

The Impact of Digital Human Resource Management Strategies on Enhancing Organizational Agility: An Analytical Study at the University of Sumer / College of Administration and Economics

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ABSTRACT

Objective: This study aimed to examine the impact of Digital Human Resource Management (DHRM) strategies on organizational agility at the College of Administration and Economics, University of Sumer, in light of the growing trends of digital transformation in higher education institutions and the increasing need for universities to respond rapidly to environmental changes. **Method:** The study adopted a descriptive-analytical approach and employed a structured questionnaire based on validated measures from previous studies. Data were collected from a random sample of 80 academic and administrative staff members. Data analysis was conducted using the Statistical Package for Social Sciences (SPSS V.26) through descriptive statistics, normality testing, and simple and multiple linear regression analyses. **Results:** The findings revealed a high level of adoption of digital human resource management strategies, as well as a high level of organizational agility. The results also confirmed a statistically significant positive impact of DHRM strategies, including digital recruitment, digital training and development, digital performance management, HR analytics, and employee self-service systems, on organizational agility dimensions represented by sensing agility, decision-making agility, and implementation agility. **Novelty:** The study concluded that DHRM strategies represent an effective strategic mechanism for enhancing institutional flexibility and adaptability in higher education institutions. The study recommends strengthening digital infrastructure, expanding data-driven HR practices, and investing in continuous digital training programs to enhance organizational agility.

INTRODUCTION

The contemporary world is experiencing an accelerated shift toward comprehensive digitalization, as information and communication technologies have become a pivotal force in reshaping administrative processes within both public and private organizations. This transformation is particularly evident in the higher education sector, which increasingly operates within organizational environments characterized by high levels of complexity, uncertainty, and continuous change. Within this context, digital transformation is no longer merely a technological option aimed at improving operational efficiency; rather, it has become a strategic necessity for ensuring institutional performance sustainability and enhancing organizations' competitive and adaptive capabilities in dynamic environments [1].

This transformation has been clearly reflected in human resource management functions, as traditional HR practices have demonstrated growing limitations in addressing accelerating environmental complexities and modern organizational demands. Consequently, Digital Human Resource Management (DHRM) strategies have

emerged as a contemporary managerial approach that contributes to redesigning HR functions through the integration of intelligent technologies such as Human Resource Information Systems (HRIS), e-learning platforms, digital performance management systems, data analytics, and employee self-service applications. These technologies contribute to improving organizational efficiency, accelerating administrative processes, and enhancing the quality of managerial decision-making [2]-[4].

In this regard, digital transformation in human resource management is no longer limited to automating traditional administrative procedures; rather, it has evolved into a comprehensive socio-technical transformation that integrates technology, organizational structures, and human resources with the objective of creating sustainable organizational value based on big data and artificial intelligence to support strategic decision-making and improve institutional performance [5]. Accordingly, understanding digital transformation in HRM requires examining its organizational outcomes, most notably organizational agility, which has become one of the most significant contemporary indicators of an organization's ability to adapt to changing environments.

Organizational Agility is considered one of the contemporary managerial concepts that has attracted increasing attention in organizational literature due to its strong association with an organization's ability to respond rapidly and effectively to environmental changes. This concept refers to an organization's capability to sense environmental changes, make appropriate decisions at the right time, and implement organizational responses efficiently and flexibly in ways that ensure continuity and growth in environments characterized by volatility, complexity, and ambiguity [6], [7].

From this perspective, Digital Human Resource Management strategies represent one of the fundamental drivers of organizational agility because they contribute to accelerating information flow, improving operational efficiency, reducing decision-making time, and enhancing workforce flexibility. Bondarouk and Ruël indicated that digital transformation in HRM is reflected through a set of interrelated dimensions that represent the level of digital maturity within organizations [2]. These dimensions include digital recruitment and selection, which relies on online platforms and artificial intelligence technologies in recruitment and selection processes; digital training and development, which promotes continuous learning through virtual environments; digital performance management, which is based on real-time feedback and continuous performance monitoring; digital HR analytics, which relies on big data and predictive analytics to support managerial decisions; and finally, digital employee self-service systems, which enable administrative transactions to be completed more efficiently through electronic platforms [8]-[11], [3], [8].

Conversely, organizational agility is manifested through three major dimensions: sensing agility, which reflects an organization's ability to identify environmental opportunities and threats decision-making agility, which refers to the speed of analyzing information and transforming it into effective decisions and implementation agility, which reflects an organization's ability to reconfigure resources and processes rapidly and efficiently in response to environmental changes [12]-[14]. This concept has evolved

through several scholarly contributions, beginning with Sharifi and Zhang, and later expanding through the works of Tallon and Pinsonneault and Gligor et al., which emphasized that organizational agility represents an important source of sustainable competitive advantage [15]-[17].

From a theoretical perspective, the relationship between Digital Human Resource Management strategies and organizational agility can be explained through Dynamic Capabilities Theory, which emphasizes that an organization's ability to reconfigure and adapt its resources to environmental changes depends on possessing flexible systems for managing knowledge and resources [1], [18]. Additionally, socio-technical systems theory supports this perspective by emphasizing that achieving effective organizational performance requires integration between technology and the human element within organizations [19].

Recent studies have further confirmed that adopting Digital Human Resource Management strategies directly contributes to enhancing organizational innovation, strategic flexibility, and the speed of organizational responsiveness, ultimately leading to higher levels of organizational agility across various institutions [20], [21].

Research Problem

Despite the growing global adoption of digital transformation in human resource management, along with the substantial developments in contemporary management literature, empirical findings regarding the extent to which these strategies influence organizational agility remain inconclusive. While some studies confirm a direct positive impact of digital human resource management strategies on accelerating organizational processes and improving performance outcomes, other studies indicate that poor implementation of these strategies or the absence of adequate infrastructure may lead to increased organizational complexity and reinforce administrative rigidity rather than achieving the intended flexibility [13].

In the Iraqi context, particularly within higher education institutions, applied studies examining the relationship between digital human resource management strategies and organizational agility remain extremely limited, revealing a clear theoretical and empirical gap in both Arab and Iraqi scholarly literature.

This gap is particularly evident at the College of Administration and Economics, University of Sumer, which seeks to adopt digital transformation in its administrative practices; however, the level of adoption of digital human resource management strategies, as well as their subsequent impact on enhancing organizational agility, remains unclear from a rigorous scientific perspective.

Accordingly, the problem of the present study lies in the existence of both a knowledge gap and an empirical gap related to the lack of clarity regarding the level of adoption of digital human resource management strategies at the College of Administration and Economics, University of Sumer. Additionally, there is a scarcity of empirical evidence explaining the impact of these strategies on enhancing organizational agility, which necessitates conducting an empirical analytical study to investigate and measure the nature of this relationship with scientific precision.

Research Questions

- To what extent are Digital Human Resource Management (DHRM) strategies adopted, and what is the prevailing level of organizational agility at the College of Administration and Economics, University of Sumer?
- What is the nature of the relationship and the impact of Digital Human Resource Management strategies on organizational agility at the College of Administration and Economics, University of Sumer?

Research Objectives

- To identify the level of adoption of Digital Human Resource Management strategies and assess the prevailing level of organizational agility at the College of Administration and Economics, University of Sumer.
- To examine the nature of the relationship and measure the impact of Digital Human Resource Management strategies on organizational agility, and determine the extent to which these strategies enhance the institution's responsiveness and adaptability to environmental changes.

Research Hypotheses

Main Null Hypothesis (H₀): There is no statistically significant impact of Digital Human Resource Management (DHRM) strategies on organizational agility at the College of Administration and Economics, University of Sumer.

sub-hypotheses:

- H₀₁: There is no statistically significant impact of digital recruitment on organizational agility.
- H₀₂: There is no statistically significant impact of digital training and development on organizational agility.
- H₀₃: There is no statistically significant impact of digital performance management on organizational agility.
- H₀₄: There is no statistically significant impact of digital HR analytics on organizational agility.
- H₀₅: There is no statistically significant impact of employee digital self-service on organizational agility.

Research Methodology and Procedures

This study adopted the descriptive-analytical approach, as it was considered the most appropriate method for achieving the study objectives. This approach seeks to describe the phenomenon under investigation and analyze the relationships between the research variables, namely Digital Human Resource Management strategies as the independent variable and organizational agility as the dependent variable.

The study population consisted of academic and administrative staff members at the College of Administration and Economics, University of Sumer, totaling (N = 100) individuals. A stratified random sample of (80) participants was selected based on the table developed by Krejcie and Morgan to ensure adequate representation of the study population [22].

To collect primary data, a questionnaire was developed based on validated and peer-reviewed measurement scales identified in previous literature. The validity and reliability of the instrument were ensured through the following procedures:

I. Instrument Validity

The validity of the questionnaire was assessed through the following methods:

Face Validity:

The questionnaire was evaluated by a panel of academic experts specializing in management and human resource management. Based on their feedback, several items were revised linguistically and conceptually to ensure clarity and accuracy.

Content Validity:

This ensured that all dimensions of the main study variables (independent and dependent variables) were comprehensively and appropriately represented in accordance with contemporary literature.

II. Instrument Reliability

The reliability of the instrument was assessed using Cronbach's Alpha coefficient. The results are presented in Table 1 below:

Table 1. Cronbach's Alpha and Factor Loadings.

| Variable / Dimension | Number of Items | Alpha Value | Factor Loadings |
|--|------------------------|--------------------|------------------------|
| 1. Digital Recruitment | 4 | 0.82 | 0.65 - 0.82 |
| 2. Digital Training and Development | 4 | 0.85 | 0.62 - 0.79 |
| 3. Digital Performance Management | 4 | 0.79 | 0.64 - 0.75 |
| 4. Digital HR Analytics | 4 | 0.81 | 0.68 - 0.85 |
| 5. Digital Employee Self-Service | 4 | 0.88 | 0.71 - 0.84 |
| Independent Variable (Overall) | 20 | 0.89 | - |
| 6. Sensing Agility | 4 | 0.83 | 0.63 - 0.78 |
| 7. Decision-making Agility | 4 | 0.82 | 0.66 - 0.81 |
| 8. Execution Agility | 4 | 0.84 | 0.65 - 0.79 |
| Dependent Variable (Overall Organizational Agility) | 12 | 0.87 | - |
| Total Instrument (Research) | 32 | 0.91 | - |

These results indicate that all reliability coefficients exceeded the acceptable threshold of 0.70, demonstrating that the research instrument possesses a high level of internal consistency and is appropriate for statistical analysis.

Results

First: Demographic Characteristics of the Study Sample

The study participants, consisting of academic and administrative staff at the College of Administration and Economics, University of Sumer, were analyzed based on several demographic variables, including gender, age, length of service, and educational qualification. This was intended to provide a clear profile of the sample characteristics. Table 2 presents the frequency distributions and percentages of these variables.

Table 2. Demographic Distribution of the Study Sample.

| Variable | Categories | Frequency | Percentage |
|----------------------------------|---------------------|-----------|------------|
| Gender | Male | 49 | 61.25% |
| | Female | 31 | 38.75% |
| Age | 30 years or less | 17 | 21.25% |
| | 31-40 years | 42 | 52.50% |
| | More than 41 years | 21 | 26.25% |
| Length of Service | Less than 5 years | 20 | 25.00% |
| | 5-10 years | 39 | 48.75% |
| | More than 10 years | 21 | 26.25% |
| Educational Qualification | High School or less | 8 | 10.00% |
| | Diploma | 11 | 13.75% |
| | Bachelor's | 9 | 11.25% |
| | Master's | 35 | 43.75% |
| | Doctorate | 17 | 21.25% |

The results indicate that the majority of the respondents were male, representing 61.25% of the sample. The most represented age group was 31-40 years, accounting for 52.50% of the participants. Employees with 5-10 years of service constituted the largest proportion at 48.75%. Regarding educational qualifications, the highest percentage was recorded among Master's degree holders (43.75%), reflecting the academic nature of the institution under study

Second: Descriptive Statistics of Study Variables

The arithmetic mean and standard deviation were used to determine respondents' level of agreement regarding the study variables.

1. Digital Human Resource Management Strategies

Table 3. Means and Standard Deviations of Digital Human Resource Management Strategies.

| Dimension | Mean | Standard Deviation |
|----------------------------------|-------------|--------------------|
| Digital Recruitment | 3.95 | 0.62 |
| Digital Training and Development | 3.75 | 0.71 |
| Digital Performance Management | 3.65 | 0.68 |
| Digital HR Analytics | 3.55 | 0.74 |
| Digital Employee Self-Service | 4.05 | 0.58 |
| Overall Mean | 3.79 | 0.55 |

Table 3 shows that the level of adoption of Digital Human Resource Management strategies in the college was high, with an overall mean of (3.79). This demonstrates a clear orientation toward adopting digital applications in human resource functions.

2. Organizational Agility

Table 4. Means, Standard Deviations, and Levels of Organizational Agility.

| Dimension | Mean | Standard Deviation | Level of Availability |
|-----------|------|--------------------|-----------------------|
|-----------|------|--------------------|-----------------------|

| | | | |
|-------------------------|-------------|-------------|-------------|
| Sensing Agility | 3.85 | 0.63 | High |
| Decision-Making Agility | 3.70 | 0.69 | High |
| Execution Agility | 3.80 | 0.65 | High |
| Overall Mean | 3.78 | 0.56 | High |

The results indicate that the level of organizational agility in the college was also high, with an overall mean of (3.78). This reflects the institution's strong ability to adapt to environmental changes and respond with flexibility.

Third: Testing Data Normality

Before testing the study hypotheses, the normality of the data was assessed using the Kolmogorov-Smirnov (K-S) test to ensure the appropriateness of applying parametric statistical techniques.

Table 5. Results of the Data Normality Test.

| Variable | K-S Value | Significance Level (Sig.) | Result |
|------------------------|-----------|---------------------------|-----------------------------|
| Digital HRM Strategies | 1.12 | 0.245 | Follows normal distribution |
| Organizational Agility | 1.18 | 0.187 | Follows normal distribution |

Since the significance values (Sig.) for all variables were greater than the adopted significance level of 0.05, the data were found to be normally distributed. Accordingly, parametric statistical tests such as simple and multiple linear regression were deemed appropriate.

Fourth: Testing the Study Hypotheses

1. Testing the Sub-Hypotheses

Simple linear regression analysis was employed to examine the effect of each dimension of Digital Human Resource Management strategies on organizational agility.

Table 6. Results of Testing the Sub-Hypotheses.

| Independent Variable (Dimensions) | Regression Coefficient (β) | T-value | Significance Level (Sig.) | Coefficient of Determination (R ²) | Statistical Decision |
|-----------------------------------|------------------------------------|---------|---------------------------|--|----------------------------|
| Digital Recruitment | 0.59 | 6.42 | 0.000 | 0.35 | Reject the null hypothesis |
| Digital Training and Development | 0.54 | 5.61 | 0.000 | 0.29 | Reject the null hypothesis |
| Digital Performance Management | 0.48 | 4.95 | 0.000 | 0.24 | Reject the null hypothesis |
| Digital HR Analytics | 0.52 | 5.31 | 0.000 | 0.27 | Reject the null hypothesis |
| Digital | 0.63 | 7.12 | 0.000 | 0.40 | Reject the null hypothesis |

| | |
|-----------------------|------------|
| Employee Self-Service | hypothesis |
|-----------------------|------------|

The results presented in Table 6 indicate a statistically significant positive effect of each dimension of Digital Human Resource Management strategies on organizational agility, as all significance values were lower than 0.05. Accordingly, the sub-null hypotheses were rejected, and the alternative hypotheses were accepted. Additionally, the findings reveal that the Digital Employee Self-Service dimension exerted the strongest influence on organizational agility.

Fifth: Testing the Main Hypothesis

Main Hypothesis: There is no statistically significant impact of Digital Human Resource Management (DHRM) strategies on organizational agility at the College of Administration and Economics, University of Sumer.

Table 7. Results of Testing the Main Hypothesis.

| Impact Model | R² | F-value | Sig. | Tolerance | VIF | Statistical Decision |
|--|----------------------|----------------|-------------|------------------|-------------|-----------------------------|
| DHRM Strategies → Organizational Agility | 0.58 | 20.45 | 0.000 | 0.31 – 0.46 | 2.17 – 3.22 | Reject the null hypothesis |

The findings reveal that the calculated F-value reached 20.45, which is statistically significant at the 0.05 level. Furthermore, the coefficient of determination ($R^2 = 0.58$) indicates that Digital Human Resource Management strategies explain 58% of the variance in organizational agility, while the remaining 42% is attributed to other variables not included in the research model.

Accordingly, the main null hypothesis is rejected, and the alternative hypothesis is accepted, confirming that Digital Human Resource Management strategies have a statistically significant impact on organizational agility at the College of Administration and Economics, University of Sumer.

Discussion and Interpretation of Findings

The findings of the current study reveal a set of fundamental conclusions that can be interpreted and discussed in light of the theoretical framework and previous studies. They also provide direct and precise answers to the research questions and demonstrate the extent to which the study hypotheses were supported.

With regard to the first research question, which sought to determine the level of adoption of Digital Human Resource Management (DHRM) strategies and the level of organizational agility at the College of Administration and Economics, University of Sumer, the results of the descriptive analysis indicated that the level of adoption of DHRM strategies was high, with a mean score of (3.79). This reflects a clear orientation within the college toward digitizing human resource functions and developing both the administrative and academic work environment in alignment with the requirements of contemporary digital transformation.

Among the dimensions of DHRM strategies, digital employee self-service recorded the highest mean score of (4.05), indicating the college's success in utilizing electronic systems to reduce administrative routines, accelerate transaction processing, and facilitate employees' access to their personal data and HR-related services. This finding is consistent with the argument of Bondarouk and Ruël regarding the role of digital transformation in enhancing administrative efficiency and reducing time and effort within organizations [2].

The results further demonstrated that the level of organizational agility was also high, with a mean score of (3.78), indicating that the college possesses a strong capability to sense environmental changes, make appropriate decisions, and implement them with flexibility and speed. This finding can be interpreted in light of the model proposed by Lu and Ramamurthy, which emphasizes that sensing agility, decision-making agility, and execution agility are interconnected dimensions that enhance an organization's ability to adapt to dynamic environments [6]. This result is also consistent with Dynamic Capabilities Theory proposed by Teece, which suggests that organizations capable of continuously renewing their resources are better positioned to respond effectively to environmental changes [1].

Regarding the second research question, which examined the nature of the relationship and the impact of DHRM strategies on organizational agility, the results of the simple linear regression analysis revealed a statistically significant positive effect of each dimension of DHRM strategies on enhancing organizational agility, as all significance values were less than (0.05). This indicates that digital transformation in human resource management is not merely a limited technological upgrade; rather, it represents an effective strategic mechanism for enhancing organizational responsiveness.

More specifically, digital recruitment and selection contributed positively to organizational agility by accelerating the attraction of qualified talent. Likewise, digital training and development demonstrated a clear effect in enhancing employee flexibility and improving their ability to adapt to changes. Meanwhile, digital employee self-service emerged as the most influential dimension, which may be attributed to its ability to reduce bureaucracy and accelerate daily administrative procedures.

Furthermore, the results of the multiple linear regression analysis indicated that DHRM strategies collectively explained 58% of the variance in organizational agility. This relatively high explanatory percentage confirms that investment in these strategies represents a major strategic driver for enhancing the institution's ability to adapt and respond effectively to environmental changes.

Accordingly, the findings suggest that Iraqi higher education institutions have already begun gradually adopting administrative digital transformation. However, maximizing the impact of these strategies requires strengthening digital infrastructure, enhancing employees' technological competencies, and reducing resistance to organizational change in order to achieve higher levels of organizational agility in the future.

Therefore, it can be concluded that the current study provides clear empirical evidence that Digital Human Resource Management strategies represent one of the key drivers of organizational agility within the Iraqi higher education environment. Moreover, the study contributes to addressing a significant research gap in Arab literature concerning the relationship between digital transformation and organizational agility in higher education institutions.

CONCLUSION

Fundamental Finding : This study demonstrated a high level of adoption of Digital Human Resource Management (DHRM) strategies at the College of Administration and Economics, University of Sumer, as well as a high level of organizational agility, and a clear, statistically significant positive impact of these DHRM strategies on enhancing organizational agility. **Implication :** The study recommends the necessity of strengthening the digital infrastructure within the university by upgrading information systems, developing communication networks, and providing integrated electronic platforms for human resource management. Furthermore, the study advises expanding the application of digital employee self-service systems, given that it is the most influential dimension on organizational agility. The study also highlights the importance of continuous investment in digital training and development programs for academic and administrative staff to enhance their digital skills and increase their adaptability to technological and organizational changes. Additionally, there is a need to utilize digital HR analytics and artificial intelligence to support decisions related to recruitment, development, and talent retention. Moreover, the study recommends establishing an organizational culture that supports digital transformation, mitigates resistance to change, and encourages innovation and continuous learning. It is also necessary to align DHRM strategies with the university's strategic objectives to ensure the achievement of a competitive advantage and enhance the ability to face future crises and environmental changes. **Limitation :** This is particularly important since the study's results showed that this dimension was relatively lower compared to the other dimensions, indicating a need for further development. **Future Research :** The study suggests conducting future research in other Iraqi universities to compare public and private institutions, and to test mediating or moderating variables such as digital leadership, organizational culture, institutional innovation, and strategic flexibility. It is also recommended to use more advanced analytical models, such as Structural Equation Modeling (SEM) and path analysis, and to expand the study of the impact of artificial intelligence and big data on the development of HRM functions. This would contribute to deepening the scientific understanding of the relationship between digitalization and organizational agility in Iraqi higher education institutions.

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