



The role of artificial intelligence as a mediating variable between digital leadership effectiveness and achieving institutional excellence

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Abstract: Objective: This study aims to examine how digital leadership (DL) affects institutional excellence (IE), with a particular emphasis on the mediating role of artificial intelligence (AI) in the corporate context. **Methodology:** This study adopted a descriptive–analytical approach. A specially designed questionnaire was distributed to collect the study data from 298 employees working in Jordanian telecommunications companies. The data were analyzed using the SPSS and AMOS (version 22) software packages. **Key Findings:** The results revealed that the dimensions of digital leadership (data vision, data-driven decision-making, virtual collaboration, and remote leadership) have a statistically significant impact on enhancing institutional excellence (excellence, creativity, customer satisfaction, and continuous improvement) through the mediating role of artificial intelligence. **Conclusions:** The study highlights the importance of digital leadership and artificial intelligence in enhancing institutional excellence. The implications of the study for organizational leaders and future researchers are discussed. **Recommendations:** Strengthen digital leadership capabilities and enhance the integration of artificial intelligence into administrative processes and decision-making to improve organizational performance and achieve sustainable institutional excellence.

Keywords: Digital leadership (DL), Artificial intelligence (AI), Institutional excellence (IE)

دور الذكاء الاصطناعي كمتغير وسيط بين فاعلية القيادة الرقمية وتحقيق التميز المؤسسي

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المخلص: الهدف: فحص تأثير القيادة الرقمية (DL) في تحقيق التميز المؤسسي (IE)، مع التركيز بشكل خاص على الدور الوسيط للذكاء الاصطناعي (AI) في السياق المؤسسي، **المنهج:** اعتمدت هذه الدراسة على المنهج الوصفي التحليلي، حيث تم تصميم استبانة خاصة لجمع بيانات الدراسة من 298 موظف وموظفة يعملون في شركات الاتصالات الأردنية، وتم تحليل بيانات هذه الدراسة برنامجي SPSS و-AMOS. **أهم النتائج:** أظهرت النتائج أن أبعاد القيادة الرقمية المتمثلة في: (رؤية البيانات، واتخاذ القرار القائم على البيانات، والتعاون الافتراضي، والقيادة عن بُعد) تؤثر بشكل معنوي في تعزيز التميز المؤسسي بأبعاده (التميز، والإبداع، ورضا العملاء، والتحسين المستمر) من خلال الدور الوسيط للذكاء الاصطناعي. **الاستنتاجات:** تُبرز هذه الدراسة أهمية القيادة الرقمية والذكاء الاصطناعي في تعزيز التميز المؤسسي. كما تناقش الدراسة دلالات هذه النتائج بالنسبة للقيادة الإدارية والباحثين المستقبليين. **التوصيات:** توصي الدراسة بتعزيز القدرات القيادية الرقمية وتوسيع توظيف تقنيات الذكاء الاصطناعي في العمليات الإدارية وصنع القرار، بما يساهم في تحسين الأداء المؤسسي وتحقيق التميز المؤسسي المستدام. **الكلمات المفتاحية:** القيادة الرقمية (DL)، الذكاء الاصطناعي (AI)، التميز المؤسسي (IE).

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1. Introduction

In the modern business environment, marked by rapid change and intense competition, the integration of technology and leadership has become a key driver of organizational success. The rapid innovations of digital technologies, such as artificial intelligence (AI), big data analytics, Blockchain, and virtual collaboration tools, have significantly changed the operations of the organization and the way leaders lead their institutions to sustainable performance (Peng, 2022). After the COVID-19 pandemic, organizations have been relying more heavily on technology-based management solutions to maintain continuity, achieve efficiency, and achieve long-term institutional excellence, thereby emphasizing the rising importance of digital leadership.

Digital leadership (DL) represents the shift beyond traditional leadership paradigms to the digital competencies, technological sensitivity, and strategic vision integration practices. It refers to the ability of the leaders to merge both conventional leadership competencies and the digital expertise to cope with the technological change, inspire innovation, and enhance organizational performance (Amelda & Alamsjah, 2021). According to the available studies, leaders with digital competency are more likely to navigate in complicated digital ecosystems, promote data-based decision-making, facilitate virtual collaboration, and react to disruptive environments successfully (Adie et al., 2022; Bula et al., 2023). Digital leadership, therefore, has emerged as an important organizational competency of organizations aiming to remain competitive and achieve institutional excellence, especially those operating in technology-intensive industries, including telecommunications.

In this study, Digital Leadership is theorized as a conceptual framework with four main dimensions, including digital vision, data-driven decision-making, virtual collaboration and remote leadership. The model of Excellence is a higher-order latent construct that is

represented by excellence, creativity, customer satisfaction, and continuous improvement. This conceptualization allows the overall approach to collective leadership practices in providing excellent organizational performance, as opposed to addressing individual leadership practices in isolation.

Artificial intelligence has an even more decisive influence on strengthening the relationship between digital leadership and institutional excellence. AI enhances the efficiency and innovation capabilities of organizations by enabling them to automate routine processes, analyze large amounts of data, and improve the quality and speed of decision-making (Olan et al., 2022). Nonetheless, although AI technologies are being adopted rapidly, there is still a lack of empirical research on the mediating role of AI based on which digital leadership can transform into institutional excellence that is long-term in nature, particularly in emergent economies.

Although the range of studies related to the topic of digital transformation and artificial intelligence continues to grow, many of the most topical questions have not been answered yet. Specifically, limited empirical findings define the way in which digital leadership leads to institutional excellence through the artificial intelligence facilitative process, particularly in the emerging economies and the technology-intensive industries. The current studies often study digital leadership or AI separately, thus overlooking the mediation mechanisms between leadership practices and long-term organizational performance. The proposed research aims to fill such a gap by empirically assessing the mediating role of artificial intelligence in the nexus between digital leadership and institutional excellence in the telecommunications industry.

Theoretically, the interdependence between digital leadership, artificial intelligence, and institutional excellence can be understood more easily in the context of the modern organizational and strategic theories. Digital leadership and AI may be considered as the

organizational strategic resources, which enable companies to feel the change in the environment, capture the technological opportunities, and reorganize internal activities to maintain the competitive advantage. This approach is consistent with the Resource-Based View and Dynamic Capabilities Theory, which highlight the role of intangible resources in bringing about sustainable organizational excellence, leadership competencies, and advanced digital technologies. With AI as a facilitating force, digital leaders can enhance organizational flexibility, creativity, and learning, which in turn strengthen institutional excellence in dynamic and uncertain settings.

2. Conceptual background and Literature review

The intersection of DL, digital technologies, and institutional excellence in contemporary business environments is attracting the attention of both researchers and practitioners. Research examining this complex relationship has become increasingly common in recent years, and the findings consistently demonstrate the mutually reinforcing and advantageous relationship between advanced digital leadership, digital capabilities, and long-term corporate excellence (Al-kahtib et al., 2025). Digital platforms and data analytics are essential elements of advanced digital abilities, which cover a wide variety of activities and technologies. Businesses can make full use of the potential of data-driven insights, optimize operations, and make better decisions thanks to these capabilities. By doing this, they help a business maintain its competitive edge and contribute significantly to its sustainability in various ways (Chatterjee et al., 2023).

2.1 Digital Leadership

DL shows a leader's ability to successfully guide companies through the possibilities as well as obstacles presented by digital transformation (Hoang et al., 2023). He can quickly assemble and manage teams, act proactively and constructively, and hit an equilibrium between novel and prevailing corporate areas, current

practices and customs, innovation, and integration, in addition to having updated facts and assistance in technological advancements and digital revolution. The telecom industry has long been a major contributor to the digital revolution. It is among the few industries where the growth of the web and the launch of cutting-edge online services have had a direct effect. (Chen, H., Li & Chen, 2021). The telecom industry is undergoing major changes as a result of a trend in usage patterns toward extravagant solutions.

By integrating digital technology, data, and expertise into systems and organizations, digitalization entails organizations using digital technologies more effectively to discover, generate, and release value. This enables value creation through completely new kinds of improvements. (Al-Mashraie et al., 2020) argued that during the adoption of digitization, information and ICT can contribute to higher rates of productivity growth. But they also alter how businesses operate, making it more important than ever to understand how to incorporate technology into operations to remain competitive (Andriushchenko et al., 2020). Unlike conventional leaders who work on "individually focused teams," digital leaders are primarily skilled at working in cross-functional teams. To achieve outstanding outcomes, the digital leader must collaborate closely with IT specialists and other groups, which is a leadership trait (Engelsberger et al., 2024). In the telecommunications industry, digital leaders are engaged in a continuum of mundane activities that directly support the digital transformation. These activities include the creation of a clear digital vision aligned with emerging technologies, promoting data-driven decision-making by using real-time analytics, remote collaboration of geographically spread teams, and managing the staff using remote and digital means. In addition, telecommunication companies' leaders actively promote the implementation of digital infrastructure, cybersecurity, and AI-based systems as a way of enhancing the quality of the delivered service, efficiency, and customer satisfaction.

2.2 Artificial Intelligence

(Perifanis & Kitsios, 2023) asserts that the words artificial and intelligence are combined to produce AI. It is defined as the capacity to see, reason, generate new concepts, and learn, representing something that is neither real nor natural. The study of creating intelligent robots that behave and react like humans is known as AI. According to (Benbya et al., 2020), AI is robotics' ability to perform intellectual tasks that are comparable to those performed by humans. These might involve the automation of activities like transporting and handling items, as well as understanding, sensing, resolving issues, creativity, and decision-making. For big businesses, AI is now seen to be the most significant and revolutionary new technology. Technologies related to AI have revolutionized information technology and established AI as an innovative field of computer science. The goal of this discipline is to create software and smart gadgets that can respond and interact similarly to how people do. The field devoted to empowering robots to do activities including reasoning, planning, perception, and learning is usually referred to as AI. Although this term mostly refers to "machines," it may also be expanded to include all living intelligence, including sophisticated capacities like self-awareness, creativity, and emotional intelligence (Bharadiya, 2023).

Since the majority of AI systems operate without human aid, they are effective. ML, which is comprises data and patterns that the system uses to make judgments, has been made possible by AI. AI refers to several information technology ideas, including computation, software development, and data transport. On the other side, cyberattacks have become more sophisticated along with artificial intelligence. Nowadays, AI is being used by many firms and enterprises to safeguard their data and information systems (Mohammad, 2020). Artificial intelligence in this research is not

seen as an abstract concept, but as a collection of applied technologies that support managerial decisions and company performance. In telecommunications, relevant AI uses include machine learning-based predictive analytics and demand forecasting, customer service automation and chatbots by means of natural language processing, and network optimization and fault detection. Such artificial intelligence applications enable the digital leaders to transform data into actionable information, increase the reliability of services, and promote institutional excellence.

2.3 Institutional excellence

According to (Aladwan & Alshami, 2021), the concept of IE is based on skill and comprises several methods that prioritize outcomes, good client service, goal integration, execution of processes, involvement from all organizational levels, creativity, and ongoing improvement, as well as mutually beneficial collaborations, shared responsibility, and reasonable benefit distribution among stakeholders (Taqa, 2025).

Companies that focus on taking advantage of significant possibilities through careful preparation, a common vision, adequate resources, and a strong concentration on performance are considered to be exhibiting IE (Hijazin et al., 2025). It was described as an extraordinarily high degree of organizational excellence and administrative innovation that results in outstanding presentation and application of the company's promotional strategy, finance, and other operations. As a consequence, all stakeholders are satisfied, and results and accomplishments exceed those of competitors (Hijazin et al., 2025). IE is defined by (Mohammed & Al-Zeidi, 2022) as the implementation of the most effective management techniques, which are typical of high-performing businesses and, when properly carried out, encourage a culture that prioritizes excellence and lasting results through a transparent measuring method (Nour & Momani, 2021). IE refers to the capacity to

integrate and harmonize an organization's components at the greatest levels of coordination and dependence, as well as to produce results that satisfy the demands and expectations of all customer. The concept of institutional excellence in this paper was determined as a multidimensional measure that is assessed using four dimensions, such as excellence, creativity, customer satisfaction, and continuous improvement. All of these dimensions can be interpreted as the ability of an organization to perform at a greater and sustainable level and correspond to previous studies that define institutional excellence as a long-term organizational performance in a holistic way.

2.4 Digital Leadership and Institutional Excellence

To properly digitize an organization and match technology with the strategic goals of the business, efficient digital leadership is essential (Limna et al., 2023). These subjects include developing sustainable and remote leadership, virtual collaboration, expanding one's creative mindset and data-driven decision-making, and adopting a digital vision (Pallathadka & Summer, 2023). Organizations need to understand that keeping a balance between social, ecological, and ethical concerns is essential to attaining sustainable growth in technical advancement (Zhang et al., 2023). Organizations prioritize IT, learning capabilities, and employees with digital skills in the digital era to encourage creativity and sustained success. For example, (Borah et al., 2021) discovered that digital leadership facilitates technological advancements and performance in the context of a firm's IE. DL plays a variety of functions in enhancing institutional excellence. To achieve institutional excellence, leadership style and virtual collaboration are two important factors. Additionally, (Benitez, 2021) discovered that DL qualities impact IE. A digital leader must prioritize data-driven decision-making with a digital vision to attain long-term excellence (Nour et al., 2022).

By looking at the previous literature, this research makes the assumption that DL, with its dimensions (data vision, data-driven decision-making, virtual collaboration, and remote leadership style), will directly impact institutional excellence. Hence, the following hypotheses are proposed.

Hypothesis 1a: Digital vision (DV) positively affects IE (excellence, creativity, customer satisfaction, continuous improvement).

Hypothesis 1b: Data-driven decision-making (DDDM) positively affects IE (excellence, creativity, customer satisfaction, continuous improvement).

Hypothesis 1c: Virtual collaboration (VC) positively affects IE (excellence, creativity, customer satisfaction, continuous improvement).

Hypothesis 1d: Remote leadership (RL) positively affects IE (excellence, creativity, customer satisfaction, continuous improvement).

2.5 Mediating role of AI

AI and IT proficiency are crucial for both successful DL and IE in the current digital era. By empowering companies to adopt data-driven strategies and strategically alter their current product or service model, AI helps them become more competitive. (Temelkova, 2020) claims that certain companies are already benefiting from AI as it becomes more widespread in the business world. But many who are already experimenting with AI are worried that they could lag. Despite serious concerns and possible drawbacks, he was certain that AI held enormous potential for employees' empowerment. It provides the tools to automate monotonous operations, observe trends in recent and previous information, and reveal major discoveries that might enhance everyday activities (Alqudah et al., 2025).

According to (Antonopoulou et al., 2021), understanding the organizational and cultural barriers that AI initiatives encounter and coming up with solutions to get beyond them

are essential to optimizing AI's potential for organizations. It is expected that managers and executives will have to navigate significant and often difficult changes in roles, processes, and organizational culture as a result of new AI applications. Furthermore, (Khaw et al., 2022) said that sustainable institutional excellence is greatly and favorably impacted by DL. Additionally, the link is somewhat mediated by AI. Thus, it may be said that AI supports IE indirectly and has an impact on digital leadership. Integrating AI into digital support systems is turning into an effective instrument for enhancing long-term corporate performance (Leavy, 2020). Numerous studies indicate that AI has a mediating role, enhancing the positive correlation between institutional excellence and digital leadership. Lastly, studies show that to strengthen the beneficial correlation between DL and sustained IE, AI plays a crucial mediating role. AI is driving DL to assist businesses in cutting expenses, enhancing sustainability reporting, and proactively resolving HR concerns. DL with AI has the capacity to revolutionize how businesses accomplish their objectives and attain sustained excellence. Hence, the following hypothesis.

Hypothesis 2: AI positively mediates the relationship between DL and IE.

3. Research Methodology

3.1 Study Approach

A quantitative technique is used to examine how AI and DL might improve the IE of Jordanian telecom enterprises. To explain the relationship between the variables, the study uses a descriptive explanatory design. Based on the previous studies, we developed our research model. Institutional Excellence was operationalized as a higher-order construct to capture its multidimensional nature. A reasonable empirical background to this study is the Jordanian telecommunications industry, which boasts a high level of digital maturity as well as a high degree of adoption of artificial intelligence technologies. The industry is characterized by robust competitive behavior, a fast change in the technology, and a strong dependence on digital types of leadership. As a result, employees who work in this field are in a good position to outline the role of digital leadership and artificial intelligence on institutional excellence, which makes the chosen sample relevant and suitable for the study purposes.

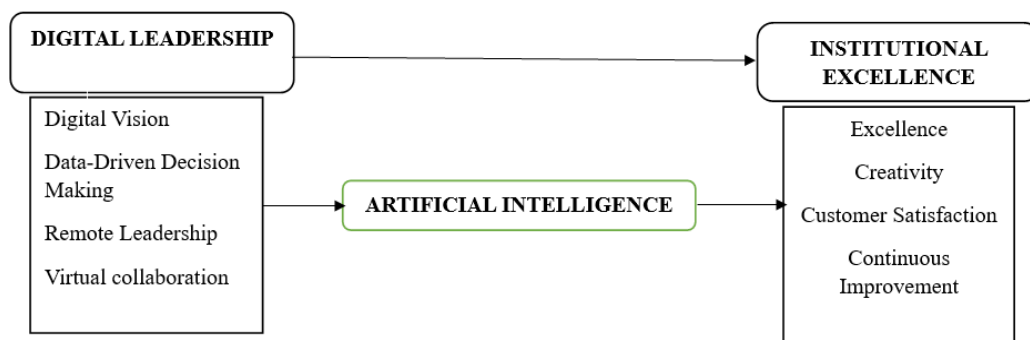


Figure 1. The study Model

Note: Institutional Excellence is modeled as a second-order construct reflected by excellence, creativity, customer satisfaction, and continuous improvement.

3.2 Questionnaire Development

Through a survey, the influence of DL on attaining IE in Jordanian telecom enterprises was evaluated, with AI serving as a mediating

variable. The survey has been divided into two sections. The first section dealt with personnel profiles, which contained details about rank, age, gender, and work history. Research on various themes was examined in the second

portion. Five Likert scale points were included in the questionnaire to represent the responses of the chosen participants. Only one response was requested of the chosen responders for each type of concept. Initially, a pilot test was carried out to confirm the study tool's validity. Ten of the highest-ranking CEOs have been chosen to participate in the pilot. In response to the pilot test findings, a number of meetings and discussions with academics were held to refine the survey and increase its validity. After the pilot test and numerous discussions with the academic experts, the questionnaire was improved to improve its validity and reliability. The revisions included rephrasing of ambiguous questions, adding clarity and consistency of the terminology, and ensuring appropriateness between items to be measured and the study constructs. Some of the items were streamlined to make it easier to understand by the respondents, and unnecessary wording was removed. These adjustments enhanced the content validity of the tool and ensured that the questionnaire captures the desired dimensions of digital leadership, artificial intelligence, and institutional excellence.

3.3 Data Collection

The study was conducted using a quantitative research method to investigate the connections between digital leadership, artificial intelligence, and institutional excellence in Jordanian telecommunication firms. The data collection was done in two phases. To test the questionnaire, firstly, the clarity, relevance, and content validity of the questionnaire were tested on ten senior executives (chief executive officers) of telecommunications companies with the purpose of a pilot test. These pilot data

were also used to refine the instruments, and they were not included in the final analysis of data. The data were gathered through an online application of Google Forms due to its effectiveness and ease of access. First response rates were average, as it is common with most online polls. To handle this, the follow-ups were sent to the possible respondents and the importance of confidentiality and anonymity was stressed to encourage the respondents to participate, thus enhancing the response and hence the sufficiency of the original sample size to test.

The sample size of the main study included 298 workers whose employee organizations were Jordanian telecommunications firms operating at different management and working levels. The participants were chosen based on their engagement in digital operations and knowledge of leadership activities and the use of artificial intelligence in their organizations. This sampling was selected in such a way that the ultimate sample had a holistic and representative picture of digital leadership and institutional excellence in the telecommunications industry.

3.4 Respondents' Demographic Profile

Descriptive statistics were conducted to present the demographic information about the respondents, including gender, age, organizational position, and work experience.

The demographic information allows concluding that the sample is represented by the respondents of diverse organizational ranks and levels of experience, thus contributing to the representativeness of the information and the applicability of the research results to the Jordanian telecommunications market.

Table 1. Respondents' Demographic Profile

Variable	Category	Frequency	Percentage
Gender	Male	172	57.7%
	Female	126	42.3%
Age	Less than 30 years	64	21.5%

	30–39 years	118	39.6%
	40–49 years	82	27.5%
	50 years and above	34	11.4%
Organizational Position	Operational staff	134	45.0%
	Middle management	108	36.2%
	Senior management	56	18.8%
Work Experience	Less than 5 years	71	23.8%
	5–10 years	123	41.3%
	More than 10 years	104	34.9%

4. Results and discussion

4.1 Collinearity test

PLS-SEM is used to test hypotheses and validate measurement accuracy since it excels at evaluating and testing complex models. For this reason, Smart PLS version 4.0.7 is used for testing. Verification of the first-order variables in this study required a mediation analysis. The

most effective technique for analyzing the relationship between variables is PLS-SEM due to its greater statistical power. The common variance issue for the collected data was examined using the lateral collinearity test. As per (Hair & Brunsveld, 2020) the VIF threshold value is less than or equal to 5. Since every VIF was less than 5, Table 2 shows that there is no CMV issue with the data of the study.

Table 2. Full collinearity testing

VIFs			
DV1	1.635	VC5	1.61
DV2	2.507	AI1	2.748
DV3	2.603	AI2	2.377
DV4	2.676	AI3	1.957
DV5	1.805	AI4	1.763
DDDM1	1.341	AI5	1.618
DDDM2	1.948	IE1	1.546
DDDM3	1.668	IE2	1.684
DDDM4	1.112	IE3	1.513
DDDM5	1.228	IE4	1.498
RL1	1.256	IE5	2.198
RL2	1.397	IE6	1.003
RL3	1.238	IE7	2.002
RL4	1.429	IE8	2.084
VC1	1.17	IE9	2.981
VC2	1.543	IE10	1.602
VC3	1.96	IE11	1.728
VC4	1.61		

4.2 Measurement Model

The legitimacy of the link between the items and the constructs in the study framework must be verified using the measuring model. Anderson recommended that the model's validity and reliability should be evaluated first. Two crucial tests to support the model are

discriminant and convergent validity. Convergent validity helps ensure that the various items measure the specific construct. Convergent and discriminant validity are demonstrated in the study. The factor loadings, CR, and AVE of the constructs are displayed in Table 3.

Table 3: Convergent Validity

Constructs	Items	FL	CR	AVE
Digital Vision	DV1	0.812	0.964	0.693
	DV2	0.895		
	DV3	0.879		
	DV4	0.863		
	DV5	0.501		
Data-Driven Decision-Making	DDDM1	0.791	0.932	0.734
	DDDM2	0.891		
	DDDM3	0.901		
	DDDM4	0.877		
	DDDM5	0.821		
Remote Leadership	RL1	0.975	0.953	0.695
	RL2	0.917		
	RL3	0.872		
	RL4	0.957		
Virtual Collaboration	VC1	0.823	0.933	0.737
	VC2	0.815		
	VC3	0.896		
	VC4	0.887		
	VC5	0.871		
Artificial Intelligence	AI1	0.796	0.924	0.726
	AI2	0.833		
	AI3	0.901		
	AI4	0.864		
	AI5	0.865		
Institutional Excellence	IE1	0.877	0.953	0.654
	IE2	0.799		
	IE3	0.846		
	IE4	0.802		
	IE5	0.792		
	IE6	0.747		
	IE7	0.709		
	IE8	0.811		
	IE9	0.825		
	IE10	0.875		

	IE11	0.798	
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First, factor loadings for the entire sample were evaluated to see if the items with factor loadings below 0.5 needed to be discarded. Fortunately, no item with the lower factor loading was found. The fact that all of the items' factor loadings are more than 0.5 means that all of the factor loadings are acceptable based on Hair's rule of thumb. Moreover, Table 3 indicates that the composite reliability values varied between 0.924 and 0.964. Every CR value exceeds the suggested value, which is more than 0.70. All AVE values, which range

from 0.654 to 0.734 and are higher than their cutoff value of 0.5, support convergent validity.

The degree of variation in each latent variable is indicated by the discriminant validity. (Franke & Sarstedt, 2019) proposed a method for evaluating discriminant validity. For this, they recommended the Heterotrait-Monotrait ratio of correlations. Table 4 demonstrates that every number is below the threshold point, or less than 0.90. Therefore, our investigation supports the discriminant validity of all constructs.

Table 4. Discriminant Validity

	DV	DDDM	RL	VC	AI	IE
DV						
DDDM	0.531					
RL	0.421	0.433				
VC	0.398	0.367	0.398			
AI	0.354	0.461	0.387	0.299		
IE	0.627	0.483	0.369	0.353	0.301	

4.3 Structural Model

The structural model is used to test the hypotheses once the measurement model has been approved. This study applied structural equation modeling (SEM) with a bootstrapping approach with Smart PIs with 5000 re-samplings. The issue of unusual data is being

variable.

attempted to be reduced. According to the data, the variables have a strong association with one another. A direct association between the variables is demonstrated by the H1a, H1b, H1c, H1d, and H2 variables. It further illustrated the relationship between IE and DL. Table 5 shows the positive and significant relationship between the

Table 5: Hypothesis Testing

No.	Research Hypotheses	Beta value	T statistics	P values	Result
H1a	DV positively affects IE	0.201	1.119	0.004<0.01	Accepted
H1b	DDDM positively affects IE	0.311	1.292	0<0.01	Accepted
H1c	VC positively affects IE	0.219	1.381	0.008<0.01	Accepted
H1d	RL positively affects IE	0.267	1.021	0.003<0.01	Accepted
H2	AI positively mediates the relationship between DL and IE	0.091	1.121	0<0.01	Accepted

With the beta value of 0.201 and the value of $p\ 0.004 < 0.01$, the H1a clearly shows that digital vision has a significant effect on IE. Thus, H1a is accepted. A beta value of 0.311 and a p-value of $0 < 0.01$

further support H1b, indicating a positive correlation between data-driven decision-making and IE. H1c shows a significant and positive relationship between virtual collaboration and IE, with a beta value of $= 0.219$ and a p-value of $0.008 < 0.01$. The results fully validate our hypothesis. The p-value of $0.003 < 0.01$ and the beta value of 0.267 provide further proof of a favorable relationship between remote leadership and IE. H2 data show that AI mediates the association between DL and IE, with a p-value of $0 < 0.01$ and a beta value of 0.091. Thus, H2 is accepted in this study. Collectively, our results highlight how AI may improve DL and IE by demonstrating the diverse strengths and statistical importance of the links between the constructs.

5. Discussion

The results of this research provide strong empirical proof of the support of digital leadership in achieving institutional excellence, whether directly or indirectly via the use of artificial intelligence. These findings reveal that a digital vision, data-driven decision-making, virtual collaboration, and remote leadership significantly lead to institutional excellence, and the concept of leadership practices in line with digital transformation proves to be vital to the success of an organization in the technology-intensive environment, and is the telecom industry. This can be explained by the strategic nature of the vision in guiding organizational priorities, which makes the improved influence of data vision as compared to virtual collaboration on institutional excellence. A clear digital vision provides a resource allocation direction, technology uptake, and long-term direction, hence directly supporting excellence and continuous improvement. Although virtual collaboration allows flexibility and teamwork, its impact is indirect and depends on the positive leadership of the organization and technological preparation. This is an indication that strategic leadership orientation

plays a more central role as compared to operational collaboration mechanisms towards institutional excellence.

In line with previous research findings (Antonopoulou et al., 2021; Khaw et al., 2022), the findings indicate that such leaders who communicate an effective digital vision and encourage a culture of data-driven decision-making are more likely to improve organizational excellence through innovation enhancement, customer satisfaction, and facilitation of continuous improvement. These results also support the thesis that digital leadership is a strategic competence that supports organizations to react appropriately to the changing market and technological conditions.

The immense role played by virtual collaboration and remote leadership in institutional excellence is an indication of the increased relevance of flexible leadership practices in the post-COVID-19 world. This finding is in line with previous studies that digitally enabled collaboration improves organizational agility and employee engagement, which leads to excellent organizational performance (Adie et al., 2022; Bula et al., 2023). Such leadership practices seem especially powerful within the environment of telecom companies, where the virtual team and the digital platform are seen as a standard.

Notably, the findings confirm the mediation between digital leadership and institutional excellence by artificial intelligence. This result confirms the previous research that highlights the importance of AI in making better decisions in organizations, organizational efficiency, and innovation (Bahoo et al., 2023; Olan et al., 2022). With the help of AI technologies, digital leaders will be able to transform leadership-related practices into actual performance results, which will enhance institutional excellence.

Theoretically, this outcome can be explained by the Dynamic Capabilities Theory because AI allows organizations to rearrange the available resources and adjust to the constantly changing environment (Alqudah et al., 2025).

In general, the results indicate that digital leadership cannot help establish institutional excellence, which is attained through the successful combination of leadership capabilities with artificial intelligence. This highlights the essence of investments in digital leadership development and AI-driven systems to remain at the pinnacle and stay competitive in the digital age.

6. Conclusions

This study aims to determine the connections among DL, AI, and IE. Consistent with Bahoo et al. (2023), the study has revealed the inherent connections between these attributes and demonstrated how AI plays a key role in fostering digital leadership that makes achieving institutional excellence easier. According to the results of this study, digital leadership abilities are the most important factors influencing excellence in modern organizations.

The study's key findings indicate that AI is one of the most crucial elements for an organization's long-term growth and success since it significantly affects the association between DL and long-term IE and acts as a mediating variable between them (Bhatti & Rehman, 2019). Additionally, the relationship between AI, DL, and IE demonstrates the scope of the organization's digital endeavor. Lastly, we may state that in the era of digitization and artificial intelligence, organizations have a unique opportunity to reconsider their roles as societal guardians. By utilizing DL, fostering digital creativity, and putting AI-powered solutions into practice, they may follow an institutional excellence path that will enhance their financial performance and leave a good, continuing inheritance for the world. Accepting digital change, adapting carefully, and using AI

as a compass to steer you toward an optimistic future are the strong courses to accomplishment at this critical time.

7. Limitations and Recommendations

Despite the empirical evidence that was introduced by the current study in relation to the effects of digital leadership on the excellence of a particular institution, a number of limitations cannot be disregarded. To begin with, the study has a cross-sectional study design, which limits the ability to determine causality between digital leadership, artificial intelligence, and institutional excellence. The longitudinal or mixed-methods designs can be used in future studies to measure changes over time and give better causal arguments.

Second, as much as the findings provide useful information regarding the aspect of digital leadership in the Jordanian telecommunications industry, one should be careful when applying the findings in other situations. Although telecommunications businesses are technology-rich organizations, the results can be different in organizations whose main processes are more digital or AI-based, like software development businesses, fintech businesses, or AI-driven companies. These organizations can show varied degrees of AI maturity, leadership practices, and the ways toward institutional excellence.

Practically, organizations are advised to make leaders cultivate the potential that is required in the digital transformation, such as promoting inter-departmental teamwork, promoting innovative organizational culture, and promoting ethical use of artificial intelligence. Institutional excellence objectives should be in line with digital transformation initiatives so as to have sustainable value creation. Additionally, companies are advised to put in place effective ethical systems on AI deployment and focus on grounding them on transparency, fairness and privacy of data as a way of fostering trust among stakeholders. Leaders can successfully embrace digital technologies and AI to deliver long-term

institutional excellence by creating an environment in which innovation and integrity are fostered.

Disclosure Statement

Ethical Approval and Consent to Participate: Not applicable, as this study involved anonymous and voluntary survey participation and did not collect any personally identifiable or sensitive data.

Availability of Data and Materials: The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions: The author solely conceived and designed the study, collected and analyzed the data, interpreted the findings, and prepared the manuscript.

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