Journal of Kyzylorda Scholarly Review

P-ISSN:3006-0265 | E-ISSN:3007-4681. Published by the Open University of Kyzylorda
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THE IMPACT OF DIGITAL HUMAN RESOURCE MANAGEMENT ON ENHANCING WORKFORCE FLEXIBILITY: THE MEDIATING ROLE OF GENERATIVE ARTIFICIAL INTELLIGENCE (AN APPLIED STUDY ON IRAQI TELECOMMUNICATIONS COMPANIES)

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Abstract. The aim of this study was to detect the influence of digital HRM on strengthening the flexibility of the work force, in Iraqi telecommunications companies, in the context of the presence of generative artificial intelligence. The research method used in this research is descriptive analytical (quantitative) methodological approach; the purpose of this approach is to obtain data on the real phenomena that are studied descriptively, and to analyze the data to understand the phenomenon of the study. This study involved all employees in the HR and IT sector of Iraqi telecom companies. In the current study, the number of employees from the study population that was sampled was (370) using simple random sampling. The data collection instrument used by the researcher was questionnaire. After conducting the appropriate statistical analysis, the study revealed a number of results, most notably that there are partial media of artificial intelligence. It investigates the effect of digital human resource management on increasing the flexibility of the workforce in the Iraqi telecommunication companies. The researcher suggests the need to develop human resources' competences in the use of AI and digital technologies through continuous training sessions, concentrating on applying generative AI, analysing its outputs, checking their accuracy and using it responsibly.

Keywords: Digital human resource management, workforce flexibility, generative AI, Iraqi telecommunications companies

Introduction

In recent years, the era of digital and technological advancement has brought about significant changes in the business world and changed the way work is done and the way HR management is conducted in the business. Human resource management doesn't just involve conventional activities like recruiting and training people, measuring their performance, and managing their compensation, anymore. Rather, the adoption of digital technologies, data, and intelligent systems is now crucial in designing faster, more responsive, and more flexible practices. With this in mind, digital human resource management has come to be seen as a sophisticated development of electronic and technology-based human resource management. It is a process of embedding the use of digital technology in human resource processes and practices to optimize the effectiveness of operations, decision making and the organisation's capacity to respond to a changing business landscape. Digital human resource management is not just digitisation of the traditional HRM processes, but a qualitative leap in the use of digital technologies in human resource management, explained in [1]. Moreover, [2] found that digitalization has become more prevalent in a variety of HR processes and that digital HR is correlated with the evolution of integrated HR as a way of adapting to the needs of the new working environment.

As organisations become more complex and increasingly dependent upon a workforce that has to respond to the changing, uncertain and fast-changing nature of technology, the need for digital human resource management (HRM) is growing. The ability of an organization to be successful in the digital world is not only based on the use of modern infrastructure and technologies; it's also based on the ability of employees to adapt to new tasks and roles, respond quickly to changes, engage in continuous learning and redeploy skills as required by work. This has fostered the notion of workforce agility as a strategic capability that will help employees adjust to change, reprioritize, learn new skills, and anticipate and prepare for new needs. [3] showed that workforce agility is correlated with the ability of the workforce to adapt to changes in the organization and technology, and recent scholarship suggests [4] that the human resource function in building workforce agility needs to be explored and human resource practices are an important factor in developing the traits of agile and adaptive workforce.

In this context, digital HRM may be considered as an organizational mechanism that can increase the agility of human resources. Digital technologies enable quicker access to employee-related information, enhanced training and development, skills gap analysis, and help with decision making regarding the allocation of employees and redeployment, and communication and collaboration within the organisation. A number of recent studies highlight the potential of the digitalization of HR processes to support the development of an environment more responsive to change through making the selection, training, performance management, empowerment and teamwork processes more flexible. In this context, [4] put forth a framework that shows how digital human resource management (HRM) can be used to improve the agility of the workforce by enhancing the digital human resource processes, systems, and practices that underlie training, workforce development, teamwork, and other practices that make up an agile workforce.

This orientation is becoming more prominent with the advent of generative artificial intelligence (GAI), which is a new phase in the evolution of intelligent technologies characterized by its capacity to create text and content, process information and engage with the user as if they were human. Since the launch of ChatGPT, the landscape of generative AI applications has dramatically changed, signaling an urgent need for a new understanding of the nature of work, the skills needed to thrive in the future, and the part HRM can play in the context of these shifts. [5] highlighted that the use of generative artificial intelligence is creating significant opportunities for enhancing human resource management practices and processes, human resource employment relations, skills, and jobs, while simultaneously presenting several challenges with respect to accuracy, bias, privacy, ethics, and the future of work.

The use of Generative AI in HRM is gaining significant traction due to its potential to aid HR professionals and specialists in diverse activities, including creating training materials, processing data, offering insights, facilitating learning and development initiatives, and helping with some recruitment and talent management tasks. [6] reported that generative AI can assist with many of the operational and strategic HRM tasks, and when used effectively human resource professionals

can complete certain tasks in less time to spend more time on long-term strategic HRM issues. Additionally, [7] noted that generative AI can be used to link the different HRD processes, as it can analyze skills gaps in real-time, create tailored development plans, collect employee feedback, and support learning and development processes.

Generative AI is not just about automating some jobs, but also about how humans and technology will interact in the workplace and how work colleagues and intelligent systems will interact in an organization. [8] suggested a strategic approach to integrating generative AI into human resource management, highlighting how vital it is to align the utilization of artificial intelligence with organizational goals, human capital development, ongoing learning, and adaptability. Therefore, generative AI can be a means by which digital human resource management can turn digital data and information into working, useable tools for continuous learning, skills reskilling and better adaptation to change that are directly linked to workforce agility.

On the other hand, the use of generative AI in HRM has its challenges, necessitating responsible and conscious management. Artificial Intelligence in HR decision-making can pose challenges regarding privacy, fairness/bias, accountability for decisions and quality of information, warned [9]. This is a validation of the value of these technologies on an organizational level, which is not simply made by adopting them, but by the organization's ability to responsibly integrate them into its HR systems and practices. Likewise, [9] highlighted the need for a responsible use of artificial intelligence in human resource management, focusing on transparency, fairness, and safeguarding the rights of the employees.

It is especially significant in telecom, where technology is a key driver, digital transformation is a primary focus and customer needs are evolving all the time. Telecommunications companies are competing, services need constant evolution, and new technologies must be acquired and changes in customer behavior and technology must be met quickly. There is strong evidence that this is happening more quickly in Iraq. For instance, Asiacell has reiterated its commitment to leading digital transformation and to creating intelligent telecommunication solutions. It also pointed to investments in digital infrastructure, employee skills development, and digital training programs in its 2024 annual report [10]. The company also revealed the launch of its artificial intelligence-based assistant named Layla, indicating the increasing use of artificial intelligence applications in Iraq's telecom industry.

Recent evidence from Iraq suggests that digital transformation is a key factor in the agility of human resource management (HRM) systems, which further validates the relevance of the present study. In the study General Company for Telecommunications and Informatics affiliated to the Iraqi Ministry of Communications, [11] revealed that digital transformation significantly impacts the agility of human resources, highlighting the need to incorporate digital transformation and agility into organizational policy formulation to deal with changes in the environment. Also, [12] looked at how HRM is applied in the Iraqi telecommunication organizations and how it is linked with organizational ambidexterity via human capital. This indicates the increasing study and interest in the field of digital HRM in the telecommunications industry in Iraq.

Though these developments are significant, the literature review suggests that research on the link between digital HRM and workforce agility is relatively scarce. Furthermore, the mediation effect of generative artificial intelligence in the relationship has not been sufficiently tested, especially in the Arab and Iraqi context and specifically in the telecommunications sector. In the previous studies, authors have concentrated on a single relationship, for example, the relationship between digital transformation and human resource agility, or the relationship between digital human resource management and other organizational outcomes, and not explored the relationship between digital human resource management and enhancing human resource agility through generative artificial intelligence. The literature shows the importance of conducting more empirical research on the impact of generative AI on human resource practice and the future of work and the workforce.

The present study is grounded on the premise that the shift to DHM doesn't necessarily translate to an agile workforce. Instead, the power of this influence could be tied to how well organizations can use intelligent tools to enable learning and development, understand skills needs, make information and knowledge available, and help workers do their work and cope with change, especially through the use of generative artificial intelligence (GAI). Hence, the study aims to explore how digital human resource management can boost the agility of employees, and to investigate the mediating effect of

generative artificial intelligence on the relationship between digital human resource management and workforce agility in the context of telecommunications companies in Iraq. This could be beneficial to the academic body in the field of digital human resource management, AI, and workforce agility, and offer practical implications for Iraqi telecom companies in enhancing their digital practices and fostering a more agile workforce capable of adapting and responding to the evolving technological landscape.

Study Problem

Although Iraq's telecom sector has seen tremendous growth in the last few years, it is still in a developing nation and HRM departments are not as advanced as those in developed nations in terms of digital and organizational development. Despite the fact that modern HRM systems have not developed in Iraq at the same rate as they have in other parts of the world, many companies are still using HRM systems with operational activities rather than integrating with digital systems, such as recruitment, training, and administration of employee affairs. This is evident in research on the environment in developing countries.

Studies in recent years highlight that job innovation and excellent job performance are not random but necessitate holistic readiness both at the organizational level and in both the legislative, organizational, and technological aspects as well as the culture [13]. However, HRM is the most important function that prepares and empowers employees, and establish proper HR conditions to stimulate innovation in their jobs, if there is limited organizational readiness in HRM, it may be restricted to support innovation and to turn it into real gains in employee performance.

Given the fact that banks operating in the Jordanian environment share some characteristics with banking institutions in other Third World countries, there were some studies conducted in the region that showed a lack in preparedness of HRM departments at banks [14]. The researcher thinks that this gap could be seen in the level of innovation, as most studies have shown that HRM significantly affects not only the level of performance in general, but also the level of innovation specifically [13] [14]. This can cause fluctuations in the performance of employees, and constrain banks' ability to use human capital as a means of attaining innovation and building competitive advantage. In view of this, the present study will try to answer the following questions:

Significance of the Study

The importance of the study is that it examines the important topics that are digital human resource management, workforce agility and generative artificial intelligence. It allows researchers in the management field to have a perspective on digital HRM concept, importance and its effect on organizational environment. In addition, the study is important because it can help managers in the telecommunications companies in Iraq understand the concept of digital HRM and become familiar with its advantages and disadvantages based on the results of this study and its recommendations, to make the HRM more effective and play its role in workforce agility.

The researcher considers this study a valuable contribution to help decision-makers determine the extent of generative AI use by Iraqi telecom companies. This study is also significant because the researcher's findings indicate that it is the first study conducted at the local and Arab levels to investigate the role of digital human resource management in the agility of the workforces in the Arab region with a mediating variable, which is the use of generative artificial intelligence.

Operational Definitions

The digital Human Resource Management (Operationally) is the degree of reliance on digital technologies and systems to plan, attract, develop, evaluate and manage employees, trying to improve the speed and effectiveness of the human resource processes and supporting decisions related to the human resources.

Workforce Agility (Operational) means the ability of the employees in the Iraqi telecommunications companies to adjust and react quickly to changes in technology and organizations, switch from one task to another, and transfer skills from one task or role to another in response to shifts in the demands of the job.

Generative Artificial Intelligence (Operationally) means the application of artificial intelligence technologies that can create new content, information and recommendations based on the data and prompts fed to them, and use such technologies to augment human resource management activities and enhance the efficiency and effectiveness of completing employee related activities and decisions.

Scope of the Study

The present study adhered to the following boundaries:

1. Subject Scope: This involved identifying the effect of digital human resource management on enhancing workforce agility, with generative artificial intelligence serving as a mediating variable.
2. Geographical Scope: This was limited to Iraqi telecommunications companies in Baghdad Governorate.
3. Human Scope: This comprised employees working in the human resource and information technology departments of Iraqi telecommunications companies.

Theoretical Framework

Digital HRM is a term used for a set of social, technical and managerial practices that utilize automation, digital infrastructure and the latest technologies to manage human resources for the purpose of efficient and effective organizational functioning. This definition also highlights that digital HRM cannot simply be associated with the digitization of HR processes, but rather that the application of digital technologies, data and AI will be used to redesign HR processes. Digital HRM is the use of digital technologies by people or institutions in HRM activities. The definition is relevant for field studies where the digital management implementation in an organisation is measured [15].

Workforce agility is a term that is linked to the capacity of employees and organizations to work in varying and uncertain situations. It looks at how employees respond to uncertainty strategically, and focuses on the importance of this ability to help organisations deal with market and technological changes. Agility of the workforce is also defined as the ability to effectively and efficiently move workforce members into value creating activities. The definition of agility is not only about changing their tasks, but also about maximizing the use of human resources [16]. Workforce agility is linked to various capacities and conduct of employees or organizational units to respond to stress and to speedy adjustments, notably in high-tech working contexts [4].

Workforce agility is an organization's capacity to adjust, via its workforce, to internal and external changes to capitalize on new opportunities or to prepare to meet new threats that can negatively impact the organization's performance. HR agility is the capacity of an organization to adjust to its environment and respond quickly to changes in an environment by doing tasks that were not planned, so as to deliver the best services following the latest scientific discoveries, in addition to providing employee qualification and training [17].

Unlike standard AI systems that analyze data and make predictions, generative AI can create fresh content by recognizing patterns within the data. The developments in artificial intelligence have encouraged a shift from data processing tasks, pattern recognition, and more creative tasks that are generative artificial intelligence [18]. Generative AI, with ChatGPT as a prime example, can serve as a tool for HR professionals in various strategic and operational roles, such as Diversity and Strategic HRM [6].

Previous Studies and Hypothesis Development

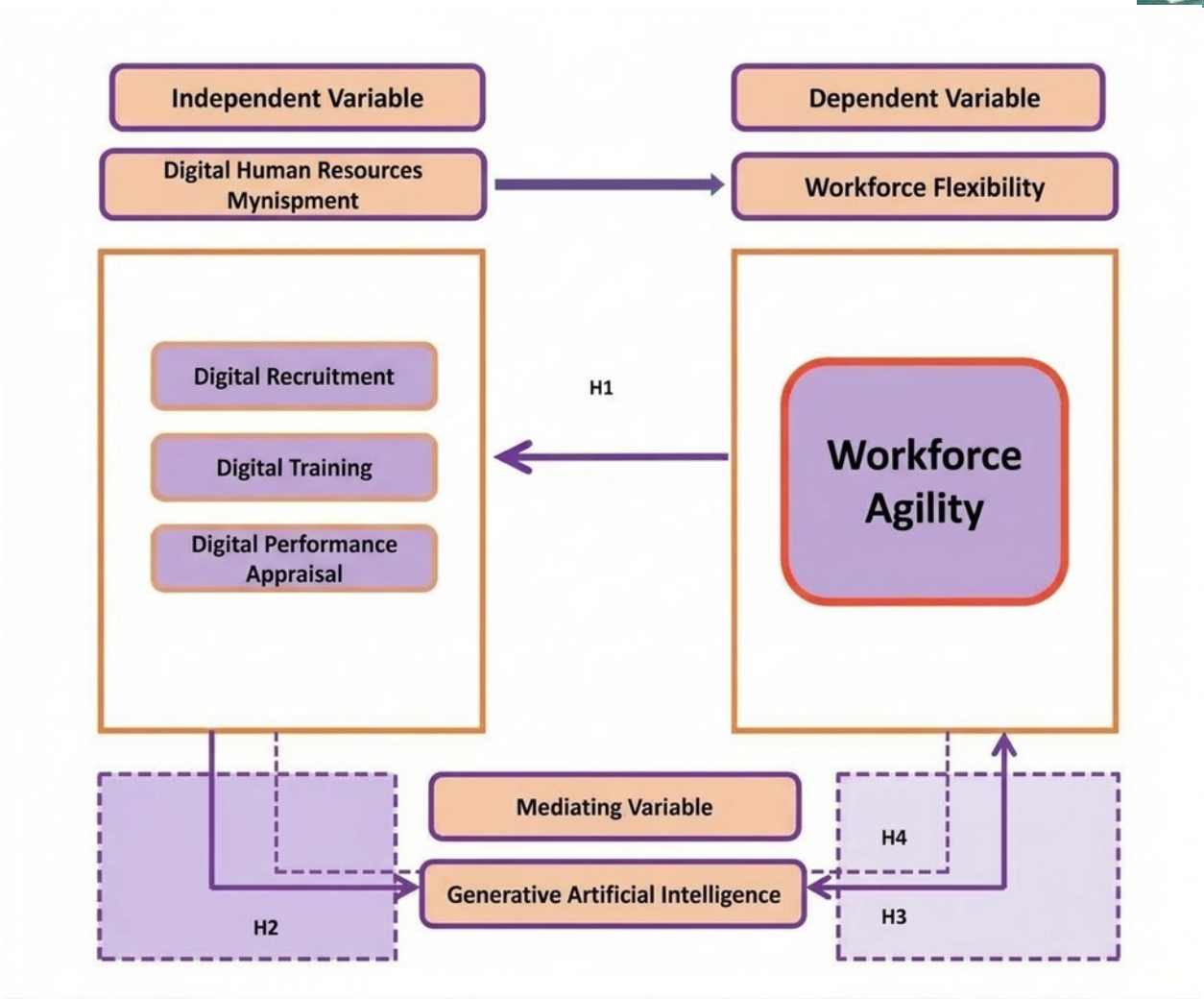
The digitalization of human resource management can pave the way for workforce agility through practices such as selection, training, empowerment, and teamwork. Recent studies also indicate that generative artificial intelligence is reshaping human resource functions and supporting efficiency, learning, adaptation, and job redesign [4].

Digital human resource management plays a vital role in enhancing organizational agility by enabling employees to adapt to accelerating organizational and technological changes. This agility includes employees' ability to perform multiple tasks, acquire new skills rapidly, accept change, and transition between roles according to work requirements. Empirical evidence indicates that organizations relying on an agile workforce achieve higher levels of organizational agility because of their rapid response to developments and continuous performance improvement.

Digital human resource management also contributes to creating a flexible, learning-oriented, and motivating environment that provides fertile ground for developing human resource agility, as it establishes a climate that encourages experimentation, professional development, and continuous learning. When the organizational culture supports the values of empowerment, openness, and collaboration, employees become more willing to acquire new skills and adapt to changing circumstances, thereby enhancing their ability to support organizational objectives and achieve the desired organizational agility [4].

Accordingly, the first hypothesis of the study can be formulated as follows:
Hypothesis One (H1): Digital human resource management has a statistically significant effect at the significance level of (**) on enhancing workforce agility in Iraqi telecommunications companies.
Digital human resource management systems play a pivotal role in establishing the organizational and technological environment that enables the adoption and use of generative artificial intelligence applications in human resource functions. As human resource processes increasingly rely on data and digital systems, organizations have become more capable of integrating generative artificial intelligence tools into areas such as recruitment, job analysis, training and development, performance management, and internal communication. A recent study on the use of generative artificial intelligence in human resource management confirmed that its current applications focus on job analysis and design, training and development, recruitment and selection, as well as human resource analytics and performance management [19]. Accordingly, the second hypothesis of the study can be formulated as follows:
Hypothesis Two (H2): Digital human resource management has a statistically significant effect at the significance level of ($\alpha \leq 0.05$) on enhancing the use of generative artificial intelligence in Iraqi telecommunications companies.
Generative artificial intelligence can play an important role in enhancing workforce agility by accelerating information acquisition, supporting continuous learning, assisting in problem-solving and idea generation, and facilitating the redesign of tasks and jobs. [20] indicated that generative artificial intelligence requires employees and organizations to develop continuous learning capabilities and adapt to changes in the nature of work. [21] found that the use of generative artificial intelligence in human resource tasks resulted in notable improvements in task completion effectiveness, reduced completion time, and increased efficiency, indicating the potential of generative artificial intelligence as a tool for supporting employees' ability to adapt to changing work requirements. Another recent study found a relationship between the use of generative artificial intelligence and progress toward achieving work objectives through mechanisms associated with resource provision and workload reduction. [22] support the view that generative artificial intelligence is associated with organizational agility. [5] also found that integrating generative artificial intelligence tools is associated with organizational agility and effectiveness. Accordingly, the third hypothesis of the study can be formulated as follows:
Hypothesis Three (H3): Generative artificial intelligence has a statistically significant effect at the significance level of ($\alpha \leq 0.05$) on enhancing workforce agility in Iraqi telecommunications companies.
Digital human resource management provides the infrastructure, data and digital processes needed to enable the use of modern technologies such as generative artificial intelligence. A combination of these technologies can complement learning and adaptation, speed up information processing and boost task performance, and thus increase the workforce's capacity to adapt to changes in the business environment. It is in line with current vision which views the generative artificial intelligence as a part of the human resource system, which helps to identify human capabilities and to process and transform information [21]. [8] highlighted the potential for generative AI to revolutionize HR processes, roles and skills, as well as the need for ongoing learning, adaptation, and job redesign.
Hypothesis Four (H4): Online HRM is a mediator between generative artificial intelligence and workforce agility in the telecommunications sector in Iraq.
Based on the foregoing, the study model can be formulated as illustrated in Figure (1).
Figure (1): Study Model.

Journal of Kyzylorda Scholarly Review
P-ISSN:3006-0265 | E-ISSN:3007-4681
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Methods

The researcher adopted the descriptive-analytical approach in designing the study.

Study Population and Sample

The study population includes all employees from HR and IT department of telecommunications companies in Iraq. Following the communication with the companies, the researcher determined that the target population consisted of about 6,000 male and female employees. The researcher sent the questionnaire to the employees of targeted companies using an electronic link to distribute the questionnaire. We received a total of (361) responses via the link. Therefore, the sample size for the study was (361), the number of male and female employees were also randomly selected from the study population as presented in the table of [23]. The distribution of the study sample members based on personal and occupational variables is shown in Table (1).

Table 1. Distribution of Study Sample Members According to Personal and Occupational Variables

Variable	Category / Level	Count / Frequency	Percentage (%)
Gender	Male	248	68.7
	Female	113	31.3
	Total	**361**	**100.0**
Years of Experience	Less than 5 years	44	12.2
	5 years – less than 10 years	197	54.6
	10 – less than 15 years	35	9.7
	15 years and more	85	23.5
	Total	**361**	**100.0**

Variable	Category / Level	Count / Frequency	Percentage (%)
	Manager	6	1.7
	Head of Department	31	8.6
Job Level / Position	Employee	324	89.7
	Total	**361**	**100.0**

Study Instrument

The researcher developed and constructed the study instrument (questionnaire) after reviewing the theoretical literature and previous studies. Previous questionnaires addressing topics related to the subject of the current study were used to develop the questionnaire items. The questionnaire was designed to identify the effect of digital human resource management on enhancing workforce agility, with generative artificial intelligence as a mediating variable in Iraqi telecommunications companies. The questionnaire was developed to align with the objectives of the current study, as follows:

The first section: Digital human resource management, comprising (15) items distributed across three subdimensions (digital recruitment, digital training, and digital performance appraisal).

The second section: Digital performance appraisal, comprising (10) items.

The third section: Generative artificial intelligence, comprising (10) items.

To analyze the data related to the study variables and test the study hypotheses, a five-point Likert scale was used to answer the questions, according to the following ratings: (1) represents "Strongly Disagree"; (2) represents "Disagree"; (3) represents "Moderately Agree"; (4) represents "Agree"; and (5) represents "Strongly Agree."

To interpret the arithmetic means of the study sample members' responses to each item of the study instrument, the following equation was used:

Interval Length = (Highest Alternative Value − Lowest Alternative Value) / Number of Levels

$$(5-1)/3 = 4/3 = 1.33$$

Accordingly, the levels are as follows:

1. Low level of agreement: from 1 to less than 2.33.
2. Moderate level of agreement: from 2.33 to less than 3.66.
3. High level of agreement: from 3.66 to 5.00.

Normality Test

The researcher used skewness and kurtosis coefficient to check the normality of the data for each item of the instrument used in the study. The results indicated that all the skewness and kurtosis coefficients of the obtained results were within the lower and upper boundaries of normal distribution. The skewness values were within the range of (-2, 2) and the range of kurtosis values was (-7, 7). This means that the data in the study are normally distributed and thus can be used to perform further statistical analysis.

Confirmatory Factor Analysis of Digital Human Resource Management Variable.

Confirmatory factor analysis is used to confirm the validity of the research model (latent variable and indicators measuring the variable) or the items in the research instrument that measures the variable. The construct validity is met if the standardized regression weights are greater than (+/- 0.40). The confirmatory factor analysis (CFA) results for the Digital Human Resource Management variable are shown in figure (2).

Journal of Kyzylorda Scholarly Review
P-ISSN:3006-0265 | E-ISSN:3007-4681
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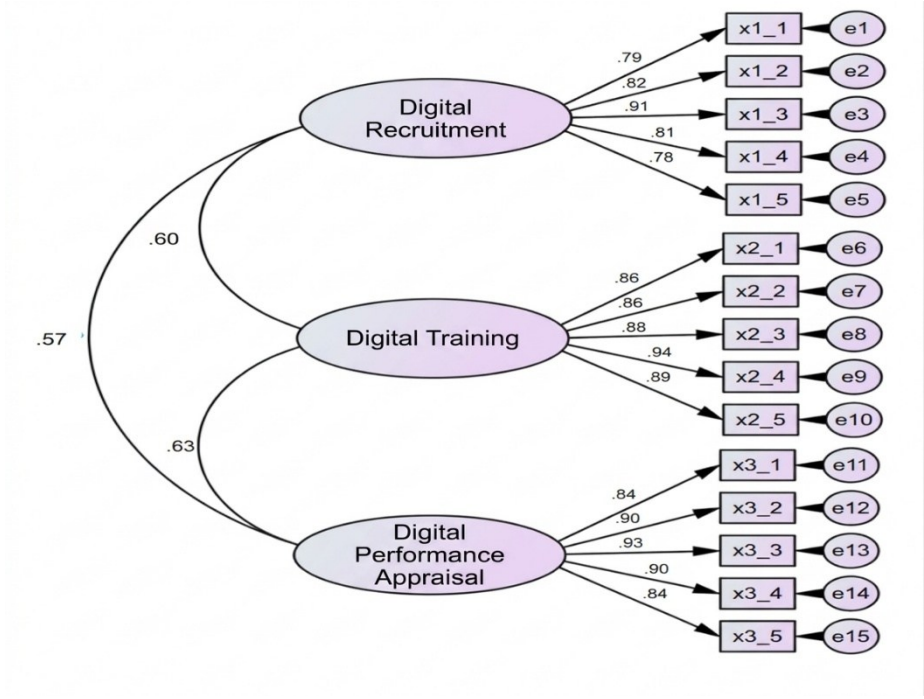


Figure 2. Confirmatory Factor Analysis of the Digital Human Resource Management Variable

Confirmatory Factor Analysis of the Workforce Agility Variable

The purpose of using confirmatory factor analysis is to verify the validity of the proposed study model, which includes the latent variable and the indicators used to measure it, or the items in the study instrument designed to measure this variable. The assumption of construct validity is satisfied when the standardized regression weights exceed (0.40). Figure (3) illustrates the confirmatory factor analysis of the workforce agility variable.

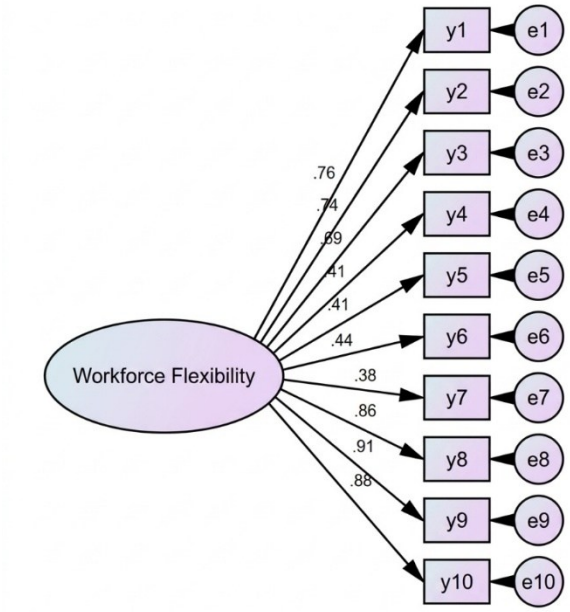


Figure 3. Confirmatory Factor Analysis of the Workforce Agility Variable

Confirmatory Factor Analysis of the Generative Artificial Intelligence Variable

The purpose of using confirmatory factor analysis is to verify the validity of the proposed study model, which includes the latent variable and the indicators used to measure it, or the items in the study instrument designed to measure this variable. The assumption of construct validity is satisfied when the standardized regression weights exceed (0.40). Figure (4) illustrates the confirmatory factor

analysis of the generative artificial intelligence variable.

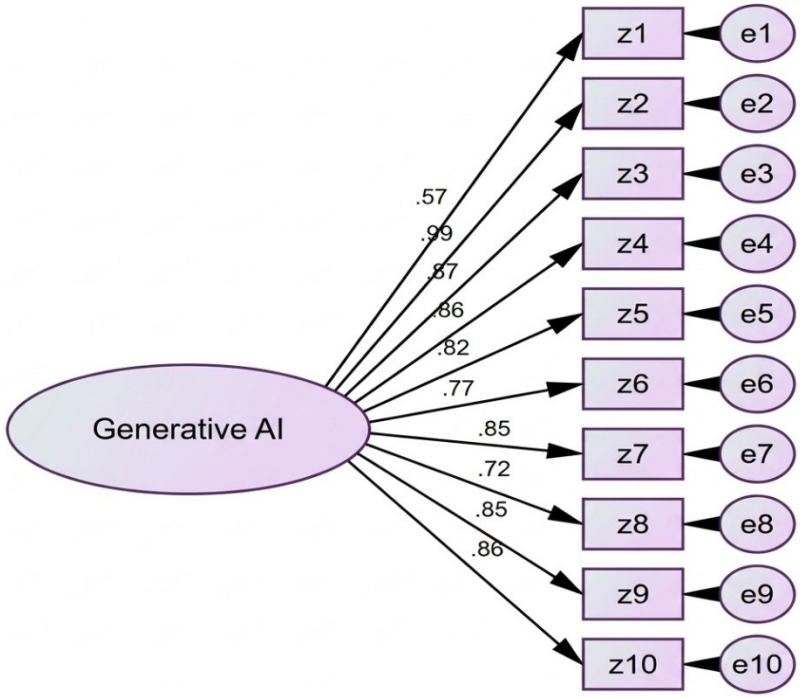


Figure 4. Confirmatory Factor Analysis of the Generative Artificial Intelligence Variable

Multicollinearity Test

The Variance Inflation Factor (VIF) and Tolerance values were used to ensure that the data were free from multicollinearity among the independent variables. Multicollinearity occurs when one independent variable is a function of another independent variable, meaning that it increases as the other variable increases and decreases as the other variable decreases. The results are presented in Table (2).

Table 2. Multicollinearity Test Results Among Study Variables

Variable	Tolerance	Variance Inflation Factor (VIF)
Digital Recruitment	0.599	1.670
Digital Training	0.697	1.434
Digital Performance Appraisal	0.568	1.762

The results in Table (2) show that there is no multicollinearity among the independent variables in the study model since the VIF values obtained in the study are appropriate because they were not greater than (10) and the Tolerance values were greater than (0.1).

The Study Instrument is reliable.

For the reliability of the used study instrument, the researcher computed the internal consistency with the Cronbach's alpha method which one of the classic method for measuring the reliability of the instrument is used. Cronbach's alpha indicates the homogeneity of the items on an instrument. The internal consistency method is based on the correlation between the items or statements of the instrument. The outcome of the reliability assessment is shown in Table (3).

Table 3. Reliability Coefficients (Cronbach's Alpha) for the Study Tool Domains

Domain / Dimension	Cronbach's Alpha Reliability Coefficient
Digital Human Resources Management	0.881
Workforce Flexibility	0.889
Generative Artificial Intelligence	0.851

The preceding table shows that the Cronbach's alpha reliability coefficients for the study instrument's dimensions ranged from (0.851 to 0.889), which are acceptable values for research purposes, as most studies indicate that the acceptable reliability coefficient threshold is (0.70) [24].

Results and Discussion

Statistical Methods Used for Data Analysis:

The researcher used SPSS v21 and AMOS to process the collected data using the following statistical methods:

1. Descriptive statistical measures to describe the sample's responses through frequencies, percentages, arithmetic means, and standard deviations.
2. Cronbach's alpha test to assess the reliability of the scale.
3. Variance Inflation Factor (VIF) test to ensure the absence of multicollinearity.
4. Multiple regression analysis to test the main study hypotheses.
5. Path analysis to test the study hypotheses in the presence of the mediating variable.

Descriptive Statistics of the Study Variables:

The dimensions of the independent variable (digital human resource management: digital recruitment, digital training, and digital performance appraisal) and dependent variable (workforce agility) and the mediating variable (generative artificial intelligence) are described. The arithmetic means and standard deviations of the study sample's responses were employed in determining the level of agreement about the dimensions of the study variables as seen in Table (4).

Table 4. Means, Standard Deviations, and Agreement Levels of Study Sample Responses Toward Study Variable Dimensions

Domain	Dimension	Mean	Standard Deviation	Evaluation Level
Digital Human Resources Management	Digital Recruitment	2.91	0.76	Medium
	Digital Training	3.10	0.70	Medium
	Digital Performance Appraisal	3.07	0.81	Medium
	Overall Digital Human Resources Management	**3.02**	**0.63**	**Medium**
Workforce Flexibility		**3.09**	**0.50**	**Medium**
Artificial Intelligence		**3.04**	**0.63**	**Medium**

It was found in the results of Table (4) that the digital human resource management level in the Iraqi telecommunications companies from the employees perspective, was moderate with an arithmetic mean (3.02) for the whole of the companies, which means that the level of evaluation was moderate. Digital human resource management had moderate evaluations for all the dimensions, with an arithmetic mean of the dimensions of the construct ranging between (2.91 to 3.10). The digital training dimension was the top ranked, followed by digital performance appraisal dimension in second rank and digital recruitment dimension in third rank.

The findings also revealed that the agility level of the telecommunication companies in Iraq from the employees' point of view, was moderate as the arithmetic mean was (3.09), which is moderate level of evaluation. The level of generative AI was also moderate, with an overall arithmetic mean score of (3.04), representing a moderate level of evaluation.

Results Related to the Study Hypotheses:

First Hypothesis (H1): Digital human resource management has a statistically significant effect at the significance level of $(\alpha \leq 0.05)$ on enhancing workforce agility in Iraqi telecommunications companies.

To test the validity of the first hypothesis, the multiple regression equation was applied to examine the effect of the dimensions of digital human resource management on enhancing workforce agility in Iraqi telecommunications companies. The results are presented below:

Journal of Kyzylorda Scholarly Review
P-ISSN:3006-0265 | E-ISSN:3007-4681
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Table 5. Multiple Regression Analysis Results for the Impact of Digital Human Resources Management Dimensions on Enhancing Workforce Flexibility in Iraqi Telecommunications Companies

Variable	β	T	Sig.	R	R2	Adjusted R2	F	Sig.
Constant		6.831	0.000					
Digital Recruitment	0.148	2.534	0.012					
Digital Training	0.310	5.714	0.000	**0.517**	**0.267**	**0.261**	**43.452**	**0.000**
Digital Performance Appraisal	0.161	2.682	0.008					

It can be seen from Table (5) that Digital HRM is affecting the agility of the human resources in Iraqi telecommunications companies. Correlation coefficient (R) was (0.517), which shows the level of association between the dimensions of digital human resource management and the agility of the workforce. The coefficient of determination (R^2) was (0.267), which means that the dimensions of digital human resource management are able to influence the level of workforce agility. That is, digital HRM accounts for 26.7% of the variance in workforces agility. In view of the above, the first hypothesis is accepted, in its present form.

Second Hypothesis (H2): Digital human resource management has a statistically significant effect at the significance level of ($\alpha \leq 0.05$) on enhancing the use of generative artificial intelligence in Iraqi telecommunications companies.

To test the validity of the second hypothesis, the multiple regression equation was applied to examine the effect of the dimensions of digital human resource management on enhancing the use of generative artificial intelligence in Iraqi telecommunications companies. The results are presented below:

Table 6. Multiple Regression Analysis Results for the Impact of Digital Human Resources Management Dimensions on the Use of Generative Artificial Intelligence in Iraqi Telecommunications Companies

Variable	β	T	Sig.	R	R2	Adjusted R2	F	Sig.
Constant		13.316	0.000					
Digital Recruitment	0.040	0.619	0.537					
Digital Training	0.292	4.913	0.000	**0.348**	**0.121**	**0.114**	**16.432**	**0.000**
Digital Performance Appraisal	0.058	0.888	0.375					

Table (6) indicates digital human resource management positively affects the use of generative artificial intelligence in the Iraqi Telecommunications Companies. The correlation coefficient (R) was (0.348), which shows the association of the dimensions of digital human resource management with the use of generative artificial intelligence. The coefficient of determination (R^2) obtained was (0.121) which means the dimensions of digital human resource management can affect the use of generative artificial intelligence. Specifically, the variation in the use of generative AI can be accounted for by 12.1% of its variance as explained by digital human resource management. The second hypothesis is accepted in this form, based on the above.

Third Hypothesis (H3): Generative artificial intelligence has a statistically significant effect at the significance level of ($\alpha \leq 0.05$) on enhancing workforce agility in Iraqi telecommunications companies.

To test the validity of the third hypothesis, simple regression analysis was applied to examine the effect of using generative artificial intelligence on enhancing workforce agility in Iraqi telecommunications companies. The results are presented below:

Journal of Kyzylorda Scholarly Review
P-ISSN:3006-0265 | E-ISSN:3007-4681
https://bulletin.ouk.kz/index.php/bulletin/index.php

Table 7. Simple Regression Analysis Results for the Impact of Using Generative Artificial Intelligence on Enhancing Workforce Flexibility in Iraqi Telecommunications Companies

R	R2	Adjusted R2	F	Sig.
0.229	0.052	0.050	19.830	0.000

Table (7) demonstrates that generative artificial intelligence has an impact on the agility of the workforce in Iraqi telecommunications companies. The correlations between the use of generative artificial intelligence and workforce agility was (0.229). The coefficient of determination (R^2) was (0.052) which showed generative artificial intelligence use did influence workforce agility. Put another way, 5.2% of the variation in workforce agility is accounted for by generative artificial intelligence. Awarding the third hypothesis in this form is based on the above.

Fourth Hypothesis (H4): Generative artificial intelligence mediates the relationship between digital human resource management and workforce agility in Iraqi telecommunications companies.

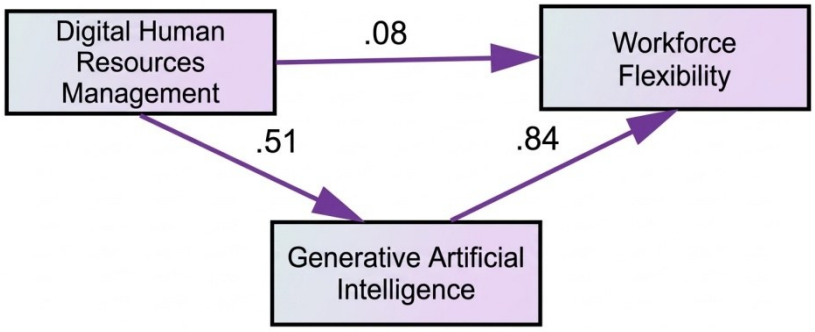
To test this hypothesis, path analysis was used to determine the significance of the indirect effect measured through the mediating variable. Table (8) presents the results of this analysis.

Table 8. Path Analysis for Examining the Mediating Effect of Artificial Intelligence on the Relationship Between Digital Human Resources Management and Workforce Flexibility

Path Direction	Direct Effect	C.R.	Sig.	Indirect Effect
Independent to Dependent	0.079	2.726	0.00	
Independent to Mediator	0.513	28.790	0.00	0.430
Mediator to Dependent	0.837	11.346	0.00	

The values of the direct and indirect effects of the mediating variable (generative artificial intelligence) on the relationship between digital human resource management and workforce agility are presented in Table (8). Results from the direct effects in the table indicate that the effect of the independent variable on the dependent variable was (0.079); the effect of the independent variable on the mediator was (0.513); and the effect of the mediator on the dependent variable was (0.837). The standardized values were used to represent these effects. All these effect values (coefficients) were noted to be statistically significant, since all were less than 0.05. This means that the mediator variable has an indirect effect, as all of the significance levels were statistically significant. This highlights the partial mediation between DHRM and workforce agility by generative AI. Based on the above, the fourth hypothesis is rejected in its current form and is reformulated in the following way: "There is a mediation effect of Generative artificial intelligence between DHRM and Workforce agility in the case of Iraqi telecommunications companies."

Figure (5) illustrates the effect of generative artificial intelligence as a mediating variable on the relationship between digital human resource management and workforce agility.



Summary of Findings and Discussion

The results showed that the HRM level of the employees in the Iraqi telecom companies was moderate in the digital HRM dimension. This is partly due to the fact that Iraqi telecoms firms have started to implement aspects of the digital approach in HR management, but they have not yet done so to the extent necessary for complete digitalization of HR. This can be related to differences in the

extent of digital infrastructure, the electronic systems employed to administer employee information, and the level of integration between the human resource systems and other administration systems. This is a moderate level that could also indicate that traditional methods are still being partly used in tandem with digital applications, in some HR processes, for example, recruitment and selection, appraisal, training or performance management. Furthermore, the digitalization of human resource management is not only about using electronic software and applications, but also entails rethinking processes and functions and boosting human resource staff digital skills. Hence the moderate level is a transitional one towards digitalization which will need more investments, organizational and technological developments. This is as expected, given the fast-changing technological landscape, the competition nature of the telecomms industry and the fact that digital transformation in HR is not an option for the organisation. As a consequence, enhancing the digital HRM can help in gathering more precise and timely data, better employee-related decision-making processes, and expand the capacity of companies to adapt to the changes in the work environment.

The results showed also that the employees' opinion of the agility level of the workforce in the telecommunications companies in Iraq was moderate. This is because while firms have some resources to support workers' adjustment to changes in the job environment such resources are not yet adequate to enable workers to adjust quickly and continually to the changes in this environment. This may be due to the fact that the level of agility of the workforce involves a range of practices including multiskilling, ongoing training, the readiness to relocate employees and tasks, the capacity to work under variable conditions and the implementation of new technologies in work. If the training program is not conducted on an ongoing basis or job and task management systems are inflexible, then workers may not be able to adapt their skills and adapt to changes quickly enough.

The study results also indicated that the usage of generative artificial intelligence (GAI) among Iraqi telecommunications organizations (ITCOs) was medium. This is a moderate level, and may be attributed to the nature of Iraqi telecommunications companies that are technologically dynamic and competitive, and their employees have to update their skills continuously. Based on these findings it is clear that there is a strong basis of organizational and workforce agility; however, it must be reinforced by training, job redesign, skills development, and providing a work environment that facilitates change.

The results showed that the Digital HRM has a statistically significant impact on increasing the dynamism of the workforce in Iraqi Telecommunications Companies. The discovery suggests that HR practices in the digital era, as companies are increasingly adopting them, are linked to their capability of establishing a more agile and adaptable workforce. This is due to the fact that digitalization gives HRM access to more data about employees and allows the analysis of these data, making it possible to identify existing skills and skill gaps, monitor employee performance and identify training needs more quickly and accurately. Digital systems also enable reallocation of the human resources to respond to the changing needs in accordance with the change, and enable the ability of the employees to move between tasks and roles.

The results also showed that digital human resource management has a significant impact on the use of generative artificial intelligence in Iraqi Telecommunications Companies statistically. This could be attributed to the fact that modern HRM practices build an appropriate organisational and human environment that allows the adoption of modern technologies, such as generative artificial intelligence. With digital human resource management, it is possible to recognize the digital capabilities of employees and know their training needs, as well as create training programs to help build competency in the field of artificial intelligence. Also, the implementation of digital systems in HRM boosts the technological culture in the organisation, which further helps in accepting the new technologies by the HR employees.

The results also showed a statistically significant impact of G-AI in improving the agility of the workforce in the Iraqi telecom companies. This is because generative AI equips workers with tools that allow them to accomplish tasks faster, find information, brainstorm ideas and create content, and solve problems.

The results indicated that the link between digital human resource management and workforce agility of Iraqi telecommunications organizations is mediated by generative artificial intelligence. This is one of the most significant findings of the research as it proves, that the influence of HRM on workforce

agility can not only be direct, but also indirect via the increased application of generative AI. This can be understood because HRM develops an organization, human, and technological context to enable the application of generative artificial intelligence (GAI), and GAI serves as a transformative mechanism that converts these digital capabilities into outcomes concerning workforce agility. Human resource management systems that rely on digital tools and systems to detect skills and training gaps and monitor employee performance can more accurately pinpoint areas where employees might benefit from generative AI.

Conclusions and Recommendations

Based on the study findings, the following recommendations can be made:

To move up the level of digital HRM in Iraqi Telecommunications Companies from moderate to advanced level through building integrated digital systems which include all the functions of HRM.

1. Build up the digital infrastructure for Human Resource Management and AI, and integrate between Human Resource systems, databases and other administrative systems.
2. Develop a clear plan for the use of generative AI within the telecommunications industry, including the scope of use, goals, controls, accountability, and means of tracking results.
3. Train employees continuously in artificial intelligence and digital technologies with a focus on the practical application of generative artificial intelligence, analysis of the results created by generative artificial intelligence, verifying the accuracy of the results generated by generative artificial intelligence and responsible use of generative artificial intelligence.
4. Improve workforce agility by running multi skills training initiatives, employee reskilling and offering greater opportunities for ongoing learning and development, allowing staff to shift between tasks and roles as needed to meet the job demands.
5. Leverage generative artificial intelligence for training and development, for example, creating training content with GAI, giving employees knowledge support with GAI and designing training programs for each employee using GAI. Also, digital HR information can be used to forecast skill needs, enabling companies to proactively respond to technological shifts instead of reacting to them once they happen.

Scientific Contribution of the Study

The scientific contribution of this study is that it provides a model that connects three variables of greater importance in the current business context: Digital Human Resources Management (dHRM), Generative Artificial Intelligence (GAI) and Workforce Agility (WA). The study is also exploring the mediating effect of Generative AI on the link between HRM and Workforce agility. This isn't just about the use of electronic systems and applications in HRM, it's about how HRM can be a more strategic way of building a more agile workforce.

Moreover, the research provides a welcome explanatory component as it shows how the benefits of digital transformation in HRM can be channelled into increased agility of the workforce through the use of generative AI.

The scientific contribution of the study is especially important in the Iraqi context, especially in the field of telecommunications companies, because it has a positive impact. It offers empirical insights into the extent of adoption of digital HRM, generative artificial intelligence, and workforce agility, as well as elucidates the nature of the relationships between these. This adds to the enrichment of Arabic literature on digital transformation, human resource management, and artificial intelligence, especially as the combination of the three variables and analysis of the intervening role of generative artificial intelligence is a relatively new research approach.

The study also makes theoretical and practical contributions that contribute to the transposition of the HRM approach from a traditional one into an approach based on the use of data and intelligent technologies, highlighting that agility cannot be achieved with technology alone, but it can be achieved with the integration of HRM with the skills development of employees.

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