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E-Administration and Its Impact on Improving Public Service Quality in Algerian Local Administration: *A Case Study of Berrouaghia Municipality*

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Abstract:

This study aims to determine the impact of implementing e-administration—as a modern trend in administrative reform—on improving the quality of public services in the Municipality of Berrouaghia. To achieve this, a field study was conducted, utilizing a designed questionnaire to gather data and information from a study sample consisting of 52 respondents. For data analysis, the Statistical Package for the Social Sciences (SPSS / v26) was employed. The study concluded that the Municipality of Berrouaghia effectively utilizes e-administration. Furthermore, the findings revealed a statistically significant correlation between the various dimensions of e-administration and the improvement of public service quality within the sector under study.

Key Words: E-Administration, Public Service, Improving Public Service, Berrouaghia Municipality, Local Administration.
JEL Classification : M15, H83, L86

1. Introduction:

The need to improve the efficiency of local administration, and to provide public services that are transparent and fast in implementation, has become urgent, here the importance of E-Administration is highlighted, as it employs information and communication technology tools to enable citizens to access services online, without the need to travel to administrative offices in person, which leads to improving public satisfaction with the services provided.

Within the framework of the e-Algeria project, the Ministry of the Interior and Local Authorities has developed several mechanisms to digitize local communities using modern technological means, to enable citizens to provide quality and quality public services, as well as to ease administrative procedures, the most important of which is the National Automatic Civil Registry, the Single Window and the electronic window for secured documents**.**

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This study came to try to answer the following question**:**

1.1 The Problem of the Study:

What is the impact of the application of E-Administration on improving the quality of public service in the local administration in the body under study?

1.2 Study hypotheses:

A. The first main hypothesis:

- There is no statistically significant relationship between the application of E-Administration and the improvement of the quality of public service in the municipality of Berrouaghia at a significance level of 0.05.

B. The second main hypothesis:

- There is no statistically significant effect between the application of e-administration and the improvement of the quality of public service in the municipality of Berrouaghia at a significant level of 0.05.

1.3 Importance of the study:

- Referring to the most prominent theoretical aspects of E-Administration and improving the level of public service.
- This study is important because it targets a sensitive local body that works to meet the needs of citizens and gain their trust.
- The results of this study are expected to contribute to the diagnosis of weaknesses when applying E-Administration in the local administration.
- Trying to direct the public sectors to the application of e-management, in order to upgrade the public service.

1.4 Study Objectives:

- Identifying the impact of the application of e-administration on improving the level of public service in the municipality of Berrouaghia.
- Demonstrate the extent of interest in improving and promoting the public service in the local administration in Algeria.
- Demonstrate the extent to which E-Administration is applied in the local (regional) administration.
- Propose recommendations based on the results reached, which would improve the public service and raise the aspirations of citizens.

1.5 Study variables:

Table 01: Study Variables

E-Administration	Independent variable
Improving the quality of public service	Dependent variable

Source**: Researcher, 2025**

1.6 Methodology used in the study:

The descriptive approach was adopted in presenting the theoretical framework of the study variables, in addition to the applied aspect of the same study, relying on the

Statistical Packages Program for Social Sciences (SPSS/v26), in order to know the nature of the effect between the study variables in the municipality of Berrouaghia (where the study was conducted).

2. Theoretical Framework of the Study: E-Administration as a Mechanism to Improve the Quality of Public Service

The application of E-Administration as a mechanism for improving the public service is a pivotal strategy that can bring positive results to the work of the administrative bodies and achieve credibility in public service institutions.

2.1 E-Management: Definition and Dimensions

E-Administration has emerged as a new management approach, which has prompted organizations to adopt computers and informatics in various management fields.

A. Definition of e-Management:

The definitions of E-Administration differed according to the different angles of their study, and these definitions include the following:

- Completing administrative transactions, using electronic technologies (Al-Taamneh, Mohammed Mahmoud & Al-Alwash, Tariq Sharif, 2004, pp. 10,11)، Provision of public services via the Internet، without the citizen having to travel to Management Personally, to get deals done the resulting waste for time and effort" (Abdelkrim, 2010/2011, p. 13)
- The process of automating all the activities of administrative institutions, relying on the necessary information technologies, to reach puberty Objectives of the new administration (Samir, 2009, p. 43)، It also aims to reduce the use of paper, simplify procedures, and complete tasks and transactions quickly and accurately, so that every department is ready to link with the e-government later (Al-Salmi & others, 2006, p. 34)
- The World Bank has defined e-governance as "the use of information and communication technologies to increase efficiency, effectiveness, transparency and accountability of the government in what it provides to citizens and the business community, and enabling them to provide information in a way that supports all government procedural systems. Corruption، giving citizens an opportunity to participate in the stages of the political process, and the decisions related to it that affect aspects of life. Miscellaneous" (Qazzaz, 2015, p. 24)
- "It is an administrative process based on the distinguished capabilities of the Internet and communication networks, in planning, directing and controlling the resources and capabilities available to the administrative institution in order to achieve the set goals" (Najm, 2009, p. 158)

E-Administration is based on three main pillars They are: (Al-Hashemi, 2017, p. 191)

- Informative content;
- Service content;
- Communication content;

As a procedural definition: "It is the transformation from the performance of transactions and the provision of services, in the traditional manual method based on paper, to the electronic form that is characterized by speed and accuracy in completion, and transcends

the scope of time and space, with the need to ensure confidentiality and privacy, in a way that contributes to improving the level of services provided."

B. Dimensions of e-Management

according to Saad Ghalib Yassin Electronic management consists of four dimensions Home They are: (Yassin, 2005, p. 23)

1. Hardware and Equipment: Includes the physical components of the computer, its systems, networks, and accessories.

2- Software: It includes the mental part of computer systems and networks, distributed in the system programs and application programs.

3- Knowledge Makers: The important element of the system as a whole, and consists of digital leaders, Principal and analyze Knowledge resources and intellectual capital. for a purpose Developing administrative work methods. (Ahmed Mohammed, 2020, p. 207)

4- The human factor: The qualified human factor is the basis of e-management, as it is based on Puberty Its objectives, and the human element active in E-Administration can be divided into: (Al-Ahbani, 2018, p. 20)

- Programmers: Developing information programs related to electronic management.
- Computer operators: data and information entry, archiving of document storage.
- Network Staff: Maintenance of computer networks and repair of malfunctions.
- Security and Protection Specialists: Securing information systems from viruses and hacks.

2.2 Public Service: Definition and Dimensions

The issue of improving the quality of the public service is a core concern for Algeria, which has intensified its programmers to achieve reforms at the level of public administrations, making them more responsive to the aspirations of citizens.

A. Definition of Public Service:

Service: It's an activity. It is an intangible basis, provided by the other, and does not entail any ownership, and the provision of the service It may be related to a tangible physical product or without (Al-Dmour, 2008, p. 14).

The term "public service" is characterized by flexibility, because it carries more than one connotation, because the field of services, although it is agreed in its public character, i.e., the uniqueness of the state to provide these services, differs in terms of their nature, form and the party in charge of providing them.

We will mention a number of definitions of public service:

- Defined as: the service provided by public institutions for the citizen, within the framework of the law and legislation in force in the country, in addition to being of public interest. (Attia, 2010, p. 9)
- Refers to the types of services that you exploit in a collective framework by force, according to Basis Equality provided by law، The State has the responsibility to provide them in order to meet the wishes of its citizens. (Crouch, 1991, p. 68)
- The public service is subject to a group of Rules that target the public interest, the most important of which can be summarized: (Brainis, 2007, p. 58)

- Continuity;
- Convenience;
- Equality;

As a procedural definition: we say that it is "an activity directed by the state, which works to meet the needs of individuals provided that continuity and equality in order to achieve the public good."

B. Dimensions of Public Service Quality:

If The dimensions on which citizens base their expectations, including their judgment on the quality of service, include ten dimensions They are: (Chrstopher & lauren, 2002, p. 465) Reliability, responsiveness, capability, credibility, communication, access to the service, tangibility, degree of understanding of the service provider to the beneficiary, courtesy, and security.

and the researchers reduced These ten dimensions To Five dimensions, they called it QoS **Model, and include the following:** (Al-Ajarmeh, 2005, p. 333)

- Materiality;
- Reliability;
- Responsiveness;
- Security;
- Tact;

3. Field Study of the Impact of the Application of E-Administration on Improving the Quality of Public Service in the Municipality of Berrouaghia:

3-1 Introduction to the Municipality of Berrouaghia (the body under study)

It is a regional community "i.e., it has competencies within a certain geographical area" that is basic, has legal personality and financial independence, and is formed by law. (According to Article 16 of the Constitution of Algeria 2016) It is located in the province of Medea in the north of Algeria, about 109 km from the capital Algiers, bordered on the north by the municipalities of Benchicao, El Hamdania, and the municipality of Ouzera, on the east by the municipalities of Sidi Naamane and Khams Djouamaa, on the west by the municipalities of Ouled Deide and Rebaia, and on the south by the municipality of Seghouane.

Its area is estimated at: 161.32 km2, of which 8,227 hectares are agricultural lands, and its population is 77,550 according to the latest statistics (in 2022).

The municipality of Berrouaghia also relies on bodies to carry out its duties, which are distributed according to its organizational structure.

3.2 Study population and sample:

The study population was limited to all 126 administrative employees in the municipality of Berrouaghia, while the sample size of the survey, which was calculated using the Steven K. Thompson equation, consisted of 50 administrative employees, distributed among the various departments and offices in the municipality of Berrouaghia, where 52 forms were distributed to be completed 40 of them were retrieved, i.e. the response rate reached 80%, and 05 forms that were not valid for analysis were excluded, leaving 35 final forms that were analyzed.

3.3 Study Tool and Variables:

When conducting applied studies، In general, a number of field data should be collected from the reality in order to study and analyze them, in order to reach clear answers to the problem of the study and the hypotheses on which it was based, and in order to answer the problem related to this study, primary sources were mainly relied upon, as the collection of primary data was resorted to through the questionnaire tool, and the questionnaire is a means of collecting data by containing Collection Questions or phrases، Asking the respondents to answer them, If The questionnaire included a certain number of phrases, which correspond to the objectives of the study and its questions, in order to be answered by the sample members, where we used the Likert scale quintet for most phrases, as each answer is given importance Relative of the lowest score (01) To Top Grade (05).

The division of this questionnaire is as follows:

- The first axis is related to the personal data (demographic data) of the characteristics of the sample.
- The second axis: the electronic administration in the municipality of Berrouaghia
- The third axis: improving the quality of public service in the municipality of Berrouaghia

3.4 Methods of Statistical Analysis:

The researcher unloaded the questionnaire and analyzed it through SPSS/v26 software, and the following statistical tools were used:

_ Alpha-Cron be Brother test to determine the stability of the questionnaire;
_ Internal consistency validity test to verify the validity of the study instrument;
_ Testing of moderation (normal distribution) in order to determine the use of parametric or non-parametric tests in statistical analyses;
_ Frequencies and percentages of describing the personal and functional variables of the study subjects;
_ Arithmetic averages and standard deviations in order to determine the relative importance and trends of the sample members for each of the study themes;
_ Pearson coefficient to calculate correlation and to negate or prove a relationship between the study variables;
_ Simple linear regression test to determine the effect and find its equation.

First: Test the overall stability of the Header Tool

In order to ascertain the stability of the study tool, the Alpha Cronbach scale was used, as the closer its value is to one, the higher the stability, i.e. the higher the possibility of obtaining the same results if the tool is applied to the same sample. By applying this scale to the study tool used by the software (SPSS), the results shown in the following table were obtained:

Table 02: Alpha Cronbach Rule

Themes	Number of Phrases	Alpha Cronbach Axis Stability
The second axis: electronic administration in	10	0.772

the municipality **of Berrouaghia**		
The third axis: improving the public service in the municipality **of Berrouaghia**	10	0.846
Overall stability	20	0.864

Source: Prepared by the researcher, 2025, based on the outputs of the SPSS/v26 program.

It is clear from the above table that the general stability coefficient of the study axes is high, ranging from 0.846 as the highest value to 0.772 as the lowest value, and in general, the stability coefficient reached 0.864 for the total questionnaire paragraphs.

This shows that the questionnaire has a high degree of consistency and can be relied on in the field application of the study.

Second: Internal Consistency Test

We have verified the validity of the internal consistency of the questionnaire by calculating the Pearson coefficient between the scores of each of the dimension statements and the total score of the dimension to which it belongs, using the SPSS statistical program, as shown in the following table:

Table 03: Shows the internal consistency of the phrases of the E-Administration variable

Number	Ferry	Correlation coefficient	Morale level
1.	The municipality has sufficient equipment and technology to establish electronic management.	0.542	0.001
2.	The Municipality is committed to the policies that regulate the use of technology and the transition to e-management	0.711	0.000
3.	The municipality has a sufficient database to complete its work	0.600	0.000
4.	The municipality has a database that provides up-to-date information	0.580	0.000
5.	The municipality and its various affiliates have qualified human cadres in the field of technology and information	0.536	0.000
6.	The municipality provides adequate training courses in the field of E-Administration for the benefit of its employees	0.708	0.000
7.	The municipality has a mechanism to protect electronic data from any breach and maintain its security and confidentiality	0.652	0.000
8.	The municipality provides internet and telephone connectivity to all its departments, offices and annexes	0.481	0.003

9.	The municipality provides an internal communication network that connects the interests and offices to each other and an external one that connects the interests with the citizen	0.373	0.027
10.	The municipality is working to convert the content of the traditional archive into a digital archive stored in computers	0.680	0.000

Source: Prepared by the researcher, 2025, based on the outputs of the SPSS/v26 program

It is clear from the table above that the values of the correlation coefficients for the statements of the first axis with the axis to which they belong were acceptable, ranging from 0.373 to 0.711, and all of them were statistically significant at a significant level of 0.05, which indicates the consistency of the statements with the axis as a whole.

Table 04: Shows the internal consistency of the phrases of the Public Service Improvement Variable

Number	Ferry	Correlation coefficient	Morale level
1.	The services provided electronically in the municipality allow to reduce the time required for the citizen to obtain the services	0.702	0.000
2.	The e-services provided by the municipality are characterized by the speed of response and saving effort in obtaining the service	0.590	0.000
3.	The provision of the e-service by the municipality contributes to simplifying procedures and work methods	0.679	0.000
4.	The municipality ensures reliable and permanent e-services	0.773	0.000
5.	The municipality provides accurate and error-free services under the e-management	0.750	0.000
6.	Citizens can benefit from the e-services provided by the municipality from their place of residence without the need to travel to the municipality headquarters	0.645	0.000
7.	The services provided electronically by the municipality are characterized by transparency and credibility	0.751	0.000
8.	The e-services provided by the municipality have helped to reduce the measures taken in the provision of traditional services.	0.768	0.000
9.	The services provided electronically in the	0.446	0.007

	municipality allow to reduce the mental effort exerted by the employees in completing administrative tasks and thus improve the services provided		
10.	The e-services provided by the municipality reduce the costs of daily work (paperwork, number of employees, queues).	0.469	0.000

Source: Prepared by the researcher, 2025, based on the outputs of the SPSS/v26 program

It is clear from the previous table that the values of the correlation coefficients of the second axis with the axis to which they belong were acceptable, ranging between 0.446 and 0.768, and all of them were statistically significant at a significance level of 0.05, which indicates the consistency of the phrases with the axis as a whole.

➢ Thus, all the statements of the first and second axes are internally consistent with the axes to which they belong, which proves that the study tool is truthful, and indeed it is suitable for measuring what it is designed to measure.

Third: Data Moderation Test (Normal Distribution)

The test of the normal distribution of the study variables is one of the basic conditions that must be met, in order to perform statistical analysis and test hypotheses, and this is to determine either parametric tests should be used if the variables follow the normal distribution or non-parametric tests if the variables do not follow the normal distribution, so we subjected the study variables to the Kolmogorov-Smirnov test In addition to the Shapiro-Wilk test to find out whether the data follow the normal distribution or not, the latter follows the normal distribution if the level of significance for all study axes is greater than 0.05, based on the null hypothesis and the following alternative hypothesis:

Hypothesis null (H0): The data follow the normal distribution (a significance level value greater than 0.05).

Alternative hypothesis (H1): The data do not follow the normal distribution (a significance level value less than 0.05).

Using SPSS/v26, we get the following table:

Table 05: Data Equivalency Test Results

	Kolmogorov- Smirnov			**Shapiro- Wilk**		
	Statistical Value Statistiques	**Degree of Freedom Ddl**	**Level of Freedom Sig**	**Statistical Value Statistiques**	**Degree of Freedom Ddl**	**Level of Freedom Sig**
E-Administration	0.139	35	0.086	0.956	35	0.178
Improving the public service	0.084	35	0.200	0.979	35	0.726

Source: Prepared by the researcher, 2025, based on the outputs of the SPSS/v26 program

From the previous table, it is clear from the values of Kolmogorov-Smirnov and Shapiro-Wilk for the two variables of E-Administration and improvement of public service and the level of their corresponding significance (the level of significant significance Sig) is 0.178 and 0.726, i.e. it is completely greater than 0.05, so we accept the null hypothesis and reject the alternative hypothesis, and say that the data of the field study follow the normal distribution This allows us to conduct various parametric tests.

3.5 Presentation of the results of the study:

First: Presenting the demographic characteristics of the study sample

The demographic factors of the sample are related to the personal characteristics of its members, and therefore can be measured and known by analyzing the characteristics and distinctive characteristics of the sample members, such as: gender, age group, years of experience... etc., and the demographic factors of the studied sample can be detailed as follows:

Table 06: Statistical Analysis of the Study Sample Based on Personal and Functional Characteristics

Gender	**Duplicates**	**Percentage**
Male	24	68.6
Female	11	31.4
Age	**Duplicates**	**Percentage**
20 to 30 years	3	8.6
31 to 40 years	20	57.1
41 to 50 years	8	22.9
Over 51 years	4	11.4
Nature of the job	**Duplicates**	**Percentage**
Head of Department	4	11.4
Head of Office	6	17.1
Engineer	5	14.3
Administrator	8	22.9
Extension	6	17.1
Office of Aid	6	17.1
Years of Experience	**Duplicates**	**Percentage**
Less than 5 years	12	34.3
5 to 10 years	8	22.3
11 to 15 years	10	28.6
More than 15 years	5	14.3

Source: Prepared by the researcher, 2025, based on the outputs of the SPSS/v26 program

The data in the above table can be interpreted as follows:

- **Gender:** We note that the percentage of males is higher than the percentage of females, by 68.6% for males, compared to 31.4% for females, i.e., the percentage of males is higher than the percentage of females by a difference of 37.20%.
- **Age Group:** We note that the highest percentage of employees (57.1%) are between the ages of 31 and 40, which indicates that the municipality relies on the youth to provide public services, followed by 22.9% representing those between the ages of 41 and 50 years old, and 11%.4% represent all those over 50 years of age and 8.6% represent those aged 20 to 30 years.
- **Nature of the job:** Through the above table, it is shown that the most respondents are administrators with an estimated percentage of 22.9%, followed by the answers of each of the heads and assistants of offices and administrative attachés with an estimated percentage of 17.1%, while the answers of engineers and heads of departments reached 14.3% and 11.4%, respectively.
- **Years of experience:** We note that the percentage of those with less than 5 years of experience represents the highest percentage and is estimated at 34.3%, followed by those with experience from 11 to 15 years with an estimated percentage of 28.6%, then those with experience from 5 to 10 years with an estimated percentage of 22.3%, and finally the category of those with more than 15 years of experience with an estimated percentage of 14.3%.

Second: Statistical Analysis of the Second and Third Axes:

Table 07: Mathematical Averages, Standard Deviations and General Trend of the E-Administration Variable in the Municipality of Berrouaghia

Number	Ferry	Arithmetic Average	Standard deviation	Direction	Ranking
1.	The municipality has sufficient equipment and technology to establish electronic management.	3.54	1.094	High	6
2.	The Municipality is committed to the policies that regulate the use of technology and the transition to e-management	3.83	0.707	High	1
3.	The municipality has a sufficient database to complete its work	3.37	0.973	Medium	8
4.	The municipality has a database that provides up-to-date information	3.60	0.881	High	5
5.	The municipality and its various affiliates have qualified human cadres in the field of technology	3.77	0.973	High	3

	and information				
6.	The municipality provides adequate training courses in the field of E-Administration for the benefit of its employees	3.11	1.231	Medium	10
7.	The municipality has a mechanism to protect electronic data from any breach and maintain its security and confidentiality	3.83	0.618	High	2
8.	The municipality provides internet and telephone connectivity to all its departments, offices and accessories	3.69	0.900	High	4
9.	The municipality provides an internal communication network that connects the interests and offices to each other and an external one that connects the interests with the citizen	3.43	1.092	High	7
10.	The municipality is working to convert the content of the traditional archive into a digital archive stored in computers	3.17	1.175	Medium	9
Average of the second axis as a whole		**3.53**	**0.562**	**High**	

Source: Prepared by the researcher, 2025, based on the outputs of the SPSS/v26 program

From the table above, we can see that the electronic management axis has recorded a high level of approval **, with an estimated arithmetic average of 3.53 and a standard deviation of 0.562,** which indicates a little dispersion of the responses of the sample members, i.e. their answers were in one direction, and in general, the sample members believe that the municipality of Berrouaghia It strives to provide technology to transform into electronic public services, as well as to provide qualified human resources to provide these services, in all its departments, offices and affiliated annexes.

Table 08: Mathematical averages, standard deviations and general trend of the public service improvement variable

Number	Ferry	Arithmetic Average	Standard deviation	Direction	Ranking
1.	The services provided electronically in the	4.09	0.562	High	5

	municipality allow to reduce the time required for the citizen to obtain the services				
2.	The e-services provided by the municipality are characterized by the speed of response and saving effort in obtaining the service	3.94	0.838	High	7
3.	The provision of the e-service by the municipality contributes to simplifying procedures and work methods	4.29	0.710	High	2
4.	The municipality ensures reliable and permanent e-services	4.11	0.900	High	4
5.	The municipality provides accurate and error-free services under the e-management	3.49	0.951	High	9
6.	Citizens can benefit from the e-services provided by the municipality from their place of residence without the need to travel to the municipality headquarters	3.29	1.073	High	10
7.	The services provided electronically by the municipality are characterized by transparency and credibility	4.11	0.631	High	3
8.	The e-services provided by the municipality have helped to reduce the measures taken in the provision of traditional services.	3.91	0.951	High	8
9.	The services provided electronically in the municipality allow to reduce the mental effort exerted by the employees in completing administrative tasks and thus improve the services provided	4.34	0.482	High	1
10.	The e-services provided by the	4.03	0.891	High	6

	municipality reduce the costs of daily work (paperwork, number of employees, queues).				
Average of the third axis as a whole		**3.96**	**0.530**	**High**	

Source: Prepared by the researcher, 2025, based on the outputs of the SPSS/v26 program

From the table above, we can see that the average of the public service improvement axis recorded an **arithmetic average of 3.96 and a standard deviation of 0.530** and a **high level of approval, i.e**., the total number of sample members, The improvement of public services has been achieved by providing e-administration in the municipality, as a result of reducing the mental effort exerted by employees in accomplishing administrative tasks, and the application of E-Administration has allowed simplification of procedures and methods of work, and the provision of public services characterized by transparency and credibility.

3.6 Hypothesis Validity Test:

- The first main hypothesis states**: "There is no statistically significant relationship between the application of e-administration and the improvement of the quality of public service in the municipality of Berrouaghia at a significant level of 0.05".**

This hypothesis was tested by calculating the Pearson correlation coefficient, where we reject the hypothesis if the significance level is less than or equal to 0.05.

Table 09: Results of the Pearson Correlation Coefficient Analysis between E-Administration and Public Service Improvement

Statement	**Improving the public service**	
E-Administration	Pearson correlation coefficient	SIG significance level
	0.531	➢ 0.001

Source: Prepared by the researcher, 2025, based on the outputs of the SPSS/v26 program

We can see through the previous table, that the significance level reached 0.001, which is less than the significant level of 0.05, which confirms the existence of a statistically significant relationship and a significant correlation between the application of e-administration and the improvement of the public service, and the correlation coefficient reached 0.531, which indicates **that there is a moderate direct correlation** between the application of e-administration and the improvement of the public service.

Through the above, the results confirm the rejection of the main hypothesis and the acceptance of the alternative hypothesis**: there is a statistically significant relationship between the application of e-administration and the improvement of public service in the municipality of Berrouaghia at a significant level of 0.05.**

- The second main hypothesis states: "**There is no statistically significant effect between the application of e-administration and the improvement of public service in the municipality of Berrouaghia at a significant level of 0.05".**

This hypothesis has been tested by simple linear regression analysis, and the results are shown below:

Table 10: Analysis of the Results of the Simple Linear Regression of the Impact of E-Administration on the Improvement of Public Service

	E-Management			
Improving the public service	Correlation coefficient	Determination Coefficient	F value	SIG Value
	0.531	0.282	12.932	0.001

Source: Prepared by the researcher, 2025, based on the outputs of the SPSS/v26 program

It is clear from the above table that the value of the correlation coefficient (R) reached 0.531, which indicates that there is a correlation between the application of e-administration and the improvement of the public service, and the coefficient of determination reached 0.282, which indicates that 28.2% of the changes in the improvement of the public service were as a result of the application of e-management, while the remaining percentage was 71.8 % belongs to other variables that were not included in the study model, and as for the calculated F value, it was estimated at 12.932 with a significance level of 0.001, which is less than 0.05, which confirms the significance of the effect.

Table 11: Analysis of linear regression results to predict the impact of e-governance on public service improvement

Models	**Contents of the form**	**Non-standard coefficient**		**Standard Parameter**	**T-value**	**Statistical significance**
		Value B	**Standard Error**	**Value B**		
The first model	**Fixed**	2.190	0.498		4.396	0.000
	E-Management	0.501	0.139	0.531	3.596	0.001

Source: Prepared by the researcher, 2025, based on the outputs of the SPSS/v26 program

As it is also clear from the table above, that the application of E-Administration affects the improvement of the level of public service, as the level of significance reached 0.003, which is less than the level of significance of 0.05, which indicates that it alone is able to affect the improvement of the level of service by 0.501, i.e., an increase of one unit in the e-administration leads to an improvement in the level of service by 0.501. The simple linear regression equation can be written as follows**:**

Y= (Public Service Improvement)0.501x (e-Management) +2.190

Through the above, the results confirm the rejection of the main hypothesis and the acceptance of the alternative hypothesis.

In other words**, "there is a statistically significant effect between the application of e-administration and the improvement of the public service in the municipality of Berrouaghia at a significant level of 0.05".**

4. Conclusion:

The application of E-Administration is one of the requirements of practical life, due to its advantages in terms of the establishment of specialized digital facilities, ease of access to them, and the lower costs compared to traditional facilities, and this mechanism has been adopted by many Arab and foreign countries to promote their public sector, especially regional (local) groups. Since they derive their legitimacy from the will of the people, they are the decentralized bodies closest to the citizen, which work to meet their needs and gain their trust by improving the level of services they provide to them.

Through the field study in the municipality of Berrouaghia, and after referring to the most important theoretical aspects related to E-Administration and improving the level of public service,

We reached a set of results, most notably:

- The municipality of Berrouaghia has qualified human cadres in the field of e-management;
- The disappearance of some of the work functions that were previously practiced in the traditional administration of the municipality;
- The existence of a high level of implementation of E-Administration in the municipality of Berrouaghia and the improvement of the level of performance;
- The level of implementation of E-Administration in the municipality of Berrouaghia is high;
- The level of public services provided in the municipality of Berrouaghia is high;
- There is a moderate direct correlation between the application of e-administration and the improvement of the level of public service in the municipality of Berrouaghia;
- There is a statistically significant effect between the implementation of e-administration and the improvement of public service in the municipality of Berrouaghia;

Following the findings, the following recommendations were proposed:

- Updating the basic structures of regional bodies in line with the requirements of digital transformation;
- Updating legislation and laws in the Interior and Local Authorities sector to ensure the integrity of the exchange of electronic documents;
- Drawing on the experiences of foreign States that have achieved effective results in improving services in local communities;
- Encouraging investors in the field of information and communication technology and supporting scientific research in the same field;
- Training human resources on E-Administration techniques in order to control the digitization of local communities;
- Integrated electronic management dissemination, allowing for common access to information between the various bodies;

- Supporting citizens in purchasing computers and subscribing to the Internet by making them accessible to all;

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6. Extensions:

Statistiques de fiabilité

Alpha de Cronbach	Nombre d'éléments
,864	20

Tests de normalité

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistiques	ddl	Sig.	Statistiques	ddl	Sig.
الإدارة_الإلكترونية	,139	35	,086	,956	35	,178
الخدمة_العمومية	,084	35	,200*	,979	35	,726

*. Il s'agit de la borne inférieure de la vraie signification.

a. Correction de signification de Lilliefors

Corrélations

		الإدارة_الإلكترونية	الخدمة_العمومية
الإدارة_الإلكترونية	Corrélation de Pearson	1	,531**
	Sig. (bilatérale)		,001
	N	35	35
الخدمة_العمومية	Corrélation de Pearson	,531**	1
	Sig. (bilatérale)	,001	
	N	35	35

**. La corrélation est significative au niveau 0.01 (bilatéral).

Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,531[a]	,282	,260	,45679

a. Prédicteurs : (Constante), الإدارة_الإلكترونية

ANOVA[a]

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	2,698	1	2,698	12,932	,001[b]
	Résidus	6,886	33	,209		
	Total	9,584	34			

a. Variable dépendante : الخدمة_العمومية

b. Prédicteurs : (Constante), الإدارة_الإلكترونية

Coefficients[a]

Modèle		Coefficients non standardisés		Coefficients standardisés	t	Sig.
		B	Ecart standard	Bêta		
1	(Constante)	2,190	,498		4,396	,000
	الإدارة_الإلكترونية	,501	,139	,531	3,596	,001

a. Variable dépendante : الخدمة_العمومية

Statistiques

		1ج	2ج	3ج	4ج	5ج	6ج	7ج	8ج	9ج	10ج	الخدمة_العمومية
N	Valide	35	35	35	35	35	35	35	35	35	35	35
	Manquant	0	0	0	0	0	0	0	0	0	0	0
Moyenne		4,09	3,94	4,29	4,11	3,49	3,29	4,11	3,91	4,34	4,03	3,9600
Ecart type		,562	,838	,710	,900	,951	1,073	,631	,951	,482	,891	,53093

Statistiques

		1أ	2أ	3أ	4أ	5أ	6أ	7أ	8أ	9أ	10أ	الإدارة_الإلكترونية
N	Valide	35	35	35	35	35	35	35	35	35	35	35
	Manquant	0	0	0	0	0	0	0	0	0	0	0
Moyenne		3,54	3,83	3,37	3,60	3,77	3,11	3,83	3,69	3,43	3,17	3,5343
Ecart type		1,094	,707	,973	,881	,973	1,231	,618	,900	1,092	1,175	,56253