Views of agricultural extension workers on the factors affecting the decline of fruit orchards in Abu Ghraib district / Baghdad Governorate

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Abstract

The research aims to identify the level of opinions of agricultural extension workers regarding the factors affecting the deterioration of fruit orchards in Abu Ghraib District / Baghdad Governorate, as well as to identify the level of opinions of agricultural extension workers regarding the factors affecting the deterioration of fruit orchards in Abu Ghraib District / Baghdad Governorate in each of the research areas, which are (natural factors, human factors, economic factors, institutional factors), and to determine the correlation between the opinions of agricultural extension workers regarding the factors affecting the deterioration of fruit orchards in Abu Ghraib District / Baghdad Governorate and some of the studied independent variables. The research population included employees working in agricultural departments, whose number was 163 employees, and the research included all employees after excluding the pilot sample of 25 employees, so that the number of those included in the research became 138 employees. A questionnaire was used to collect data from respondents to achieve the research objectives. It consisted of two parts: the first for the independent variables, and the second part comprised 57 items. A five-point Likert scale (strongly agree, strongly disagree, agree, neutral, disagree strongly disagree) was used to measure the degree of agreement, with numerical weights of 1, 2, 3, 4, and 5, respectively. The actual scale values ranged from 57 to 285. Cronbach's alpha was used to verify the reliability of the questionnaire, yielding a value of 0.892. Data were collected through personal interviews in August 2025. SPSS software and other statistical methods were used to analyze the data. The results showed that the level of opinions among agricultural extension workers regarding the factors affecting the decline of fruit orchards in Abu Ghraib District, Baghdad Governorate, was high, tending towards moderate. This suggests that respondents are aware of the importance of these studied factors and their impact on the decline of fruit orchards in Abu Ghraib District. The researcher recommends considering these factors further. The factors affecting the deterioration of fruit orchards were addressed by the Ministry of Agriculture when developing plans for fruit orchard development in the Abu Ghraib district.

Keywords: Worker opinions, agricultural extension, influencing factors, fruit orchards, Baghdad.

Introduction

Horticulture is a branch of agriculture that focuses on developing the production and use of fruit crops. Horticulture is considered a specialized branch of general botany, and fruit science is a subfield of horticulture [1]. Fruit is a staple food crop of great importance to humans due to its high nutritional value. It contains most of the components of food, in addition to providing calories, minerals, carbohydrates, vitamins, proteins, and fats that humans need for growth and activity.

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Fruits are a key nutrient in human life because they provide sugars and starches. Furthermore, consuming certain types of fruit contributes to accelerating and facilitating the digestion process [2]. Fruit orchards have become increasingly important economically, as they contribute to reducing dependence on fruit imports from abroad, with the possibility of exporting the surplus to boost national revenues. Some types of fruit are a key input in agricultural industries, as they are consumed after being processed in ways such as canning, drying, or freezing, in addition to being used in the manufacture of sweets, refreshments, and juices. Fruit trees also have a remarkable aesthetic dimension in their cultivation in gardens, parks, and along roadsides [3].

The Arab world is characterized by its vast area, diverse climate, and varied terrain, which has allowed for the expansion of fruit cultivation to include a wide range of crops, each suited to its specific environment. Arab governments have paid considerable attention to this sector, particularly in recent years, as the area under fruit cultivation has expanded and production has increased year after year. This development is a result of adopting modern and advanced scientific methods in various agricultural processes, encompassing all stages of production, from planting and fertilization to irrigation, pest and weed control, harvesting, transportation, handling, and storage. Scientific research institutions, including institutes, universities, and government agencies, have also contributed to this progress by modernizing research methods and encouraging innovation, which has positively impacted the agricultural sector and society as a whole [1].

The degradation of orchard lands is a complex phenomenon that includes a range of factors such as changes in soil properties, biodiversity, productivity levels, and socio-economic repercussions [4]. The decline in vegetation cover is one of the most prominent environmental challenges facing the world today as a result of the disruption of the relationship between humans and the environment. Rapid population growth and technological advancements have led to excessive pressure on natural environmental resources, resulting in their depletion and damage to ecosystems [5].

Fruit trees are greatly affected by their surrounding environmental conditions. The degree of this influence varies depending on the species, variety, and the fruit's natural state. Al-Allaf (2021) indicated that environmental conditions have a direct impact on fruit. Furthermore, natural factors play a significant role in the development of agricultural land in any region. Each region is characterized by unique conditions that distinguish it from others [6]. These conditions are not uniform but vary from one region to another, even within the same country. Therefore, natural factors are fundamental when studying agriculture, particularly in determining the quantity and types of crops in a given area [7]. Temperature, wind, and rainfall are among the most important natural factors that can negatively or positively affect agriculture and its products [8]. Additionally, climate is one of the most prominent natural factors influencing the cultivation, production, and distribution of fruit trees. Each crop has specific climatic requirements, making the relationship between climate and fruit tree cultivation very close, Indeed, Human factors have a significant impact on fruit tree cultivation and production, as humans are the fundamental element in the agricultural production process.

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Agriculture cannot be practiced without them. These human factors are characterized by their rapid change and interconnectedness, and they vary from one region to another. Based on their importance to the research topic, these factors can be classified as follows [9].

The means of developing future fruit tree cultivation constitute an integrated process that combines change and growth simultaneously. It is based on the principle of intentional change to achieve a specific goal through organized policies implemented by governmental bodies in cooperation with social and civil society organizations at the local level. These efforts focus on introducing new systems or building effective social forces and creating suitable conditions for bringing about the desired social change, which is called development [10].

A major problem in Iraq is not a shortage of labor, but rather a reluctance among the workforce to engage in agricultural work. Most workers prefer other fields, particularly in government institutions and departments, due to the higher income levels these jobs offer compared to agricultural activities. A study was conducted on the reasons for the reluctance of farmers' children to work in agriculture. Based on its findings, it was concluded that it is necessary to improve the investment structure in the agricultural sector and encourage it, similar to the industrial sector. This includes allocating reclaimed land in good condition to the children of smallholder farmers, providing them with the necessary facilities; adopting a conditional support mechanism aimed at supporting small farmers and encouraging them to continue agricultural activity; developing agricultural education programs at various levels to prepare qualified personnel capable of integrating into the agricultural labor market; amending loan policies to ensure the availability of appropriate loans and advances for farmers, especially smallholders and tenants; and supporting and developing agricultural extension programs to provide farmers with the latest agricultural methods and information [11]. The agricultural extension service plays a crucial role as a link between government agencies and farmers. The service provider performs several roles, including that of intermediary, acting as a liaison between scientific research centers and farmers. The extension service provider transfers innovations and useful technical information to the field and conveys farmers' problems to research institutions to find appropriate solutions. They also act as consultants, providing advice on various agricultural issues, such as selecting suitable crops for crop rotation and appropriate farming methods. Furthermore, the extension service provider acts as a planner, identifying farmers' needs based on sound agricultural practices that consider climatic and environmental conditions, as well as the farmers' knowledge and skills in addressing challenges. They also develop extension plans and programs, supervise their implementation, and evaluate their results. Finally, the extension service provider supports and organizes farmers' efforts by establishing cooperatives aimed at raising awareness of the impacts of various factors and how to address them, in addition to contributing to providing the services farmers need [12].

Diversifying agricultural extension and advisory services helps bridge the gap between supply and demand. Agricultural extension services play a pivotal role in supporting and developing the agricultural sector, as they are an effective means of

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providing specialized information and professional guidance to farmers and agricultural workers, contributing to increased production efficiency, improved crop quality, and higher agricultural income [13]. The success of agricultural extension services depends on a range of factors, which Shaker [14] identified as the preparation and training of agricultural extension agents, the effectiveness of communication channels and methods used in the extension process, the provision of necessary and appropriate agricultural inputs, the elimination of bureaucratic constraints that limit extension work, and effective coordination between rural organizations and other institutions. Small farmers in Iraq are among the most affected by climate change and water scarcity, as this directly impacts the four dimensions of food security: availability, stability, accessibility, and quality of use. With declining rainfall and rising temperatures, agricultural production decreases, and farmers' resilience diminishes, leaving many feeling alone in facing these crises. Without addressing this reality, many are forced to leave their lands and migrate from rural areas to cities in search of better opportunities [15]. Iraq faces major risks and weaknesses, including recurring droughts, low rainfall, and rising temperatures. These problems are exacerbated by the aging irrigation networks, which have deteriorated due to neglect and insufficient investment in infrastructure. Many factors have contributed to the decline of fruit orchards and the lack of sustainable development. Among these natural factors contributing to reduced production and the eventual disappearance of fruit orchards are the increasing frequency and intensity of dust storms resulting from decreased soil moisture caused by drought, urban sprawl, and unsound agricultural practices. Human factors also play a role, including the need for support and training for the workforce and technicians employed by government departments. Economic factors directly impact the growth of this vital sector of national production, as do institutional factors that directly influence the production, cultivation, and expansion of fruit orchards, given their role in providing support and directly impacting orchard development. This leads to the important research question: What are the opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards and ways to develop them in the Abu Ghraib district of Baghdad Governorate?

Objectives

1- To identify the level of opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards in Abu Ghraib District, Baghdad Governorate.

2- 2- Identifying the level of opinions of agricultural extension workers regarding the factors affecting the deterioration of fruit orchards in Abu Ghraib District / Baghdad Governorate in each of the research areas, which are (natural factors, human factors, economic factors, and institutional factors).

3- To determine the correlation between the opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards in Abu Ghraib District, Baghdad Governorate, and some of the studied independent variables (age, gender, educational attainment, years of service, scientific specialization, participation in training courses, and access to information sources).

Research Hypothesis

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There is no correlation between the opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards in Abu Ghraib District, Baghdad Governorate, and the following studied independent variables: age, gender, educational attainment, years of service, scientific specialization, participation in training courses, and access to information sources. Research Methodology

This study employed the survey method, a descriptive approach, to interpret the relationships between the independent and dependent variables. The aim was to describe and explain the phenomena or topics under investigation. Data related to these phenomena were collected through a variety of research methods, including observation, interviews, questionnaires, and content analysis. The data was then presented in detail in the final report [16].

Research Methodology

The number of agricultural employees working in the relevant departments was 163. After excluding the pilot sample of 25 agricultural employees, who were not included in the final study, the total number of participants was 138, Both the agricultural employee and the agricultural worker serve as agricultural advisors in the research sample.

- Data Collection Tool

A questionnaire was used to collect data from employees working in the agricultural departments, as it is one of the most commonly used data collection methods [17]. A preliminary questionnaire was developed after reviewing scientific sources, studies, and previous research related to the research topic, and after consulting with university professors and specialists, based on this review, the questionnaire consisted of two parts to achieve the research objectives. The first part included the characteristics of employees in the agricultural departments covered by the study, namely (age, gender, educational attainment, years of service, academic specialization, participation in training courses, and access to information sources. The second part included four areas related to the decline of fruit orchards. These areas comprised items: (natural factors, consisting of 17 items; human factors, consisting of 13 items; economic factors, consisting of 10 items; and institutional factors, consisting of 17 items). These factors were measured using a five-point scale constructed according to the Likert scale, and weights of (5, 4, 3, 2, 1) were assigned to the respondents' responses (strongly agree, strongly disagree, agree, neutral, disagree disagree). The scale was rated as follows: "Severely," according to the actual range of total scores for each participant, with values ranging from 57 to 285, and a hypothetical mean of 171, The result is measured against whether it is higher or lower than the arithmetic mean. The SPSS statistical software for social research was used, along with statistical methods such as ratios, arithmetic means, and ranges, to analyze the research data.

- Validity and reliability of the scale.

Confirmation of the results of the scale test, its reliability, degree of stability or retention, and internal consistency between items for the scores achieved by the measurement tool if it is reused with a change of time [18]. To assess reliability, a pretest was conducted on a sample of (25) respondents from the study population who were not initially surveyed. This was done to verify the reliability of the scales and items included in the questionnaire. To statistically measure reliability, the pretest data were analyzed using Cronbach's alpha,

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which yielded a value of 0.892. This value is greater than (0.75%) and is considered statistically acceptable in social research [19]. Data were collected in August 2025.

Results and Discussion

First Objective: To identify the level of opinions among agricultural extension workers regarding the factors affecting the decline of fruit orchards in Abu Ghraib District, Baghdad Governorate, in general.

The results showed that the lowest numerical value representing the respondents' level of opinion regarding the factors affecting the decline of fruit orchards was (169), and the highest value was (281), with a mean of (241.11) points and a standard deviation of (20.28) points. A significant percentage of respondents (49.3%) fell within the high category, followed by the medium category (45.7%), and the low category (5.0%). The respondents were divided into three categories according to the range law, as illustrated in Table 1.

Table 1. Distribution of respondents according to categories and their mean opinions regarding the factors affecting the decline of fruit orchards.

Categories	Frequency	%	Average
Low (169-205)	7	5.0	187.14
Medium (206-242)	63	45.7	230.84
High (243-Higher	68	49.3	256.19
the total	138	%100	SD=20.28

Table 1 shows that the level of opinions among agricultural extension workers regarding the factors affecting the decline of fruit orchards in Abu Ghraib District was high, with a mean score of 256.19. This may be attributed to several reasons, including the respondents' awareness of the impact of these factors on orchard decline, their direct field experience, and their continuous interaction with farmers, which enhances their understanding of the actual problems facing orchards in Abu Ghraib District.

Second objective :to identify the opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards in Abu Ghraib District, Baghdad Governorate, in each of the research areas: natural, human, economic, and institutional factors. First Area: Natural Factors

The results showed that the lowest numerical value representing the respondents' level of opinion regarding the factors affecting the decline of fruit orchards was (50), and the highest value was (85), with a mean of (72.14) and a standard deviation of (6.57). The percentage of respondents in the high category was (49.9%), followed by the medium category at (44.9%), and the low category at (5.8%). The respondents were divided into three categories according to the range law, based on their level of opinion regarding natural factors, as shown in Table 2.

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Table 2. Distribution of respondents into categories according to the percentage and mean of their opinions regarding natural factors.

Categories	Frequency	%	Average
Low (50-61)	8	5.8	56.63
Medium (62-73)	62	44.9	68.63
High (74-Higher	68	49.9	77.18
the total	138	100%	SD=6.57

Table 2 shows that the level of opinions among agricultural extension workers regarding the natural factors affecting the decline of fruit orchards in Abu Ghraib District was high, with a mean score of 77.18. This may be attributed to their awareness of the impact of natural factors on fruit orchards, particularly periods of drought and high temperatures.

Second Field: Human Factors

The results showed that the lowest numerical value representing the level of opinions of workers regarding the factors affecting the decline of fruit orchards was 36, and the highest value was 65, with a mean score of 54.10 and a standard deviation of 6.32. The percentage of respondents in the high category was 45.7%, followed by the medium category at 44.2%, and the low category at 10.1%. The respondents were divided into three categories according to the range law based on their level of opinions regarding human factors, as shown in Table 3.

Table 3: Distribution of Respondents into Categories According to the Percentage and Mean of Their Opinions in the Area of Human Factors.

Categories	Frequency	%	Average
Low (36-45)	14	10.1	41.07
Medium (46-55)	61	44.2	51.67
High (56-Higher)	63	45.7	59.37
the total	138	100%	SD=6.32

Table 3 shows that the level of opinions among agricultural extension workers regarding the human factors affecting the decline of fruit orchards in Abu Ghraib District was high, with a mean score of 59.37. This may be attributed to several reasons, including their awareness of the impact of human factors on fruit orchards.

Third Field: Economic Factors

The results showed that the lowest numerical value representing the level of opinions of workers regarding the factors affecting the decline of fruit orchards was 28, and the highest value was 50, with a mean score of 43.15 and a standard deviation of 4.72. The

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percentage of respondents in the high category was 65.9%, followed by the medium category at 29.0%, and the low category at 5.1%. The respondents were divided into three categories according to the range law based on their level of opinions regarding economic factors, as shown in Table 4.

Table 4. Distribution of Respondents into Categories According to the Percentage and Mean of Their Opinions in the Area of Economic Factors.

Categories	Frequency	%	Average
Low (28-34)	7	5.1	30.14
Medium (35-41)	40	29.0	39.25
High (42-Higher)	91	65.9	45.87
the total	138	%100	SD=4.72

Table 4 shows that the level of opinion among agricultural extension workers regarding the economic factors affecting the decline of fruit orchards in Abu Ghraib district was high, with a mean score of 45.87. This is attributed to the high costs of agricultural inputs, which have led to many farmers being unable to maintain or sustain their orchards, particularly regarding fertilizers, pesticides, and labor costs. They have observed the impact of these factors on the decline of their fruit orchards.

Fourth Field: Institutional Factors

The results showed that the lowest numerical value representing the level of workers' opinions on the factors affecting the decline of fruit orchards was (51), and the highest numerical value was (86), with a mean of (71.71) and a standard deviation of (7.36). The percentage of respondents in the high category was (44.9%), followed by the medium category at (46.4%), and the low category at (8.7%). The respondents were divided into three categories according to the range law, based on their level of opinions on institutional factors, as shown in Table 5.

Table 5. Distribution of respondents into categories according to the percentage and mean of their opinions on institutional factors.

Categories	Frequency	%	Average
Low (36-45)	12	8.7	56.83
Medium (46-55)	64	46.4	68.00
High (56-Higher)	62	44.9	78.25
the total	138	%100	SD=7.36

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Table 5 shows that the level of opinions among agricultural extension workers regarding the institutional factors affecting the decline of fruit orchards in Abu Ghraib District was moderate, with a mean score of 68.00. This may be attributed to the respondents' awareness of the impact of institutional factors on fruit orchard decline, particularly through the agricultural extension service's role in disseminating modern scientific recommendations (tree pruning, irrigation, fertilization), in addition to its role as a link between government agencies and farmers in delivering publicly funded agricultural plans to the target groups.

Third Objective: To determine the correlation between the opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards in Abu Ghraib District/Baghdad Governorate and some of the studied independent variables (age, gender, educational attainment, years of service, scientific specialization, participation in training courses, and access to information sources).

1- Age: The study results showed that the ages of the respondents ranged from (28-63) years, with a mean of (41.99) and a standard deviation of (8.44). The respondents were distributed into three categories according to the range law, as shown in Table 6.

Table 6. Distribution of respondents according to age categories.

categories	Frequency	%	mean	value r	value t
Young children (28-39)	61	44.2	245.44	-0.178	-2.10
Middle-aged children (40-51)	54	39.1	238.46		
Elderly people (52- Higher)	23	16.7	235.87		
the total	138	100			

To find the correlation between the level of opinions and the age variable, Pearson's correlation coefficient was used, which had a value of (-0.178), indicating a negative relationship between the two variables. To determine the significance of the relationship, the t-test was used, with a calculated value of (-2.10), which is higher than the critical t-value of (1.645). This indicates a significant negative correlation at a probability level of (0.05). Therefore, the statistical hypothesis is rejected, and the alternative hypothesis is accepted, which states that (there is no significant correlation between the level of opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards and age). This is because the level of opinions of the respondents regarding the factors affecting the decline of fruit orchards varies according to the age groups of the respondents; that is, the younger the age, the higher the level of opinions. This may be since the younger age group is more knowledgeable about the most important factors affecting the decline of fruit orchards and is more connected to information sources, especially modern means of communication (social media and the internet).

2- Gender:

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The respondents were divided into two gender groups, and it was found that males achieved a higher average than females. The results are shown in Table 7.

Table 7. Distribution of Respondents According to Gender Variable Groups.

categories	Frequency	%	mean	value r	value t
Males	88	63.8	250.60	**0.24	2.886
Females	50	36.2	224.42		
the total	138	100			

To determine the correlation between opinion levels and gender, Spearman's rank correlation coefficient was used, yielding a value of 0.24. This indicates a positive relationship between the two variables. To assess the significance of the relationship, a t-test was used, yielding a calculated value of 2.886. This value is higher than the critical t-value of 2.326, indicating a significant positive correlation at the 0.01 probability level. Therefore, the statistical hypothesis is rejected, and the alternative hypothesis, which states that there is no significant correlation between the level of opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards and gender, is accepted. The correlation favors males, possibly because male respondents are assigned more duties outside the agricultural sector than females, giving them greater exposure to nature and a better understanding of the causes of fruit orchard decline. This may be because male respondents are assigned more duties outside the agricultural sphere than female respondents, leading to greater exposure to nature and a deeper understanding of the factors contributing to the decline of fruit orchards.

3- Academic Achievement:

The study results showed that the respondents were distributed into five categories according to the academic achievement variable. The highest percentage (36.2%) was observed in the Bachelor of Agriculture category, while the lowest rate (3.6%) was recorded in the Agricultural Preparatory category, as shown in Table 8.

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Table 8. Distribution of respondents according to categories of the academic achievement variable.

categories	Frequency	%	Mean	value r	value t
Agricultural Preparatory School	5	3.6	197.25	**0.33	4.033
Bachelor of Science in Agriculture	50	36.2	234.65		
Diploma in Agriculture	43	31.2	243.58		
Master's Degree	31	22.5	250.87		
PhD	9	6.5	251.89		
the total	138	100			

To determine the correlation between opinion levels and educational attainment, Spearman's rank correlation coefficient was used, yielding a value of 0.33. This indicates a positive relationship between the two variables. To assess the significance of the relationship, a t-test was used, yielding a calculated value of 4.033. This value is higher than the critical t-value of 2.326, indicating a significant positive correlation at the 0.01 probability level. Therefore, the statistical hypothesis is rejected, and the alternative hypothesis, which states that "there is no significant correlation between the level of opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards and their educational attainment," is accepted. This may be because the respondents with higher levels of education possess academic knowledge about the causes of fruit orchard decline in Abu Ghraib.

4- Years of Employment:

The research results showed that the values representing years of employment ranged between (3-44) years, with a mean score of (22.09) and a standard deviation of (11.47). The respondents were categorized into three groups using the range formula, and the results are presented in Table 9.

Table 9. Distribution of Respondents According to Categories of Years of Employment.

categories	Frequency	%	mean	value r	value t
Young children (28-39)	55	39.9	244.93	-*0.19	-2.262
Middle-aged children (40-51)	42	30.4	240.05		
Elderly people (52- Higher)	41	29.7	237.10		
the total	138	100			

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To determine the correlation between opinion levels and years of service, Pearson's correlation coefficient was used, yielding a value of -0.19, indicating a negative relationship between the two variables. To assess the significance of the relationship, a t-test was used, yielding a calculated value of -2.262, which is higher than the critical t-value of 1.645. This indicates a significant negative correlation at a probability level of 0.05. Therefore, the statistical hypothesis is rejected, and the alternative hypothesis, stating that there is no significant correlation between the level of opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards and their years of service, is accepted. This may be attributed to the fact that the accumulated experience gained from years of work in this field has increased their expertise and knowledge of the realities and challenges of agricultural extension work, thus enhancing their awareness and understanding of the importance of the factors affecting the decline of fruit orchards compared to those with fewer years of service.

5 - Academic Specialization:

The respondents were divided into two categories according to their academic specialization. It was found that the other specializations achieved a higher average of (255.30), representing (76.1%) of the counseling specialization. The results are shown in Table 10.

Table 10. Distribution of Respondents According to Categories of Academic Specialization Variable.

categories	Frequency	%	mean	value r	value t
Agricultural Extension major	33	23.9	236.66		
Other majors	105	76.1	255.30	**0.27	3.264
the total	138	100			

To determine the correlation between opinion levels and scientific specialization, Spearman's rank correlation coefficient was used, yielding a value of 0.27. This indicates a positive relationship between the two variables. To assess the significance of the relationship, a t-test was used, yielding a calculated value of 3.264. This value is higher than the critical t-value of 2.326, indicating a significant positive correlation at the 0.01 probability level. Therefore, the statistical hypothesis is rejected, and the alternative hypothesis, which states that there is no significant correlation between the opinion levels of agricultural extension workers regarding the factors affecting the decline of fruit orchards and their scientific specialization, is accepted. The correlation favors other specializations, and this may be because the diversity of scientific specializations among extension workers leads to variations in their knowledge and understanding of extension work. Furthermore, it contributes to the exchange of experiences and the integration of roles when providing extension services to farmers.

6- Participation in Training Courses

Respondents were divided into two categories based on the training course variable, the highest percentage of participants, with an average of (242.95) and a percentage of (92.8%), was among those who participated, as shown in Table 11.

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Table 11. Distribution of Respondents According to the Training Course Participation Variable.

categories	Frequency	%	mean	value r	value t
Participant	128	92.8	242.95	**0.26	3.143
Non-participant	10	7.2	217.60		
the total	138	100			

To determine the correlation between the level of opinions and the variable of participation in training courses, Pearson's correlation coefficient was used, yielding a value of 0.26. This indicates a positive relationship between the two variables. To assess the significance of the relationship, a t-test was used, yielding a calculated value of 3.143. This value is higher than the critical t-value of 2.326, indicating a significant positive correlation at the 0.01 probability level. Therefore, the statistical hypothesis is rejected, and the alternative hypothesis, which states that there is no significant correlation between the level of opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards and their participation in training courses, is accepted. This acceptance favors the participation group, possibly because those involved in the management and development of fruit orchards have experience with the factors leading to their decline.

7- Information Sources

The research results showed that the lowest value for information sources was (13) and the highest value was (30), with an average of (24.17). The respondents were distributed into three categories according to the range law, with the highest percentage falling within the large category, as shown in Table 12.

Table 12. Distribution of Respondents According to Categories of the Information Sources Variable.

categories	Frequency	%	mean	value r	value t
Few (13-18)	10	7.2	239.10	**0.28	3.427
Moderate (19-24)	63	45.7	236.21		
Many (25- Higher)	10	7.2	239.10		
the total	138	100			

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To find the correlation between the level of opinions and the information sources variable, Pearson's correlation coefficient was used, which amounted to (0.28), indicating a positive relationship between the two variables. To determine the significance of the relationship, the (t) test was used, with a calculated value of (3.427), which is higher than the critical (t) value of (2.326). This indicates the existence of a significant positive correlation at a probability level of (0.01). Thus, the statistical hypothesis is rejected, and the alternative hypothesis is accepted, which states that (there is no significant correlation between the level of opinions of agricultural extension workers regarding the factors affecting the decline of fruit orchards and information sources). The reason may be that the respondents who access more sources about fruit orchards are more knowledgeable about the factors affecting the decline of fruit orchards.

Conclusions

1-The study results indicate that the level of opinions among agricultural extension workers regarding the factors affecting the decline of fruit orchards in Abu Ghraib District, Baghdad Governorate, is generally high, tending towards moderate. This suggests that the respondents are aware of the importance of these studied factors and their impact on the decline of fruit orchards in Abu Ghraib District.

2-The results showed that the level of opinions among agricultural extension workers regarding the factors affecting the decline of fruit orchards was high, tending towards moderate, in the area of natural factors. Similarly, it was high, tending towards moderate, in the area of human factors. However, it was high in the area of economic factors, and moderate, tending towards high, in the area of institutional factors. This indicates that the respondents are aware of the importance of these factors collectively and their direct impact on the decline of fruit orchards, in addition to their awareness of the nature of the problem and its multiple dimensions. The high average for economic factors is explained by there are a key factor affecting farmers' ability to manage and maintain their orchards. Meanwhile, the high average for institutional factors indicates a need to strengthen the role of agricultural institutions.

3- The existence of a significant relationship in the opinions of agricultural extension workers regarding most of the studied factors indicates the importance of these factors in the characteristics of workers who can be assigned to develop orchards.

Recommendations

The Iraqi Ministry of Agriculture and its affiliated bodies are primarily responsible for:

1- Taking into account the factors affecting the decline of orchards by the relevant authorities when developing orchard development plans in the Abu Ghraib district.

2-Taking into consideration the personal characteristics of the employees in government departments who are assigned to manage the fruit orchards in the research area.

3- The necessity of introducing and cultivating improved varieties of fruit trees that are characterized by their resistance to harsh climatic conditions, diseases, and agricultural pests.

5- Encouraging future studies that address orchards from multiple research perspectives not covered by the current study, to support relevant authorities in developing effective extension policies and plans to improve orchard production. 6. Activate extension services for orchard owners in general and meet their needs, including specialized

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training for agricultural extension agents and the development of a comprehensive agricultural extension program in coordination with relevant authorities.

7. Develop a reliable and up-to-date database on fruit orchards, including their numbers, areas, and achieved results.

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