

Impacts of E-Management on Human Resource Performance in Algeria - A Case Study of the Faculty of Economics, Management, And Business at Ain Temouchent University.

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Abstract:

The study aimed to identify the impact of e-management, including its dimensions (technology used, e-planning, e-organization, e-guidance, and e-control), on human resource performance at the Faculty of Economics, Management, and Business at Ain Temouchent University. The study employed descriptive and analytical approaches, relying on a questionnaire as a data collection tool. The study population included faculty and staff, as well as a representative sample of 40 employees. A total of 36 valid questionnaires were returned for analysis, representing a response rate of 90%. The study results indicated a high assessment of the level of e-planning, guidance, and organization. However, the results of the oversight were limited to one type of oversight: traditional oversight, which places the faculty behind the technological trend in this area. Conflicting results regarding the technology used indicate a gap between the hardware and programs for administrators and professors. There is a shortage of technological tools and internet access for professors, which reflects the need to pay greater attention to this aspect.

Keywords: Human resource management, e-management, performance, e-planning, e-organization, e-guidance, e-control.

1. Introduction:

E-government has helped, both internationally and in the Arab world, in completing business and providing services to citizens electronically. This has effectively contributed to solving many problems, the most important of which are crowding and standing in queues (Najm, 2004). Some Arab countries have adopted a clear strategy to develop their methods, such as the Gulf states, most notably the UAE and Bahrain. However, other countries still face significant challenges in bridging the gap to keep pace with technology (Al-Mukhtar, 2018). Algeria has recently witnessed modernization in various sectors, especially higher education and scientific research, through the use of information and communication technology in administration, facilitating transaction procedures, providing faster, less expensive, and more effective services, and abandoning paper-based administration, which was characterized by widespread bureaucracy, administrative corruption, and poor service provision (Ayyoub, 2019)

-Study Problem:

Based on the above, e-administration represents a qualitative leap for universities in Algeria. Studying its relationship to the quality of services provided is an important topic that must be highlighted. The shift toward e-administration is no longer an option; rather, it has become an urgent need to adapt to the changing times and the pace of development (Obeid, 2021). Accordingly, we found it important to study the impact of e-administration on human resource performance at the University of Ain Temouchent - Belhadj Bouchaib -, Faculty of Economics, Management, and Business Sciences, by posing the following problem:

To what extent does e-administration impact human resource performance at the Faculty of Economics, Management, and Business Sciences at the University of Ain Temouchent - Belhadj Bouchaib?-

Main Hypothesis:

There is a statistically significant impact of e-administration on human resource performance at the Faculty of Economics, Management, and Business Sciences at the University of Ain Temouchent - Belhadj Bouchaib -?

Sub-hypotheses:

Sub-hypothesis 1: There is a statistically significant effect of the technology used on human resource performance at the Faculty of Economics, Management, and Business Sciences at Ain Témouchent University, at a 5% significance level.

Sub-hypothesis 2: There is a statistically significant effect of electronic planning on human resource performance at the Faculty of Economics, Management, and Business Sciences at Ain Témouchent University, at a 5% significance level.

Sub-hypothesis 3: There is a statistically significant effect of electronic organization on human resource performance at the Faculty of Economics, Management, and Business Sciences at Ain Témouchent University, at a 5% significance level.

Sub-hypothesis 4: There is a significant effect of electronic guidance on human resource performance at the Faculty of Economics, Management, and Business Sciences at Ain Témouchent University, at a 5% significance level.

Sub-hypothesis 5: There is a statistically significant effect of electronic monitoring on human resource performance at the Faculty of Economics, Management, and Business Sciences at Ain Témouchent University, at a 5% significance level.

Study Objectives: This study seeks to:

- Understand the extent to which the Faculty of Economics, Business, and Management Sciences at Ain Temouchent University applies the concept of e-management;
- Highlight the importance of e-management and its impact on human resource performance;
- Identify the attitudes of human resources toward the faculty's e-management components;
- Identify the most important features of e-management at the faculty and their resulting outcomes.

Study Methodology:

To achieve the study objectives, the descriptive analytical approach was adopted, which primarily relies on studying the phenomenon in its context. In addition, interviews, observation, and questionnaires were used as tools for data collection, which was analyzed using the statistical program SPSS V28.

Previous Studies:

- Nour Taher Mohammed Al-Aqra's study (2019): The Role of E-Government in Improving Job Performance among Employees in Government Institutions Operating in Qalqilya Governorate.

A descriptive approach was adopted to address references and define concepts, in addition to an analytical statistical approach to process the study population's data. The study was based on the level of government institutions in Qalqilya Governorate, and a sample of 50 employees was taken from within the institution. The most important findings of the study are the necessity of government institutions transitioning to e-Government, provided that it is supported by competent and experienced human resources. It also highlights the need to establish a motivational system and attempt to attract them, while working to train current employees and financial resources, given its ability to raise performance levels with clear indicators. It is also necessary to align the legal environment in government institutions with the gradual implementation of e-Government, along with a monitoring and evaluation system and measurement indicators to ensure the quality of the transformation, address challenges, and address deviations.

- MD. Tanjil Ahmed 2019: E-HRM Practices and Their Impact on Organizational Performance: A Study on the Manufacturing Industry in Bangladesh

The study used a descriptive approach in the theoretical aspect, referencing a set of references and previous studies. Interviews were conducted with ten managers from several branches of the National Manufacturing Corporation in Bangladesh. Among the most important findings of the study is that the corporation tends to use more applications, and excessive stress can sometimes manifest itself in negative consequences. One of the drawbacks is its high costs. Furthermore, after working for a long time, workers are not enthusiastic about learning the details of the electronic system.

- Sahem Nawafleh (2018), The Impact of E-Management on Employee Job Performance in Public Management

The topic of e-management is considered one of the valuable outcomes of information and communications technology (ICT). ICT-related investments globally are recognized as having shown significant growth over the past twenty years—not only in the public sector but also in the private sector—in an effort to enhance overall performance. Accordingly, this research paper sought to determine the role of e-governance in determining employee performance in the Jordanian public sector. It is well known that e-governance is likely to have an impact on various measured criteria. A questionnaire was administered to a randomly selected sample of 337 employees, all working in the Jordanian Ministry of Foreign Affairs and Expatriates, the Civil Status and Passports Department, and the Department of Lands and Survey in the public sector in the Hashemite Kingdom of Jordan. The results showed a significant correlation between e-governance factors and enhanced employee performance in the Jordanian public sector ($\alpha \leq 0.05$). The author encouraged future studies in this area that could be generalized to all government institutions and agencies in Jordan.

- Mazen Al-Shabaki, Sami Abu Nasser, and Yousef Muhammad Abu Amon (2017):

The Impact of E-governance on the Development of University Services in E-Learning at Al-Azhar University in Palestine. The researcher used the analytical approach, studying a sample of 35 employees in the field of electronic technology. He used the SPSS statistical program to analyze the data. One of the most important findings of the researcher is that the university's move toward distance learning accelerates the process of administrative transformation toward e-management. The results showed that what prevents this, despite the desire to do so, is the lack of electronic and technical resources at the university level. The study also revealed a significant lack of training in the application of machine learning programs related to objects. The statistical study demonstrated the positive impact of e-management on university services and human resources management.

- Study by Abdel Hakim Ahmed Rabie Najm and Ahmed Suleiman Saeed, 2016:

Electronic human resources management and its impact on job performance, applied to employees in public and central hospitals affiliated with the Health Directorate in Dakahlia Governorate. The analytical approach was adopted, drawing on a set of references and data and analyzing them. A sample of 383 employees from the Dakahlia Health Directorate was taken. The results revealed a significant impact of the dimensions of electronic management. Among the most important findings are the importance of increasing awareness of the importance of operational electronic management among employees and the need to deepen the trend toward it. This can be achieved by creating an electronic archive in all hospitals that documents all files, and by having management base its decisions on the data provided by electronic management in databases. Furthermore, there is a need to train employees and increase their interaction with them to acquire the necessary skills to deal with electronic management. - Ebru Beyza Bayarçelik 2015, Exploring the outcomes of Electronic Human Resource Management (E-HRM). The researcher used the descriptive approach, and in his research paper he relied on a set of interviews with some human resources management officials in the industrial sector in Turkey. The study showed that time management can be easily controlled, as electronic management facilitates access to personal data of employees and workers, which facilitates the work of human resources specialists and reduces performance costs and data collection costs by applying this type of management. Electronic management speeds up the implementation of tasks by facilitating internal communications from managers and officials towards employees.

Theoretical Framework of the Study

First: The Origin and Definition of E-management:

E-management in its modern form is not a new concept; rather, it is the result of numerous successive developments and stages that humanity has witnessed throughout history. The first appearance of electronic management was in 1960 AD when the (LBM) company coined the term word processor for the activities of its electric printer. The reason for launching this term was to draw the attention of management in offices to the production of these printers when they are connected to the computer and use the word processor. The first evidence of the importance of what this company proposed appeared in 1964 AD when this company produced a device that it put on the market called (MT/ST Magnetic Tape / Selected Printer Device). This printer had a magnetic tape. When writing any message using this printer, the words are stored on the magnetic tape, where it is possible to print this message after retrieving it from the tape on the printer after we print the name and address of the person to whom it is addressed. This process saved a lot of effort, especially when it is required to send the same message to a large number of recipients. Many techniques appeared in the administrative field to be applied in various institutions to achieve the desired goals with the lowest costs and high quality performance (Al-Salmi, 2003)

Table No. (1): The most important definitions of e-administration

Definition	Reference (author)	n
A framework that includes both e-business to denote public e-administration or e-government for citizen-oriented, business-oriented, or government-oriented institutions and departments.	(Ghalib, 2005)	1
The management process based on the unique capabilities of the Internet and business networks to plan, direct, and control the core resources and capabilities of the company and others without limitations in order to achieve the company's objectives.	Invalid source specified.	2
An administrative strategy for the information age, working to achieve better services for citizens, institutions and their customers, while making optimal use of available information sources. This is achieved by employing the available material, human and moral resources within a modern electronic framework, in order to make optimal use of time, money and effort, and to achieve targeted demands with the required quality, while supporting the concept of "get on the line and don't get in the line."	Invalid source specified.	3

Source: Prepared by researchers based on various sources.

From the previous definitions, we conclude that e-governance represents the process of creating, storing, organizing, and managing digital documents and data within an organization using software applications and tools. It involves automating document-related tasks, enabling collaboration and information sharing, and improving efficiency and productivity while reducing costs and ensuring compliance.

Second: The Importance of E-governance

E-governance refers to the use of electronic technologies such as computers, the internet, and mobile devices to manage and coordinate various aspects of business operations. E-governance has become increasingly important in today's digital age, as companies of all sizes need to adapt to a rapidly changing technological landscape.

Here are some reasons why e-governance is important: (Lahoul Abdel Qader, 2021/2022)

- Bringing the administration closer to the citizen, by enabling citizens to find information and access services wherever they are without having to visit relevant departments.
- Reducing the burden of paperwork by adopting organized processes that allow data to be collected once for multiple uses and organize redundant data.
- Facilitating the preservation and documentation process, which reduces the need for storage space.
- Helping build trust between management, employees, and beneficiaries, leading to overall satisfaction.
- Contributing to achieving administrative flexibility and eliminating red tape by facilitating and simplifying administrative work.
- Contributing to achieving better, faster, and broader communication.
- Helping citizens access high-quality public services at a lower cost.
- Contributing to the fight against corruption by monitoring, recording, and publicly following up on all electronic administrative processes.

In general, e-administration is important because it enables an organization to operate more efficiently, reduce costs, communicate more effectively, and make more informed decisions. By adopting e-administration technologies, an organization can remain competitive in today's rapidly changing business landscape.

Third: Components of e-administration: E-administration consists of four basic components: (Yassin, 2005)

A. Computer hardware: This represents the physical components of the computer.

B. Software: This is the mental component of computer systems and networks. It is divided into two main categories: system software and application software. General application software includes web browsers, email programs, groupware, computer graphics, spreadsheets, and databases. Special application software, by its nature, is diverse and varied, including accounting software, financial software packages, e-commerce software, enterprise resource planning software, project management software, and others. System administration software is technically more complex than other types of software. These include: operating systems, network management systems, programming language translators, audit tools, and computer-aided programming and software engineering.

C. Communications network: This is the electronic connections spanning the web of the Internet, extranets, and intranets. It represents value to the organization and its electronic management.

D. Knowledge creators: They are the most important in the e-management system, i.e. digital leaders, branch managers, and analysts of knowledge resources and the organization's intellectual capital. Knowledge creators are responsible for managing the strategic synergy of the elements of e-management on the one hand and changing the prevailing ways of thinking to achieve a culture of knowledge. (Ghalib, 2005)

Fourth: Functions of e-management:

The rapid developments of the current technological era, known as the technological revolution, have brought about significant changes in traditional processes. As a result, management has shifted toward e-management, which has helped optimize the use of time, effort, money, and energy. E-management now relies heavily on information systems for planning, designing organizational structures, managing teamwork, and achieving remote coordination and control, all made possible through information technology.

-E-planning: It relies primarily on the use of strategic planning and the pursuit of strategic objectives. Decisions made using electronic systems in business planning are characterized by comprehensiveness, serving the organization's various departments and management. In light of the electronic revolution, e-planning also relies on new knowledge systems, such as decision support systems, expert systems, and artificial neural network systems. It also relies on simplifying work systems and procedures (Al-Waqqi, 2018)

- E-organization: Contemporary organizations rely on changes in the levels and form of organizational structures, transforming them from a vertical to a horizontal form. This is because long structures present multiple problems, as they involve multiple administrative levels, resulting in increased costs. They also involve the distances between senior management and employees, creating difficulties in coordination and complicating communication processes. Therefore, long organizational structures can be replaced with new organizational structures that tend toward flattening, leading to a better flow of information and increasing the efficiency and effectiveness of communication processes within the organization (Shakhab, 2022)

-E-guidance: In administrative intellectual studies, the leader is considered the center of control. The directive distributes roles among employees and has the authority to make decisions. The role of employees is limited to implementing orders. In electronic leadership, the employee in the public administration working within the scope of public service does not need to refer to superiors, but rather refers to the database present in his workplace. The database serves as an administrative enablement for the employee to make his decision regarding public service related to the public. We can say that leadership is a fundamental function in e-management and the responsibility of every leader from their position. They also carry out the communications mission, creating a suitable environment that allows them to deliver their messages to stakeholders via the electronic communications network. They also assume the responsibility of direct motivation. As a leader, they necessarily direct the group they lead by guiding subordinates and motivating them to work toward achieving goals. (Lahoul, 2021/2022)

- Electronic oversight: Traditional oversight is criticized for focusing on the past because it comes after planning and implementation. Electronic oversight allows for real-time monitoring through the organization's network or internal network, which reduces the time gap between the detection of deviations or errors and the process of correcting them. It is also a continuous, renewable process that detects deviations first and foremost through the flow of network information between managers, employees, suppliers, and consumers. Everyone works simultaneously, which leads to increased electronic trust and loyalty, whether between employees and management or between beneficiaries and management. This means that electronic oversight is closer to trust-based oversight (Al-Waqqi, 2018)

2.2 Human Resource Performance: Basic Concepts

First: The Concept of Human Resource Performance

Table No. (2): The Most Important Definitions of Human Resource Performance

Definition	Reference (author)	n
Achieving outputs through specific tasks or activities within a specific job position over a specific period of time. Human resources job performance is linked to three main elements: ability, effort, and opportunity. Performance can be measured through the outputs achieved through the interaction of these elements.	Invalid source specified.	1
The ability to accomplish tasks reflects the achievements of the human resources in the organization and their levels and degrees of achievement, which are primarily the	Invalid source	2

result of discipline and seriousness in carrying out tasks and responsibilities.	specified.	
The level of performance an individual provides when performing his work in terms of the quantity and quality of the work he provides.	Invalid source specified.	3

Source: Prepared by researchers based on various sources.

Therefore, it can be said that human resource performance refers to the ability that reflects the effort expended by human resources, whether in terms of mental or physical effort, to accomplish the tasks and work assigned to them and required by their positions.

Second: The Importance of Human Resource Performance. These are the main reasons why human resource performance is important:

*Human resource performance ensures alignment between the overall objectives of the organization and the management of its workforce. By effectively managing recruitment, training, and development, human resource departments can ensure that the organization has the right talent to achieve its strategic goals (Rynes, 2002)

*Human resource performance directly impacts employee engagement and productivity levels. Effective human resource practices, such as providing clear performance expectations, offering career development opportunities, and recognizing and rewarding achievements, contribute to higher levels of employee satisfaction and motivation, leading to increased productivity. (Macey, 2008).

*Human resource performance plays an important role in attracting and retaining top talent. By implementing effective recruitment strategies, creating a positive employer brand, and offering competitive compensation and benefits packages, HR departments can attract high-quality candidates and reduce turnover rates. (Breaugh, 2000)

*HR performance impacts an organization's culture and climate. HR professionals shape the workplace environment by setting policies, promoting diversity and inclusion, fostering ethical behavior, and managing employee relations. A positive culture and climate contribute to increased job satisfaction, employee engagement, and overall organizational performance. (Schneider, 2013)

*HR performance ensures compliance with labor laws, regulations, and ethical standards. HR professionals are responsible for maintaining accurate employee records, handling employee complaints and disputes, and ensuring fair and equitable treatment of all employees. Effective HR practices mitigate legal and reputational risks for organizations. (Budhwar, 2013)

Overall, HR performance is critical to an organization's success; it can help attract and retain top talent, boost productivity and efficiency, support organizational goals, mitigate risks, and improve employee satisfaction.

Third: Determinants of Human Resources Performance

Human resources performance is affected by a number of factors, the most important of which are: (Haimer, 2017/2018)

Expectations: These represent the performance objectives that human resources seek to achieve.

Incentives: These represent the human resources' desire to achieve objectives.

Resources: These are the means and tools used to achieve objectives.

Knowledge and Skills: These are the various knowledge necessary to perform tasks and implement activities.

Feedback: These are the results resulting from human resources performance.

Capacities: These represent the intellectual and physical capabilities of human resources.

Job Design: This refers to the distribution of various tasks and activities among human resources.

Fourth: Human Resources Performance Evaluation Criteria

In each process, the necessary criteria must be established to determine the acceptable level of human resource performance. These criteria are derived from the objectives set in the plan and are useful in judging performance efficiency. Performance evaluation criteria are classified into three basic criteria, as follows: (Bersoli, 2017)

*Criteria describing personal characteristics: These refer to the positive personal qualities that a human resource must possess while performing their duties within the scope of their job, enabling them to perform successfully and efficiently. Examples of this include honesty, sincerity, loyalty, and belonging. A human resource whose performance reflects these qualities will be positively reflected, contributing to a good evaluation of this performance. Evaluating these qualities is not an easy task, as it requires the evaluator to continuously monitor performance to determine the extent to which they are present. This difficulty stems from the fact that they are intangible. Therefore, their evaluation is accompanied by inaccuracy and the possibility of some degree of bias, as their evaluation relies entirely on the evaluator's personal opinion and judgment.

*Behavioral criteria: Behavioral criteria refer to the positive behaviors exhibited by the human resource being evaluated, indicating positive aspects of their performance. These behaviors include cooperation, diligence, initiative, overcoming

difficulties and problems, and treating customers well. Evaluating these positive behaviors by the evaluator also requires continuous monitoring of the performance of the person being evaluated. Therefore, their evaluation is also difficult, but to a lesser extent than evaluating attributes.

***Outcome criteria:** Outcome criteria clarify the measurable and evaluable accomplishments of the human resource whose performance is being evaluated in terms of quantity, quality, cost, time, and return. These accomplishments represent the desired objectives.

Undoubtedly, these criteria are more accurate in describing good performance, but they are difficult to use in evaluating human resources performing tasks with intangible productivity, such as administrative tasks. The results achieved by the human resource are evaluated by comparing their actual performance with the specified performance, thus determining the level of this achievement.

3. Field Study

3.1 Methods and Tools:

This part of the study relied on the descriptive and analytical approaches, which help achieve the study's objectives. Data and information were collected by distributing questionnaires to sample members, classifying them, and analyzing them to achieve a better and more accurate understanding of the subject under study. This was achieved using a set of statistical methods using the SPSS.V. 82 statistical program.

Study Population and Sample: The study population consists of employees of the Faculty of Economics, Management, and Business Sciences at Ain Temouchent University, Belhadj Bouchaib, regardless of their gender and job title. To conduct the study, the questionnaire was distributed to a group of 40 employees who were randomly and impartially selected from the study population. We were able to retrieve 36 complete questionnaires that were ready for analysis.

Study Tools: After reviewing a wealth of previous literature in the field of e-management and human resource performance, a questionnaire was designed as the primary tool for the study to collect field data from the study population.

It consists of questions covering the study variables and is divided into two axes. Main sections:

The first section: Includes personal data for employees at the Faculty of Economics, Management, and Commerce, including gender, age, educational level, and seniority (number of years of service)

The second section: Includes two parts:

The first section: Includes statements related to e-government.

Part Two: Includes statements related to human resources performance.

To analyze the questionnaire data, the Statistical Package for Social Sciences (SPSS) program was used, and the five-point Likert scale was chosen to measure the degree of application of the concepts of e-management and human resources performance at Ain Temouchent University, as follows:

Table No. (3): Five-point Likert scale

Strongly disagree	Disagree	Neutral	agree	Strongly agree	Response
5	4	3	2	1	Score

Source: Prepared by the researchers

2.3 Results and Discussion:

1.2.3 Validity of the Study Tool: The validity of the internal consistency of the questionnaire items was confirmed by calculating the Pearson correlation coefficient between the score of each item in the axis and the total score of the items in the corresponding dimension. Accordingly, the following hypotheses were formulated:

Hypothesis H0: There is no correlation, meaning $r \neq [-1.1]$

Hypothesis H1: There is a correlation, meaning $r = [-1.1]$

Table No. (4): Correlation coefficient between the items on technology use.

connection	phrases	N
0,792**	The institution has the necessary electronic devices.	1

0,498**	The institution has internet service.	2
0,683**	The devices have the software required to perform the tasks.	3
0,735**	There are protection programs in the devices	4
0,729**	The software is updated periodically.	5
0,687**	Malfunctions are maintained periodically.	6

Source: Prepared by the researchers based on SPSS outputs. V28.

We note from the table above that the Pearson correlation coefficient between the phrases of the technology use dimension and the total score for the axis (e-management) is between $r = [-1.1]$. Therefore, we accept Hypothesis H1 and reject Hypothesis H0. Therefore, it can be said that there is a correlation between the paragraphs of the independent variable dimension and the total score for the axis to which they belong.

Table No. (5): Correlation coefficient of the phrases of electronic planning and their respective dimension.

connection	phrases	N
0,786**	The university is moving towards a complete transition to electronic administration.	1
0,873**	Electronic planning helps the university determine material and human needs.	2
0,921**	Electronic planning helps the university know its real situation.	3
0,885**	Electronic planning helps the university adapt to new developments and emergencies.	4

Source: Prepared by the researchers based on SPSS outputs. V28

We note from the table above that the Pearson correlation coefficient values between the statements of the electronic planning dimension and the total score of the axis (e-management) are between $r = [-1.1]$. Therefore, we accept Hypothesis H1 and reject Hypothesis H0. Therefore, it can be said that there is a correlation between the items of the independent variable dimension and the total score of the axis to which they belong.

Table No. (6): Correlation coefficient of the electronic organization statements and the dimension to which they belong.

connection	phrases	N
0,745**	Electronic organization helps the university to carry out tasks.	1
0,604**	Available electronic tools help employees collaborate to accomplish tasks.	2
0,439*	Services such as knowing the number of hours completed are provided through applications or websites.	3
0,685**	E-administration helps in creating an electronic archive.	4
0,701**	Electronic administration contributes to reducing the amount of paperwork, in addition to storing and saving data easily.	5

Source: Prepared by the researchers based on SPSS outputs. V28

We note from the table above that the Pearson correlation coefficient values between the statements of the electronic organization dimension and the total score of the axis (electronic management) are between $r = [-1.1]$. Therefore, we accept Hypothesis H1 and reject Hypothesis H0. Therefore, it can be said that there is a correlation between the items of the independent variable dimension and the total score of the axis to which they belong.

Table No. (7): Correlation coefficient of electronic guidance statements and the dimension to which they belong.

connection	phrases	N
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0,605**	There is communication between different levels of management.	1
0,874**	Electronic instructions are broadcast to inform employees of all new developments.	2
0,787**	Employees are directed electronically to perform new tasks.	3
0,720**	Employees are electronically motivated to deliver more.	4

Source: Prepared by the researchers based on SPSS outputs. V28

We note from the table above that the Pearson correlation coefficient between the statements of the e-guidance dimension and the total score for the axis (e-management) is between $r = [-1.1]$. Therefore, we accept Hypothesis H1 and reject Hypothesis H0. Therefore, it can be said that there is a correlation between the items of the independent variable dimension and the total score for the axis to which they belong.

Table No. (8): Correlation coefficient of the e-monitoring statements and the dimension to which they belong.

connection	phrases	N
0,836**	The progress of tasks is monitored electronically.	1
0,824**	Employee data is monitored on their electronic devices.	2
0,684**	Employees are notified via email.	3

Source: Prepared by the researchers based on SPSS outputs. V28

We note from the table above that the Pearson correlation coefficient between the statements of the electronic monitoring dimension and the total score for the axis (electronic management) is between $r = [-1.1]$. Therefore, we accept Hypothesis H1 and reject Hypothesis H0. Therefore, it can be said that there is a correlation between the paragraphs of the independent variable dimension and the total score for the axis to which they belong.

Table No. (09): Correlation coefficient between the statements of human resources performance.

connection	phrases	N
0,706**	The required work is completed quickly.	1
0,453*	The work is completed on time without delay.	2
0,751**	I notice an improvement in employee performance.	3
0,750**	There is accuracy in conveying information to employees, which makes it easier for them to perform their tasks.	4
0,656**	There is an improvement in communication channels between employees.	5
0,724**	I can adapt to new developments quickly without compromising my performance at work.	6
0,768**	I notice that there is a decline in the error rate in the overall performance of employees.	7
0,636**	I am interested in training programs to use electronic management to develop my performance level	8
0,633**	Work pressure has been reduced thanks to the use of electronic means.	9

Source: Prepared by the researchers based on SPSS outputs. V28

We note from the table above that the Pearson correlation coefficient between the dependent variable items and the total axis score is between $r = [-1.1]$. Therefore, we accept Hypothesis H1 and reject Hypothesis H0. Therefore, we can say that there is a correlation between the dependent variable items and the total axis score.

2.2.3 Reliability of the Study Tool:

We measured the study tool using Cronbach's alpha, which determines the level of acceptance of the measurement tool. There are two hypotheses regarding this coefficient:

Hypothesis H0: The data are unreliable if $AC = [0;6,1[$

Hypothesis H1: The data are reliable if $AC \neq [0;6,1[$

A greater than 0.6 indicates that the tool has acceptable reliability. This can be demonstrated by explaining the reliability test in the following table:

Table No. (10): Reliability test Cronbach's alpha coefficient.

Cronbach's alpha coefficient	Number of phrases	Dimensions	Axes
0,760**	6	Technology used	Electronic administration
0,888**	4	Electronic planning	
**0,663	5	Electronic organization	
0,737**	4	Electronic guidance	
**0,667	3	Electronic censorship	
0,842**	9	Human Resources Performance	
**0,912	32	Total	

Source: Prepared by the researchers based on SPSS outputs. V28.

We note from the table that the reliability coefficient of the questionnaire reached 0.912, a value higher than 0.71. Therefore, we accept hypothesis H1 and reject hypothesis H0. This indicates the reliability of the questionnaire questions and their validity in data analysis.

3.2.3 Testing the Study Hypotheses.

First: Testing the Main Hypothesis.

☐ H0: There is no statistically significant effect of e-management on human resource performance at the Faculty of Economics, Management, and Business Sciences, Ain Temouchent University, at a 5% significance level.

☐ H1: There is a statistically significant effect of e-management on human resource performance at the Faculty of Economics, Management, and Business Sciences, Ain Temouchent University, at a 5% significance level.

To test this hypothesis, a simple linear regression model was used to verify the presence of a statistically significant effect.

$$Y = B_0 + B_1 X_1$$

Where:

- Y: Human resource performance (dependent variable)

- X: E-management (independent variable)

- B0, B1: Regression coefficients.

Table No. (11): Correlation coefficient analysis of the impact of e-management on human resource performance

Récapitulatif des modèles				
Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation

1	,578 ^a	,334	,315	,63292
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Source: Prepared by the researchers based on SPSS V28 outputs.

We note from the table above that the correlation coefficient (R) was estimated at 0.578, which is a moderate percentage, indicating a correlation between the independent variable (e-governance) and the dependent variable (human resources performance). The coefficient of determination (R-deux) was estimated at 0.334, meaning that 33.4% of the change in human resources performance at the college is explained by the dimensions of e-governance, while 66.6% is explained by other factors not included in the study.

Table No. (12): One-way analysis of variance

ANOVA ^a						
Modèle		Somme des carrés	Ddl	Carré moyen	F	Sig.
1	Régression	6,836	1	6,836	17,066	<,001 ^b
	De Student	13,620	34	,401		
	Total	20,456	35			

Source: Prepared by the researchers based on SPSS V28 outputs.

We note from the table above that the F value is 17.066 at a significance level of $0.01 \geq 0.05$, which is less than 0.05. This means that the model is statistically significant and its results can be relied upon. Therefore, e-management has an impact on human resource performance at the Faculty of Economics, Management, and Business at Ain Temouchent University.

Table No. (13): Analysis of the results of the simple linear regression on the impact of e-management on human resource performance.

Coefficients ^a						
Modèle		Coefficients non standardisés		Coefficients standardisés	T	Sig.
		B	Erreur standard	Bêta		
1	(Constante)	,485	,525		,924	,362
	Electronic administration	,702	,170	,578	4,131	<,001

Source:
Prepared by
the
researchers
based on
SPSS V28
outputs.

From the table, we note that the T value reached 4.131, while the significance level was $0.001 < 0.05$, which is less than the significance level of 0.05. Therefore, we reject the null hypothesis and accept the alternative hypothesis, i.e., there is a statistically significant effect of e-management on human resource performance at the Faculty of Economics, Management, and Business Sciences at Ain Temouchent University, according to the following equation:

$$Y = 0.485 + 0.702X \text{ (electronic management)}$$

Second: Testing the first sub-hypothesis:

- ☐ H0: There is no statistically significant effect of the technology used on human resource performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level.
- ☐ H1: There is a statistically significant effect of the technology used on human resource performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level.

Table No. (14): Correlation coefficient analysis of the effect of technology used on human resource performance.

Source:
the
based on
outputs.

Récapitulatif des modèles				
Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,139 ^a	,019	-,010	,76815

Prepared by
researchers
SPSS V28

We note

from the table above that the correlation coefficient (R) was estimated at 0.139, which is very weak, indicating no correlation between the independent variable (technology used) and the dependent variable (human resource performance). The coefficient of determination (R-deux) was estimated at 0.019, meaning that 19% of the variation in human resource performance is explained by the technology used, and 81% is explained by other factors not included in the study.

Table No. (15): One-way analysis of variance

ANOVA ^a						
Modèle		Somme des carrés	Ddl	Carré moyen	F	Sig.
1	Régression	,394	1	,394	,668	,419 ^b
	De Student	20,062	34	,590		
	Total	20,456	35			

Source: Prepared by the researchers based on SPSS V28 outputs.

We note from the table above that the F value is 0.668 with a significance level of $0.419 \leq 0.05$, which is greater than 0.05. This means that the model is insignificant and its results cannot be relied upon. Therefore, the use of technology has no impact on human resource performance at the Faculty of Economics, Management, and Business.

Table No. (16): Analysis of the results of the simple linear regression on the impact of technology used on human resource performance.

Coefficients ^a						
Modèle		Coefficients non standardisés		Coefficients standardisés	t	Sig.
		B	Erreur standard	Bêta		
1	(Constante)	2,117	,614		3,447	,002
	Technology used	,143	,175	,139	,818	,419

Source: Prepared by the researchers based on SPSS.V28 outputs.

From the table, we note that the t-value reached 0.818, while the significance level reached $0.419 > 0.05$, which is greater than the significance level of 0.05. Therefore, we accept the null hypothesis and reject the alternative hypothesis, i.e., there is no statistically significant effect of the use of technology on human resource performance at the Faculty of Economics, Management, and Business Sciences, Ain Temouchent University.

Third: Testing the Second Sub-Hypothesis

- ☐ H0: There is no statistically significant effect of electronic planning on human resource performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level.
- ☐ H1: There is a statistically significant effect of electronic planning on human resource performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level.

Table No. (17): Correlation Coefficient Analysis of the Impact of Electronic Planning on Human Resource Performance.

Récapitulatif des modèles				
Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,546 ^a	,298	,278	,64967

Source: Prepared by the researchers based on SPSS V28 outputs.

We note from the table above that the correlation coefficient (R) was estimated at 0.546, which is a moderate percentage, indicating a correlation between the independent variable (electronic planning) and the dependent variable (human resource performance). The coefficient of determination (R-deux) was estimated at 0.298, meaning that 29.8% of the change in human resource performance is explained by the dimensions of electronic organization, while 70.2% is explained by other factors not included in the study.

Table No. (18): One-way analysis of variance.

ANOVA ^a						
Modèle		Somme des carrés	Ddl	Carré moyen	F	Sig.
1	Régression	6,106	1	6,106	14,466	<,001 ^b
	De Student	14,351	34	,422		
	Total	20,456	35			

Source: Prepared by the researchers based on SPSS V28 outputs.

We note from the table above that the F value is 14.466 at a significance level of $0.001 \geq 0.05$, which is less than 0.05. This means that the model is statistically significant and its results can be relied upon. Therefore, electronic planning impacts human resources performance at the Faculty of Economics, Management, and Business at Ain Temouchent University.

Table No. (19): Analysis of the results of a simple linear regression on the impact of electronic planning on human resources performance.

Coefficients ^a						
Modèle		Coefficients non standardisés		Coefficients standardisés	t	Sig.
		B	Erreur standard	Bêta		
1	(Constante)	1,494	,312		4,782	<,001
	Electronic planning	,416	,109	,546	3,803	<,001

Source: Prepared by the researchers based on SPSS V28 outputs.

From the table, we note that the T value reached 3.803, while the significance level was $0.001 < 0.05$, which is smaller than the significance level of 0.05. Therefore, we reject the null hypothesis and accept the alternative hypothesis, i.e., there is a statistically significant effect of electronic planning on the performance of land resources in the management of the Faculty of Economics and Management at Ain Temouchent University, according to the following equation:

$$Y = 1.494 + 0.416X \text{ (electronic planning)}$$

Fourth: Testing the third sub-hypothesis.

☐ H0: There is no statistically significant effect of electronic organization on human resource performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level.

☐ H1: There is a statistically significant effect of electronic organization on human resource performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level.

Table 20: Correlation coefficient analysis of the effect of electronic organization on human resource performance.

Récapitulatif des modèles				
Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,537 ^a	,288	,267	,65437

Source: Prepared by the researchers based on SPSS V28 outputs.

We note from the table that the correlation coefficient (R) was estimated at 0.537, which is a moderate percentage, indicating a correlation between the independent variable "electronic organization" and the dependent variable "human resource performance." The coefficient of determination (R-deux) was estimated at 0.288, meaning that 28.8% of human resource performance is explained by the dimensions of electronic organization, while 71.2% is explained by other factors not included in the study.

Table No. (21): One-way analysis of variance

ANOVA ^a						
Modèle		Somme des carrés	Ddl	Carré moyen	F	Sig.
1	Régression	5,898	1	5,898	13,773	<,001 ^b
	De Student	14,559	34	,428		
	Total	20,456	35			

Source: Prepared by the researchers based on SPSS V28 outputs.

We note from the table above that the F value is 13.773 at a significance level of $0.001 \geq 0.05$, which is less than 0.05. This means that the model is statistically significant and its results can be relied upon. Therefore, electronic organization has an impact on human resources performance at the Faculty of Economics, Management, and Business at Ain Temouchent University.

Table 22: Analysis of the results of a simple linear regression on the impact of electronic organization on human resources performance.

Coefficients ^a					
Modèle		Coefficients non standardisés		Coefficients standardisés	Sig.
		B	Erreur standard	Bêta	
1	Constante	1,102	,420		,013
	Electronic organization	,572	,154	,537	<,001

Source: Prepared by the researchers based on SPSS V28 outputs.

From the table, we note that the T value reached 3.711, while the significance level was $0.001 < 0.05$, which is smaller than the significance level of 0.05. Therefore, we reject the null hypothesis and accept the alternative hypothesis, i.e., there is a statistically significant effect of electronic organization on human resources performance at the Faculty of Economics, Management, and Business Sciences, Ain Temouchent University, according to the following equation:

$$(Y=1.102+0.572X(\text{electronic organization}))$$

Fifth: Testing the Fourth Sub-Hypothesis

□ H0: There is no statistically significant effect of e-mentoring on human resource performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level.

□ H1: There is a statistically significant effect of e-mentoring on human resource performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level.

Table No. (23): Correlation coefficient analysis of the effect of e-mentoring on human resource performance.

Récapitulatif des modèles				
Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,540 ^a	,291	,270	,65298

Source: Prepared by the researchers based on SPSS V28 outputs.

We note from the table above that the correlation coefficient (R) was estimated at 0.540, which is a moderate percentage, indicating a correlation between the independent variable (e-guidance) and the dependent variable (human resource performance). The coefficient of determination (R-deux) was estimated at 0.291, meaning that 29.1% of human resource performance is explained by the dimensions of e-guidance, while 70.9% is explained by other factors not included in the study.

Table No. (24): One-way analysis of variance

ANOVA ^a						
Modèle		Somme des carrés	Ddl	Carré moyen	F	Sig.
1	Régression	5,959	1	5,959	13,976	<,001 ^b
	De Student	14,497	34	,426		
	Total	20,456	35			

Source: Prepared by the researchers based on SPSS V28 outputs.

We note from the table above that the F value is 13.976 at a significance level of $0.001 \geq 0.05$, which is less than 0.05. This means that the model is statistically significant and its results can be relied upon. Therefore, e-guidance has an impact on human resources performance at the Faculty of Economics, Management, and Business at Ain Temouchent University.

Table No. (25): Analysis of the results of a simple linear regression on the impact of e-guidance on human resources performance .

Coefficients ^a						
Modèle		Coefficients non standardisés		Coefficients standardisés	T	Sig.
		B	Erreur standard	Bêta		
1	(Constante)	1,225	,386		3,177	,003
	Electronic guidance	,449	,120	,540	3,739	<,001

Source: Prepared by the researchers based on SPSS V28 outputs.

From the table, we note that the T value reached 3.739, while the significance level reached $0.001 < 0.05$, which is smaller than the significance level of 0.05. Therefore, we reject the null hypothesis and accept the alternative hypothesis, i.e., there is a statistically significant effect of electronic guidance on human resources performance at the Faculty of Economics, Management, and Business Sciences, Ain Temouchent University, according to the following equation:

$$(Y=1.225+0.449X(\text{electronic}) \text{ routing})$$

Sixth: Testing the fifth sub-hypothesis.

□ H0: There is no statistically significant effect of electronic monitoring on human resources performance at the Faculty of Economics, Management, and Business Sciences at a significance level of 5%.

□ H1: There is a statistically significant effect of electronic monitoring on human resources performance at the Faculty of Economics, Management, and Business Sciences at a significance level of 5%.

Table No. (26): Correlation coefficient analysis of the effect of electronic monitoring on human resources performance.

Récapitulatif des modèles				
Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,478 ^a	,229	,206	,68122

Source: Prepared by the researchers based on SPSS V28 outputs.

We note from the table above that the correlation coefficient (R) was estimated at 0.478, which is a low percentage, indicating a weak correlation between the independent variable (electronic supervision) and the dependent variable (human resource performance). The coefficient of determination (R-deux) was estimated at 0.229, meaning that 22.9% of human resource performance is explained by the dimensions of electronic guidance, while 78.1% is explained by other factors not included in the study.

Table 27 : One-way analysis of variance

ANOVA ^a						
Modèle		Somme des carrés	Ddl	Carré moyen	F	Sig.
1	Régression	4,678	1	4,678	10,081	,003 ^b
	De Student	15,778	34	,464		
	Total	20,456	35			

Source: Prepared by the researchers based on SPSS V28 outputs.

We note from the table above that the F value is 10.081 at a significance level of $0.003 \geq 0.05$, which is less than 0.05. This indicates that the model is statistically significant and its results can be relied upon. Therefore, electronic monitoring has an impact on human resources performance at the Faculty of Economics, Management, and Business at Ain Temouchent University.

Table 28: Analysis of the results of a simple linear regression on the impact of electronic monitoring on human resources performance.

Coefficients ^a						
Modèle		Coefficients non standardisés		Coefficients standardisés	T	Sig.
		B	Erreur standard	Bêta		
1	Constante	1,276	,435		2,937	,006
	Electronic censorship	,410	,129	,478	3,175	,003

Source: Prepared by the researchers based on SPSS V28 outputs.

From the table, we note that the T value reached 3.175, while the significance level reached $0.003 < 0.05$, which is less than the significance level of 0.05. Therefore, we reject the null hypothesis and accept the alternative hypothesis, i.e., there is a statistically significant effect of electronic monitoring on human resources performance at the Faculty of Economics, Management, and Business Sciences, Ain Temouchent University, according to the following equation.

$$(Y=1.276+0.410X \text{ (electronic control)})$$

Hypothesis Testing Results:

Through hypothesis testing, we concluded:

-Main Hypothesis: There is a statistically significant effect of e-management on human resource performance at the Faculty of Economics, Management, and Business Sciences, Ain Temouchent University, at a 5% significance level. This means that the implementation of e-management at the Faculty of Economics, Management, and Business Sciences leads to improved human resource performance at the faculty.

-First Sub-Hypothesis: There is no statistically significant effect of the technology used on human resource performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level. This was due to the heterogeneity of the study sample, which comprised administrators and professors. Administrators receive a set of electronic work requirements that have not yet been provided to professors.

-Second Sub-Hypothesis: There is a statistically significant effect of e-planning on human resource performance at the Faculty of Economics, Management, and Business Sciences, at a 5% significance level. This indicates that employees are aware of the faculty's overall direction and the extent to which e-planning helps them deliver optimal performance. - Sub-hypothesis Three: There is a statistically significant effect of electronic organization on human resources performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level. This indicates the extent to which electronic management helps employees achieve accuracy, speed, and cooperation in work, while reducing errors.

-Sub-hypothesis Four: There is a statistically significant effect of electronic guidance on human resources performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level. This indicates the existence of an integrated electronic work system for guidance and the implementation of tasks.

-Sub-hypothesis Five: There is a statistically significant effect of electronic monitoring on human resources performance at the Faculty of Economics, Management, and Business Sciences at a 5% significance level. Despite the lack of electronic monitoring, there is some control over employee work time, and delays are dealt with in the form of alerts to employees to focus on certain tasks rather than others. 2. Conclusion:

There is no doubt that e-management has contributed to shifting administrative methods and objectives to a new level characterized by speed and quality, as well as high flexibility in planning and implementing strategies, speed in guidance, instantaneous information delivery, and accurate and easy data exchange between administrative levels. This is in addition to increased oversight and the capabilities technology provides in this field to control performance quality. These fundamental changes have brought about significant improvements in the level of human resource performance, including ease of training and learning, speed of achievement and communication, reduced workload, and rapid adaptation to new developments.

Results:

First: Results related to the e-management axis and its dimensions:

The results showed a positive assessment of the level of approval of the availability of e-management at the Faculty of Economics, Management, and Business Sciences at Ain Temouchent University. The standard deviation was 0.64, with a relative weight of 50%. This assessment was represented by five dimensions: (technology used, electronic planning, electronic organization, electronic guidance, and electronic control.)

Second: Results related to the human resources performance axis:

The study results indicated a good level of human resources performance at the Faculty of Economics, Management, and Business Sciences at Ain Temouchent University. The standard deviation was 0.76, with an arithmetic mean of 2.6, indicating a relatively average level of approval.

Results related to hypothesis testing:

-The study results showed a statistically significant effect of e-management on human resources performance at the Faculty of Economics, Management, and Business Sciences at a significance level of $0.001 < 0.05$, with $T = 4.131$, indicating an improvement in human resources performance through e-management. The results showed no statistically significant effect of the technology used, with a significance level of $0.419 > 0.05$. The interview indicated that teachers lacked the required technology, while administrators were relatively well-versed in it.

-The results showed a statistically significant effect of electronic planning on human resources performance, with a significance level of $0.001 < 0.05$. The results also demonstrated the sample's awareness of the department's planning level,

aspirations, and policies. According to the interview, there is an effort to expand e-management and modernize the sector to meet the demands of the ever-evolving technology landscape.

-The results showed a statistically significant effect of electronic organization on human resources performance, with a significance level of $0.001 < 0.05$. This indicates the presence of cooperation between various departments, levels, and positions, as well as effective communication to improve performance. The results showed a statistically significant impact of electronic guidance on human resources performance, with a significance level of $0.001 < 0.05$. This indicates the presence of instructions in the form of electronic messages, in addition to internal communication, and a high level of interaction between senior management and various levels.

-The results showed a statistically significant impact of electronic monitoring on human resources performance, with a significance level of $0.003 < 0.05$. Although monitoring is still limited to alerts, during our visit to the organization, we observed the presence of traditional monitoring, with employees mentioning urgent work to their colleagues. We must note the weakness of electronic monitoring.

Recommendations:

-Attention must be paid to the hardware aspect and its availability, in addition to providing free internet access for all employees, in addition to an internal internet network for data transfer.

-Attention must be paid to device maintenance and its provision as a service on a regular basis.

-Attention must be paid to the security aspect, and efforts must be made to appoint a cybersecurity officer, as data and information protection has become imperative in light of the high risks and lack of protection on the internet.

-Information technology programs must be updated and the latest programs must be provided.

-The implementation of plans related to the zero-paper strategy and the complete transition to electronic administration must be accelerated.

-College-specific applications must be provided for employees to access their personal information, including working hours, workplace, and absences, as well as salary, employment status, performance points, and performance level.

-Modern performance monitoring programs and statistical programs must be utilized to collect performance and completion time data. Data from all employees' devices must also be monitored and analyzed, and an electronic control panel must be added to ensure transparency and governance.

-E-learning must be advanced to maximize wasted time and costs, while also improving the quality of training to achieve optimal performance.

-Employees must be trained to use automated intelligence tools, add shortcuts to expedite routine administrative processes, and integrate them into the service to answer frequently asked student questions to reduce workload. Electronic data archiving must be initiated to create an electronic database that is easily and securely accessible to all employees.

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