# The Extent of the Contribution of Digital Technology in Enhancing the Functions of Human Resources Management: A Case Study of the University of M'sila

**Received:** 01/05/2025; **Accepted:** 02/06/2026

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## Abstract

This study aims to explore the extent to which digital technology contributes to enhancing human resource management (HRM) functions at the University of M'sila. To achieve this objective, a descriptive-analytical methodology was adopted. Data were collected through questionnaires distributed to a random sample of eighty (80) employees working in various administrative departments related to HRM. The data were analyzed using a range of statistical methods. The findings revealed that the adoption of digital technology, in its various dimensions, significantly contributes to the advancement of HRM functions at the University of M'sila, particularly in the areas of empowerment, training, and career management. Based on these results, the study recommends prioritizing investment in the development of digital infrastructure within the university, providing continuous professional development and training opportunities for employees, and implementing effective strategies to enhance the integration of digital technology across the different HRM functions at the University of M'sila.

## Keywords

Digital Technology; Human Resources Management; Empowerment; Training; Career Management

# مدى مساهمة التكنولوجيا الرقمية في تعزيز وظائف إدارة الموارد البشرية: دراسة حالة جامعة المسيلة

## ملخص

تهدف هذه الدراسة إلى التعرف على مدى مساهمة التكنولوجيا الرقمية في تعزيز وظائف إدارة الموارد البشرية في جامعة المسيلة. ولتحقيق هذا الهدف، تم الاعتماد على المنهج الوصفي التحليلي. جُمعت البيانات من خلال استبيانات وُزعت على عينة عشوائية مكونة من ثمانين (80) موظفًا وموظفة يعملون في مختلف الأقسام الإدارية ذات الصلة بإدارة الموارد البشرية. كما تم تحليل البيانات باستخدام مجموعة من الأساليب الإحصائية. حيث اظهرت النتائج أن تبني التكنولوجيا الرقمية، بأبعادها المتنوعة، يُسهم بشكل كبير في الارتقاء بوظائف إدارة الموارد البشرية في جامعة المسيلة، لا سيما في مجالات التمكين والتدريب وتسيير المسار المهني. بناءً على هذه النتائج، توصي الدراسة بإعطاء الأولوية للاستثمار في تطوير البنية التحتية الرقمية داخل الجامعة، وتوفير فرص التطوير والتدريب المهني المستمر للموظفين، وتطبيق استراتيجيات فعالة لزيادة دمج التكنولوجيا الرقمية في مختلف وظائف إدارة الموارد البشرية بجامعة المسيلة.

## الكلمات المفتاحية

تكنولوجيا رقمية؛
إدارة موارد بشرية؛
تمكين ؛
تدريب ؛
تسيير مسار مهني.

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***E-ISSN: 2588-2007*** ---Journal homepage: *http://revue.umc.edu.dz/index.php/h*

## I- Introduction :

The contemporary world is undergoing profound transformations across various sectors, driven by rapid technological advancements. Among these shifts, digital transformation has emerged as a pivotal force reshaping administrative activities within institutions. This transformation encompasses the utilization of digital technologies to optimize processes, enhance efficiency, and introduce innovative solutions that elevate institutional performance (Westerman, Bonnet, Ferraris, & Williams, 2014). Recent studies have demonstrated that digital transformation within educational institutions—particularly universities—extends beyond mere upgrades in technological infrastructure. It also significantly influences various administrative functions, most notably human resource management.

In the midst of today's digital revolution, it has become imperative for educational institutions, such as universities, to adopt digital transformation technologies across all operational domains, including human resource management (HRM). HRM stands as one of the functions most significantly affected by digital technology, encompassing a range of activities aimed at developing, motivating, and effectively utilizing employees to achieve organizational objectives. These activities include recruitment, training, professional development, talent management, and career planning. Digital technologies play a crucial role in enhancing these HR functions by streamlining procedures, accelerating workflows, and improving communication between administration and employees (Cascio & Montealegre, 2016).

A substantial body of prior research has examined the impact of digital technologies on various aspects of institutional performance and human resource management. For example, the study conducted by Wurood Qasim Jarrab (2019) explored the role of digital transformation technologies in improving strategic performance in the banking sector. Similarly, Maryam Mohammed Al-Zoubi (2019) investigated the impact of digital transformation on employee performance within telecommunications companies. Stefan Strohmeier (2020) provided a conceptual clarification of digital human resource management and its developmental trajectory.

In the Algerian context, Bashir Abdelhamid (2023) highlighted the strong link between digital transformation and HRM practices within Algeria Telecom. The study by Ghazal Ibtisam and Marghi Amira (2023) emphasized the positive influence of digital transformation on job performance. Moreover, research by Nasri Bouthaina and Mekrani Rehab (2022) revealed the contribution of digitization in improving HRM operations in universities. Additionally, the study by Saleh Zabi and Shaaban Baietish (2021) underscored the role of strategic leadership and digital transformation in enhancing the effectiveness of HRM in Algerian universities.

Recent studies have demonstrated that digital transformation in human resource management can play a significant role in enhancing administrative performance. This improvement is achieved through the optimization of operational processes, the stimulation of innovation, and the reinforcement of interactions between individuals and institutions (Bersin, 2017). Furthermore, research by Kavanagh & Thite (2015) and Marler & Parry (2016) has underscored the positive impact of digital technologies on the effectiveness of HRM processes and the quality of administrative decision-making.

Within this context, the University of M'sila emerges as a noteworthy example of an educational institution striving to harness digital technologies to strengthen its human resource functions. Digital technologies are not limited to facilitating administrative procedures; they also contribute to the development of strategic HR practices by offering tools that enhance talent management, employee empowerment, and continuous training initiatives (Stone, Deadrick, Lukaszewski, & Johnson, 2015).

Building upon these insights, the present study aims to analyze the extent to which digital technologies contribute to strengthening human resource functions at the University of M'sila. It focuses on key areas such as employee empowerment, training, and career path management, adopting an analytical framework grounded in three dimensions of digital transformation: operational, transformational, and relational. The study seeks to uncover how these dimensions influence various HRM functions related to human capital. Specifically, it explores whether digital technologies truly improve recruitment and selection processes, whether they facilitate the development of advanced training programs that meet employee needs, and whether they enhance career path management and offer opportunities for employee growth. These questions remain open and merit thorough investigation, particularly in the Algerian context and within institutions like the University of M'sila that aim to integrate such technologies to improve their administrative performance.

### Main Research Question:

- To what extent do the various dimensions of digital technology contribute to strengthening human resource functions at the University of M'sila?

**Sub-questions:**

1. To what extent does digital technology, across its different dimensions, contribute to enhancing HR functions in the area of employee empowerment?
2. To what extent does digital technology, across its different dimensions, contribute to enhancing HR functions in the area of training?
3. To what extent does digital technology, across its various dimensions, contribute to enhancing human resource functions in the area of career path management?

## I.1. **Research Hypotheses**

### General Hypothesis:

- Digital technologies, in their various dimensions, significantly contribute to the enhancement of human resource functions at the University of M'sila.

### Specific Hypotheses:

1. Digital technologies, in their various dimensions, significantly contribute to the enhancement of HR functions at the University of M'sila.
2. Digital technologies, in their various dimensions, significantly contribute to the enhancement of HR functions in the area of employee empowerment.
3. Digital technologies, in their various dimensions, significantly contribute to the enhancement of HR functions in the area of professional training.
4. Digital technologies, in their various dimensions, significantly contribute to the enhancement of HR functions in the area of career path management.

## I. 2. Research Objectives

1. To explore the extent to which digital technologies contribute to the enhancement of human resource functions at the University of M'sila.
2. To assess the contribution of digital technologies to employee empowerment within the HR department at the University of M'sila.
3. To determine the role of digital technologies in supporting professional training for staff at the University of M'sila.
4. To analyze the impact of digital technologies on career path management for employees at the University of M'sila.

## I. 3. Importance of the Study

The significance of this study lies in its attempt to understand and evaluate the impact of digital technology on human resource management at the University of M'sila. In an era where reliance on digital technologies has become essential for enhancing administrative performance, HRM emerges as one of the domains most positively affected by digital transformation. This study is important as it explores how advanced technological tools contribute to improving administrative processes, increasing efficiency, and identifying the challenges that HR departments might face when adopting these technologies. Furthermore, it investigates the potential benefits of such transformations in achieving more effective administrative outcomes.

## I. 4. Key Concepts of the Study

### .1 Concept of Digital Technology

- Digital technology refers to the use of tools, systems, and applications that rely on digital data to process information, facilitate communication, and manage operations.1
- It includes smart devices, software, the Internet, and artificial intelligence, and is applied across all modern life sectors, including education, healthcare, administration, and industry.2
- Digital technology is not limited to technical tools alone; it also encompasses cultural and social transformations that accompany its use by altering patterns of communication, work, and learning.3

### Operational Definition:

In this study, digital technology refers to the collection of digital tools and systems—including smart devices, software, the Internet, and artificial intelligence platforms—employed in executing administrative tasks. Its impact will be measured based on participants' responses to a questionnaire assessing the extent to which digital technologies enhance various human resource management functions.

## .2 Concept of Human Resource Management

- According to the American Society for Human Resource Management, HRM is the art of acquiring, developing, and retaining a competent workforce to achieve organizational goals with maximum performance efficiency.4
- HRM is also defined as a set of programs, functions, and activities designed to optimize both individual and organizational objectives.5

- Bélanger defines HRM as "a set of activities that focus on the development and maintenance of the human resources needed by the organization to achieve its goals. Key activities include recruitment, training, promotion, and job analysis.6"

### Operational Definition:

Human Resource Management refers to the administration concerned with employees' affairs, including hiring, qualification, training, and competence development. It involves attracting and retaining the workforce necessary for the institution and enhancing their performance to achieve organizational goals. In this study, HRM is measured through respondents' answers to a questionnaire assessing the contribution of digital technologies to various HRM functions..

## .3 –Concept of Empowerment

In the field of human resource management, empowerment is defined as the process of granting employees the authority, autonomy, and necessary resources to make decisions and carry out tasks effectively. This not only enhances their sense of ownership and responsibility toward their work but also aligns them more closely with the organization's goals. 12

Empowerment encompasses the delegation of authority, the provision of essential information, the development of skills, and the acknowledgment of employee contributions.13

It can also be defined as the process of designing a work environment that motivates employees and enables them to fully utilize their capabilities in contributing to the organization's objectives. This includes engaging them in decision-making processes that affect their work, encouraging initiative and innovation, and granting them the freedom to act—within clearly defined parameters14

### Operational Definition

Empowerment in human resource management is a process aimed at granting employees the confidence, autonomy, and resources necessary to perform their tasks effectively. This includes delegating authority, providing information, and developing skills. Empowerment contributes to enhancing the employee's sense of responsibility and belonging, and motivates innovation. It is measured through respondents' answers to a questionnaire assessing the extent to which digital technology contributes to strengthening human resource management functions.

## .4 – Concept of Training

- Training is a set of actions that enable organizational members to remain in a state of readiness and advancement for their current and future roles within their organization and its environment7.
- It is a systematic process aimed at providing employees with knowledge, skills, and abilities in specific areas to improve their job performance or modify their attitudes and behaviors necessary for their current or future roles, ultimately supporting the organization's objectives.8
- Training also involves the structured development of the knowledge, skills, ideas, and attitudes required for employees to fulfill their work responsibilities effectively.9

**Operational Definition:**

Training refers to all structured activities aimed at equipping employees with the knowledge, skills, and attitudes necessary to enhance their professional performance and to meet the requirements of their current and future job roles. The contribution of training is assessed based on respondents' evaluations of how digital technologies support training functions within human resource management

**.5 –Concept of Career Management**

Career path management refers to the process through which employees are enabled to understand, shape, and develop their professional trajectories and interests, and to invest in them either within the organization or beyond it.10

It is defined as the individual's progression and movement from one position to another, taking into account both the needs and objectives of the organization and the individual's own abilities, skills, and aspirations. Career path management is also viewed as a set of activities undertaken by the individual to monitor and guide their professional development within a given organization, in a way that allows for the achievement of the highest possible levels of competence, professional success, and social fulfillment—all in line with their qualifications and capabilities.11

**Operational Definition**

The career path is understood as a series of accumulated and successive professional experiences and positions that an individual undergoes over time—often within a preplanned framework and advancing progressively throughout their working life. This path is shaped by the individual's aspirations, ambitions, emotions, and personal inclinations. It is measured through participants' responses to a questionnaire assessing the extent to which digital technologies contribute to the enhancement of human resource management functions

## I.1. Methodological Procedures of the Study:

### I.1. 1. Research Method:

This study relied on the descriptive-analytical method due to its relevance to the nature and objectives of the research.

### I.1. 2. Study Sample:

The questionnaire was administered to a sample of 80 male and female employees working in various administrative departments related to human resource management, selected through the available sampling method.

### I.1. 3. Study Boundaries:

Spatial boundaries: This study was conducted at Mohamed Boudiaf University in M'sila.
Human boundaries: 80 male and female employees from various administrative departments.
Temporal boundaries: The study was conducted during the academic year 2024/2025.

### I.1. 4. Research Tools:

The questionnaire was used as the main data collection tool in this study.

### I.1.4.1. Psychometric Properties of the Research Tools:

### First: Reliability and Validity of the Questionnaire

An initial assessment of the questionnaire's reliability and validity was conducted, yielding the following results:

### A. Reliability – Internal Consistency (Cronbach's Alpha):

The reliability of the questionnaire was measured using internal consistency with Cronbach's Alpha coefficient, which estimates the average inter-item correlations across the questionnaire as a whole, as shown in the following table:

**Table (1) shows the reliability of the questionnaire using Cronbach's Alpha.**

| | **Cronbach's Alpha Coefficient** | **Number of Items** |
|---|---|---|
| **Questionnaire as a Whole** | 0.928 | 57 |
| | | |

- **Reliability and Validity of the Digital Transformation Questionnaire**:
  **A. Validity**
- **Correlation Between the Total Scores of the Axes and the Total Score of the First Axis**:
  The correlations between the total score of each axis and the total score of the overall digital transformation questionnaire were calculated using Pearson's correlation coefficient. All correlations were statistically significant at the significance level ($\alpha = 0.01$).

## Specifically:

- The correlation between the total score of the first axis and the total score of the questionnaire as a whole was **0.76**.
- The correlation between the total score of the second axis and the total score of the questionnaire as a whole was **0.89**.
- The correlation between the total score of the third axis and the total score of the questionnaire as a whole was **0.85**.
- The correlation between the total score of the fourth axis and the total score of the questionnaire as a whole was **0.70**.

Therefore, it can be concluded that the questionnaire demonstrates **validity**, as shown in the following table:

| **Table (2): Correlation Matrix Between the Total Scores of the Axes and the Overall Score of the Digital Transformation Questionnaire** | |
|---|---|
| **Axes and Total Score** | Total Score |
| **First Axis** | 0.*762* |
| **Second Axis** | 0.897** |
| **Third Axis** | 0.859** |
| **The correlation is significant at the alpha level (0.01).** | |

## Reliability:

| **Table (3): Internal Consistency Reliability of the Digital Transformation Questionnaire (Cronbach's Alpha Coefficient)** | | |
|---|---|---|
| **Dimensions:** | | |
| **Dimension One** | 0.822 | 8 |
| **Dimension Two** | 0.747 | 8 |
| **Dimension Three** | 0.872 | 8 |
| The questionnaire as a whole | 0.903 | 24 |

The reliability of this scale was calculated using internal consistency through Cronbach's Alpha. The reliability coefficient for the first dimension was **0.82**, for the second dimension **0.74**, and for the third dimension **0.87**. The overall reliability of the questionnaire was found to be **0.90**. Based on these results, the questionnaire can be considered reliable and suitable for use in research, as shown in the table below.

## B. Validity

- **The correlation between the total scores of the dimensions and the overall score of the first dimension:**
  The correlations between the total scores of each dimension and the overall score of the Human Resource Management Questionnaire were estimated using **Pearson's correlation coefficient**. All correlations were statistically significant at the **0.01 level ($\alpha = 0.01$)**.

Specifically, the correlation between the total score of the first dimension and the overall score of the questionnaire was **0.78**. The correlation between the second dimension and the overall score was **0.92**, while the third dimension had a correlation of **0.87**. The fourth dimension showed a correlation of **0.90**, and the fifth dimension had the highest correlation at **0.93**.

Therefore, it can be concluded that the questionnaire demonstrates strong **validity**, as presented in the following table.

| Table (4) illustrates the correlation matrix of the total scores of the dimensions with the overall score of the Human Resource Management Questionnaire. | |
|---|---|
| The Dimensions and the Overall Score: | **Overall Score** |
| First Dimension | 0.782** |
| Second Dimension | 0.927** |
| Third Dimension | 0.878** |
| Fourth Dimension | 0.904** |
| Fifth Dimension | 0.936** |
| **The correlation is statistically significant at the alpha level (0.01).** | |

## B. Reliability:

The reliability of this scale was calculated using internal consistency through **Cronbach's Alpha**. The coefficient for the first dimension was **0.89**, for the second dimension **0.81**, for the third dimension **0.89**, for the fourth dimension **0.78**, and for the fifth dimension **0.91**. The overall reliability of the questionnaire was found to be **0.90**. Based on these values, it can be concluded that the questionnaire is **reliable and appropriate for use in research**, as shown in the following table.

| **Table (5) illustrates the reliability of the Human Resource Management Questionnaire through internal consistency.** | | |
|---|---|---|
| **Dimensions:** | **Cronbach's Alpha Coefficient** | **Number of Items** |
| **First Dimension** | 0.894 | 5 |
| **Second Dimension** | 0.819 | 5 |
| **Third Dimension** | 0.895 | 5 |
| **Fourth Dimension** | 0.780 | 5 |
| **Fifth Dimension** | 0.912 | 5 |
| **Overall Questiqnnair** | 0.960 | 25 |

## 6.5. Statistical Methods Used:

A set of statistical methods was employed using the Statistical Package for the Social Sciences (SPSS) version 21 to statistically process the data and address the study's research questions. The statistical processing included the use of:

- Cronbach's Alpha equation to calculate reliability.
- The Kolmogorov-Smirnov test and the Shapiro-Wilk test to verify the condition of normal distribution for the variables.
- Regarding the study's hypotheses, the T-test was used.
- Data were statistically processed using the SPSS program for social sciences.

# III- Results and discussion

## III-1. Presentation, Interpretation, and Discussion of Results in Light of the Study Hypotheses:

### III.1.1 Presentation, Interpretation, and Discussion of Results in Light of the General Hypothesis:

The general hypothesis of this study stated:
"Digital technology, through its various dimensions, significantly contributes to enhancing human resource management functions at the University of M'sila."
To verify the validity of this hypothesis, Pearson's correlation coefficient was used to determine the strength and nature of the relationship. The results were as follows:

| Table No. (6) Illustrates the interaction between digital transformation and human resource management. | | | | | |
|---|---|---|---|---|---|
| Variables of the study | | Human Resources Management | Correlation Matrix | F | Interpretation |
| Digital Transformation | Pearson Coefficient | 0.766** | 0.587 | 110.820 | The impact is substantial |
| | Significance Level | 0.007 | | | |
| | Sample Size | 80 | | | |
| The correlation is statistically significant at the alpha level (α = 0.01). | | | | | |

Based on Table 6 above, it is observed that the Pearson correlation coefficient between the scores of the study sample on the Digital Technology Questionnaire and their scores on the Human Resources Management Questionnaire reached (0.76), which is a high and positive value. This indicates a positive correlation, meaning that the distribution of the participants' scores on the Digital Technology Questionnaire aligns with the distribution of their scores on the Human Resources Management Questionnaire. Consequently, this result supports the general hypothesis of the study, which posits that digital technology, with its various dimensions, significantly contributes to enhancing human resources management functions at the University of M'sila. The confidence level for this result is 99%, with a 1% probability of error.

This finding is consistent with the conclusions of Westerman et al. (2014), who emphasized that digital technology contributes to improving administrative processes through the adoption of innovative solutions and effective digital technologies. It also aligns with the findings of Cascio and Montealegre (2016), who pointed out that digital technology helps streamline human resources processes and improve effective communication within organizations. Furthermore, it concurs with the study by Ghazal Ibtissem and Merghi Amira (2023), which found that digital technology effectively contributes to enhancing job performance within Algerian educational institutions. Similarly, it agrees with the findings of Bashir Abdelhamid (2023), who confirmed a positive relationship between the dimensions of digital transformation and human resources management practices at Algeria Telecom.

Based on the statistical data and theoretical support, it can be concluded that the general hypothesis of the study has been confirmed, demonstrating that digital technology, in its various dimensions, significantly contributes to enhancing human resources management functions at the University of M'sila.

### III.1.2 Presentation and Discussion of the Results of the First Hypothesis:

The first hypothesis of this study stated: "Digital technology, with its various dimensions, significantly contributes to enhancing human resources management functions in the area of empowerment." To verify the validity of this hypothesis, Pearson's correlation coefficient was used to determine the strength and nature of the relationship. The results were as follows:

| Table (7) illustrates the interaction between digital transformation and human resources management in the area of empowerment. | | | | | |
|---|---|---|---|---|---|
| Variables of the study | | empowerment | Correlation Matrix | F | Interpretation |
| Digital Transformation | Pearson Coefficient | 0.**650 | 0.423 | 57.077 | The impact is substantial |
| | Significance Level | 0.000 | | | |
| | Sample Size | 80 | | | |
| The correlation is statistically significant at the alpha level (α = 0.01). | | | | | |

Based on Table 7 above, it is observed that the Pearson correlation coefficient between the scores of the study sample on the Digital Technology Questionnaire and their scores on the empowerment dimension reached (0.65), which is a strong and positive value. This indicates a positive correlation, meaning that the distribution of the participants' scores on the empowerment dimension mirrors the distribution of their scores on the digital technology dimension. Considering the coefficient of determination, which reached (57.07), it can be said that there is a significant overlap between the participants' scores on both questionnaires. Consequently, this result supports the first hypothesis of the study, which states that digital technology, in its various dimensions, significantly contributes to enhancing human resources

management functions in the area of empowerment. The confidence level for this result is 99%, with a 1% probability of error.

These findings are consistent with the study by Stone et al. (2015), who affirmed that the use of digital technology contributes to enhancing employees' sense of empowerment by facilitating access to information and improving participation in decision-making. They are also supported by the findings of Strohmeier (2020), who argued that digital management enhances employee autonomy and positive engagement with management. Furthermore, the results align with the study by Ghazal Ibtissem and Merghi Amira (2023), which confirmed that digital transformation plays an active role in increasing employee empowerment in Algerian institutions through tools such as collaborative digital platforms and e-learning programs.

Based on the statistical results and theoretical support, the validity of the first hypothesis can be confirmed. It has been shown that digital technology, in its various dimensions, effectively contributes to strengthening empowerment within human resources management functions at the University of M'sila. This highlights the importance of adopting digital systems to improve the performance efficiency of human capital.

### III.1.3 Presentation and Discussion of the Results of the Second Hypothesis:

The second hypothesis of this study stated: "Digital technology, with its various dimensions, significantly contributes to enhancing human resources management functions in the area of training." To verify the validity of this hypothesis, Pearson's correlation coefficient was used to determine the strength and nature of the relationship. The results were as follows:

Table (8) illustrates the interaction between digital transformation and human resources management in the area of training.

| Variables of the study | | empowerment | Correlation Matrix | F | Interpretation |
|---|---|---|---|---|---|
| Digital Transformation | Pearson Coefficient | 0.**601 | 0.361 | 44.126 | The impact is substantial |
| | Significance Level | 0.000 | | | |
| | Sample Size | 80 | | | |
| The correlation is statistically significant at the alpha level (α = 0.01). | | | | | |

From Table (8) above, it can be observed that Pearson's correlation coefficient between the study sample's scores on the digital technology questionnaire and their scores on the training domain questionnaire reached (0.60), which is a strong and positive value. This indicates a direct correlation; that is, the distribution of the participants' scores on the training questionnaire matches the distribution of their scores on the digital technology questionnaire. Considering the coefficient of determination value, which was (44.12), it can be concluded that there is an overlap between the sample's responses on both questionnaires. Therefore, this result supports the second hypothesis, stating that digital technology, in its various dimensions, significantly contributes to enhancing human resources management functions in the area of training. The confidence level in this result is 99%, with only a 1% chance of error.

This result aligns with studies emphasizing the effective role of digital technology in developing training methods. Cascio & Montealegre (2016) pointed out that digital systems have contributed to providing flexible and interactive learning environments that transcend time and space.

According to Stone et al. (2015), digital transformation facilitated the design of customized training programs using big data and artificial intelligence techniques. Locally, Nasri Bouthaina and Mekrani Rahab's (2022) study confirmed the importance of adopting digital technology for organizing and implementing effective employee training programs in Algerian universities. Mariam Mohammed Al-Zoubi's (2019) research also showed that institutions adopting digital training technologies experienced improvements in employee efficiency and motivation.

Based on the above, the second hypothesis can be confirmed. The statistical and theoretical results indicate that digital technology significantly enhances the effectiveness of training as a key function within human resources management at the University of M'sila. This underscores the importance of digital transformation as a strategic tool for developing employee capabilities and achieving institutional excellence.

### III.1.4 Presentation and Discussion of the Results of the Third Hypothesis:

The third hypothesis of this study stated: "Digital technology, with its various dimensions, significantly contributes to enhancing human resources management functions in the area of career management." To verify the validity of this hypothesis, Pearson's correlation coefficient was used to determine the strength and nature of the relationship. The results were as follows:

Table (9) illustrates the interaction between digital transformation and human resource management in the field of career path management.

| Variables of the study | | empowerment | Correlation Matrix | F | Interpretation |
|---|---|---|---|---|---|
| Digital Transformation | Pearson Coefficient | 0.**653 | 0.427 | 58.041 | The impact is substantial |
| | Significance Level | 0.000 | | | |
| | Sample Size | 80 | | | |
| The correlation is statistically significant at the alpha level ($\alpha = 0.01$). | | | | | |

As shown in Table (9) above, the Pearson correlation coefficient between the scores of the study sample on the Digital Technology Questionnaire and their scores on the dimension of Career Path Management was **0.65**—a strong, positive correlation. This indicates a **direct relationship**, meaning the participants' scores in the area of career path management are distributed in a similar pattern to their scores on digital transformation.

Given the **coefficient of determination ($R^2$)** value of **58.04**, it can be inferred that there is a significant overlap in how the participants responded to both questionnaires. Therefore, this result supports the **third hypothesis** of the study, which posits that digital technology, with its various dimensions, significantly contributes to enhancing human resource management functions, particularly in the field of **career path management**. The confidence level for this result is **99%**, with only a **1% margin of error**.

These findings align with previous studies highlighting the role of digital technology in ensuring **career development continuity** and **guiding human capital** within institutions. For instance, the study by **Bondarouk & Brewster (2016)** emphasized that digital systems facilitate dynamic databases to track career performance and development. Similarly, **Gueutal et al. (2009)** found that digital tools can predict potential career paths based on performance analytics.

In the Algerian context, **Boualam & Marsli (2021)** demonstrated that adopting digital HR information systems improved career planning and guided employees toward paths aligned with their qualifications and aspirations. Furthermore, **Zawi & Hichour (2020)** showed that digital transformation helped Algerian universities identify future training needs and connect them to promotion and professional development opportunities.

Based on these findings, the third hypothesis is confirmed: **digital technology significantly enhances the effectiveness of human resource management in career path management at the University of M'sila**. Digital transformation emerges as a strategic tool for ensuring well-structured planning and continuous career progression for employees, ultimately supporting sustainable institutional performance.

## General Conclusion

In light of the study's results and hypotheses, we can confirm both the **general hypothesis** and the **sub-hypotheses**:

- Digital technology in all its dimensions significantly enhances human resource management functions at the University of M'sila.
- Digital technology significantly improves HR functions in the field of **employee empowerment**.
- It also plays a key role in enhancing HR **training** functions.
- Most importantly, it contributes greatly to **career path management** within HR.

### Recommendations and Suggestions

Based on the results obtained, the researcher provides the following recommendations to strengthen the role of digital technology in improving HR management performance:

- **Strengthen the university's digital infrastructure** by investing in technological platform upgrades and providing the necessary equipment to support HR functions.
- **Launch and continually develop digital training programs** aimed at improving the competencies of HR staff in using various tech tools (e.g., ERP systems, e-learning platforms, performance evaluation systems).
- **Digitize career path management** by adopting smart systems that track employee career development and identify training and promotion opportunities based on updated, real-world data.
- **Promote a digital transformation culture** and raise awareness within the academic institution regarding the importance of digitalization in enhancing administrative and functional performance—through workshops, seminars, and field training.
- **Prioritize hiring digitally competent talent** capable of adapting to tech-driven environments and using digital tools to solve problems.

## IV-Conclusion:

The findings of this study highlight that **digital technology has become a cornerstone in the development of HR functions**, especially in higher education institutions striving for administrative efficiency and competitive advantage. The case of the University of M'sila demonstrates that digital adoption significantly enhances recruitment, training, empowerment, and career path planning mechanisms, making them more adaptive to the changing academic environment.

While the study confirms the validity of its general and specific hypotheses, it also reveals several challenges—such as inadequate infrastructure, a lack of technical training, and the absence of a strategic digital vision.

Therefore, the study recommends the implementation of **clear policies to drive digital transformation** in universities, including infrastructure development, specialized training programs, innovation-driven culture promotion, and **data-informed management practices**.

In conclusion, the future of human resource management in academic institutions largely depends on their readiness to embrace and leverage digital technologies in ways that support strategic goals and institutional excellence in a rapidly evolving global landscape.

## Referrals and References:

[1]. Tapscott, D. (2009). *Grown Up Digital: How the Net Generation is Changing Your World*. McGraw-Hill, p. 5.
[2]. Negroponte, N. (1995). *Being Digital*. Vintage Books, p. 12.
[3]. Selwyn, N. (2012). *Education in a Digital World: Global Perspectives on Technology and Education*. Routledge, p. 21.
[4]. Felix, A. (1959). *Public Personnel Administration*. New York: Holt, Rinehart and Winston, Inc., p. 36.
[5]. Gharbi, A., et al. (2007). *Human Resource Development* (1st ed.). Dar Al-Fajr for Publishing and Distribution, Alexandria, p. 14. [in Arabic].
[6]. Bélanger, P. (1984). *Gestion des Ressources Humaines: Approche Systémique* (1re éd.). Gaétan Morin, Québec, p. 37.
[7]. Hassouna, F. (2010). *Human Resource Management* (1st ed.). Dar Wael for Publishing and Distribution, Amman – Jordan, p. 172. [in Arabic].
[8]. Rashid, M. F. (2009). *Human Resource Management* (3rd ed.). Obeikan Publishing and Distribution, Kingdom of Saudi Arabia, p. 685. [in Arabic].
[9]. Moissi, H. (2014). *Human Resource Development: Concepts and Applications*. Modern University Office, Alexandria, p. 3. [in Arabic].
[10]. Jouda, M. A. (2010). *Human Resource Management*. Dar Wael, Jordan, p. 291. [in Arabic].
[11]. Pertti, J. M. (2012). *Ressources Humaines et Gestion des Personnes* (8e éd.). Vuibert, Paris, p. 118.
[12]. Armstrong, M., & Taylor, S. (2023). *Armstrong's Handbook of Human Resource Management Practice* (16th ed.). Kogan Page, p. 215.
[13]. Mathis, R. L., Jackson, J. H., Valentine, S. R., & Meglich, P. A. (2017). *Human Resource Management* (15th ed.). Cengage Learning, p. 188.
[14]. Byars, L. L., & Rue, L. W. (2019). *Human Resource Management* (12th ed.). McGraw-Hill Education, p. 245.