Analysis of the role of training and extension programs in developing the performance of agricultural workers in agricultural departments in Baghdad Governorate

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Abstract

This research aims to identify the level of analysis of the role of training and extension programs in developing the performance of agricultural workers in the agricultural departments of Baghdad Governorate. This analysis focuses on the areas of the role of training programs (identifying training needs, planning training programs, implementing training programs, and evaluating training programs) as well as the areas of improvement (developing knowledge, developing skills, and developing attitudes). The research population consisted of employees working in agricultural departments who received training from the Agricultural Rehabilitation and Training Center during 2024, totaling 310 employees. A simple random sample of 40% was drawn from the total number of employees in these departments, resulting in a total sample size of 124 respondents. A questionnaire was used to collect data from the respondents and to achieve the research objectives. The areas of the role of the programs consisted of 46 items, and the areas of performance improvement consisted of 24 items. A five-point Likert scale was used to calculate the respondents' scores according to the number of items. To verify the reliability, a pilot sample was selected from the research population outside the sample, consisting of 30 respondents. Cronbach's alpha was used, yielding a value of 0.95. The data were collected through personal interviews in August 2025. The SPSS program was used to analyze the data, along with some statistical methods. The research results indicate that the role of training programs has a clear impact on the development of agricultural workers in the agricultural departments of Baghdad Governorate. This indicates the necessity of adopting training programs of all kinds for employees working in the agricultural departments throughout the Ministry of Agriculture. The improvement in the performance of the respondents was also clear according to their responses. The research recommends increasing training programs due to their impact on the employees' situation and their contribution to raising the efficiency of workers in agricultural extension, as well as improving their performance of the tasks assigned to them. It also recommends encouraging employees to participate in training courses and working to motivate employees by paying the costs of the training programs in which they participate.

Keywords: Path analysis, extension training programs, agricultural workers, Baghdad.

[1] Extracted from the master's thesis of the first researcher

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Introduction

Training is considered one of the most important pillars of contemporary human resource development. It is viewed as a systematic process aimed at developing the mental, skill-based, and behavioral capabilities of employees, leading to improved productivity and job performance. It is also seen as an organized and deliberate effort to bring about cognitive and behavioral changes in the performance of individuals within organizations by providing them with the necessary expertise to meet the demands of modern work [1]. Another perspective suggests that training is a professional educational process that involves equipping employees with new knowledge, developing their technical skills, and fostering positive attitudes toward work, thereby enhancing their level of professional readiness in changing work environments. Successful training is based on an accurate diagnosis of training needs, scientific planning of the content, effective implementation based on diverse teaching methods, and then monitoring the impact of the training in the work environment [2]. Al-Ta'i et al. defined agricultural extension training as a learning process through which individuals acquire skills and knowledge that enable them to perform their jobs effectively [3]. Al-Hiti defined training as efforts aimed at providing the working individual with information and knowledge that equips them with skills to perform their work or develop skills, knowledge, and experience to increase their current and future efficiency [4]. Training has also been defined as a set of tricks and methods for controlling others in a specific social situation [5].

Shawish views training as "a structured procedure that increases an individual's knowledge and skills to achieve a specific goal" [6]. Kashwi defined it as a deliberate process of modifying attitudes, knowledge, or skill-based behavior through the acquisition of experience to achieve effective performance in a single activity or a group of activities [7]. Harold defined training as "organized activities to provide trainees with the knowledge and skills to understand concepts, reconstruct behavior, and apply learning to different situations with increasing efficiency to achieve desired results" [8]. Training in agricultural extension is not different from the general definition of training, but the difference lies in its focus on agricultural extension workers and the content of the educational material that trainees receive in terms of knowledge and skills related to agricultural extension. Malon defined training in agricultural extension as "a description of the programs and activities implemented by the extension agency or institution to maintain and enhance the competencies of its employees, enabling them to perform tasks related to their work and thus helping the agency or institution achieve its objectives within the scope of its defined mission" [9]. As for Al-Saadi, he defined it as “an organized process to acquire or develop the knowledge, skills and attitudes of agricultural extension agents through following various training methods (training courses, supervisory extension training, scientific cultural training, media training,

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etc.) to reach the required performance in their work" [10].

The importance of training increases when it comes to developing the performance of workers in sectors that require constantly evolving applied skills, such as agriculture. The rapid advancements in agricultural technologies and production methods necessitate a workforce capable of keeping pace with these developments. Recent studies have shown that training directly contributes to improving workers' cognitive performance by raising their level of scientific awareness and connecting them to modern agricultural practices, particularly in water, soil, and pest management [11]. At the skills level, training enables workers to master the technical and operational skills necessary for carrying out agricultural work using modern technologies, in addition to equipping them with the ability to address field problems scientifically [12]. On a behavioral and emotional level, training contributes to strengthening job commitment, developing positive attitudes toward work, and increasing motivation, leading to more balanced and effective performance within organizations [13]. In this context, agricultural extension training is one of the most important tools used by agricultural institutions to enhance the capabilities of workers and agricultural extension agents. Extension training refers to a set of educational activities aimed at transferring modern agricultural knowledge to workers and extension agents in a practical manner that meets their professional needs. The literature classifies extension training into in-service training, workshop training, field training, e-training, and collaborative training with research institutions [14]. Foreign studies highlight the importance of field training in agricultural extension, as it allows workers to learn through direct experience and provides opportunities to engage with real agricultural problems [15]. E-training is also considered a modern method that has contributed to increasing the efficiency of agricultural extension, especially with the expanding use of digital technologies and artificial intelligence in the agricultural sector [16].

Agricultural extension training directly impacts the quality of services provided to farmers by enhancing the knowledge transfer skills of extension agents and improving their ability to use modern extension tools, such as interactive presentations, extension kits, and smart applications. A study by Al-Ami Latif [17]. demonstrated that professional training for extension agents increases their ability to effectively communicate agricultural technologies to farmers and raises the adoption rate of these technologies within the agricultural community. Furthermore, international studies have shown that training contributes to developing extension agents capable of making sound decisions promptly and relying on scientific data to address agricultural challenges [18]. The effectiveness of training is determined by several internal and external factors: the quality of the training courses and methodology, the availability of supporting extension tools (printed materials, audio-visual aids, and electronic platforms), institutional support (management follow-up and implementation budgets), and the working conditions of the trainee's return

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environment. In general, Iraqi studies have shown that organizational and administrative problems, along with a lack of financial support or logistical follow-up, hinder the transfer of acquired skills to the field. Furthermore, the absence of an effective post-training evaluation system reduces the institution's ability to measure the true impact [19].

Based on the above, it is clear that training is a fundamental approach to improving the overall performance of agricultural sector workers, whether at the cognitive, skill-based, or behavioral level. Modern extension training programs are a pivotal tool in developing human capacities within agricultural institutions, contributing to increased productivity and the achievement of sustainable agricultural development. The research question, therefore, is: What is the role of extension training programs in analyzing the performance trajectory of agricultural workers in the agricultural departments of Baghdad Governorate?

Research Objectives

First: The main objective of this research is to analyze the role of extension training programs in developing the performance of agricultural workers in the agricultural departments of Baghdad Governorate, to achieve the following sub-objectives:

1-To identify the level of role of extension training programs in the agricultural departments of Baghdad Governorate in general, as well as the following research fields: (identifying training needs, planning training programs, implementing training programs, and evaluating training programs).

2-To identify the level of performance improvement among agricultural workers in the agricultural departments of Baghdad Governorate in general, and specifically in the following research fields: knowledge development, skills development, and attitude development.

3-To identify the direct and indirect effects of training programs on improving job performance.

Second: Identifying requirements: The Role of Extension Training Requirements in Analyzing the Performance Path of Agricultural Workers in Agricultural Departments / Baghdad Governorate

Research Methodology

The descriptive approach was used through the survey method in this study to investigate the effect of the independent variable on the dependent variable in the field study, which aims to provide a detailed and comprehensive description and interpretation of the phenomena or topics being studied [20].

Research Population and Sample

The number of agricultural workers in the departments covered by the research is (310) employees. A random sample of (40%) of the total number of employees was drawn from these departments as follows: (Agricultural Research, Animal Resources, Agricultural Extension and Training, Veterinary Services, Horticulture, Mesopotamia General Seed Company, Forestry and Desertification, Seed

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Testing and Certification, and Plant Protection). The number of employees was (85, 31, 89, 10, 39, 11, 19, 11, 15) respectively. A simple random sample of (40%) of the total number of employees who had received training was drawn from these departments. These departments, thus bringing the total sample size for the study to (124) respondents.

Data Collection Tool

The questionnaire was used as the tool for collecting data from employees working in agricultural departments, as it is one of the most commonly used methods in the data collection process [21]. The questionnaire was prepared in its initial form after reviewing scientific sources, previous studies, and research related to extension training and employee performance, and after consulting with university professors and specialists in the subject. In light of this, the questionnaire consisted of three parts to achieve the study's objectives. The first part included the areas of the role of extension training programs in developing agricultural workers in the agricultural departments of Baghdad Governorate, and it consisted of (46) items and four field: the felid of identifying training needs, which consisted of (8) items; the second area of planning training programs, which consisted of (17) items; the third area of implementing training programs, which consisted of (9) items; and the fourth felid of evaluating training programs, which consisted of (12) items. The second part of the questionnaire included areas of improving employee performance, which are (developing knowledge, developing skills, and developing attitudes), and it consisted of (24 items), with 8 items in each domain. All domains were measured using a five-point Likert scale. Weights of 5, 4, 3, 2, and 1, were assigned to the respondents' responses (strongly agree, agree, neutral, disagree, and strongly disagree), respectively, according to the actual range of each respondent's total score. Thus, the scale values for the domains related to program role ranged from 46 to 230, with a hypothetical mean of 138. For the domains related to program improvement, the values ranged from 24 to 120, with a hypothetical mean of 72.

The third part dealt with requirements and consisted of 19 problems measured using a three-point Likert scale (large, medium, and small). These problems were assigned weights of 1, 2, and 3, and their scores ranged from 19 to 57.

- Validity and Reliability Procedures

Reliability refers to the degree of stability, retention, and consistency of the scores obtained from the measurement instrument if it is reused with modifications. To check reliability, a pre-test was conducted on the employee survey questionnaire in mid-August 2025.

Results and Discussion

1- To identify the level of role of extension training programs in agricultural departments in Baghdad Governorate in general, and specifically in the following research field: (identifying training needs, planning training

programs, implementing training programs, and evaluating training programs).

The research results showed that respondents' scores ranged from 159 to 230, with an overall average score of 195.55 for the role of extension training programs in improving the performance of agricultural workers in the agricultural departments of Baghdad Governorate, and a standard deviation of 17.24. It was found that 55.6% of respondents classified the role as moderate, 25.0% as high, and 19.4% as low. Respondents were divided into three categories according to the range law, as shown in Table 1.

Table 1. Distribution of respondents according to their level of role in training programs in general.

Categories Role of Programs	Frequencies	%	Average
Low (159-182)	24	19.4	173.08
Medium (183-206)	69	55.6	192.57
High (207 and more)	31	25.0	219.58
Total	124	100%	SD=17.24

Table 1 shows that the level of the role of training and extension programs in agricultural departments in Baghdad Governorate, in general, for the research areas is average and tends to be high. This is due to several reasons, and among these reasons may be that the needs of the respondents for training courses are great, and that planning them is important and increases the flexibility of the training programs, as well as their implementation is done at times that allow the respondents to benefit the most, and that the authorities in charge have foresight in the process of evaluating those programs in every part of the training programs.

The first field: Identifying Training Needs

The research results, shown in Table 2, indicate that the average score of the respondents in the area of identifying training needs was (34.85), with a standard deviation of (3.55). It was found that (49.2%) of the respondents were in the medium category, (41.1%) in the high category, and (9.7%) in the low category. The respondents were divided into three categories according to the range formula.

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Table 2. Distribution of Respondents According to the Field of Identifying Training Needs.

Categories	Frequencies	%	Average
Low (26-30)	12	9.7	28.58
Medium (31-35)	61	49.2	33.10
High (36 and more)	51	41.1	38.43
Total	124	%100	SD=3.55

Table 2 shows that the level of training and extension programs in agricultural departments in Baghdad Governorate, according to the field of identifying training needs, is moderately high. This is due to several reasons, including the preparation of a training program guide to meet work requirements and the prior identification of training needs through well-considered annual plans.

The research results, shown in Table 3, indicate that the average score of respondents in the area of training program planning was 73.75, with a standard deviation of 6.45, which is relatively high. The data shows that the largest percentage of respondents (55.6%) rated this area as moderately high, followed by the high category (37.1%). Respondents were divided into three categories according to the range law.

The second field: Training Program Planning

Table 3: Distribution of Respondents into Categories According to the Field of Training Program Planning.

Categories	Frequencies	%	Average
Low (56-65)	9	7.3	62.22
Medium (66-75)	69	55.6	70.68
High (76 and more)	46	37.1	80.61
Total	124	%100	SD=6.45

Table 3 shows that the level of training and extension programs in agricultural departments in Baghdad Governorate, according to the training program planning domain, is moderately high. This is due to several reasons, including the inclusion of activities or topics in the program planning that enhance problem-solving skills and the ability to find solutions. Additionally, the training program is designed to support trainees' ability to make appropriate professional decisions.

The third field: Implementation of Training Programs

The research results, shown in Table 4, indicate that the average score of respondents in the area of training program implementation was 37.67, with a standard deviation of 4.71, placing it within the high category. It is also evident that the majority of respondents (50.8%) rated this domain as high, followed by the medium category (47.6%). Respondents were divided into three categories according to the range formula.

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Table 4: Distribution of Respondents into Categories According to the felid of Training Program Implementation.

Categories	Frequencies	%	Average
Low (21-28)	2	1.6	23.50
Medium (29-36)	59	47.6	34.27
High (37 and more)	63	50.8	41.32
Total	124	%100	SD=4.71

Table 4 shows that the level of training and extension programs in agricultural departments in Baghdad Governorate, according to the field of program implementation, is moderate with a tendency towards high. This is due to several reasons, including the contribution of training programs to creating a suitable organizational environment for the efficient implementation of strategic plans and objectives. The training programs focus on improving and developing work procedures, which positively impact the quality of performance within the institution.

The fourth field: Evaluation of Training Programs

The research results, presented in Table 5, indicate that the average score of the respondents was 49.26, with a standard deviation of 6.62, which falls within the high range. More than half of the respondents (57.3%) classified this area as high. The respondents were divided into three categories according to the range law.

Table 5: Distribution of Respondents into Categories According to the Field of Training Program Evaluation.

Categories	Frequencies	%	Average
Low (27-37)	5	4.0	31.40
Medium (38-48)	48	38.7	44.37
High (49 and more)	71	57.3	53.59
Total	124	%100	SD=6.62

Table 5 shows that the level of training and extension programs in the agricultural departments of Baghdad Governorate, according to the area of program implementation, is average but tends towards high. This is due to several factors, including a tangible interest in evaluating training programs and monitoring their results, along with the efforts of the agricultural departments' administrations to assess the effectiveness of the training and its achievement of the desired objectives.

2- To identify the level of improvement in the performance of agricultural workers in the agricultural departments of Baghdad Governorate in general, and specifically in the following research field: knowledge development, skills development, and attitude development.

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Table 6 shows that the overall average level of performance improvement reached (101.20), which falls within the high category (96 and above). This indicates that most agricultural workers enjoy a high level of job performance as a result of the developmental programs or practices they have participated in. The data also shows that 73.4% of the sample were classified in the high category, compared to only 23.4% in the average category, and 3.2% in the low category. The respondents were divided into three categories according to the range law.

Table 6. Distribution of respondents into categories according to overall performance improvement.

Categories	Frequencies	%	Average
Low (50-72)	4	3.2	61.25
Medium (73-95)	29	23.4	87.34
High (96 and above)	91	73.4	107.38
Total	124	%100	SD=14.02

Table 6 shows that the overall level of performance improvement among agricultural workers in the agricultural departments of Baghdad Governorate is moderate, tending towards high. This is due to several factors, including the high level of knowledge the respondents possess regarding the information provided about training programs, their positive viewpoints and feelings towards these programs, and their skills in utilizing these programs for agricultural and professional benefit.

Table 7 shows that the overall average level of knowledge development was (33.71), which falls within the high category (32 and above). This indicates that agricultural workers possess a high level of knowledge and professional development in their field. The results also show that 74.2% of the sample belonged to the high category, while 21.8% were in the medium category and only 4.0% in the low category. The respondents were divided into three categories according to the range law.

The first field: Knowledge Improvement

Table 7. Distribution of Respondents into Categories According to the Knowledge Improvement field.

Categories	Frequencies	%	Average
Low (18-24)	5	4.0	21.80
Medium (25-31)	27	21.8	29.33
High (32 and above)	92	74.2	35.95
Total	124	%100	SD=4.87

Table 7 shows that the level of improvement in the knowledge and skills of agricultural workers in the agricultural departments of Baghdad Governorate is moderately high. This is due to several reasons, including the worker's

commitment to understanding instructions and guidelines to minimize errors during agricultural tasks. The worker also adheres to occupational health and safety instructions at agricultural work sites and possesses a thorough understanding of their duties, authority, and assigned responsibilities.

The second Field: Skills Development

The results in Table 8 show that the overall average for skills development was (33.79), which falls within the high category (31 and above). This indicates that agricultural workers possess a high level of skill proficiency, enabling them to perform their duties efficiently. The data shows that the majority of the sample (83.1%) belongs to the high category, while the average category (15.3%) and the low category (1.6%) are only categorized into three groups according to the range law.

Table 8: Distribution of Respondents into Groups According to Skills Improvement Field.

Categories	Frequencies	%	Average
Low (15-22)	2	1.6	16.00
Medium (23-30)	19	15.3	28.68
High (31 and above)	103	83.1	35.45
Total	124	%100	SD=4.95

Table 8 shows that the level of performance improvement among agricultural workers in the agricultural departments of Baghdad Governorate in the field of skills development is moderate, tending towards high. This is due to several reasons, including the agricultural worker's efficient and high-quality completion of assigned tasks and duties; their meticulous and responsible performance of basic duties; their effective use of time to benefit agricultural work; and their wise and effective handling of emergencies and unexpected situations.

The third field: Improving Attitudes

The results in Table 9 show that the overall average level of attitude development reached (33.72), which falls within the high category (31 and above). This reflects the high level of positive attitudes among agricultural workers towards agricultural work and the training programs in which they participate. The results also show that the largest percentage of the sample (83.1%) falls within the high category, compared to (15.3%) in the medium category and only (1.6%) in the low category. The respondents were divided into three categories according to the range law.

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Table 9: Distribution of Respondents into Categories According to the Field of Attitude Improvement.

Categories	Frequencies	%	Average
Low (15-22)	2	1.6	16.00
Medium (23-30)	19	15.3	26.68
High (31 and more)	103	83.1	35.34
Total	124	%100	SD=4.96

Table 9 shows that the level of performance improvement among agricultural workers in Baghdad Governorate's agricultural departments, specifically in skills development, is moderate but tends towards high. This is attributed to several factors, including the worker's willingness to attend additional training courses to enhance their performance, their receptiveness to constructive feedback and criticism aimed at improving their work, their strong connection to the agricultural entity they work for, and their dedication to their work, requiring the necessary effort and time.

3- Identifying the direct and indirect effects of training pathways on improving job performance.

The correlation shown by the correlation coefficient does not establish a causal relationship between the factors (functional training areas) and the level of functional training performance. There may be indirect effects of the factors on each other in addition to the direct effect of each factor. This represents one of the important conditions for revealing the causality of the relationship (Baily, 1987:47). Therefore, the path analysis method was used to reveal causal relationships, as described by Johnson (1988:422), which is effective in determining the causality of the relationship between independent factors and the dependent factor. He emphasized the necessity of using it in psychological and social research to avoid the misleading conclusion that the researcher may draw based on the significance of the relationship, using the correlation coefficient between the study factors and the dependent factor. From this, it can be said that the correlation between an independent factor and the dependent factor may not be mostly from the independent factor included in the analysis, but rather from other factors included in the analysis. Based on path analysis, the correlation relationship can be interpreted through the effect of the paths of the factors, through which the direct and indirect effects of the path model of the factors included in the study (training areas) become clear, as shown in Figure (1) and Table (10).

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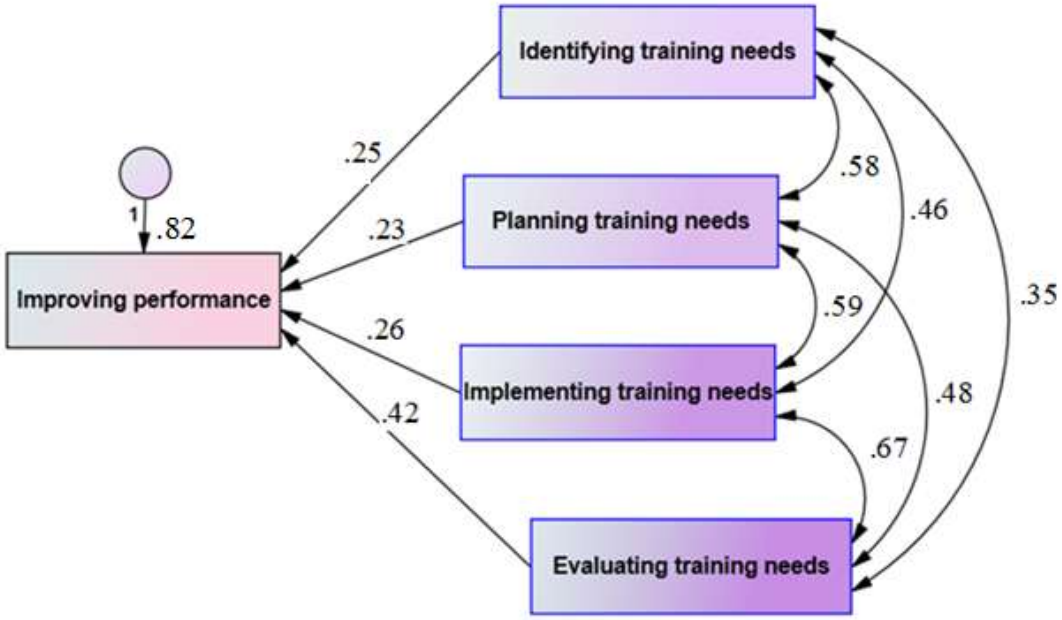

Figure 1. Direct and indirect effects of the training domains pathways model on the dependent worker's job performance.

Table 10 shows that the direct effect of x1 was significantly positive, reaching 0.25, and that the indirect effects of all other factors in the study were significant in relation to factor x1, totaling 0.3995, all of which were positive. Similarly, the direct effect of x2 was significantly positive, with a strength of 0.23, and all indirect effects of the other variables were significant in their impact, all positive, reaching 0.50. Likewise, the direct effect of x3 was significantly positive, and all indirect effects of the other variables were significant in their impact, all positive, reaching a strength of 0.5261. The direct effect of x4 was also significantly positive, while all indirect effects of the other factors reached a strength of 0.36.17, and were significant in their impact, all positive. Therefore, it is clear that the training factors (training areas) showed significant correlations with the level of worker performance in the direct effect, and also had indirect causal effects in the Dependent factor (job performance).

Table 10. Causal effects (direct and indirect) of training field pathways on job performance.

Fields / Type of effect	X1 needs identification	X2 needs planning	X3 needs implementation	X4 needs an assessment
Direct effect	0.25	0.23	0.26	0.42
About path x1	1	0.1450	0.1150	0.0875
About path x2	0.1334	1	0.1357	0.1104
About path x3	0.1191	0.1534	1	0.1638
About path x4	0.1470	0.2016	0.2814	1
Correlation value	0.6495	0.73	0.7921	0.7817

Table 10 shows that all factors (fields of vocational training) explain 82% of the variance in the impact of vocational training fields on employee performance. This explains the interconnected relationship between training fields (identification, planning, implementation, and evaluation) and employee performance, indicating the importance and necessity of making significant efforts and paying attention to all areas of vocational training to develop and improve employee performance.

Secondly: Defining the requirements for the role of extension training programs in analyzing the performance of agricultural workers in agricultural departments / Baghdad Governorate.

The results of Table 11, which identifies the requirements facing extension training programs in agricultural departments in Baghdad Governorate, show that all items received high levels of agreement. This indicates the existence of real and diverse challenges that affect the effectiveness of these programs and their ability to achieve their goals in improving the performance of agricultural workers. The problem of "insufficient funding provided by entities responsible for training and qualifying agricultural sector personnel" ranked first according to its relative weight (8.250) and received the highest number of approvals (95), reflecting its pivotal importance to the success of the training process.

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Table 11. The requirements facing training and extension programs in improving the performance of agricultural workers in the agricultural departments / Baghdad Governorate.

S	Problems	Agree	Neutral	Disagree	Relative weight
1	Weak funding provided by the relevant authorities for training and qualifying agricultural sector personnel.	95	27	2	8.250
2	Lack of resources and their unavailability for training programs.	84	37	3	7.959
3	Lack of awareness of the importance of agricultural extension training programs.	73	39	12	7.475
4	Lack of cooperation between the trainer, the trainee, and those around him in an educational environment.	48	49	27	6.508
5	The weakness of trainers' qualifications and self-development in preparing them to benefit from training programs.	57	52	15	7.016
6	Insufficient supplies and tools are needed to implement training programs.	79	37	8	7.717
7	Weak follow-up and continuous evaluation of agricultural extension training programs.	76	32	16	7.451
8	The lack of clear protocols for evaluating the effectiveness of the mentoring program itself.	69	47	8	7.475
9	Lack of responsiveness and cooperation from trainees with the trainer or lecturer.	40	55	29	6.266
10	The nomination procedures for training and specialized courses are unclear and not defined by objective criteria.	57	49	18	6.943
11	Failure to announce training courses promptly.	65	42	17	7.161
12	Difficulty in getting trainees to the location where the training courses are held.	67	40	17	7.209
13	The lack of competence of the trainers responsible for implementing the training programs.	43	52	29	6.338
14	The content of the specialized training courses is not appropriate for the trainees' field of specialization.	49	47	28	6.508
15	Lack of amenities and facilities for trainees	49	49	26	6.556

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16	Favoritism among trainers in dealing with trainees	41	51	32	6.217
17	The course time is insufficient to cover all its topics.	52	47	25	6.653
18	Lack of material and moral incentives for livestock workers to enroll in training courses	76	41	7	7.669
19	The difficulty in applying for specialized training courses stems from the lack of a clear plan for them.	60	48	16	7.064

Table 11 reveals numerous requirements, including insufficient funding leading to reduced capacity to provide training materials, fewer courses, lower quality content, and a failure to attract specialized trainers. This directly impacts the performance of agricultural workers. The requirements of "lack of resources and their unavailability for training programs" followed, with a relative weight of 7.959. This issue is closely linked to funding, as limited resources-whether human, logistical, or technical-impede the successful implementation of extension training programs. Other problems also emerged with significant weight, such as inadequate supplies and tools for implementing training programs; a lack of incentives for workers to participate in training courses; weak follow-up and continuous evaluation; and the absence of clear evaluation protocols. These all point to administrative and organizational deficiencies in the management of the training process, in addition to a clear deficiency in technical and logistical support systems. As for the requirements that came in last place, such as: the lack of cooperation between trainees and trainers, the lack of competence of some trainers, and favoritism in dealing within the training environment, the low relative weight of these problems does not indicate their lack of importance, but rather that the respondents see them as having less impact compared to the major requirements related to funding, resources, and organizational controls that form the basic structure for the success of any training program.

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Conclusions

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. The research results showed that the training and extension programs available to agricultural workers in Baghdad Governorate have a generally positive impact on improving job performance. However, this impact remains at a moderate level, indicating a gap between the current training situation and the level required to achieve optimal performance.

2. It appears that the practices for identifying training needs within agricultural departments are implemented to an acceptable degree, but they do not rely on accurate diagnostic methodologies. This reduces the effectiveness of subsequent training programs and makes them less aligned with the actual needs of the workers.

3. The research results show that the process of planning training programs is carried out with relative attention. However, the limited integration between planning and the strategic objectives of the agricultural sector leads to a weakness in translating plans into high-impact training programs.

4. The analysis of the results shows that the implementation of training programs is generally good. However, the differences among workers indicate variations in the quality of implementation and a need to diversify training methods and develop the skills of trainers to ensure that the content reaches all beneficiaries effectively. 5. The research findings indicate that evaluating training programs is clearly important to agricultural departments. However, the measurement tools and standards used still need development to provide accurate feedback that contributes to redesigning and improving future programs.

6. The results indicate that the most significant requirements affecting the training process are weak funding and a lack of basic resources necessary for implementing training programs, followed by a lack of awareness of the importance of training among some employees. This demonstrates that financial and logistical challenges are the biggest obstacles to developing training programs and qualifying personnel, thus limiting the quality of implementation and the effectiveness of training outcomes.

Recommendations

The Iraqi Ministry of Agriculture is directly responsible for developing the agricultural sector, and training programs for this important sector fall under the purview of the Agricultural Extension and Training Department. Therefore, the researcher recommends the following:

1. Developing all stages of the training process, from needs assessment to planning, implementation, and evaluation, to ensure increased efficiency of extension programs and a tangible impact on improving the job performance of agricultural workers.

2. Enhancing the accuracy of identifying training needs by using scientific analytical tools such as questionnaires, interviews, and observation, and involving employees in identifying their needs to ensure that training aligns with actual work requirements. 3. Develop the training program planning

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process by preparing annual plans based on needs analysis and linking these plans to the institutional goals of the agricultural sector, while involving specialists and experts to ensure their effectiveness and sustainability.

4. Improve the quality of training program implementation by diversifying training methods, such as field visits and practical application, and providing trainers with the necessary resources to ensure effective training that aligns with the institution's objectives.

5. Develop evaluation and follow-up systems by adopting objective standards and clear performance indicators, along with conducting pre- and post-training assessments that measure the impact of training and contribute to developing more efficient future programs.

6. Continue implementing effective training programs that have proven their ability to improve employee performance, with greater attention given to average and low-performing employees to reduce the performance gap and achieve greater job integration.

7. Regularly update the content of theoretical and practical training programs to keep pace with scientific and technological developments in the agricultural sector, focusing on raising the knowledge and skills level of average and low-level employees. 8. Foster positive attitudes and professional commitment among employees through motivational and training programs that focus on building supportive attitudes toward performance and encourage initiative and creativity at work.

10. It is recommended to enhance financial support and provide the necessary resources for training programs through coordination among relevant entities, while simultaneously working to raise awareness among staff about the importance of training through awareness and motivational campaigns. This will ensure the mitigation of the impact of current requirements and the sustainable improvement of the effectiveness of training programs.

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