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The Role of Electronic Management in Developing the Organizational Behavior of Workers in Agricultural Extension in Salah al-Din Governorate-Iraq

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ABSTRACT

The research aims to identify the role of electronic management in developing the organizational behavior of workers in agricultural extension within Salah al-Din Governorate / Iraq in general. Moreover, to identify the role of e-management in each of the following research domains (professional competence, improving communication and organizational interaction, commitment and job satisfaction, enhancing organizational culture within agricultural extension institutions) and to identify the significance of differences in determining the role of e-management in developing organizational behavior according to the following variables (years of job service, academic achievement, administrative assignment, technology training, trend towards using electronic communication).The descriptive approach was used in this study as it is appropriate for studying organizational and social phenomena. The questionnaire form was also adopted as the main tool for the process of collecting data and information. It included 28 questions distributed across the organizational behavior axes targeted in the research.The research community included agricultural employees in (the Salah al-Din Agriculture Directorate and the Extension Center) so the total study community became (409) respondents. A simple random sample of 20% was selected, and thus, the research sample became composed of 82 agricultural employees. After statistically analyzing the data, the results showed that the role of electronic management in developing the organizational behavior of agricultural extension workers in Salah al-Din Governorate was generally moderate, as the percentage of the average category was 51.22%. The results also showed the presence of significant differences according to the independent variables studied, which indicates the impact of these variables on the level of the role of electronic management.The results showed that the most prominent challenges facing the application of e-management are the lack of administrative and financial support and the lack of training. The researchers recommended the need to provide sufficient funding to develop the infrastructure and organize periodic training programs for agricultural extension workers, focusing on the less experienced categories to ensure improving their skills in using Electronic systems.

دور الإدارة الالكترونية في تطوير السلوك التنظيمي للعاملين في الارشاد الزراعي بمحافظة صلاح الدين / العراق

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الخلاصة :

يهدف البحث إلى التعرف على دور الإدارة الإلكترونية في تطوير السلوك التنظيمي للعاملين في الإرشاد الزراعي بمحافظة صلاح الدين / العراق بشكل عام، والتعرف على دور الإدارة الإلكترونية في كل من مجالات البحث التالية (الكفاءة المهنية، تحسين الاتصال والتفاعل التنظيمي، الالتزام والرضا الوظيفي، تعزيز الثقافة التنظيمية داخل مؤسسات الإرشاد الزراعي)، والتعرف على دلالة الفروق في تحديد دور الإدارة الإلكترونية في تطوير السلوك التنظيمي وفقاً للمتغيرات المستقلة التالية (سنوات الخدمة الوظيفية، التحصيل الدراسي، التكليف الإداري، التدريب التكنولوجي، الاتجاه نحو استخدام الاتصال الإلكتروني). استخدام المنهج الوصفي في هذه الدراسة كونه ملائم لدراسة الظواهر التنظيمية والاجتماعية كما تم اعتماد استمارة الاستبيان كأداة رئيسية لعملية جمع البيانات والمعلومات، وقد تضمنت 28 سؤال موزعة على محاور السلوك التنظيمي المستهدفة في البحث وشمل مجتمع البحث العاملين الزراعيين في (مديرية زراعة صلاح الدين والمركز الإرشادي) فأصبح مجتمع الدراسة الكلي (409) مبحوثاً، وتم اختيار عينة عشوائية بسيطة بنسبة 20%، وبذلك أصبحت عينة البحث مكونة من (82) موظفاً زراعياً. وبعد تحليل البيانات احصائياً أظهرت النتائج أن دور الإدارة الإلكترونية في تطوير السلوك التنظيمي للعاملين في الإرشاد الزراعي بمحافظة صلاح الدين كان بشكل عام متوسطاً حيث كانت النسبة المئوية للفئة المتوسطة هي 51.22% ، كما واظهرت النتائج وجود فروق معنوية وفقاً للمتغيرات المستقلة المدروسة مما يدل على تأثير هذه المتغيرات على مستوى دور الإدارة الالكترونية . وأظهرت النتائج ايضاً أن أبرز التحديات التي تواجه تطبيق الإدارة الإلكترونية تتمثل في قلة الدعم الإداري والمالي وقلة التدريب، وأوصى الباحثون بضرورة توفير التمويل الكافي لتطوير البنية التحتية وتنظيم برامج تدريبية دورية للعاملين في الإرشاد الزراعي مع التركيز على الفئات الأقل خبرة لضمان تحسين مهاراتهم في استخدام الأنظمة الإلكترونية.

الكلمات المفتاحية: الإدارة الالكترونية، السلوك التنظيمي، التنمية الريفية، العاملين في الارشاد الزراعي.

INTRODUCTION

The modern technological revolution seeks to transform into an integrated electronic communications system that aims to change the normal administrative work from manual management to management using computers or other electronic devices, by relying on strong information systems that help in making administrative decisions in the fastest time and at the lowest costs. This can include a system of internal and external communications for any organization (Abdullah, 2025) Technology has emerged as a key component in many facets of life, no longer limited to particular industries but instead directly affecting how people and organizations operate. The benefits it provides—namely, quick access to information, knowledge growth, and improved task execution accuracy—are the reason for its pervasive integration (Ghanim, 2024). Global marketplaces have become competitive hubs for technological innovation in the context of the rapid digital revolution, where researchers and developers work to create clever answers to the intricate problems that societies and businesses face (Azawi, 2024) .As soon as a new digital invention emerges, it is immediately followed by a more advanced one, reflecting a reality dominated by countries that invested early in technology and succeeded in harnessing it

to develop their institutional and production structures. The electronic aspect has effectively contributed to reshaping management methods, raising performance efficiency, and accelerating communication, making institutions and organizations more capable of adapting to changes and keeping pace with the requirements of the digital age. Investing in the electronic aspect is no longer an option but rather a strategic necessity to achieve progress and institutional excellence in a world governed by knowledge and the speed of innovation (EkaPutri, 2024).

According to the Food and Agriculture Organization (FAO), the digital revolution in agriculture enhances efficiency and reduces operational costs, which have a positive impact on the local economy (Amin *et al*.,2021). On the other hand, the World Bank assures that an investment in sustainable agriculture reduces poverty levels as well as increases rural development (Hamed & Abdullah,2024). Therefore, incorporating Electronic Management into the agricultural extension sector is a significant step towards the development of this sector. Electronic Management is one of the major drivers to increase the productivity of employees engaged in providing extension services. It assists in improving access to farm information and providing accurate and current information for supporting timely and effective decision-making (Fathy *et al*.,2023). Electronic management also enhances the ability of agricultural extension workers to educate farmers through interactive electronic platforms, which allows broad and rapid extension. In addition, electronic systems reduce the typical administrative work of keeping paper records and producing hand-made reports, thus allowing employees to focus more on providing quality services. They also improve planning and appraisal by gathering and analyzing information in advanced methods so it is possible to ascertain the needs of farmers and implement extension programs accordingly (Yahya, 2021). E-meetings and e-training also help to enhance the productivity of extension workers without physical presence, which reduces logistical costs and improves opportunities for continuous professional development. In addition, Electronic Management improves coordination among the various stakeholders involved in agricultural extension, which enhances the integration of efforts and helps to provide more effective services. Finally, digital technology in agricultural extension contributes to achieving the sustainability of the agriculture sector by enhancing innovation and strengthening the ability to absorb environmental and economic shocks (abdullah, 2025). Electronic Management is a critical tool in molding the organizational behavior of agricultural extension workers because it helps to improve professional efficiency through the provision of advanced agricultural information systems that allow employees to make faster and more accurate decisions, thereby boosting agricultural productivity. Digitization of administrative tasks also aids in strengthening communication and inter-organizational interaction since electronic platforms facilitate effective communication among staff and management, lowering administrative barriers and increasing mutual coordination. Electronic Management is also critical in increasing job commitment and professional fulfillment since computerized systems aid in providing equitable incentives and better human resource management, improving the sense of responsibility and belonging among employees (Nawafleh, 2018). On the other hand, the utilization of digital solutions serves to spread the culture of innovation and continuous development among the staff of agricultural extension organizations because such systems work

to reduce resistance to change and support the culture of continuous learning, thus rendering employees more prepared to keep pace with modern developments in agriculture. Those regions reflect the importance of digital transformation to make agricultural extension more efficient and effective (Al-Hamdany *et al*.,2021), having a direct influence on achieving sustainable agricultural development, which is linked with sustaining the environment and reducing waste, especially in light of the challenges facing Iraq due to its dependency on oil as a major source of wealth. Thus, the evolution of Electronic Management is not a technological advancement but a necessity to achieve agricultural sustainability along with a more secure financial future (Afzal *et al*.,2016). Extension agriculture is among the most crucial pillars for the construction of the agricultural sector since it aims at passing on knowledge and new technology to farmers to increase their production and boost their efficiency and assists in augmenting farmers' consciousness of sustainable agriculture practices and the reasonable use of natural resources (Naji & Ali,2023). It also works as a solution to overcome challenges in agriculture with the help of scientific research through innovative solutions. With advancements in digital technology, it has been essential to make Electronic Management an integral part of agricultural extension work to enhance working efficiency and facilitate faster decision-making (Shada *et al*.,2023). Previous scientific studies indicate the existence of real problems in the electronic aspect of agricultural extension. The results of a study by (Khalaf, 2024) showed that 63% of agricultural extension workers suffer from problems in using digital technology despite the government's move towards automation. The overall impact rate of technology and human resources reached 2.32 on a scale (1-3), confirming that these obstacles represent a real threat. A study by (Sulaiman, 2018) also showed that the use of information and communication technology in agricultural extension faces several obstacles, despite the Ministry of Agriculture's directives to shift to a digital system. Among the most prominent problems are weak administrative and financial support, and the lack of availability and low level of training for agricultural extension workers on the use of digital means, which made them a real obstacle to achieving full benefit from the digital transformation.

Nevertheless, agricultural extension in Salah al-Din Governorate is confronted by challenges relating to the ineffective adoption of new technology and the delay in the implementation of Electronic Management, which causes slow transfer of agricultural information and low speed of administrative decision-making, negatively affecting the development of the agricultural sector. The lack of coordination between computer systems and traditional administrative processes lowers the effectiveness of agricultural extension in helping farmers and remaining current with issues of modern agriculture. Therefore, this research seeks to study the role of Electronic Management in developing the organizational behavior of agricultural extension workers, analyze its impact on professional performance and organizational interaction, and propose solutions to enhance its efficient use. The research came to answer the following question:

- What is the role of Electronic Management in developing the organizational behavior of workers in agricultural extension within Salah al-Din Governorate / Iraq?

RESEARCH OBJECTIVES:

1- Identify the role of Electronic Management in developing the organizational behavior of workers in agricultural extension in Salah al-Din Governorate and Iraq in general.
2- Identify the role of Electronic Management in developing the organizational behavior of workers in agricultural extension in Salah al-Din Governorate in each of the following research domains: (the impact of Electronic Management on professional efficiency, the role of Electronic Management in improving communication and organizational interaction, Electronic Management and its role in job commitment and job satisfaction, and the role of Electronic Management in enhancing organizational culture within agricultural extension institutions).
3- Identify the significance of differences in determining the role of Electronic Management in developing the organizational behaviour of workers in agricultural extension in Salah al-Din Governorate according to the following variables (years of job service, academic achievement, administrative assignment, technology training, the trend towards using electronic communication).
4- Identify the obstacles to implementing Electronic Management in agricultural extension in Salah al-Din Governorate

IMPORTANCE OF THE RESEARCH:

1- Enhancing the efficiency of agricultural extension- The research assists in enhancing performance by elucidating the role of electronic management of agricultural extension agents, which facilitates access to agricultural information and makes more accurate and faster decisions.
2- Improving the work environment and administrative organization- The research helps highlight the impact of digital management on developing workers' organizational behavior, which contributes to improving communication, increasing cooperation between agricultural employees, and reducing administrative barriers.
3- Supporting sustainable agricultural development- The research explains how Electronic Management can contribute to spreading modern and sustainable agricultural practices, which enhance agricultural productivity and reduce natural resource waste.
4- Addressing the challenges of digital transformation in agricultural extension- The research helps identify the obstacles facing the application of Electronic Management in the agricultural sector in Salah al-Din Governorate. It proposes solutions that contribute to achieving an effective and sustainable digital transformation.

RESEARCH HYPOTHESES: The following hypothesis will be tested:

According to the examined variables (years of job service, academic achievement, administrative assignment, technology training, and the trend towards using electronic communication), the moderates show no difference in evaluating the role of electronic

management in impacting the organizational behavior of workers in agricultural extension in Salah al-Din Governorate, Iraq.

PROCEDURAL DEFINITIONS:

1- Electronic Management: It is the process of employing technological applications to manage administrative operations and services within agricultural institutions. The aim is to improve efficiency, accelerate decision-making, and enhance communication between employees and departments, which contributes to raising the quality of institutional performance.
2- Organizational behavior: It is a set of practices demonstrated by workers within agricultural institutions that are affected by administrative systems, the work environment, and organizational culture, which affects individual and collective performance and the extent to which the objectives of extension work are effectively achieved.
3- Agricultural extension workers: All agricultural employees in the Directorate of Agriculture and the Extension Center who provide agricultural extension services, but with different methods and roles, as the directorate employees specialize in developing extension policies and plans and supervising their implementation, while agricultural extension workers in field centers work to transfer these directives to farmers directly. Administrators and technicians also contribute to supporting the extension process by analyzing data, preparing reports, and providing the necessary logistical resources to ensure the success of extension programs. Therefore, all workers in these institutions share in achieving one goal, which is to improve agricultural production through extension, but with different mechanisms that complement each other.

DEFINING THE RESEARCH COMMUNITY AND SAMPLE:

According to the Agriculture Directorate's and the advisory center's official records, the total study community consisted of 409 respondents, including agricultural workers with a preparatory certificate or higher who worked at the Salah al-Din Agriculture Directorate's headquarters, all of its affiliated agricultural departments, the advisory center, and its affiliated farms, Al-Dour Farm and Balad Farm. After a simple random sample of 20% was chosen, 82 agricultural workers made up the research sample.

A percentage of 20% of the research community was chosen as a sample for the study, based on what a number of researchers in social studies have indicated, as this percentage is appropriate and acceptable in the case of medium-sized communities, especially when the individuals are relatively homogeneous in terms of jobs or the nature of work, as (Obeidat, 1998) indicates that “if the study community is limited or medium-sized, a percentage ranging from 10% to 30% can be sufficient, if the individuals of the community are close in characteristics.

QUESTIONNAIRE DESIGN:

After reviewing scientific sources, previous studies, and consulting experts, a data collection tool was designed consisting of three parts:

Part One: It included a set of studied independent variables, which are (years of job service, academic achievement, administrative assignment, technology training, and the trend towards using electronic communication).

Part Two: It included four domains related to organizational behavior, which are (the impact of electronic management on professional efficiency, the role of electronic management in improving organizational communication and interaction, electronic management and its role in job commitment and job satisfaction, and the role of electronic management in enhancing organizational culture within agricultural extension institutions).

Part Three: It included a set of challenges facing the application of electronic management in agricultural extension in Salah al-Din Governorate

MEASUREMENT OF INDEPENDENT FACTORS:

1- Academic achievement: This variable was measured at the following levels (secondary agriculture, agricultural institute, bachelor's degree in agriculture, higher diploma in agriculture, master's degree in agriculture, doctorate in agriculture), and the following weights were given (1, 2, 3, 4, 5, 6) respectively.
2- Years of job service: This was measured by the number of years the employee spent in job service until the time of data collection.
3- Administrative assignment: This variable was measured at the following levels (department manager, division manager, unit manager, administrative employee), and the following weights were given (1, 2, 3, 4), respectively.
4- Technology training: This variable was measured at the following levels (participant, non-participant), and the following weights were given (1, 2), respectively.
5- The trend towards using electronic communication: This variable was measured by specifying (6) questions in front of which the following alternatives were placed (agree, neutral, disagree) and the weights (3, 2, 1) were given to the positive questions and vice versa for the negative questions. The D for this variable ranged between (6 - 18) degrees.

MEASURING THE SCALE OF THE ROLE OF ELECTRONIC MANAGEMENT IN DEVELOPING ORGANIZATIONAL BEHAVIOR:

The role of Electronic Management was measured through (28) questions distributed over the study domains. Each question had three alternatives for the answer: (major role, moderate role, and minor role) and the weights were given (3, 2, 1) respectively, so the total score for the answer ranged between (28 - 84) degrees, as shown in Table (1) below:

Table No. (1) shows the theoretical range of the domains

Scope	Number of questions	Domain score
Professional Competence	7 questions	7 – 21
Improving Organizational Communication and Interaction	7 questions	7 – 21
Commitment and Job Satisfaction	7 questions	7 – 21
Enhancing Organizational Culture within Agricultural Extension Institutions	7 questions	7 – 21
Total	28 questions	28 – 84

MEASURING THE OBSTACLES TO APPLYING ELECTRONIC MANAGEMENT IN AGRICULTURE EXTENSION:

The obstacles to applying electronic management were measured through (8) questions. Three alternatives were placed for each question to answer (major obstacle, moderate obstacle, minor obstacle), and the weights were given (3, 2, 1) respectively.

STATISTICAL METHODS:

In order to achieve the research objectives, the data is classified and analyzed, and the results, conclusions and recommendations are reached and presented in their final form. The following statistical methods were used: (percentage, range, category length, arithmetic mean, frequency distribution, variance analysis, standard deviation).

RESULTS AND DISCUSSION:

First objective: To determine the role of electronic management in influencing the organizational behavior of workers in agricultural extension in the Governorate of Salah al-Din/ Iraq in general.

The results showed that the degrees of the role of Electronic Management in developing organizational behavior, in general, ranged between (28 - 84) degrees, with a general moderate of (59.8). A standard deviation of (10.13) and based on the range law, the respondents were classified into three categories, as in Table No. 2:

Table (2) shows the distribution of respondents according to the categories of the role of Electronic Management in general

Categories	Number	Percentage	Average role	Overall average	S.d
Minor (28-46)	20	24.39	41.8	59.8	10.13
Moderate (47-65)	42	51.22	58.8		
Major (66-84)	20	24.39	78.4		
Total	82	100%			

Table No. (2) shows that the high percentage of the role of Electronic Management in developing the organizational behavior of agricultural extension workers was in the moderate category at 58.8%. The results show that agricultural extension workers in Salah al-Din Governorate are moderately influenced by electronic management, which may help to improve the working environment. Deeper change is hindered by obstacles, including insufficient training and digital infrastructure, underscoring the need for further efforts to facilitate successful technology adoption. See Figure No. (1)

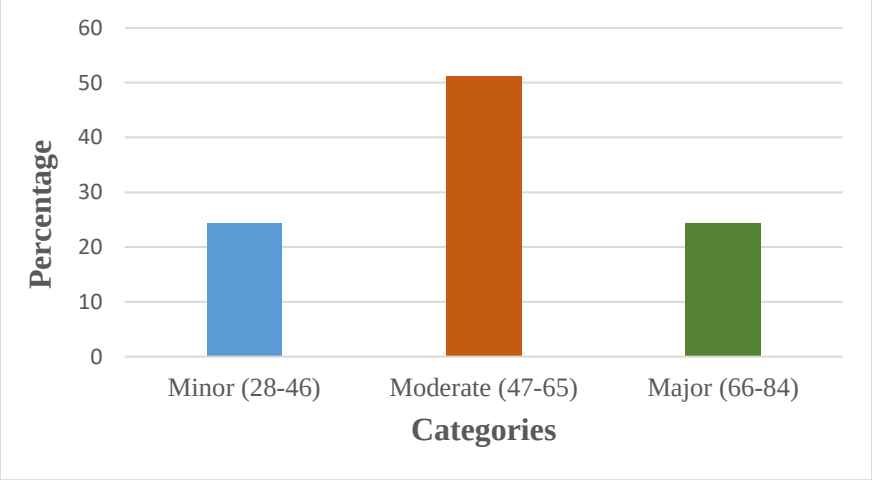

Figure No. (1) Categories of the role of electronic management in general

The second objective: determine the role of Electronic Management in developing the organizational behavior of workers in agricultural extension in the Governorate of Salah al-Din/ Iraq in each of the following research domains:

1- Professional competence:

The results showed that the degrees of the role in the domain of professional competence ranged between (7 - 21) degrees with a general moderate of (14.1). Based on the range law, the respondents were classified into three categories. Table No. 3:

Table (3) shows the distribution of respondents according to the categories of the domain of professional competence

Categories	Number	Percentage	Average role	Overall average	S.d
Minor (7-11)	22	26.83	8.5	14.1	3.11
Moderate (12-16)	38	46.34	12.8		
Major (17-21)	22	26.83	18.9		
Total	82	%100			

The role of Electronic Management in the domain of professional competence was classified as moderate in a significant proportion of the cases, as illustrated in Table No. 3. Electronic management has a moderate effect on the professional competence of agricultural extension workers in the Salah al-Din Governorate, which suggests that it has little effect on task efficiency and performance enhancement. This highlights the need for improved training programs and stronger technical infrastructure to maximize efficacy. It is likely the result of inadequate training and poor integration with older systems.

2- Improving communication and organizational interaction: The results showed that the degrees of the role in the domain of professional competence ranged between (7 - 21) degrees with a general moderate of (13.86); based on the range law, the respondents were classified into three categories, as in Table No. 4:

Table (4) shows the distribution of respondents according to the domain of improving communication and organizational interaction.

Categories	Number	Percentage	Average role	Overall average	S.d
Minor (7-11)	22	26.82	8.9	13.86	3.11
Moderate (12-16)	35	42.69	13.6		
Major (17-21)	25	30.49	19.1		
Total	82	%100			

Table No. (4) shows that the high percentage of the role of Electronic Management in improving communication and organizational interaction was in the moderate category, followed by the major category. The significance that electronic management plays in improving administrative coordination and information flow among agricultural extension agents is shown in its moderately increasing impact. However, its efficacy was diminished by constraints including poor training and underutilization of digital tools, underscoring the necessity of expanding digital applications and putting in place focused capacity-building initiatives.

4- Job commitment and job satisfaction: The results showed that the degrees of the role in the domain of professional competence ranged between (7 - 21) degrees, with a general moderate of (14.11). The respondents were divided according to the range law into three categories, as in Table No. 5:

Table (5) shows the distribution of respondents according to the domain of commitment and job satisfaction.

Categories	Number	Percentage	Average role	Overall average	S.d
Minor (7-11)	21	25.60	9.18	14.11	1.93
Moderate (12-16)	40	48.78	13.96		
Major (17-21)	21	25.60	19.34		
Total	82	%100			

Table No. (5) shows that the high percentage of the role of Electronic Management in the domain of commitment and job satisfaction was in the moderate category. A limited improvement in the work environment and task facilitation is suggested by the moderate impact of electronic management on agricultural extension workers' job commitment and satisfaction. The lack of supportive incentives and a poor fit between digital systems and employee needs may be the cause of this limited effect, highlighting the necessity of better infrastructure and motivating policies to raise employee engagement.

4- Enhancing organizational culture within agricultural extension institutions: The results showed that the degrees of the role in the domain of professional competence ranged between (7 - 21) degrees, with a general moderate of (13.71). The respondents were divided according to the range law into three categories, as in Table No. 6:

Table (6) shows the distribution of respondents in the domain of enhancing organizational culture.

Categories	Number	Percentage	Average role	Overall average	S.d
Minor (7-11)	26	31.70	9.89	13.71	2.03
Moderate (12-16)	35	42.68	14.32		
Major (17-21)	21	25.60	18.78		
Total	82	%100			

Table No. (6) shows that the high percentage of the role of Electronic Management in the domain of enhancing organizational culture was moderate, tending to minor. Weak technological integration into institutional values and practices is seen in the minor to moderate impact of electronic management on organizational culture within agricultural extension institutions. The necessity for tactics that increase digital awareness and encourage the adoption of creative organizational practices is highlighted by the possibility that this is the result of resistance to change and inadequate training.

Third Objective: Identify the significance of differences in determining the role of Electronic Management in developing the organizational behavior of workers in agricultural extension in the Governorate of Salah al-Din / Iraq according to the following study variables:

1- Years of job service: The results showed that the least number of years was (1) year and the most number of years was (30). The respondents were divided into three categories, as shown in Table No. (7).

Table (7) Results of the analysis of variance between the moderates of the categories of years of job service.

Categories	Number	Percentage	Average role	Average difference	L.S.D	F value	Significant
Less than 10 years	35	42.67	72.7	11.15	10.00	2.197	Significant
10-20 years	20	24.39	59.8	10.89	12.49		N.S
More than 10 years	27	32.92	48.8	4.98	8.930		N.S
Total	82	100%	MSE =603.621				

In Table (7) above, the result indicates that the differences in the role of Electronic Management are due to the category of agricultural employees with less than 10 years of experience, which reflects that this category is more affected by electronic digital transformation. This may be due to their possession of higher technical skills and more remarkable ability to adapt to electronic systems compared to employees with more extended experience, who may face difficulty in adopting technological changes. Therefore, enhancing the use of Electronic Management requires dedicated training strategies to support all job categories according to their different levels of experience.

2- Academic achievement: Based on this variable, the respondents were classified into six categories, as shown in Table No. (8).

Table (8) Results of the analysis of variance between the moderates of the academic achievement categories.

Categories	Number	Percentage	Average role	Average difference	L.S.D	F value	Significant
Agricultural Secondary School	15	18.30	37.8	9.15	10.10	6.104	N.S
Agricultural Institute	10	12.19	49.8	10.19	12.19		N.S
Faculty of Agriculture	33	40.24	59.9	9.98	8.930		Significant
Higher Diploma	5	6.09	62.4	10.21	9.99		Significant
Master of Agriculture	13	15.86	72.5	12.43	9.32		Significant
PhD of Agriculture	6	7.32	79.8	11.76	10.34		Significant
Total	82	%100	MSE = 573.937				

In Table (8), the result indicates that there are major differences in determining the scale of the role of Electronic Management in developing organizational behavior according to the level of academic achievement, as the categories holding a bachelor's, master's, and doctorate degrees were more capable of determining the role of Electronic Management, and this may be attributed to their possession of higher analytical and cognitive skills, which facilitates the assimilation of digital technologies and interaction with electronic systems effectively. Therefore, enhancing the role of Electronic Management requires designing training programs that are compatible with different educational levels to ensure that all agricultural employees adapt to the electronic digital transformation.

3- Technology training: The technology training variable was divided into two categories, as shown in Table No. (9).

Table (9) Results of the analysis of variance between the moderates of technology training categories.

Categories	Number	Percentage	Average role	Average difference	L.S.D	F value	Significant
Non-participant	52	63.41	52.7	17.1	13.65	2.360	Significant
Participant	30	36.59	69.8				
Total	82	%100	MSE=605.189				

In Table (9), the result indicates that agricultural employees who received technology training were abler to identify the role of Electronic Management in developing their organizational behavior, which confirms the importance of digital qualification in enhancing the efficiency of using electronic systems. This difference is due to the fact that training provides agricultural employees with the skills necessary to adapt to digital tools, which facilitates the process of communication and decision-making and improves job performance. Therefore, expanding the scope of technology training is necessary to enhance the effectiveness of Electronic Management in the agricultural extension environment.

4- Administrative assignment: Based on this variable, the respondents were classified into four categories, as shown in Table No. (10).

Table (10) Results of the analysis of variance between the moderates of the administrative assignment categories.

Categories	Number	Percentage	Average role	Average difference	L.S.D	F value	Significant
Administrative Officer	32	39.02	37.9	13.11	15.10	3.658	N.S
Unit/Farm Manager	30	36.58	47.8	12.19	10.29		significant

Division/ Center Manager	15	18.29	60.5	16.98	12.96	significant
Section Manager	5	6.09	76.7	13.24	10.99	significant
Total	82	%100	MSE=619.215			

In Table (10), the result indicates that determining the role of Electronic Management in developing organizational behavior differs according to the level of administrative assignment, as the ability to determine the role was greater among department managers, followed by division managers, then unit managers. This is due to the fact that department managers are more involved in planning and strategic decision-making, which makes them more interactive with electronic systems in organizing work and administrative coordination. Therefore, enhancing the role of Electronic Management requires directing digital transformation strategies to meet the needs of all administrative levels to ensure better integration in the work environment.

5- The trend towards using electronic communication: The findings indicated that the minimum trend score was 6, while the maximum value was 18. The respondents were classified into three categories, as indicated in Table No. (11):

Table (11) Results of the analysis of variance between the moderates of the categories of the trend towards using electronic communication.

Categories	**Number**	**Percentage**	**Average role**	**Average difference**	**L.S.D**	**F value**	**Significant**
6 - 10 Negative	23	28.04	40.54	4.02	8.918		N.S
11 - 15 Neutral	36	43.90	51.54	12.85	11.48	2.749	Significant
(16 - or more) Positive	23	28.04	66.87	13.83	12.51		Significant
Total	82	%100	MSE= 603.161				

In Table (11), the result indicates that employees with a high tendency towards using electronic communication tools were able to identify the role of electronic management in developing their organizational behavior, followed by those with a moderate tendency, which reflects the importance of mental readiness and acceptance of technology in enhancing job effectiveness. This difference is due to the fact that individuals with a positive tendency towards digital tools are able to adopt and benefit from them in improving communication and administrative coordination. Therefore, enhancing awareness of the importance of electronic management and encouraging a positive tendency towards its use can contribute to improving job performance in general.

Fourth Objective: Identifying the obstacles to applying electronic management in agricultural extension in Salah al-Din Governorate:

Table (12) Arrangement of questions of obstacles to applying electronic management in descending order according to the choice (major obstacle)

S.	Obstacles to the implementation of Electronic Management	Repeat Selection Major Handicap	Total society
1	Lack of administrative and financial support	75	82
2	Lack of training and qualification	67	82
3	Weak technological infrastructure	61	82
4	Weak Internet and communication networks	59	82
5	Resistance to change by employees	56	82
6	Weak supporting legislation and laws	55	82
7	Farmers' lack of acceptance of modern technology	45	82
8	Lack of integration of electronic systems	30	82

Table (12) The above shows that the most prominent obstacles to the application of electronic management in agricultural extension are the lack of administrative and financial support, lack of training, and weak infrastructure. This requires improving financing and technical qualifications. In addition, the weakness of the Internet and resistance to change hinder the electronic digital transformation, which requires strengthening the infrastructure and the culture of adapting to technology.

CONCLUSIONS:

1- The study results indicate that the role of electronic management in developing the organizational behavior of agricultural extension workers in Salah al-Din Governorate was generally moderate. This indicates the need for further technological integration and continuous training to support the electronic digital transformation within the extension work environment.

2- The study showed the presence of statistically significant differences in determining the role of electronic management according to the following research variables (years of service, academic achievement, administrative assignment, level of technological training, tendency towards using electronic means of communication). This indicates that these variables contribute to enhancing the knowledge and ability of agricultural extension workers in maximizing the role of electronic management in developing organizational behavior.

3- The results showed the presence of a number of obstacles and problems. From this, it is concluded that the success of electronic management in the agricultural extension sector requires addressing the weakness of financial and administrative support, the provision of infrastructure, and the lack of training by developing planned and supportive policies,

providing sufficient funding, and establishing a culture of electronic transformation in agricultural institutions in general.

RECOMMENDATIONS:

1. Provide sufficient funds to develop the infrastructure and enable the introduction of electronic management systems while developing incentive policies to support the continuity of digital transformation in agricultural extension.
2. Conducting periodic training courses for agricultural extension workers, targeting less experienced groups, to qualify them to use electronic systems and improve their professional effectiveness.
3. Constructing communication and Internet networks in agricultural lands and updating laws and legislation to maintain digital transformation and reduce resistance to change by spreading a culture of accepting modern technology.

CONFLICT OF INTEREST:

The manuscript is not associated with any conflicts of interest, as declared by the authors.

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