their conditions and with a clear economic return through appropriate extension methods and tools (Swanson, 2008). One of the goals of agricultural extension, as mentioned by WHO?, is to transfer technology related to agriculture and livestock production, as well as, to enhance and raise skills and knowledge among all farmers in rural areas to use the most efficient practices in production management, improve rural life, achieve food security, and increase levels of income, health, and education, especially among the less fortunate (Raidimi and Kabiti, 2019). They mentioned the promotion of natural resource management rationally and sustainably. It is crucial to realize that the role, structure, and function of

extension systems go through many stages: development and change in various countries of the world according to the development processes in each country and according to the level of knowledge and skill of farmers and the extent of using modern technologies and agricultural marketing systems in those countries (Msuya *et al.*, 2017).

Knowledge is information, facts, concepts, ideas, and interpretations stemming from the mental capabilities of the knowledge resource, as well as, technical skills related to knowledge and personal characteristics in people to add value to their work (Al-Kubaisi and Hatem, 2016). Defining knowledge states everything rooted in the human mind as a result of learning from different situations and events in a way that benefits from them when needed to solve a problem in a specific circumstance. Knowledge is also the process by which the individual perceives, through the mind, the characteristics of a subject, explains, and clarifies it, and includes the perception or the perceptual process of all the processes by which the individual obtains knowledge, including thinking, remembering imagination, and judgment (Doré *et al.*, 2011). Also, it is valuable information obtained by a person through study, research work, or whatever means knowledge has a value that is indispensable or has non-substitution for others (Al-Shimy, 2011).

Developing agricultural extension workers and training them externally and internally is a matter of most importance, as it contributes to developing the skills and knowledge of the workers and encouraging them to adopt sound scientific methods, which contributes to increasing production and improving its quality by using developmental extension methods and programs for farmers and workers in the agriculture sector (Zarqa *et al.*, 2015). Among the tasks and duties of

extension centers are developing audiovisual agricultural programs, preparing and distributing brochures and extension publications, and holding exhibitions, farming festivals, and specialized seminars with the aim of developing the extension system in the agricultural field (Al-Jubouri, 2022). Therefore, the applicable study aimed to identify the comprehension level of the role of employees in agronomic extension centers and the extent of their knowledge of administrative processes when providing farm extension service in some central governorates of Iraq. The research also sought to know the level of administration systems, planning, and coordination between extension centers and employees and how this affects the farms.

MATERIALS AND METHODS

This research is descriptive and analytical. Four chosen governorates in the middle of Iraq, namely, Babylon, Anbar, Baghdad, and Salah al-Din, serve as survey areas for 50% of the 220 employees. Thus, the sample reached 110 employees, choosing an agricultural extension and training center by simple random sampling. One came from each studied governorate to express the employees' opinion on providing the agricultural extension service (Table 1).

Data collection tool

A structured questionnaire became a tool to obtain information due to its suitability with the nature of the research and the data for acquisition, as the questionnaire is one of the

most imperative tools used to acquire information related to the existing conditions (Abu-Muammar, 2017). It utilizes a binary scale for respondent scoring on knowledge, where the scoring is as follows: Yes = 1 and No = 0, with the scale reaching 88 as its highest degree, and the lowest degree was 1. This form helps measure the validity and reliability of the scale. The initial form of the questionnaire reached a group of specialists with experience and specialization in agricultural extension and psychology to ensure the apparent face validity and content validity of the questionnaire paragraphs after deleting and adding some paragraphs, as indicated by Fayyad (2015). Thus, the theoretical scale scores ranged from 1 to 88 degrees, according to the following areas:

Role of extension centers in education

It refers to the procedures and activities performed by agricultural extension center workers to increase beneficiaries' knowledge and help them use rural resources optimally and effectively. The testing of this variable comprised 21 questions for respondents, and the scores in this field ranged between 1 to 21 degrees.

Role of extension centers in planning

Workers in agricultural extension centers use available information and data to design rural development programs based on the needs of respondents. This survey included 12 questions, and the respondents' scores ranged from 1 to 12 degrees.

Table 1. Research population and sample for employees by governorates according to agricultural extension centers.

No.	Extension Centers	Number of Employees	%	Sample
1	Babylon extension centers	60	27.15	30
2	Anbar extension centers	45	20.36	22
3	Baghdad extension centers	76	34.39	38
4	Salah al-Din extension centers	40	18.11	20
Total		221	100	110

Role of extension centers in the promotion and supportive process

It refers to several procedure sets and activities undertaken by agricultural extension center workers to help respondents solve rural problems and choose a local leader. With 13 questions, their scores ranged from 1 to 13.

Role of extension centers in organization coordination

It indicates sets of extension procedures and activities performed by agricultural extension center workers to cooperate and coordinate with rural organizations to provide extension services in the center's work area. The form included 10 questions, and their scores ranged from 1 to 10.

Role of extension centers in farmers' communication

It is a set of extension procedures and activities conducted by agricultural extension center workers to help beggars quickly transfer their problems to competent authorities for discussion and deliver sound solutions to benefit from; their scores ranged from 1 to 13 for the contained 13 questions.

Role of extension centers in workers' training

Workers at the agricultural extension center use a variety of processes and activities to improve their knowledge, abilities, and attitudes as extension agents and guides to achieve rural development goals. The form has 19 questions, with their scores ranging from 1-19.

In ensuring the tool's reliability, a random survey sample of 25 employees distributed in the extension centers became a selection from outside the research sample. The Alpha-Cronbach method helped ensure the reliability coefficient, with the necessary data collected from the respondents during October 2022. Statistical methods and tools analyzed, presented, and interpreted the research results, including the arithmetic mean,

standard deviation, percentages, simple and multiple correlation coefficients, and frequency distribution tables.

RESULTS AND DISCUSSION

Role of extension workers

The results showed that the respondents' knowledge level about the role of agricultural extension centers ranged from 1 to 81 degrees, with an arithmetic mean of 44.79 degrees and a standard deviation of 7.78 degrees (Table 2). The administrative extension centers are low on a scale of 1-88 degrees. The reason may be due to the weak role of education, training, and support by relevant institutions and the role of coordinating these centers with the departments and institutions in those governorates, which confirms the results from Howaidi (2017).

Role of extension centers in education

The findings showed that 50% of the respondents had moderate knowledge of the role provided by the extension center in education, with an average of 10.97 degrees and a standard deviation of 4.5 on a scale of 1-21 degrees (Table 3) and dividing them resulted into three categories according to the law of extent. One of the reasons may be the poor performance of some of the respondents in using modern technology, reflecting negatively on the agricultural extension workers and their failure to communicate modern ideas to farmers, and the lack of advanced equipment in extension centers, which hinders the work of the extension workers in performing their extension roles (Ashraf *et al.*, 2018).

Role of extension centers in workers' planning

The results revealed that 46.36% of the respondents had moderate knowledge of the role of the change to the extension center in planning, with an average of 7.51 degrees and

Table 2. Categories of the respondent's knowledge degree of the role of the administrative operations of agricultural extension centers in providing extension services.

Categories of respondents' knowledge of the role of extension centers	The number= 110	% 100
Low: 1 - 30 degrees	49	44.55
Medium: 31 - 60 degrees	46	41.82
High: 61 and above degrees	15	13.63
Total	110	100

Table 3. Categories of the respondent's knowledge degree of the educational role of the agricultural extension center.

Categories of respondents	The number= 110	% 100
Low: 1 - 7 degrees	33	30
Medium: 8 - 15 degrees	55	50
High: 16 and above degrees	22	20
Total	110	100

Table 4. Categories of the respondent's knowledge degree of the role provided by the extension center in the planning process.

Categories of respondents	The number= 110	% 100
Low: 1 - 5 degrees	51	46.36
Medium: 6 - 10 degrees	45	40.91
High: 10 and above degrees	14	12.73
Total	110	100

Table 5. Categories of the respondent's knowledge degree of the role provided by the extension center in the promotion and consolidation process.

Categories of respondents	The number= 110	% 100
Low: 1 - 3 degrees	58	52.73
Medium: 4 - 7 degrees	40	36.36
High: 8 and above degrees	12	10.91
Total	110	100

a standard deviation of 4.22 degrees on a scale of 1–12 degrees. It may be a reason for not collecting facts, resulting in three categories according to the law of extent (Table 4). Data about the change to the extension center area, identifying the needs and problems of the region, and prioritizing the crisis facing the targeted concerns are consistent with a study by Reda and Ihsan (2015).

Role of extension centers in promotion and consolidation function

The outcomes showed that 46.50% of the respondents had medium knowledge of the role provided by the extension center in promotion and consolidation, with an average

of 5.79 degrees and a standard deviation of 3.89 degrees on a scale of 1–13 degrees (Table 5). It may be due to the role of the counseled to participate in the planning and implementation of extension programs to nominate the counselors to obtain material and moral incentives from the extension apparatus, which incurred division into three categories according to the law of Range (Suvedi and Stoep, 2016).

Role of extension centers in organization coordination

The data revealed that 49.09% of the respondents had no knowledge of the coordinating role of the extension center, with

an average of 3.9 degrees and a standard deviation of 4.88 degrees on a scale of 1–10 degrees, with a reason may be to visit workers in social organizations in the work area of the extension center (Table 6). Necessary solutions are for extension workers to attend official meetings with local organizations’ workers in the area covered by the extension center, to participate in committees involving staff of local organizations to solve problems of development faced in the coverage area of the extension center, and to invite local organizations’ employees to participate in extension activities in the extension center work area.

Role of the extension centers in communication

The results indicated that 55.45% of the respondents had no knowledge of the role provided by the extension center in communicating with farmers, with an average of 5.99 degrees and a standard deviation of 2.89 degrees on a scale of 1 to 13 degrees (Table 7). The reasons include fewer visits to workers of social organizations in the coverage area of the extension center, limited attendance to official meetings with local organizations’ staff members in the extension center’s responsible zone, non-participation in committees with local organizations’ employees

to solve problems of development faced by their area of responsibility, and few invitations extended to workers of local organizations to participate in activities indicating available services in the concerned center work area (Sarhan, 2014).

Role of extension centers in workers’ training

The results detailed that 44.80% of the respondents had no knowledge of the role provided by the extension center in the training of workers, with an average of 9.65 degrees and a standard deviation of 7.16 degrees on a scale of 1–19 degrees (Table 8). Training rural youth on how to implement small projects and some rural industries, training rural women on setting up small projects, and the lack of training for women in rural areas to implement some local livelihood, and training farmers on how to implement modern agricultural recommendations (Makino, 2010) are primary suggestions. Likewise, training farmers on how to recycle agricultural waste and make green fodder, developing training guides on how to simplify information for farmers, how to use means of persuasion for rural people, and dealing with weaknesses in training to implement the practical demonstration in the village are also necessary concerns (Al-Jazzar *et al.*, 2017).

Table 6. Categories of the respondent's knowledge degree of the role provided by the extension center in the process of coordination with organizations.

Categories of respondents	The number= 110	% 100
Low: 1 - 2 degrees	54	49.09
Medium: 3 - 6 degrees	38	34.55
High: 7 and above degrees	18	16.36
Total	110	100

Table 7. Categories of the respondent's knowledge degree of the role of the communicative process in the agricultural extension center.

Categories of respondents	The number= 110	% 100
Low: 1 - 2 degrees	32	29.09
Medium: 3 - 7 degrees	61	55.45
High: 8 and above degrees	17	15.46
Total	110	100

Table 8. Categories of knowledge degree of the respondent on the role of the training process at the agricultural extension center.

Categories of respondents	The number= 110	% 100
Low: 1 - 4 degrees	64	44.8
Medium: 5 - 11 degrees	36	31.8
High: 12 and above degrees	10	7.4
Total	110	100

Table 9. Distribution of the respondents according to the variables studied.

Categories	Levels	Number	%	Correlation coefficient value
Age groups	Low (22-34)	30	27.27	0.343
	Average (35-47)	54	49.09	
	High (48-60)	26	23.64	
Gender	Male	76	69.09	0.267
	Female	34	30.91	
Number of years of service	Low(3-18)	64	58.18	0.401
	Moderate (19-34)	26	23.64	
	High (35-49)	20	18.18	
Educational level	Agriculture Preparatory School	8	7.27	0.299
	Diploma	23	20.91	
	B Sc. in Agriculture	64	58.18	
	M Sc. in Agriculture	15	13.64	
	Ph.D. in Agriculture	9	8.18	
Job stability	I didn't move	80	72.73	0.451
	moved once	21	19.09	
	moved twice	9	8.18	
	moved thrice	zero	zero	
Position	Responsible employee	36	32.73	0.213
	Executive employee	59	53.64	
	Another job center	15	13.64	
Participates	Participant	87	79.09	0.354
	Not participating	23	20.91	

Determination of the independent variables

The results showed that 49.09% of the surveyed workers were in the middle-age group between 35 and 47 years, 69.09% of them were males, 58.18% had service between three and 18 years of experience in agricultural work, and 58.18% were college graduates (Table 9). About 72.73% of them have not experienced a transfer from their place of work and are stable and employed, with the results implying that 53.64% of the respondents are executive employees. The results revealed a significant correlation at the probabilistic level (0.01, 0.05) between all independent variables, as the values of the correlation coefficients were as follows: 0.343,

0.401, 0.401, 0.299, 0.451, 0.213, and 0.354 (Table 9). However, the studied variables significantly impacted the provision of service by workers in extension centers through their role in understanding the administrative processes taking place in the extension center, and this result is consistent with the study of Al-Jubouri (2022).

CONCLUSIONS

The study determined that most employees do not have sufficient experience in providing extension services to farmers due to weak management and planning in implementing agricultural extension programs.

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