

Evaluation of In-Service Training Programs at the Agricultural Extension and Training Center in Kirkuk for the Period 2022–2024 from the Trainees' Perspective

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Abstract

The study aimed to determine the level of training evaluation from the trainees' perspective in general and within each evaluation domain, as well as to identify the variation in training outcomes, as a dependent variable, according to selected trainee characteristics. The study population included all agricultural employees in Kirkuk who participated in the training programs implemented at the Agricultural Extension and Training Center during the period from 2022 to 2024, totaling 150 trainees. Data were collected through personal interviews using a questionnaire specifically designed for trainees. The questionnaire consisted of two parts. The first part addressed the trainees' personal and occupational characteristics, while the second part included seven domains for training evaluation. The instrument was presented to a panel of experts to establish face validity and content validity. Reliability was assessed using two methods: the split-half method with correction by the Spearman–Brown formula, and Cronbach's alpha coefficient. The collected data were statistically analyzed using several statistical techniques, including percentage weight, the Karl Pearson correlation coefficient, the Spearman correlation coefficient, the Mann–Whitney U test, and the Kruskal–Wallis test. The results indicated that the overall level of training was moderate with a tendency toward a high level. The training outcomes domain ranked first, with an achievement percentage of 79.61%, whereas the training environment and its requirements domain ranked last, with an achievement percentage of 73.43%. The findings also revealed no variation in the level of training outcomes according to the following variables: gender, age, length of service, specialization related to the training course topic, previous participation in training, and nomination for training. In contrast, variation in the level of evaluation was observed with respect to educational attainment, occupational ambition, willingness to innovate, and training motivation.

Keywords: In-service training, training evaluation, agricultural extension, trainees' perspectives, training outcomes, Agricultural Extension and Training Center, Kirkuk.

Introduction

Agricultural extension services, represented by the range of activities provided by agricultural extension to farmers in general, are planned and implemented by extension personnel, particularly at the local level, who constitute one of the most important inputs of the extension system. They are the principal instrument through which the system carries out its operations, programs, and activities in order to achieve the intended objectives at each stage. The effectiveness and feasibility of these activities, projects, and programs are influenced by the quantitative and qualitative characteristics of the personnel within the system, as well as by the level of their job performance. The quantitative dimension refers to the adequacy of the number of personnel responsible for delivering extension services, whereas the qualitative dimension encompasses their administrative, technical, and organizational capacities. Therefore, the development of the capacities of extension personnel has received increasing attention as an appropriate strategy for improving the performance of the extension organization and meeting farmers' needs [1].

The importance of training has emerged as the foundation of learning, development, and human resource capacity building, and

consequently as a key factor in societal progress. At the present time, training has become an increasingly urgent necessity in an era characterized by rapid social change, numerous scientific discoveries, and continuous agricultural and industrial advancement. These rapid transformations have placed contemporary individuals before new tasks and needs that must be addressed in order to keep pace with scientific and technological change. Training therefore aims to increase the returns on human capital through the investment of individuals' productive capacities in order to achieve the highest possible level of productivity.

While training constitutes a necessity in all sectors, it is even more urgent in the agricultural sector because of the relative underdevelopment of agriculture in Arab countries and the existing opportunities for modernization and improvement. This is further compounded by the inadequate pre-service preparation of personnel working in this sector, in addition to continuous scientific developments that have generated agricultural technologies requiring application at the field level. Accordingly, training has become an essential requirement for all personnel in the agricultural sector, whether they are government

employees in their various positions or farmers and local rural leaders [2]. Meeting the agricultural sector's quantitative and qualitative needs for trained manpower at an appropriate level constitutes one of the principal foundations for promoting development, particularly in developing countries, because such manpower represents the link between the level of specialists and the level responsible for implementing the production process. Research conducted on the impact of training on increasing production and productivity has demonstrated that one of the most important factors in raising production levels is the existence of effective education and training systems [3].

Accordingly, recent years have witnessed increasing attention to extension training by governmental organizations, whose administrators have recognized the importance of training as an activity that benefits both the individual and the organization. Training contributes to improving the efficiency and productivity of employees, enhancing work methods, bringing about positive changes in their knowledge, skills, and attitudes, and assisting them in solving the problems they encounter in order to achieve the highest possible level of productive efficiency. All training institutions therefore seek to prepare their personnel intellectually and professionally, enable them to perform their roles efficiently, and

provide them with updated knowledge required by emerging conditions in order to achieve their objectives [4].

Therefore, the educational and training activities undertaken by agricultural extension organizations cannot be objectively judged in terms of their importance and success without conducting a sound evaluation process. Evaluation, in the contemporary context, represents the instrument through which the constraints affecting extension activities and programs are diagnosed, and the basis from which their development can be achieved [5]. Al-Ta'ani noted that evaluation is a complex process because it requires judgment and therefore involves numerous elements and tests. Among the matters that should be taken into consideration in evaluating training programs is the extent to which the program achieves its intended objectives. Tests are considered effective evaluation tools for identifying strengths to be reinforced and weaknesses to be addressed. Accordingly, the course of the training program may be modified on the basis of evaluation results, and its objectives and content may be reconsidered if the findings indicate that they are not appropriate to the trainees' capabilities [6].

The implementation of any training program requires the careful selection of trainees and trainers, the provision of training requirements, and consideration of the conditions

surrounding the training process. All these aspects should be included in any evaluation of training programs, which should be conducted objectively to ensure the achievement of the intended objectives and the rational utilization of human and material resources [7]. Measuring reactions toward the training program is one of the most common and least costly methods of training evaluation. It refers to identifying trainees' opinions regarding the training program, trainers, training content, type of training, and training methods. Several approaches may be used to assess such reactions, including personal interviews with trainees to identify their views of the program, careful observation of trainees during the training course, or the use of questionnaires designed to obtain quantitative responses. The latter is considered one of the most effective methods because the information obtained through it is measurable [8].

For these reasons, and in view of the importance of training and its evaluation, the researcher selected the Agricultural Extension and Training Center in Kirkuk, which has implemented numerous training courses for agricultural employees aimed at improving their

Research Objectives

First: To evaluate in-service training at the Agricultural Extension and Training Center in Kirkuk from the trainees' perspective in the following

professional competence and bringing about positive changes in their knowledge, skills, and attitudes, while also acquainting them with recent developments in their areas of specialization. Training of agricultural employees has received the greatest attention among the center's activities and programs, as reflected in the large numbers of employees participating in these courses. Considerable expertise, effort, and financial resources have been invested in implementing these programs. Therefore, it is necessary to identify the benefits, outputs, and returns of this investment on both the organization and the trainees. Such an assessment cannot be achieved through simple or casual observation; rather, it requires a systematic evaluation process. From this perspective, the present study was designed to evaluate in-service training at the Agricultural Extension and Training Center in Kirkuk in order to identify strengths to be reinforced and weaknesses to be addressed. The study was guided by the following question: What is the current status of in-service training evaluation at the Agricultural Extension and Training Center in Kirkuk.

domains: training objectives, training content, selection of trainers, training methods and aids, training environment and requirements, trainers'

characteristics, and training outcomes. This objective will be achieved through:

- a. Determining the overall level of in-service training across all training domains.
- b. Determining the level of in-service training within each of the domains mentioned above.

Second: To determine the variation in training outcomes from the trainees' perspective (as a dependent variable) according to selected personal characteristics of the trainees, namely: gender, age, educational attainment, length of service, specialization related to the training course topic, previous participation in training, nomination for training, occupational ambition, willingness to innovate, and training motivation.

Significance of the Study

The significance of the study can be summarized as follows:

1. Development of the training process: The study contributes to evaluating in-service training at the Agricultural Extension and Training Center in Kirkuk, thereby helping to identify strengths and weaknesses and improve the quality of training programs provided to trainees.
2. Improvement of the efficiency of agricultural personnel: The study provides scientific indicators

regarding the effectiveness of training in developing trainees' knowledge and skills, which is expected to positively enhance professional performance in the agricultural sector.

3. Support for decision-making and future planning: The study assists decision-makers in formulating more effective training plans based on empirical findings derived from the trainees' perspective, thereby contributing to the more effective achievement of agricultural extension objectives.

Research Hypothesis

There are no statistically significant differences in training outcomes, as perceived by trainees (as a dependent variable), according to the trainees' personal and occupational characteristics, namely: gender, age, educational attainment, length of service, specialization related to the training course topic, previous participation in training, nomination for training, occupational ambition, willingness to innovate, and training motivation.

Operational Definitions

1. In-service training: A set of organized training activities and programs provided by the Agricultural Extension and Training Center in Kirkuk during the period 2022–2024, aimed at developing

trainees' job-related knowledge and skills. It is measured through trainees' responses to the questionnaire items developed for this purpose using a three-point scale.

2. Training motivation: The degree of readiness and willingness of trainees to participate in the training programs provided by the Agricultural Extension and Training Center in Kirkuk, as reflected in their interest in attendance, interaction, and benefit from training.

3. Agricultural trainees: Any individual working or producing within the agricultural sector who participated in the training courses organized by the Agricultural Extension and Training Center in Kirkuk during the period from 2022 to 2024, and who holds one of the following qualifications: agricultural secondary school certificate, agricultural diploma, bachelor's degree in agriculture, or

postgraduate qualifications in agricultural sciences.

Materials and Methods

Study Population

The study population consisted of all employees working in the Directorate of Agriculture in Kirkuk and other agricultural institutions, including the Agricultural Supplies Company, the Mesopotamia Company, the Seed Testing and Certification Company, the Veterinary Directorate in Kirkuk, and the Agricultural Research Directorate in Kirkuk, who participated in the training courses conducted by the Agricultural Extension and Training Center in Kirkuk during the period from 2022 to 2024. The total number of trainees was 175. Data were collected from 150 trainees, representing 86% of the total trainee population, after excluding a number of questionnaires due to incomplete information.

Table (1): Titles of Training Courses, Numbers of Trainers, Trainees, and Respondents, and Dates of Implementation (2022)

No	Training Course Title	No. of Trainers	No. of Agricultural Trainees	No. of Respondents	Date of Implementation
1	Important proper and commonly adopted methods for producing breeder and foundation seeds of barley	2	12	12	7–9/3/2022
2	Cultivation and management of wheat for seed production	3	12	10	14–16/3/2022
3	Propagation and grafting of deciduous and evergreen fruit rootstocks	2	14	10	10–12/5/2022
4	Cultivation and management of wheat for seed production within the extension awareness program	2	12	8	24–26/5/2022
5	Agricultural marketing using modern post-harvest methods	1	15	8	19–21/7/2022
Total		10	65	48	

Table (2): Titles of Training Courses, Numbers of Trainers, Trainees, and Respondents in Each Training Course, and Dates of Implementation (2023)

No	Training Course Title	No. of Trainers	No. of Trainees	No. of Respondents	Date of Implementation
1	Management science, administrative reform, and the importance of management	2	11	10	22/1–2/2/2023
2	Integrated management of strategic field crops	3	10	10	28/2–2/3/2023
3	Management science and the State Discipline Law	2	12	11	14–16/5/2023
4	Production of maize	2	11	9	24–

ISSN 2072-3857

hybrids and synthetic varieties, and crop management operations				26/5/2023
Total	9	44	40	

Table (3): Titles of Training Courses, Numbers of Trainers, Trainees, and Respondents in Each Training Course, and Dates of Implementation (2024)

No	Training Course Title	No. of Trainers	No. of Trainees	No. of Respondents	Date of Implementation
1	Geographic Information Systems (GIS) applications and GPS devices	2	10	10	23–25/1/2024
2	Integrated management of wheat crop	3	12	11	28–30/4/2024
3	Importance of spraying cattle, buffaloes, and livestock shelters with pesticides to control ticks as vectors of hemorrhagic fever	3	12	10	2–4/7/2024
4	Irrigation scheduling and fertilizer application using modern irrigation systems for maize crop	2	10	10	8–10/10/2024
5	Integrated management in the design and implementation of irrigation systems	2	12	11	4–6/11/2024
6	Paulownia trees and their role in reducing global warming	3	10	10	9–12/12/2024
Total		15	66	62	

Research Instrument

In order to achieve the objectives of the study, the researcher developed a questionnaire consisting of two main parts:

Part One: This section included a set of questions designed to measure the personal and occupational characteristics of the trainees. These variables were measured as follows:

1. Gender: This variable was categorical in nature, classified into males and females.

2. Age: This variable was measured in terms of years.

3. Educational attainment: It was assigned numerical values (1, 2, 3, 4) corresponding to the following levels respectively: secondary school, diploma, bachelor's degree, and higher degree.

4. Length of service: This was calculated based on the number of years the trainee has spent in his/her current job.

5. Specialization: Refers to the extent of the trainee's specialization in the subject of the training course. It was assigned numerical values (1, 2) representing (specialized, non-specialized), respectively.

6. Previous training participation: Indicates whether the trainee had participated in previous training courses. It was assigned numerical values (1, 2) representing (participated, not participated), respectively.

7. Training nomination: Refers to the process through which trainees are selected to attend training courses. It was assigned numerical values (1, 2) representing (consulted in nomination, not consulted), respectively.

8. Occupational ambition: This variable was measured through 10

items, with response weights of (1, 2, 3) according to the response level.

9. Willingness to innovate: This variable was measured through 8 items, with response weights of (1, 2, 3).

10. Training motivation: This variable was measured through 12 items, with response weights of (1, 2, 3).

Part Two: This section included the evaluation of training across seven domains: training objectives, training content, selection of trainees, training methods and aids, training environment and requirements, trainers' characteristics, and training outcomes. Each domain included a number of evaluation criteria as follows (14, 12, 7, 10, 10, 14, and 12 respectively), bringing the total number of criteria to 79.

These evaluation criteria were developed based on a review of relevant literature and the opinions of specialists in training, evaluation, and measurement. Three response options were provided for each criterion to indicate the level of achievement: high, medium, and low, assigned numerical values (1, 2, 3) respectively. The overall level of training was determined by summing the scores of all criteria, resulting in a theoretical range between 79 and 237.

The questionnaire was initially reviewed by a panel of experts in

agricultural extension, education, psychology, measurement, and evaluation to ensure face validity. Accordingly, some items were rephrased. Content validity was established through comparison of the evaluation criteria and items with similar studies and research, as well as by determining the relative importance of each training evaluation domain based on expert opinions.

Reliability was assessed to determine the instrument's ability to consistently measure the intended phenomenon and to produce approximately similar results if reapplied to the same group under similar conditions or with a parallel test [9]. Reliability is considered a fundamental requirement for research instruments [10].

To estimate reliability, a pilot sample of 25 trainees was selected randomly from within the study population who had participated in training courses during the period 2022–2024. These participants were employees of the Directorate of Agriculture in Kirkuk, its

agricultural divisions, and the General Company for Seed Certification in Kirkuk. Data were collected through personal interviews using the questionnaire.

The pilot test aimed to:

- a. Ensure clarity of questionnaire items for respondents.
- b. Estimate the reliability of the research instrument.

Reliability was calculated using the split-half method by determining the correlation between odd and even items, which reflects half-test reliability. The full reliability coefficient was then computed using the Spearman–Brown formula. To further confirm reliability, the Cronbach alpha method was also used, as it is commonly applied for attitude and opinion scales and provides a lower-bound estimate of reliability [11]. This method is based on the relationship between item variance and total variance within each evaluation domain.

A scale is considered reliable when the reliability coefficient exceeds 0.70 [12]. Table (4) presents the reliability coefficients.

Table (4): Reliability Coefficients (Cronbach's Alpha and Spearman–Brown) for the Training Evaluation Domains

No.	Training Evaluation Domains	Spearman–Brown	Cronbach's Alpha
1	Training Objectives	0.792	0.798
2	Training Content	0.842	0.825
3	Selection of Trainees	0.754	0.816
4	Training Methods and Aids	0.768	0.842
5	Training Environment and Requirements	0.830	0.769
6	Trainers' Characteristics	0.851	0.829
7	Training Outcomes	0.806	0.806

From the above table, it is evident that all evaluation domains obtained reliability coefficients higher than (0.70), indicating an acceptable level of reliability for the training evaluation domains.

After completing data collection, coding, and tabulation, the data were analyzed using the Statistical Package for the Social Sciences (SPSS) and Microsoft Excel. Since the data were not normally distributed, the researcher adopted non-parametric statistical methods, including the Kruskal–Wallis test and the Mann–Whitney U test, in addition to several other statistical tools, namely: percentage weight, Karl Pearson correlation coefficient, Spearman's correlation coefficient, Cronbach alpha, Mann–Whitney test, and Kruskal–Wallis test.

RESULT AND DISCUSSION

1. Evaluation of In-Service Training at the Agricultural Extension and Training Center in Kirkuk from the Trainees' Perspective This objective

was achieved through the following sub-objective:

a. Determining the overall level of in-service training across all evaluation domains:

The level of training evaluation was classified into three categories using the arithmetic mean and standard deviation of the scores representing the evaluation degree. The standard deviation value (28.12) was added to the mean score (171.45), and then subtracted to define the middle category range, which was between (143–200) degrees.

Since the minimum observed score was (102) and the maximum was (237), the low evaluation category was determined to range between (102–142), while the high evaluation category ranged between (201–237), as shown in Table (5).

Table (5): Level of In-Service Training Evaluation Across All Domains from the Trainees' Perspective

Training Level	Evaluation	No. of Trainees	Percentage (%)	Mean
Low	evaluation (102–142)	13	8.7	125.08
Medium	evaluation (143–200)	101	67.3	173.05
High	evaluation (201–237)	36	24	218.64
Total		150	100%	

Mean = 171.45 SD = 28.12

The results presented in Table (5) show that 8.7% of the trainees rated the training as low, while 67.3% rated it as moderate, and 24% rated it as high.

The results indicate that more than three-quarters of the respondents perceived the in-service training at the Agricultural Extension and Training Center in Kirkuk as moderate tending toward a high level. This may be attributed to the sound procedures and efforts exerted by the center's staff and supporting institutions, which positively influenced trainees' evaluation of the training programs. This finding is consistent with the studies of Al-[13], [14].

Table (6) presents the ranking of the evaluated training domains according to their degree of achievement. The results indicate that the training outcomes domain ranked first, with a mean score of (28.66) and an achievement percentage of (79.61%). This may be attributed to trainees' awareness of

the direct impact of training on improving job performance, developing practical skills, enhancing problem-solving abilities, and increasing responsibility. It may also be explained by the nature of the sample, which included trainees who had participated in multiple training courses, leading to a cumulative training effect and higher levels of satisfaction, which was reflected in their positive evaluations of this domain compared to other domains. This result is consistent with the study of [15], which confirmed a positive relationship between training components and job performance in agricultural extension workers.

In contrast, the training environment and requirements domain ranked last, with a mean score of (33.09) and an achievement percentage of (73.43%). Although this is still considered a good level, it is relatively lower compared to other domains because it reflects material and logistical factors outside the core training process. Such factors

may not always be optimal in extension centers, unlike training outcomes which depend more directly on trainer competence and

content quality. This finding is inconsistent with the study of [16], but consistent with the study of [17].

Table (6): Ranking of Training Evaluation Domains According to Degree of Achievement

No.	Evaluation Domain	Mean	Maximum Score	Percentage Weight (%)	Rank
7	Training Outcomes	28.66	36	79.61	1
4	Training Methods and Aids	23.70	30	79.00	2
6	Trainers' Characteristics	33.09	42	78.79	3
1	Training Objectives	32.87	42	78.26	4
2	Training Content	28.17	36	78.25	5
3	Selection of Trainees	16.05	21	76.43	6
5	Training Environment and Requirements	22.03	30	73.43	7

Second: Determining Differences in Training Outcomes According to Trainees' Personal and Occupational Characteristics

1. Gender: The Mann–Whitney U test was used. Table (7) shows that the Mann–Whitney value was (0.397) and the significance level was (0.847), which is greater than (0.05). Accordingly, the null hypothesis is accepted, indicating homogeneity in training outcomes according to gender. This similarity between males and females may be attributed to the fact that training courses target common job-related skills required in agricultural work at the center, in addition to uniform training conditions (trainers, halls, and facilities), which led to similar expectations and evaluations.

2. Age: The Kruskal–Wallis test was used. Table (7) shows a calculated value of (3.566) with a significance

level of (0.168), which is higher than (0.05). Therefore, the null hypothesis is accepted, indicating no statistically significant differences in training outcomes according to age. This suggests that increasing age did not lead to noticeable improvement or decline in training outcomes.

3. Educational Attainment: The Kruskal–Wallis test was used. The calculated value was (18.91) with a significance level of (0.000), which is less than (0.05). Thus, the null hypothesis is rejected, indicating significant differences in training outcomes according to educational level. Bachelor's and diploma holders recorded higher mean ranks compared to other groups, while postgraduate degree holders recorded the lowest ranks, suggesting that current training programs are more suitable for intermediate educational levels.

4. Length of Service: The Kruskal–Wallis test was used. The value was (1.545) with a significance level of (0.462), which is greater than (0.05). Therefore, the null hypothesis is accepted, indicating no significant differences according to years of service. This implies that years of experience are not a decisive factor in training success, and that training itself is the key determinant of skill acquisition. It also reflects that the training programs are designed to meet the needs of employees with different levels of experience.

5. Specialization in Training Topic: The Mann–Whitney U test was used. The value was (2154.5) with a significance level of (0.444), which is greater than (0.05). Therefore, the null hypothesis is accepted, indicating no significant differences according to specialization. This may be due to the fact that training content was delivered in a clear and simplified manner that considered differences in academic backgrounds, enabling both specialized and non-specialized participants to benefit equally.

6. Previous Training Participation: The Kruskal–Wallis test was used. The value was (319) with a significance level of (0.053), which is slightly greater than (0.05). Therefore, the null hypothesis is accepted, indicating no significant differences according to previous training participation. This suggests that prior training experience did not have a decisive influence on current

training outcomes. This finding is consistent with the study of [14].

7. Training Nomination: The Mann–Whitney U test was used. The value was (1144.5) with a significance level of (0.052), which is greater than (0.05). Therefore, the null hypothesis is accepted, indicating no significant differences according to training nomination. This may be due to trainees' awareness of the importance of training for professional development regardless of how they were nominated.

8. Occupational Ambition: The Kruskal–Wallis test was used. The value was (34.639) with a significance level of (0.000), which is less than (0.05). Therefore, the null hypothesis is rejected, indicating significant differences according to occupational ambition. Trainees with higher ambition achieved higher training outcomes, as ambition acts as a strong motivating factor enhancing training effectiveness.

9. Willingness to Innovate: The Kruskal–Wallis test was used. The value was (16.12) with a significance level of (0.0003), which is less than (0.05). Therefore, the null hypothesis is rejected, indicating significant differences according to willingness to innovate. This reflects a high awareness among trainees of the importance of keeping up with modern agricultural developments. Trainees with greater willingness to innovate benefited more from training. This finding is consistent with the study of [18],

ISSN 2072-3857

which indicated that higher openness to change enhances interaction with modern techniques and training programs.

10. Training Motivation: The Kruskal–Wallis test was used. The value was (18.45) with a significance level of (0.0001), which is less than (0.05). Therefore, the null hypothesis is rejected, indicating significant differences

according to training motivation. These differences are statistically significant and attributed to variations in motivation levels. Higher-ranked differences were in favor of trainees with strong motivation, indicating that highly motivated trainees achieve better training outcomes. This result is not consistent with the study of [14], but it is consistent with the study of [19].

Table (7): Variation in Training Outcomes According to Trainees' Characteristics

No.	Factor	Categories	No. of Trainees	Percentage (%)	Mean Rank	Mann–Whitney / Kruskal–Wallis Value	Calculated significance level
1	Gender	Males	91	60.67	77.82	0.397	0.847
		Females	59	39.33	71.77		
2	Age	24–35 years	85	56.7	78.20	3.566	0.168
		36–47 years	24	16.0	38.38		
		48–60 years	41	27.3	72.20		
3	Education attainment	Secondary	10	6.7	73.20	18.91	0.000
		Diploma	15	10	86.80		
		Bachelor	72	48	88.36		
		Higher degree	53	35.3	55.28		
4	Length of service	Short (1–12 years)	81	54.0	74.67	1.545	0.462
		Medium (13–24 years)	48	32.0	72.16		
		Long (≥ 20 years)	21	14.0	86.07		
5	Specialization	Specialized	108	72	76.55	2154.5	0.444
		Non-specialized	42	28	73.13		
6	Previous training participation	Participated	145	96.7	76.82	0.232	0.630
		Not participated	5	3.3	66.30		

7	Training nominati on	With opinion	125	83.3	76.84	1144.5	0.052
		Without opinion	25	16.7	68.78		
8	Occupati onal ambition	Low (11–17)	8	5.3	37.00	34.639	0.000
		Medium (18– 24)	57	38.0	54.11		
		High (25–30)	85	56.7	93.46		
9	Willingn ess to innovate	Low (8–13)	7	4.7	30.5	16.12	0.0003
		Medium (14– 18)	41	27.3	61.2		
		High (19–24)	102	68.0	84.9		
10	Training motivatio n	(13–20)	7	4.6	52.9	38.286	0.000
		(21–28)	58	38.7	75.00		
		(29–36)	85	56.7	115.5		

Conclusion

In light of the study results, it can be concluded that more than three-quarters of the trainees rated the in-service training courses at the Agricultural Extension and Training Center in Kirkuk as moderate tending toward a high level, indicating that the overall level of training can be considered good. This reflects the professional efforts exerted by the center's administration and supporting institutions, as well as a generally positive attitude toward the training programs. The results also showed that the training outcomes domain ranked

first in terms of degree of achievement, indicating a direct and tangible impact of the training on improving job performance and developing trainees' skills, as it is closely linked to daily work requirements. In contrast, a relatively low score was recorded for the item related to developing the ability to assume greater responsibilities, which suggests that the training programs may not sufficiently include topics related to leadership skills, decision-making, and responsibility-taking.

Acknowledgments

The authors would like to express their sincere gratitude to all individuals and institutions who contributed to the completion of this research. Special thanks are extended to the academic staff and colleagues for their valuable

guidance, support, and constructive suggestions throughout the study.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Funding Declaration

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Author Contributions

The first and second authors contributed to writing the original draft of the manuscript, as well as reviewing and editing the final version. Both

authors have read and approved the final manuscript and agreed to its submission.

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