International Journal of Social Science Research and Review

http://ijssrr.com
editor@ijssrr.com
Volume 8, Issue 6
June, 2025
Pages: 1-15

The Impact of Digital Leadership on Employee Digital Performance in Manufacturing Organizations in Iraq: The Mediating Role of Digital Maturity

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http://dx.doi.org/10.47814/ijssrr.v8i6.2653

Abstract

This study aims to investigate and analyze the impact of both digital leadership and digital maturity on digital performance in the Iraqi industrial sector. This research comes in light of the rapid transformations towards digitization and technological innovation witnessed by industries and organizations worldwide. Drawing on theoretical literature and previous studies, the study seeks to understand the relationship between these three variables in the context of the Iraqi industrial environment. To achieve the study objectives, a questionnaire was used as the primary tool to collect data from managers working in Iraqi industrial companies. The sample size for the study was 121 managers. The collected data will be analyzed using appropriate statistical methods to examine the impact of digital leadership and digital maturity on the digital performance of these companies. The study results are expected to contribute to providing practical insights on how to enhance the digital performance of Iraqi industrial companies by developing digital leadership practices and raising their levels of digital maturity. Additionally, the study seeks to identify the challenges and opportunities facing Iraqi industrial companies in their journey towards digital transformation and provide practical recommendations for managers and decision-makers on how to adopt effective digitalization strategies in line with the characteristics of the local industrial environment.

Keywords: *Digital Leadership; Digital Maturity; Employees Digital Performance*

1. Introduction

The COVID-19 epidemic has rocked economies worldwide and changed corporate paradigms recently. This revolution has affected marketing strategies, production methods, and consumer behaviors. In this setting, a new era of digital technology has emerged, which is influencing the business world and

drastically changing the landscape of innovation and organizational administration. As a result of these changes, businesses are under pressure to upgrade their resources to maintain competitive advantages. Additionally, researchers quickly investigate and identify factors that support organizational needs. (Al-Omush,et al,2023)."Furthermore, examples of the proliferation of digital technology and its influence in initiating a new epoch of industrial and economic transformation that fundamentally reshapes organizational management include the emergence of artificial intelligence (AI), block chain technology, big data, edge computing, cloud computing, and 5G". (Mollah, M,et al,2025). Corporate investments in digital technology are projected to increase by 2023. exceed $7.4 trillion, expanding at a rate above 50%, according to a poll conducted by the International Data Corporation Statistical data reveals that SMEs comprise around 90% of all firms worldwide. Their intrinsic adaptability has established them as the principal accelerator for economic growth, significantly influencing the development of the global economy. (Wang,2024) The shift to remote work is increasingly seen as a major future business trend. ((Hill et al., 2022). Thus, during the digital transformation process, organizations must align the interests of their employees with the use of scientific management concepts. Organizations must urgently address the critical issue of improving employee satisfaction and motivation.. (Blahopoulou,et al.,2022) The effective use of digital technologies by employees is essential for successful digital transformation and job performance. Employers highly value digitally literate employees for their capacity to handle data, communicate information creatively, resolve issues, and develop new procedures and products. (Colbert,et al,2016) "Nonetheless, prior studies on digital transformation have mostly focused on organizational performance metrics, including digital innovation and big data analytics capabilities, while insufficiently considering the achievement of digital performance at the person level. A thorough database analysis reveals that there are currently few publications about employee digital performance".(Wang,et.al,2024) Additionally, prior studies have shown that digital self-efficacy This research examines the relationship between transformative supervisory leadership and employee digital performance, with a data-driven culture acting as a mediator in the interaction between senior management and employee digital performance.

Iraqi enterprises in the "digital era require leaders who can define clear objectives and strategies for digital transformation, while also motivating and equipping employees to develop the digital competencies necessary for sustainable success. Additionally, it is essential for senior management in Iraqi enterprises to gain a comprehensive understanding of the digital transformation process to effectively address its challenges. Organizations are currently experiencing volatility, uncertainty, complexity, and ambiguity. Organizations must transition from traditional leadership to digital leadership to successfully innovate and maintain competitiveness in the digital landscape, thereby promoting sustainable development.. This essay contends that leadership in digital environments is essential for optimizing digital performance and requires immediate focus to comprehend the technological challenges arising as unintended consequences of digitalization. Digital maturity necessitates that a leader examine the attributes essential for alleviating techno-stress. "Research indicates that leadership support for employees is crucial in alleviating techno-stress and its effects"". (Rohwer et al., 2022) However, research also indicates that the traditional skill sets of leaders are insufficient for thriving in a digital transformation context (Cortellazzo et al., 2019) Therefore, we contend that leaders need to demonstrate greater maturity in their digital skills. These skills are essential for enhancing digital performances and identifying suitable responses. Since digital leadership and digital performances are so current, it is crucial to examine their junction, which has not received enough attention up to this point. By conceptually examining the role of leaders' emotional intelligence (EI) in digital performances through digital maturity, this article hopes to pave the way for additional research on the subject. We came up with the following research question to direct our further investigation: In digital maturity, what part do digital leaders play in creating digital performances? We first provide a thematic literature analysis to respond to this topic (Pare´ et al., 2015). Given this background, the research will examine industrial enterprises in Iraq to investigate how digital maturity functions as a mediator between digital leadership

and digital performance. One major area where research is lacking is proof that digital leadership helps with digital performance and maturity. Strategies for bolstering digital performances.

This research adheres to this framework. The initial section provides a comprehensive review of scholarly sources about digital leadership and digital maturity in enhancing digital performance, facilitating a deeper grasp of the study's topic area. In the subsequent section, we delineate the selected research approach. The final section delineates the study's findings, illuminating the challenges of digital leadership and digital maturity in the digital performance of Iraqi enterprises, with prospective remedies derived from the established model. The findings are derived from the study's results, together with their practical implications and limits.

2. Literature Review and Hypothesis Development

"The emergence of transformative technologies such as big data analytics (BDA), machine learning (ML), artificial intelligence (AI), and the internet of things (IoT) has profoundly influenced government frameworks, labor dynamics, organizational cultures, and work practices. This technological development indicates a need for social systems and technological activities to align with the mass customization of products or services. Organizations need to enhance their dynamic capabilities to effectively utilize the contemporary technologies facilitating their digital workplace transformations. These encompass the enhancement of IT skills, the formulation of dynamic policies for the digital workplace, and the improvement of innovation capabilities to respond to the evolving business landscape". (Chatterjee.et al,2023) The markets are constantly changing due to digitization, which also gives organizations new opportunities. RBV and DCT are especially well-suited to understanding how 'digital leadership leads to exceptional performance and establishes the foundation for corporate growth (Barney, J. B.,2001) It is possible to view digital leadership skills as an expression of dynamic potential in and of themselves. They cover a range of dynamic activities, such as seeing, grasping, and transforming; examples include spotting new digital opportunities, adapting to digital transformation, and using digital technologies to create novel goods, services, and procedures (Khin,2019) Rapid growth has accelerated workplace transformation. The rapid growth of digital technology has necessitated the development of greater digital skills. The relationship between leaders' digital capabilities and staff performance has been extensively researched, but the findings are inconsistent, and organizational solutions for improving sustainable employee performance are unclear. (Wang,et.al,2024)

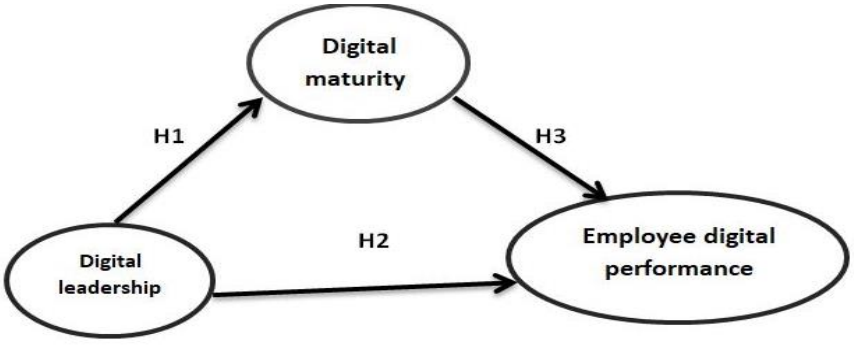

Figure 1. Research Conceptual

2.1 Digital Leadership and Digital Maturity

"Enhancing and raising digital maturity should be the ultimate goal or outcome of the digital transformation process. As a result, the first step is to develop roadmaps and rubrics to assess how well the organization is currently using information technology (IT) and information and communication

technology (ICT). To gauge an organization's progress in its digital transformation process, experts have developed digital maturity models". (Williams et al,2019) One of the key drivers of digital transformation is the leadership style. transformation. Leaders and leadership styles are crucial to the start and effective completion of the protracted and intricate process of digital transformation, as is extensively covered in the literature (Rıfat Arık,et al,2022) according to (Alma,et al ,2022) Digital leadership has a positive impact on firms' digital maturity. Digital leaders are providing a nurturing environment for digital transformation. Digital leaders, who are sole decision-makers in small businesses, have a significant impact due to their agility and ability to quickly make technology decisions.

In same context (Kwiatkowski,et al,2020) Leaders with digital maturity possess extensive knowledge, demonstrate entrepreneurial characteristics, and lead initiatives for digital transformation. Executives and leaders significantly influence employee performance, thereby affecting the implementation of digital transformation initiatives. The study's results indicated that executives in digitally mature firms demonstrated a comprehensive understanding of technology, made decisions grounded in facts and data rather than intuition, and displayed an entrepreneurial mindset towards their staff. (Rudito,et al ,2017) Digital leadership is essential for the success of organisations. Furthermore, the attainment of digital maturity may be facilitated by leaders who exhibit specific capabilities, including a digital leadership style. Addressing environmental changes necessitates leaders possessing digital leadership qualities, including the foresight to formulate a vision, the courage to capitalise on opportunities, and the capacity to adapt to rapid change.

In addition, (Kwiatkowski,et al,2020) The study reveals that digital leaders foster a culture of speed and transparent communication. The degree of open communication varies significantly between digitally mature companies and those that are still developing. Specifically, our results show that the most open and transparent communication occurs within digitally advanced companies. Following the prior discourse, we assert that a substantial positive correlation exists between digital leadership and digital maturity, and we offer the subsequent hypothesis.:

H1. There is a positive relationship between digital leadership and digital maturity for companies in Iraq.

2.2 Digital Leadership and Digital Employee Performance

To address the deficiency of a comprehensive description of digital leadership in earlier works, they define it as follows:

"Digital leadership is a complicated concept that aims to create a cutting-edge, customer-centered, digitally enabled business model by (1) changing the digital leader's job, abilities, and approach; (2) realizing a digital organization, including governance, vision, values, structure, culture, and decision processes; and (3) adjusting people management, virtual teams, knowledge, communication, and collaboration on the individual level." (Jameson,et.al,2022) Several other writers, including those from the business world, acknowledge the necessity for a comprehensive definition of digital leadership. This applies to the entire organization. El Sawy et al. (2016) "The digital transformation of the company involved a decade-long evolution in thinking, strategy, and culture. This shift encompassed a re-evaluation of traditional practices, the adoption of innovative technologies, and a commitment to fostering a culture that embraces change and agility. According to our definition, digital leadership means acting appropriately for the organization's and its business ecosystem's strategic success in digitalization. Digital leadership entails adopting new perspectives on corporate platforms, IT, company strategy, business models, mindsets and skill sets, and the workplace".

El Sawy et al. (2016) Additionally, note that there is a lack of widespread agreement or understanding regarding the concepts of digital leadership. A 2015 poll of 4800 management experts in

the United States is cited, which found that strategy, culture, and talent development are more important for successful digital transformation than technological challenges. In the same context, information technology can be a part of a digital leadership style, from work ethic to legal concerns in the field to the introduction and operation of hardware (computers, smartphones, modems, and touch screens) and software (software, apps, and operating systems). By comparing followers' level of readiness for the leadership process with indicators of digital information readiness and competence, it is possible to determine followers' preparedness for digital information-based enterprises. This is inextricably linked to the leadership's strategy for implementing digital transformation within the company they oversee (Turyadi,et al,2023) Other rules, like those about the leadership evaluation of an employee's job outcomes, empathy for employees, and handling of complaints from subordinates, are also at the evaluation stage. The description above suggests that the digital leadership style is a collection of characteristics or actions that leaders use to persuade followers to achieve organizational goals and objectives. It is also possible to define a leadership style as a preferred and frequently employed pattern of behavior and tactics. Similarly, the public finds it easier to receive information on media skills in the digital age due to its rapid availability (nafiuddin,2015) **according to (Zhong, L. 2016) the dimension of DL are Vision Administration, Advanced Learning Society, Excellence in professional practice, far reaching strategic improvement, Advanced Citizenship**.

On the other hand, the cornerstone of digital literacy for safely and effectively navigating the digital environment is digital performance (DP). This entails using ICT for work, learning, self-improvement, and social participation with assurance and critical thinking. It offers the background knowledge, abilities, and attitude required to work and learn in the knowledge society.

Using a three-stage approach (Grosheva & Bondarchuk ,2019The study conducted a comprehensive analysis of diagnostic tasks related to the digital transformation of the cyber sector. The first step involves developing a strategic plan to assess the company's digitalization. Secondly, the company evaluates its activities and uses a digital solution to enhance its profile. Finally, strategic development and current digitalization activities evaluate personal capability. Nonetheless, for ongoing procedures, digital capabilities must be strengthened. (Varshney ,2020) We conducted an empirical study where we selected the majority of new businesses within the context of the digital transformation process to motivate and develop personnel. The employee learns new skills and improves their performance. their digital skills after this approach—protecting their job in the digital age. The workers eventually become digital natives as a result of this. However, the embedded staff primarily paid attention to the technical aspects of digitization. According to Okeji et al. (2019We conducted a qualitative study to enhance digital literacy abilities and explore library capabilities across various social media platforms. With this focus, the competencies shift from "what" to "how." An employee must complete the duties assigned to them in order to meet the employer's organizational needs. Therefore, we use ratings to assess the knowledge and proficiency of digital literacy. However, sophisticated digital settings are not the focus of this study. Digital employee performance is the individual’s accomplishment of his/her duties and roles with the help of electronic technologies in a certain period, which is related to the value of the organization in which the individual works. (Khansa & Ferdian,2021) Furthermore, digital employee performance refers to the employee’s accomplishment in technological work based on the requirements of the job (Bangon, 2012) Based on the previously provided explanations, it is concluded that digital employee performance is the employee’s accomplishment in performing his/her duties and roles, which are measured within a certain period based on pre-determined criteria.

Digital leadership and digital employee performance are increasingly significant in today’s digital-driven business environment. Digital leadership shapes how employees adapt to and thrive in a digitally transformed workplace. Leaders who effectively use digital tools and technologies to streamline processes, enhance communication, and provide real-time feedback can significantly improve employee engagement and performance. By fostering an environment of continuous learning and innovation, digital

leaders enable employees to develop the necessary skills to meet the challenges of a digital-first world. Moreover, digital leadership helps align organizational goals with individual performance by creating clear digital strategies and performance metrics that ensure that employees remain motivated and productive. As a result, employees in organizations with strong digital leadership are more likely to exhibit higher levels of creativity, collaboration, and satisfaction, which directly contributes to improved overall performance. We contend that a substantial positive correlation exists between digital leadership and digital employee performance, and we suggest the following hypothesis.:

H2. There is a positive relationship between digital leadership and digital employee performance for companies in Iraq.

2.3. The Mediating Role of Digital Maturity and Digital Performance

"The fourth industrial revolution is a process in which all tasks and functions are done by self-driving systems. This means that the whole process, from placing an order to delivering it, can be fully controlled within the life cycle of a product, as desired by customers. This allows for the highest level of quality to be achieved in meeting customer demands and expectations (Kalender.et al,2024) However, Industry 4.0 is expected to transform not only one domain but also people, companies, and nations. It is anticipated that every scientific mutual understanding will lead to a significant transformation in the discipline. effect. In this continuously shifting business environment, a rapid digitalization era has begun. Companies have realized that they must commence their transformation initiatives as soon as possible to be competitive in the digital age. As a result of digitalization, the idea of digital transformation has entered company visions. "Digital transformation" refers to the process of redesigning organizations, economies, businesses, and individuals using digital tools."(Rachinger,et al,2019) Organizations require agility, speed, flexibility, and the capacity for rapid transformation to pursue emerging business opportunities and adapt to the swiftly evolving landscape. Digital maturity serves as an indicator of a company's proximity to its desired stage of digital transformation within the global business market. Consequently, businesses can assess the outcomes of the transformation and determine the nature of the digitization process present in a competitive landscape. (Berghaus & Back,2016) A viable, feasible, and usual development path toward the desired situation is depicted by maturity models, which are instruments that allow the assessment of the current position. particularly during the process of digital transformation".

Digital maturity involves aligning the organization to effectively compete within the progressively digital landscape. The term “digital maturity” is of particular interest in the work of organizations. Companies with greater digital maturity achieve better organizational performance. Researchers see the concept of digital maturity as referring to digital capabilities such as strategy, technological expertise, business models, and customer experience. Additionally, it encompasses leadership capabilities like governance, change management, and culture. (Rossmann, 2018) Fashionistas are companies with strong Despite having digital capabilities, the Conservatives lack effective leadership; they have strong leadership but poor digital skills. To attain digital mastery, businesses must cultivate both capacity dimensions, according to Westerman et al. (2014). Businesses Those who do this demonstrate superior corporate performance, as indicated by metrics like product margins, earnings before interest and taxes, and revenue per employee. Westerman et al. (2014) have widely incorporated their model into management practice. KPMG, McKinsey, and Boston Consulting Group are among the consulting firms that have created a corresponding framework to gauge digital maturity. These consulting firms use this framework to evaluate the level of digital maturity among their clients. According to Westerman et al. (2014) and Rossmann (2018), The assessment of digital maturity encompasses strategic capability, leadership capability, market capability, operational capability, people and expertise capability, and governance capability.

BCG study indicates that enhanced digital maturity leads to higher performance, while cost efficiency affects product quality. and client contentment (Eremina et al., 2019) according to Çallı (2021) The digital maturity of companies significantly influences organizational performance by facilitating rapid responses to opportunities and threats. The findings support the role of digital maturity and organizational agility in improving corporate performance. We contend that a substantial positive correlation exists between digital maturity and employee performance in the digital realm., and we propose the following hypothesis:

H3. There is a positive relationship between digital maturity and digital employee performance for companies in Iraq.

3. Research Methodology

3.1 Population and Sample Study

A sample of managers from Iraqi industrial and service enterprises participated in this poll. This study focuses on senior, middle, and first-level managers because they are more familiar with their organization's policies and procedures and collaborate more closely with senior management to assess their organization and its executives than employees. Since managers of the firms this study was targeting did not have access to the sample frame with all of the members and their details, purposeful sampling was employed. Since randomization is difficult, we recommend purposeful sampling when working with large populations. (Etikan et al., 2016). Respondents from 95 firms filled out 137 questionnaires. However, the survey eliminated 16 forms due to their failure to meet the 85% completion requirement for managers. Therefore, we collected data from 121 managers across 90 firms for this exploratory study .

3.2 Data-collection Methods

This research is classified as a causal study as it seeks to examine the influence and link between the variables of interest. The chosen research method that aligns with this objective is the quantitative-data approach, as causal studies are inherently quantitative. The quantitative approach and research strategy of administering an online survey was used to measure the variables, as it facilitates quick access to respondents. Furthermore, this expedited data gathering, as online surveys are recognized as one of the most efficient methods for obtaining replies (Saleh & Bista, 2017). This study employed cross-sectional research, gathering data at a single point in time. Google Forms, , enabled the creation of the questionnaire. We disseminated the online questionnaire link through email and many social media sites. Furthermore, via these methods, the questionnaire forms were immediately dispatched to each participant in the sample to prevent responses from those outside the designated group. The questionnaire is segmented into four sections, each intended to assess a certain variable in the study. The initial section is designated for inquiries regarding demographic information, including gender and marital status. The questionnaire consists of 20 items, all of which are close-ended questions, enabling replies that aid data analysis according to the chosen methodology of this study. The current study assesses "digital leadership" using 12 items derived from Zhong, L. (2016) to evaluate the digital capabilities of organizational leaders. To assess "digital maturity," 8 items were selected from Westerman et al. (2014), as this study deemed them suitable for measuring digital maturity in organizations. Furthermore, to assess "employee digital performance," this study integrated elements from two distinct questionnaires developed by prior researchers. An interval scale was chosen to ensure robust measurements for all questions in the questionnaire. A five-point Likert scale was employed, spanning from "Strongly agree" to "Strongly disagree." The questionnaire's external validity was established by pretesting, during which it was disseminated to and endorsed by a specialist in organizational behavior.

3.3 Data-analysis Methods

This study analyzed the data to meet the research objectives and address the research questions. The analysis was conducted using IBM SPSS. The demographic data of the respondents, collected for analytical purposes, is presented in tables to illustrate the frequencies of gender and marital status among participants. Descriptive statistical measures were employed, including standard deviation and measures of central tendency, particularly the mean. A Cronbach's alpha test was conducted to verify the reliability of the constructs. This study did not employ control variables, as its objective was not to create a predictive model for the dependent variable based on the independent variable. Instead, it concentrated on identifying potential relationships among the variables of interest. A Pearson's correlation coefficient test was conducted to measure the statistical relationships among the variables of interest. To validate the hypotheses concerning the direct relationships of interest, three linear regression tests were conducted. Finally, a mediation analysis was performed to test the hypothesized mediating relationships in this study.

4. Finding and Discussion

4.1 Demographical Findings

Tables 1 and 2 present the demographic characteristics of the (90) respondents. For analytical purposes, the demographic characteristics were gathered focusing on gender and marital status.

Table 1. sample demographical characteristics: gender

	Frequency	Percent	Valid percent	Cumulative percent
Male	53	59%	59%	59%
Female	37	41%	41%	
Total	90	100%	100%	100%

Table 2. sample demographical characteristics: marital status

	Frequency	Percent	Valid percent	Cumulative percent
Single	7	8%	8%	
Married	83	92%	92%	92%
Total	90	100%	100%	100%

The sample, as detailed in Tables 1 and 2, comprises (90) currently employed individuals, in accordance with the methodology outlined. The data indicates that the male participants in the questionnaire outnumber their female counterparts, with females accounting for 41% and males for 59% of the sample. The data indicates that the proportion of single respondents was significantly lower than that of married individuals, with only 8% identifying as single compared to 92% who were married.

4.2 Descriptive Statistic

"This section examines the variables associated with each response, utilizing the mean as a measure of central tendency and the standard deviation as a measure of dispersion. The methodology employed a 5-point Likert scale for manager responses, where 1 indicated strongly agree and 5 indicated strongly disagree. When (3) is considered the midpoint, a mean rating below 3 indicates a positive assessment, while a mean at or above 3 reflects a negative rating. According to Table 3, each variable received a positive rating. All standard deviation statistics were relatively low, each remaining significantly below 1.0. Table 3 presents a summary statistic for each variable".

Table 3. Descriptive statistic

Variables	N	Mean	Std. Deviation
Digital leadership	90	2.23	0.639
Digital maturity	90	2.22	0.736
Employee digital performance	90	2.06	0.656

4.3 Reliability Analysis

The reliability of the constructs of interest was tested to determine and ensure internal consistency. This was achieved through the conduction of a Cronbach's alpha test, which was accomplished through the selection of the "reliability" command on SPSS. Moreover, this specific parameter pertains to a value range from 0 to 1. As the value approaches the upper limit of this range, (1), internal consistency and the reliability of the items on the study's questionnaire scale increase (BrizPonce, 2017). The guideline for interpreting Cronbach's alpha values, as established by George and Mallery (2003), is as follows: "$\alpha > 0.9$ = excellent, $\alpha > 0.8$ = good, $\alpha > 0.7$ = acceptable, $\alpha > 0.6$ = questionable, $\alpha > 0.5$ = poor, $\alpha < 0.5$ = unacceptable." This study deemed 0.7 as the "acceptable" number for Cronbach's alpha. The results of the reliability test are illustrated in Table 4.

Table (4) Reliability Test

Cronbach's alpha	**No.of items**
0.819	**20**

Table 4 clearly demonstrates that the dependability statistics exceed the minimal permissible threshold of Cronbach's alpha. The researchers of this study may affirm that all constructs are reliable, given the acceptable internal consistency.

5.4 Hypothesis Testing

5.4.1 Correlations of Variables

Pearson's correlation coefficient test effectively measured the statistical correlations among the variables. The correlation coefficient, known as Pearson's r, ranges from +1 to -1, where +1 indicates a perfect positive correlation and -1 indicates a perfect negative correlation, each representing the maximum strength of their respective relationships. Furthermore, a score of 0 indicates the lack of any form of linear association. As illustrated in Table 5, the (p-values) that relate to relationships of relevance in the model of this study are all less than 0.05, indicating significant correlations.

However, due to the results of the correlation analysis, the researchers were able to achieve an additional finding, as it can also be noted that there is a statistically significant correlation between digital leadership and the dependent variable of employees' digital performance. Additionally, it was found that there is a direct statistical correlation between the mediator variable (digital maturity) and the dependent variable (employees digital performance).

The analysis of the three hypothesized direct relationships revealed that the strongest positive correlation was between digital maturity and employee digital performance, with a correlation coefficient of ($r = 0.864$). A notable positive direct correlation exists between digital leadership and employees' digital performance ($r = 0.820$). A strong positive correlation exists between digital maturity and digital leadership ($r = 0.801$).

Table 5 correlation matrix

Correlations				
		Digital leadership	Digital maturity	Employee digital performance
Digital leadership	Pearson Correlation	1	0.731*	0.820**
	Sig. (2-tailed)		0.031	0.000
	N	90	90	90
Digital maturity	Pearson Correlation	0.801*	1	0.864**
	Sig. (2-tailed)	0.052		0.000
	N	90	90	90
Employee digital performance	Pearson Correlation	0.810**	0.731**	1
	Sig. (2-tailed)	0.000	0.004	
	N	90	90	90
* Correlation is significant at the 0.05 level (2-tailed).				
** Correlation is significant at the 0.01 level (2-tailed).				

5.4.2 Linear –regression Test

To examine the proposed direct relationships, two distinct linear regression analyses were performed, addressing each relationship and dependent variable independently. Tables 6 and 7 present the results concerning the linear relationship between digital leadership and digital maturity. Table 6 indicates that 8.6% of the variation in the dependent variable, digital maturity, is attributable to changes in the independent variable, digital leadership, alongside the constant, as evidenced by R Square = 0.086. Furthermore, Table 7 demonstrates a significant relationship, indicated by a p-value of less than 0.05, and a positive correlation, with Beta = 0.293. This demonstrates the influence of digital leadership on the digital maturity.

Table 6 Linear-regression model summary: digital leadership impact on digital maturity

Model summary				
Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	0.731[a]	0.086	0.67	0.7114
A Predictors :(constant) digital leadership				

Table (7) Liner –regression results: digital leadership impact on digital maturity

Coefficients [a]					
Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std.Error	Beta		
(constant)	1.466	0.369		3.976	0.000
Digital leadership	0.337	0.157	0.293	2.123	0.039
A dependent variable: digital maturity					

Tables 8 and 9 present the results of the analysis concerning the linear relationship between digital maturity and employee digital performance. Table 8 indicates that 25.8% of the variation in the dependent variable (employee digital performance) is attributable to changes in the independent variable (digital maturity), as reflected by a R Square value of 0.258. Table 9 demonstrates a significant relationship, indicated by a p-value less than 0.05, and a positive correlation, with Beta equal to 0.452. This demonstrates a significant influence of digital maturity on employee digital performance.

Table 8 Linear-regression model summary: digital maturity impact on employee digital performance.

Model summary				
Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	0.519[a]	0.258	0.244	0.54381
A Predictors :(constant) digital maturity				

Table (9) Liner –regression results: digital maturity impact on employee digital performance .

Coefficients [a]					
Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std.Error	Beta		
(constant)	1.049	0.267		4.043	0.000
employee digital performance .	0.452	0.120	0.519	4.214	0.039
A dependent variable: on employee digital performance					

Tables 10 and 11 present the findings of the examination of the linear correlation between digital leadership and employee digital performance. Table 10 indicates that 14.2% of the variation in the dependent variable (workers' digital performance) is attributable to changes in the independent variable (digital leadership), along with the constant, as seen by R Square = 0.142. Furthermore, Table 11 demonstrates a significant link, evidenced by a p-value less than 0.05, along with a positive correlation indicated by Beta = 0.377. This demonstrates the influence of digital leadership on employee digital performance.

Table 10 Linear-regression model summary: digital leadership impact on employee digital performance.

Model summary				
Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	0.377[a]	0.142	0.123	0.54340
A Predictors :(constant) digital leadership				

Table (11) Liner –regression results: digital leadership impact on employee digital performance.

Coefficients [a]					
Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std.Error	Beta		
(constant)	1.300	0.205		6.325	0.000
employee digital performance .	0.2484	0.088	0.377	2.818	0.059
A dependent variable: on employee digital performance					

5.4.3 Mediation Analysis

A mediation study was done to examine the proposed mediating relationships using techniques developed by Andrew F. Hayes. The results of the mediating function of digital maturity between digital leadership and employee digital performance are shown in Tables 12 and 13.

Table 12 mediation analysis

Y	**Employees digital performance**
X	**Digital leadership**
M	**Digital maturity**
Sample size	**90**

Table 13 effect on digital leadership and digital maturity on employee digital performance

Outcome variable : Employees digital performance		
Standardized coefficients	Coeff.	p
Digital leadership	0.149	0.0424
Digital maturity	0.5624	0.000

Table 13 demonstrates that digital maturity (the mediator) significantly influences employees' digital performance, with a coefficient of 0.5624 ($p < 0.05$). Furthermore, a substantial direct effect of Digital Leadership (the independent variable) on Employees' digital performance was evidenced, with $p < 0.05$. This demonstrates that digital maturity completely mediates the relationship between digital leadership and employees' digital performance.

5.5 Summary of Results

Upon thorough examination of the data utilizing correlation, linear regression, and mediation analysis, the subsequent findings were derived. The influence of digital leadership on digital maturity is notably positive, supporting the acceptance of H1. Furthermore, the influence of digital leadership notably enhances the digital performance of employees, thereby supporting H2. Furthermore, the digital maturity of leaders has a direct influence on their digital performance (accepting H3).

5. Conclusions, Practical Implications and Future Research

We conducted this study to investigate and evaluate the influence of digital leadership on employees' digital performance, using digital maturity as a mediating variable. The findings from the descriptive analysis indicate the presence of digital leadership. Iraq's manufacturing enterprises have demonstrated excellent execution. We categorize the digital maturity of company management as very high, and the digital performance of personnel as very strong.

Digital leadership (X) significantly influences digital maturity (Z)
Digital leadership (X) significantly influences employees digital performance (y)
Digital maturity (Z) significantly impacts employee digital performance (Y)
Digital leadership significantly impacts employee digital performance by enhancing digital maturity.

We anticipate that future research will establish variables for digital maturity. Research on the topic of digital maturity is still limited. Further research may address digital leadership, digital transformation, digital creativity, and digital culture. The research will be intriguing if conducted inside the SMEs sector, as it encompasses the largest business entities in Iraq. The issues faced by SMEs in the digital era are noteworthy for research.

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