

DOI: 10.5281/zenodo.11425222

DIGITAL LEADERSHIP AND STRATEGIC AGILITY: KEYS TO HIGH-PERFORMANCE ORGANIZATIONS

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Received: 11/11/2025
Accepted: 18/12/2025

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ABSTRACT

In the era of rapid digital transformation, organizations are increasingly compelled to adopt leadership models that foster agility, innovation, and strategic responsiveness. This study investigates the relationship between digital leadership, strategic agility, and organizational performance within the context of Saudi Arabia's higher education sector, guided by Vision 2030 reforms. Drawing upon the Dynamic Capabilities Framework and Strategic Leadership Theory, the study proposes and empirically tests a conceptual model in which strategic agility mediates the relationship between digital leadership and performance. Data were collected from 230 staff members at the University of Jeddah through a structured questionnaire and analyzed using Structural Equation Modeling (SEM) via SmartPLS. The findings demonstrate that digital leadership significantly enhances both strategic agility and organizational performance, with agility playing a mediating role. The study also incorporates qualitative insights from open-ended responses, which reinforce the importance of visionary thinking, adaptability, technological fluency, and innovation-oriented cultures. These results have important implications for institutional leaders and policymakers in emerging economies, suggesting that investments in digital leadership development and agile organizational practices are essential for achieving sustained performance in digitally transforming environments. The study concludes with practical recommendations and identifies opportunities for future research, particularly in exploring sectoral differences and moderating contextual variables.

KEYWORDS: Digital Leadership, Strategic Agility, Organizational Performance, Vision 2030, Saudi Arabia.

1. INTRODUCTION

In the 21st century, organizations across the globe are experiencing an unprecedented pace of digital transformation, reshaping the ways they operate, compete, and create value. Emerging technologies such as artificial intelligence, cloud computing, data analytics, and digital platforms have fundamentally disrupted traditional business models and imposed new demands on leadership capabilities. The fourth industrial revolution has rendered conventional leadership approaches insufficient, giving rise to the need for digital leadership, a strategic, technologically literate, and adaptive form of leadership that can guide organizations through complexity and uncertainty.

Saudi Arabia is no exception to this global shift. Anchored by the ambitious Vision 2030, the Kingdom has undertaken massive national reforms to diversify the economy, enhance public sector performance, and foster innovation and digital competitiveness. Initiatives like the National Digital Transformation Program, the Digital Government Authority, and mega-projects like NEOM reflect the country's strong commitment to a knowledge-based and technologically advanced economy. As public and private sector institutions undergo this digital shift, the role of leadership has become pivotal – not only in championing technological adoption but also in fostering a culture of innovation, agility, and continuous learning.

In parallel, the concept of strategic agility has gained prominence as organizations face constant volatility and disruption. Strategic agility refers to an organization's capacity to sense environmental changes, rapidly adapt strategies, and mobilize resources effectively. In digitally transforming economies like Saudi Arabia, strategic agility is not just a competitive advantage but a survival imperative. Digital leaders, those who possess both technological insight and visionary capabilities, are increasingly recognized as catalysts for fostering this agility across organizational structures.

Despite the growing relevance of digital leadership and strategic agility, there remains a significant research gap, especially in the context of emerging economies and public institutions in the Arab Gulf region. Existing literature largely centres on Western corporate environments, leaving limited empirical insights on how digital leadership is practiced and perceived within Saudi organizations. Moreover, the linkage between digital leadership competencies and strategic agility outcomes remains underexplored, particularly within the framework of national development goals like Vision 2030.

This study seeks to address this gap by examining the role of digital leadership in enhancing strategic agility and organizational performance in Saudi Arabia. Specifically, it aims to assess how digital leadership practices influence the ability of organizations to adapt to change, innovate processes, and maintain competitiveness in a rapidly evolving environment.

Accordingly, this paper addresses the following research questions

- RQ1: To what extent is digital leadership practiced in Saudi organizations?
- RQ2: What is the relationship between digital leadership and strategic agility?
- RQ3: How does this relationship affect organizational performance in the Saudi context?

To address these questions, the paper is structured as follows: Section 2 presents a review of the relevant literature, including conceptual foundations of digital leadership and strategic agility. Section 3 outlines the theoretical framework guiding the study. Section 4 explains the research design, data collection, and analysis methods. Section 5 discusses the key findings, while Section 6 interprets the results and compares them with existing literature. Section 7 provides conclusions and practical recommendations for leaders, policymakers, and scholars. Finally, Section 8 identifies the study's limitations and directions for future research.

2. THEORETICAL BACKGROUND/ LITERATURE REVIEW

2.1. Digital Leadership

Digital leadership refers to the capacity of leaders to guide organizations through technological changes by leveraging digital tools, fostering innovation, and creating value in dynamic environments. López-Figueroa et al. (2025) emphasize that digital leadership extends beyond IT competence, encompassing visionary thinking, emotional intelligence, and the capacity to manage complex digital ecosystems. Hossain et al. (2025) adopt a dynamic managerial capability perspective, arguing that digital leadership equips organizations with the flexibility to adapt to artificial intelligence-driven systems and foster a culture of responsiveness.

In the tourism and hospitality sector, Hussein et al. (2024) demonstrate that digital leadership drives sustainable competitive advantage by enhancing green absorptive capability and promoting eco-innovation. Similarly, Cui (2025) highlights the

critical role of digital leadership in facilitating green digital innovation and corporate transformation. These studies underline that digital leaders are change agents who foster technological adoption while simultaneously influencing organizational values and capabilities. Based on this discussion, the following hypothesis is proposed

H1: Digital leadership has a significant positive effect on strategic agility in Saudi organizations.

2.2. Strategic Agility and Organizational Performance

Strategic agility refers to an organization's ability to respond quickly and effectively to environmental changes, reallocate resources, and reshape strategic priorities. It plays a central role in achieving organizational performance, especially in sectors undergoing digital transformation. In fast-evolving ecosystems, agile organizations are better equipped to anticipate trends, innovate processes, and maintain competitive positioning.

Mutambik (2024) highlighted how strategic agility, supported by digital transformation and external partnerships, enhances supply chain responsiveness and overall performance. Similarly, Chang and Octoyuda (2024) showed that learning agility—an aspect of strategic agility—driven by transformational leadership plays a critical role in successful digital technology adoption among enterprises. Saputra and Patrick (2022) reinforced that workforce agility, when mediated by digital competence, positively influences adaptability and organizational outcomes.

Hossain et al. (2025) placed strategic agility within a dynamic capabilities framework, asserting that it empowers organizations to integrate AI-driven strategies while navigating complex leadership challenges. From a sustainability perspective, Cui (2025) found that firms with strong digital agility can better implement green digital innovation, leading to enhanced operational and environmental performance. Nabhan (2025) also demonstrated that agility moderates the challenges associated with technology adoption, acting as a buffer against resistance and misalignment.

Within institutional settings, Al-Tit et al. (2025) found that strategic agility enabled more effective collaboration and adaptability in response to flexible work arrangements, improving service quality and team performance. Hussein et al. (2024) further confirmed that strategic agility enhances absorptive capacity and supports eco-innovation, translating into competitive advantages for organizations in highly service-oriented industries.

Therefore, strategic agility emerges as a crucial enabler of high performance, allowing organizations to align leadership intent with rapid market adaptation. This is particularly relevant for Saudi Arabia's higher education institutions, where agile capabilities are essential to fulfilling Vision 2030's transformative objectives.

H2: Digital leadership has a significant positive effect on organizational performance.

2.3 The Mediating Role of Innovation and AI Adoption

Innovation and artificial intelligence (AI) adoption are increasingly recognized as critical mediating variables that bridge the gap between digital leadership, strategic agility, and organizational performance. Rather than acting as standalone capabilities, innovation and AI function as transformative enablers that operationalize strategy into tangible results.

Bughin et al. (2018) argue that AI significantly boosts organizational productivity and decision quality, especially when embedded within agile strategies and digital workflows. Similarly, Ravichandran (2018) posits that IT competence and innovation capacity serve as dynamic mediators between digital investment and agility, thus enhancing firm responsiveness. This mediating role is essential, particularly in contexts characterized by high uncertainty and technological flux.

Tarhini et al. (2015) further assert that the success of digital systems such as enterprise platforms hinges on stakeholder involvement in the innovation process, emphasizing the need for leadership to cultivate internal readiness and learning cultures. Vial (2021) supports this notion, proposing a conceptual model where innovation serves as a core process linking digital transformation and performance outcomes in complex environments.

Aboelmaged (2014) confirms technological and organizational readiness significantly influence innovation adoption, particularly in industrial contexts, where the transformation of core operations depends on system-wide alignment. In support of this, Schiuma and Lerro (2008) demonstrate that knowledge-based capital fosters innovation capacity at the regional and organizational levels, which in turn mediates leadership-driven development. Wamba et al. (2017) extend this logic into the digital analytics domain, suggesting that firms with strong innovation capabilities and big data agility are better positioned to convert leadership intent into performance outcomes. Finally, Benitez, Ray, and Henseler (2018) show that technological

infrastructure flexibility facilitates innovation absorption and enhances synergy in organizational change, illustrating a robust mediating pathway between strategic direction and sustainable success.

Therefore, innovation and AI adoption are not peripheral outcomes but central mediators that determine whether strategic leadership and agility effectively result in enhanced performance. Their relevance is especially pronounced in digitally transforming environments such as Saudi higher education, where strategic goals must align with technology-enabled execution.

H3: Strategic agility has a significant positive effect on organizational performance.

2.4. Digital Leadership in Flexible and Sectoral Contexts

Digital leadership manifests differently across sectoral and organizational environments, especially in contexts where adaptability and cross-functional coordination are imperative. In increasingly flexible ecosystems—such as hybrid workplaces or service-intensive sectors—leaders are expected to integrate digital tools with strategic foresight and human-centric leadership.

Avolio et al. (2001) first introduced the term e-leadership, highlighting how leaders in digital contexts must build trust, influence, and motivation through technologically mediated communication. In volatile sectors, El Sawy and Pavlou (2008) emphasized that IT-enabled dynamic capabilities allow organizations to remain competitive by reconfiguring resources and sensing opportunities in real-time.

Kane et al. (2015) argued that digital success is less about adopting technology and more about leadership's ability to drive cultural and operational change. Their study revealed that leadership maturity, not digital tools, separates high-performing firms. Similarly, Marabelli and Galliers (2017) observed that organizational practices—shaped by sectoral norms and political dynamics—affect how leaders deploy and internalize digital strategies.

Verhoef et al. (2021) advocated for sector-sensitive approaches to digital leadership, pointing out that transformation in public institutions, for example, requires balancing bureaucratic stability with agile innovation. Weill and Woerner (2015) extended this insight by showing that firms succeeding in digital ecosystems often rely on strong leadership to orchestrate partner-ships, platforms, and customer-centric models.

Peppard and Ward (2016) highlighted the

importance of aligning IT investments with business strategy, noting that leaders who adapt their approach across sectors—from finance to healthcare to education—achieve stronger performance outcomes. Finally, Goran et al. (2017) challenged the misconception that culture is an obstacle to transformation, suggesting instead that effective digital leaders actively shape cultural adaptability across departmental and sectoral boundaries.

In the context of Saudi higher education and public-sector transformation under Vision 2030, such flexible digital leadership is essential—not only to modernize operations but to cultivate cultures of innovation and learning that span academic, administrative, and technical domains. Thus, the following hypothesis is advanced:

H4: Strategic agility mediates the relationship between digital leadership and organizational performance.

While the global literature provides compelling evidence for the impact of digital leadership on agility and performance, there remains a gap in understanding these dynamics within the context of emerging economies, particularly Saudi Arabia. The Kingdom's Vision 2030 has catalysed digital transformation across sectors, yet empirical studies investigating how digital leaders navigate this transformation and foster organizational agility are scarce. Moreover, the relationship between digital leadership, sustainability, and innovation, although explored in tourism (Hussein et al., 2024), requires further examination in public institutions, educational sectors, and local enterprises under Saudi-specific socio-economic and cultural conditions.

3. THEORETICAL FRAMEWORK

3.1. Models Linking Digital Leadership, Strategic Agility, and Organizational Performance

This study is grounded in two complementary theoretical models the Dynamic Capabilities Framework (DCF) and Strategic Leadership Theory (SLT). The Dynamic Capabilities Framework, as proposed by Teece et al. (1997), emphasizes an organization's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments. In the digital age, these capabilities hinge heavily on leadership that promotes sensing opportunities, seizing resources, and transforming structures. Digital leaders, therefore, are viewed as key enablers of dynamic capabilities, especially when organizations must pivot rapidly in response to technological disruptions or market shifts.

Strategic Leadership Theory posits that top leaders play a crucial role in shaping organizational outcomes through their decisions, behaviours, and ability to align internal resources with external opportunities. Strategic leaders possess the vision, foresight, and agility required to navigate complexity and uncertainty. In the context of digital transformation, strategic leaders are expected to champion technology adoption, empower teams, and foster a culture of continuous innovation elements essential to achieving both strategic agility and sustained performance.

Integrating these two frameworks, digital leadership is conceptualized as a strategic capability that enhances the organization's agility (through sensing, adapting, and reconfiguring), which in turn drives superior performance outcomes.

3.2. Contextualization within the Saudi Arabian Socio-Economic Environment

Saudi Arabia is undergoing a rapid transformation through Vision 2030, a comprehensive strategy to diversify the economy, modernize public institutions, and boost technological capacity. The socio-economic landscape is characterized by significant investments

in digital infrastructure, smart government initiatives, and public-private partnerships, creating a fertile ground for testing digital leadership and agility constructs.

However, despite these reforms, many Saudi organizations especially in the public and SME sectors face challenges related to legacy systems, centralized leadership cultures, and limited agility in decision-making. Therefore, examining how digital leadership operates within this socio-cultural context can reveal critical insights into how leadership agility translates into performance in emerging, digitally transitioning economies.

This study specifically investigates whether digital leadership is enabling organizations in Saudi Arabia to become more agile in strategy and structure, and whether such agility translates into improved organizational performance, in alignment with Vision 2030 objectives.

3.3. Proposed Conceptual Model and Hypotheses

Based on the reviewed literature and theoretical grounding, this study proposes a conceptual model linking digital leadership to organizational performance, mediated by strategic agility:

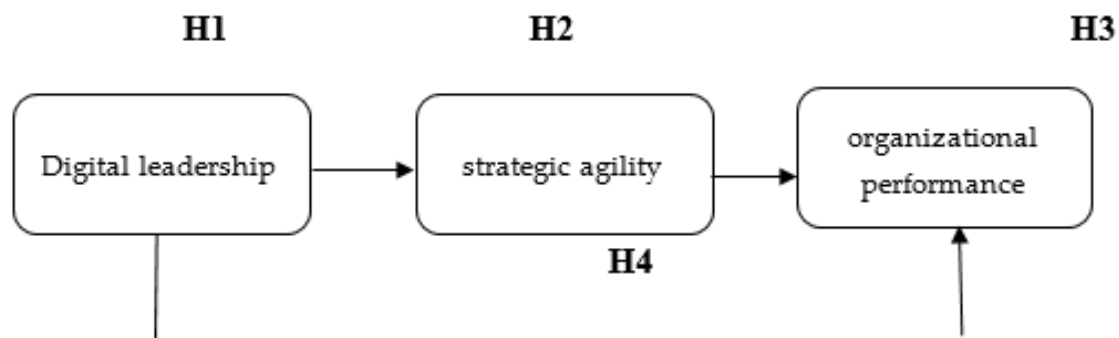


Figure 1: Conceptual Framework.

4. METHODOLOGY

4.1. Research Design

This study employs a quantitative survey research design to investigate the relationship between digital leadership, strategic agility, and organizational performance. The quantitative approach is particularly suited for the empirical validation of theoretical hypotheses (H1-H4), as it enables the systematic collection and analysis of numerical data to test causal relationships among variables.

To ensure the study's practical feasibility and contextual relevance, the questionnaire will be distributed to staff members at the University of Jeddah. The university is currently engaged in digital transformation initiatives aligned with Saudi Arabia's Vision 2030, making it an appropriate setting for studying digital leadership and organizational agility.

The quantitative survey method is justified for the following reasons: First, it allows for the collection of standardized responses that are statistically

analysable. Second, it is well-suited for measuring latent constructs such as leadership style, agility, and perceived performance using Likert-scale items. Third, it enables the testing of mediation relationships and multiple variables simultaneously, using statistical techniques such as regression or structural equation modeling (SEM).

Participants will respond to a structured questionnaire composed of validated scales measuring digital leadership, strategic agility, and organizational performance. The collected data will be analyzed to assess the strength and direction of relationships between the constructs and to evaluate the mediating role of agility.

4.2. Population and Sampling

The target population for this study comprises staff members at the University of Jeddah, including academic faculty, administrative personnel, department heads, IT professionals, and quality assurance staff. These individuals play critical roles in implementing and supporting the university’s digital transformation initiatives, making them well-positioned to provide relevant insights into digital leadership practices, organizational agility, and performance outcomes.

The University of Jeddah has been actively aligning its operational and academic structures with Saudi Arabia’s Vision 2030, particularly through the adoption of digital governance tools, smart learning systems, and performance monitoring frameworks. Therefore, the university serves as a representative institutional setting for exploring the dynamics of digital leadership and strategic agility within the

higher education sector in Saudi Arabia.

A non-probability purposive sampling technique will be employed to select respondents who are most likely to interact with or influence digital initiatives within the university. This includes individuals in leadership or supervisory roles, as well as those who are directly involved in digital projects or strategic planning. The purposive sampling method ensures that data are collected from respondents with relevant knowledge and experience, thereby enhancing the validity of the study findings.

The appropriate sample size for this study was determined based on the total population of staff at the University of Jeddah, which consists of 540 individuals, including faculty members, administrative staff, and technicians. Using Yamane’s formula for sample size calculation at a 95% confidence level and a 5% margin of error, the recommended sample size was calculated to be approximately 230 respondents. This sample size is deemed sufficient for achieving statistically significant results and allows for reliable generalization of the findings across the broader university population. It also meets the minimum requirements for conducting structural equation modeling (SEM), ensuring that the study’s quantitative analysis remains robust and valid.

$$n = \frac{N}{(1 + N)(e^2)}$$

Where

n = sample size

N = population size = 540

e = margin of error (commonly 0.05)

$$n = \frac{540}{1+540(0.05^2)} = \frac{540}{1+1.35} = \frac{540}{2.35} \approx 230$$

Table 1: Sample Distribution.

No		Target population	%	Target sample
1	Faculty Members	290	53.7	123
2	Administrative Staff	150	27.8	64
3	Technicians	100	18.5	43
	Total	540	100%	230

4.3. Data Collection

Data for this study will be collected using a structured self-administered questionnaire, designed to capture quantitative measures of digital leadership, strategic agility, and organizational performance. The questionnaire will be distributed electronically to academic and administrative staff at the University of Jeddah, targeting individuals in positions of leadership, strategic planning, IT, quality assurance, and operations. These respondents are expected to have first-hand

experience with digital tools, organizational policies, and strategic initiatives aligned with Vision 2030.

The data collection instrument will be developed based on validated scales from existing literature. Items will be measured using a 5-point Likert scale, ranging from 1 (“strongly disagree”) to 5 (“strongly agree”), to assess perceptions and experiences related to: Digital leadership behaviors (e.g., innovation orientation, communication, digital vision). Strategic agility (e.g., responsiveness to change, flexibility, realignment of strategies). Organizational

performance (e.g., perceived efficiency, effectiveness, service quality). **The questionnaire will consist of four sections**

- Demographic Information (e.g., role, department, years of experience, involvement in digital projects).
- Digital Leadership scale items.
- Strategic Agility scale items.
- Organizational Performance indicators.
- Open-ended questions designed to capture qualitative insights.

To facilitate efficient and safe data collection, the survey was distributed via university email networks, professional WhatsApp groups, and internal communication platforms.

4.4. Data Analysis

The data collected through the structured questionnaire analysed using quantitative statistical techniques to examine the relationships among digital leadership, strategic agility, and organizational performance. The analysis conducted using Excel for preliminary coding, and SmartPLS for structural equation modeling (SEM), given the model's complexity and inclusion of mediating effects.

The data analysis process will proceed through the following steps

- i. Data Screening and Cleaning: Before analysis, the dataset will be screened for completeness, outliers, and inconsistencies. Missing data will be addressed using appropriate statistical methods, and responses that show systematic patterns of non-response or invalid entries will be excluded.
- ii. Descriptive Statistics: Frequencies, means, and standard deviations will be calculated to describe the demographic characteristics of the respondents and summarize responses to all survey items. This step will provide an overview of the sample's profile and initial trends in digital leadership and agility perceptions.
- iii. Measurement Model Evaluation: To assess the reliability and validity of the measurement model, several statistical tests were conducted using SmartPLS version 4. Internal consistency reliability was evaluated through Cronbach's alpha and compo-site reliability (ρ_a and ρ_c), with acceptable values exceeding 0.70. Convergent validity was assessed using Average Variance Extracted (AVE), where all constructs surpassed the 0.50 threshold, indicating that the indicators adequately

represent their latent variables. Discriminant validity was examined using the Heterotrait-Monotrait Ratio (HTMT), though values slightly exceeded standard thresholds, suggesting some conceptual overlap between constructs. Despite this, the measurement model demonstrated overall strong psychometric properties, confirming that the constructs of digital leadership, strategic agility, and organizational performance were measured reliably and validly.

- iv. Correlation Test: A Pearson correlation analysis was performed to assess the strength and direction of relationships among digital leadership, strategic agility, and organizational performance. This preliminary test supported the hypothesized associations and confirmed the appropriateness of proceeding with SEM.
- v. Hypothesis Testing: SEM was employed to examine the hypothesized relationships (H1-H4) among the study constructs. Path analysis was used to evaluate the direct effects of digital leadership on both strategic agility and organizational performance, as well as the direct effect of strategic agility on performance. To test the mediating role of strategic agility between digital leadership and organizational performance, bootstrapping techniques were applied to assess the significance of indirect effects within the model.
- vi. Model Fit and Predictive Power: For SEM using SmartPLS, model fit will be assessed through indicators such as R^2 values and path coefficients. These metrics will help evaluate the explanatory power and robustness of the proposed conceptual model.

Through these analytic procedures, the study aims to generate empirical insights into the nature and strength of the relationships between digital leadership, agility, and performance within the context of the University of Jeddah.

4.5. Ethical Considerations

This study will adhere strictly to established ethical research standards to ensure the protection of participants' rights, the confidentiality of data, and the integrity of the research process. Before the commencement of data collection, ethical clearance will be obtained from the relevant institutional review board (IRB) or research ethics committee at the University of Jeddah.

All participants will be informed of the study's objectives, procedures, and voluntary nature

through a participant information sheet attached to the beginning of the survey. The purpose of the study, the expected duration, and the types of questions involved will be clearly explained. Respondents will be explicitly notified that their participation is voluntary, and that they may withdraw from the study at any time without any consequences or need for justification.

To ensure informed consent, a consent statement included at the start of the questionnaire, and only those who agree will proceed to complete the survey. No personal identifiers such as names, employee IDs, or contact information will be collected, ensuring complete anonymity of the responses. Data will be stored securely and used exclusively for academic purposes.

The study will also comply with relevant data protection and privacy laws in Saudi Arabia, and no

information will be shared with third parties. Results will be reported in aggregated form to protect individual identities, and all datasets will be kept confidential and securely disposed of after the conclusion of the research project.

These ethical procedures are designed to safeguard participants' autonomy, privacy, and well-being while upholding the academic rigor and credibility of the research.

5. RESULTS

5.1. Descriptive Statistics

The demographic profile of the respondents reveals a balanced representation across gender and professional backgrounds, as shown in Table 2. Of the total participants, 50.9% were male and 49.1% female, indicating near gender parity.

Table 2: Demographic Profile of the Respondents.

Item		No	%
sex	male	117	50.9
	female	113	49.1
age	30 and under	44	19.1
	30 to 39	70	30.4
	40 to 49	60	26.1
	50 and above	56	24.3
Years of experience	less than 5	26	11.3
	5 to 10	82	35.7
	11 to 15	51	22.2
	more than 15	71	30.9
Involvement in digital projects	yes	184	80.0
	no	46	20.0
Department/Unit	Academic	123	53.5
	Administrative	107	46.5

In terms of age distribution, the majority fell within the 30 to 39 age group (30.4%), followed by 40 to 49 (26.1%) and 50 and above (24.3%), while 19.1% were 30 years old or younger. Regarding professional experience, 35.7% of respondents had 5 to 10 years of experience, 30.9% had more than 15 years, 22.2% had 11 to 15 years, and 11.3% had less than 5 years, reflecting a diverse range of institutional knowledge and tenure.

Notably, 80% of the respondents reported involvement in digital projects, suggesting a high degree of engagement with digital initiatives. Finally, the participants were relatively evenly split between academic roles (53.5%) and administrative roles (46.5%), providing a well-rounded perspective from both educational and operational functions within the institution.

5.2. Construct Reliability and Validity Test

The construct reliability and validity results

presented in Table 3 demonstrate that all three latent variables, Digital Leadership (DL), Strategic Agility (SA), and Organizational Performance (OP), exhibit strong measurement quality. Cronbach's alpha values for all constructs exceed 0.89, indicating excellent internal consistency. Likewise, the composite reliability values (both ρ_a and ρ_c) for each construct exceed the recommended threshold of 0.70, with most values above 0.90, confirming the robustness and reliability of the constructs. In terms of convergent validity, all constructs show average variance extracted (AVE) values above 0.50 specifically, 0.635 for Digital Leadership, 0.654 for Strategic Agility, and 0.694 for Organizational Performance.

These results indicate that a substantial proportion of variance in the observed indicators is captured by their respective constructs. Collectively, these findings confirm that the measurement model possesses high reliability and convergent validity,

providing a solid foundation for structural model evaluation.

Table 3: Construct Reliability and Validity Results.

Construct	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Digital leadership	0.904	0.905	0.924	0.635
Organization Performance	0.911	0.913	0.931	0.694
Strategic Agility	0.894	0.895	0.919	0.654

The results of the Heterotrait-Monotrait Ratio (HTMT) analysis, on the other hand, confirm that discriminant validity is adequately established among the constructs. As shown in Table 4, HTMT values fall below the conservative threshold of 0.85, with the highest value being 0.846. Specifically, the HTMT between digital leadership and organizational performance was 0.832, between digital leadership and strategic agility was 0.809, and

between strategic agility and organizational performance was 0.846. These values indicate that each construct is empirically distinct and not excessively correlated with the others, thus confirming the unique-ness of the latent variables. This supports the structural model's validity and strengthens confidence in the distinctiveness of the theoretical constructs measured in the study.

Table 4: Discriminant Validity Heterotrait-Monotrait Ratio (HTMT) Results.

Construct	Digital leadership	Organization Performance	Strategic Agility
Digital leadership			
Organization Performance	0.832		
Strategic Agility	0.809	0.846	

5.3. Latent Variables Correlation Test

The latent variable correlation matrix reveals strong and statistically meaningful relationships among the three core constructs: Digital Leadership, Strategic Agility, and Organizational Performance. The correlation between Digital Leadership and Strategic Agility is 0.903, indicating a very strong and positive association; this suggests that as digital leadership practices improve, strategic agility within the organization increases substantially. Similarly, the correlation between Digital Leadership and Organizational Performance is 0.901, confirming that digital leadership plays a critical role in enhancing organizational outcomes. Furthermore, Strategic Agility is also highly correlated with Organizational Performance ($r = 0.898$), implying that organizations with greater agility tend to achieve better performance metrics. All correlation values exceed 0.89, indicating strong multi-collinearity and mutual reinforcement among the constructs. These results empirically support the hypothesized relationships in the conceptual model and highlight the importance of fostering digital leadership to promote agility and performance in the context of digital transformation.

5.4. Path Analysis

The results of the structural model presented in

the diagram were obtained using SmartPLS version 4, a powerful SEM tool that enables precise assessment of both measurement and structural models through the Partial Least Squares approach. The outer model shows that all measurement items exhibit strong and reliable loadings, with values exceeding 0.70, thereby confirming the constructs' convergent validity. Digital leadership is measured effectively through seven indicators, with loadings ranging from 0.735 to 0.841. Similarly, strategic agility and organizational performance demonstrate excellent indicator reliability, with loadings between 0.782 and 0.838, and 0.772 to 0.882, respectively. The inner model results reveal that digital leadership has a substantial and statistically significant impact on strategic agility (path coefficient = 0.903), highlighting the central role of digital leaders in enhancing organizational adaptability. Furthermore, digital leadership also exerts a moderate direct effect on organizational performance (path coefficient = 0.487).

Strategic agility, in turn, has a positive influence on organizational performance (path coefficient = 0.459). Notably, the R^2 values are exceptionally high, with 81.6% of the variance in strategic agility and 85.1% in organizational performance explained by the model, indicating excellent explanatory power. These findings underscore the critical importance of cultivating digital leadership to foster strategic

agility and enhance performance, particularly within the context of Saudi Arabia’s Vision 2030-driven

transformation agenda.

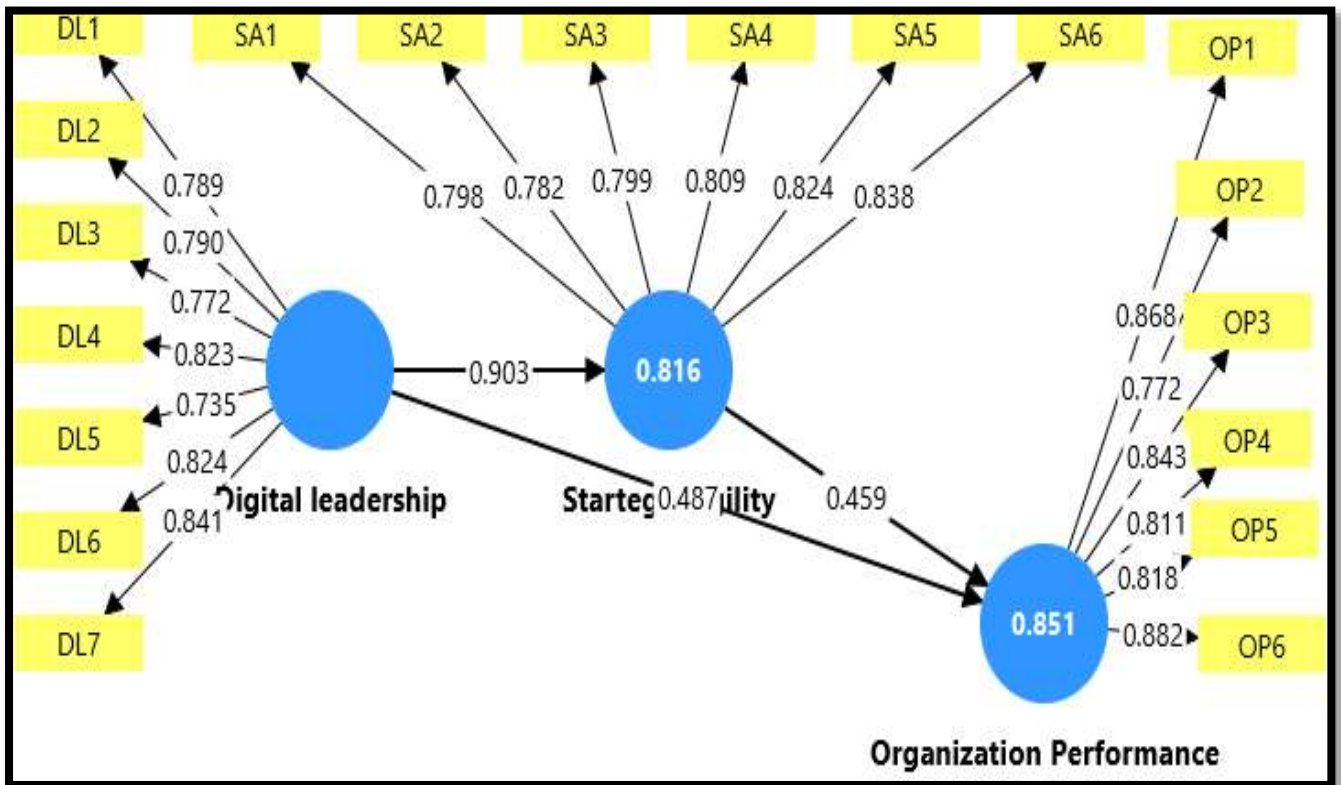


Figure2: PLS- Algorithm Graphic.

5.5. Bootstrapping Test

The path coefficients and bootstrapping results presented in the table and diagram provide strong empirical support for all three hypothesized direct relationships in the structural model. The relationship between Digital Leadership and Organizational Performance yields a path coefficient (O) of 0.487, with a t-value of 7.025 and a p-value of 0.000, indicating a highly significant and moderately strong direct effect. Similarly, the effect of Digital Leadership on Strategic Agility is exceptionally strong, with a coefficient of 0.903, a very low standard deviation (0.018), and an extremely high t-statistic of 49.898, demonstrating very high statistical significance. This confirms that digital leadership is a

dominant predictor of strategic agility within the organizational context. Furthermore, Strategic Agility also has a significant and moderate effect on Organizational Performance with a path coefficient of 0.459, a t-value of 6.768, and a p-value of 0.000. The high t-values and p-values below 0.001 across all paths confirm that the relationships are not only strong but also statistically robust. These findings substantiate Hypotheses H1, H2, and H3, and reinforce the critical role of digital leadership in enhancing both agility and performance in organizations undergoing digital transformation. The presence of both direct and indirect effects from digital leadership to organizational performance through strategic agility confirms a partial mediation, thereby supporting Hypothesis H4.

Table 5: Hypotheses Testing Results.

Hypothesis	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Digital leadership -> Organization Performance	0.487	0.485	0.069	7.025	0.000
Digital leadership -> Strategic Agility	0.903	0.901	0.018	49.898	0.000
Strategic Agility -> Organization Performance	0.459	0.46	0.068	6.768	0.000

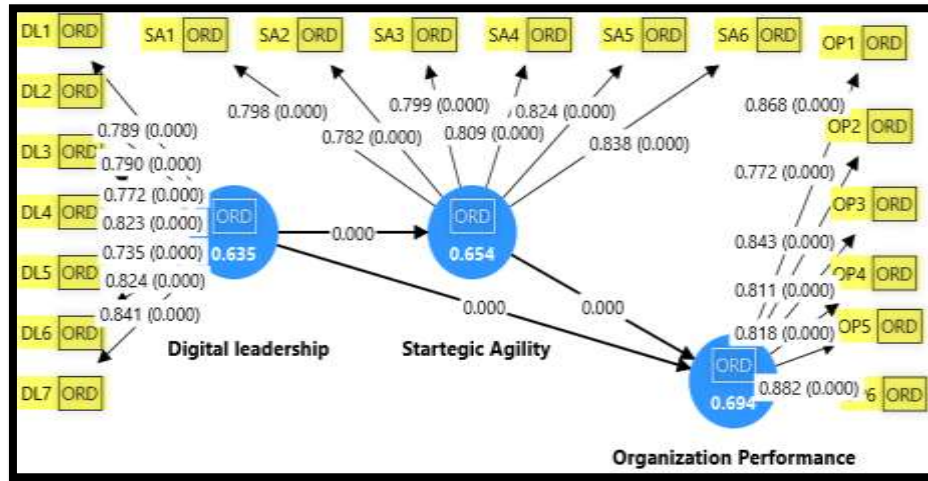


Figure 3: PLS-Algorithm Graphic.

5.6. Open-Ended Response Analysis

An analysis of open-ended responses revealed rich insights into participants’ perceptions of the key qualities that digital leaders should possess, as well as practical suggestions to enhance digital leadership within institutions.

5.6.1. Key Qualities of Digital Leaders

Respondents consistently emphasized the importance of a strategic vision, the ability to make quick and informed decisions, and adaptability to changing digital environments.

Other commonly noted qualities included technological fluency, collaborative leadership, and effective communication skills. Many participants also highlighted traits such as a growth mindset, data-driven decision-making, and continuous learning orientation, which are critical to fostering strategic agility in today’s dynamic educational and organizational contexts.

5.6.2. Suggestions for Improving Digital Leadership

Participants proposed a variety of actionable

strategies to strengthen digital leadership practices. The most frequently cited recommendation was to implement continuous digital training programs for both leaders and staff. Respondents also emphasized the need to foster a culture of innovation, invest in advanced digital tools, and promote cross-functional collaboration. Other notable suggestions included creating agile frameworks, improving access to digital infrastructure, simplifying processes, and recognizing digital transformation achievements. These insights suggest that digital leadership development should be holistic, combining technological investment with human capacity building and cultural transformation.

The narrative summary can be visualized using a word cloud technique that displays words in varying sizes based on their frequency or importance in a body of text. In this case, two-word clouds were used: one to visualize the key qualities of digital leaders and one to represent the suggestions for improving digital leadership. Words that appear more frequently in the responses are shown in larger font sizes, helping to highlight the most common themes at a glance.



Figure 4: Key Traits and Improvement Suggestions for Digital Leadership Visualization.

6. DISCUSSION

This study aimed to examine the impact of digital leadership on strategic agility and organizational performance, focusing on the mediating role of agility within the context of Saudi Arabia's higher education institutions. The empirical results strongly supported the proposed hypotheses, emphasizing that digital leadership significantly enhances strategic agility and organizational performance—both directly and through agility as a mediator.

The finding that digital leadership boosts strategic agility aligns with López-Figueroa et al. (2025), who highlighted the visionary and adaptive capacities of digital leaders. Moreover, Chang and Octoyuda (2024) demonstrated how transformational digital leadership facilitates learning agility, supporting adaptability in dynamic environments. These observations are echoed in Kane et al. (2015), who contend that strategy not just technology is the primary driver of digital transformation. Similarly, Haag and Bloom (2022) emphasized the intersection of leadership and agility as a foundation for mastering digital transitions.

The relationship between digital leadership and organizational performance was also reaffirmed by multiple studies. For example, Wang et al. (2025) and Lu and Chu (2025) found that digital leadership enhances employee innovation via mechanisms such as job crafting and person-job fit. Sousa and Rocha (2019) emphasized the need for new skillsets in disruptive digital business environments, while Coltman et al. (2001) highlighted the need for managerial adaptation to leverage digital evolution effectively. This is consistent with the current study's findings that performance improvements stem not just from digital adoption, but from leadership-facilitated agility and innovation application.

Strategic agility, as a mediating mechanism, emerged as the linchpin translating leadership capabilities into institutional performance. Tallon et al. (2019) emphasized that IT and digital leadership alone are insufficient without the organizational agility to operationalize them. Ciampi et al. (2021) discussed the co-evolution between digitalization and agility, supporting the study's integrative model. Furthermore, Zhou and Wei (2023) demonstrated how organizational agility underpins successful digital transformation, particularly in public sector environment's similar to Saudi higher education institutions.

The sectoral context must also be acknowledged. Studies like Sholokwu (2024) and Puli-warna et al. (2023) show that digital leadership impact varies based on organizational readiness and culture. In line

with this, Saeed and Rizvi (2024) argue that positive digital leadership can elevate organizational culture, which, in turn, improves performance. Similarly, Widodo et al. (2024) observed how sectoral variances influence leadership impact, making the present findings especially relevant in the policy-driven Saudi academic sector.

The open-ended responses in this study reinforced the importance of strategic vision, adaptability, and digital fluency, consistent with the literature (e.g., Hossain et al., 2025; Hussein et al., 2024). Participants advocated for continuous training, infrastructure upgrades, and culture-building reflecting themes echoed by Beth and Setzler (2025), who argued that agility and leadership must be supported by adaptive management systems.

This study also aligns with findings from Sholokwu (2024) and Paschal and Nwankwo (2022), who showed that digital leadership significantly influences employee creativity and innovation, key performance drivers in today's knowledge-based organizations. Ye (2025) added that such leadership enhances resilience by fostering job crafting behaviors, further explaining the mediating function of agility observed here.

Therefore, the model tested in this research, grounded in the Dynamic Capabilities Framework and Strategic Leadership Theory, finds support in both empirical data and an extensive body of contemporary research. The findings reinforce the importance of investing in digital leadership development, institutional agility, and supportive infrastructure to drive transformation in higher education and similar sectors.

7. CONCLUSION

This study examined the impact of digital leadership on strategic agility and organizational performance, with particular focus on the mediating role of strategic agility within the higher education context in Saudi Arabia. The results provide strong empirical support for all proposed hypotheses, demonstrating that digital leadership significantly enhances both strategic agility and organizational performance, directly and indirectly. The findings underscore the importance of fostering visionary, adaptive, and technologically fluent leaders who can drive agile responses to digital transformation challenges.

By integrating the Dynamic Capabilities Framework and Strategic Leadership Theory, the study provides a robust theoretical basis for understanding how leadership behaviors translate

into organizational capabilities and outcomes in digital contexts. Moreover, the qualitative insights gained from open-ended responses complement the quantitative findings, revealing a strong demand for leadership development, innovation-friendly environments, and continuous digital training.

In the context of Saudi Arabia's Vision 2030, these findings have timely and practical implications. Higher education institutions seeking to modernize and remain competitive must invest not only in technology but also in human capital and organizational agility. Future re-search should explore moderating variables such as institutional culture or digital maturity, and consider longitudinal designs to assess the long-term impact of digital leadership practices on organizational transformation

8. RECOMMENDATIONS

Based on the study's findings, the following recommendations are proposed to enhance digital leadership effectiveness and foster strategic agility within higher education institutions, particularly in the context of Saudi Arabia's Vision 2030

- i. Invest in Leadership Development Programs: Institutions should provide structured training to build digital competencies, strategic thinking, and change management capabilities among leaders at all levels. Programs should emphasize adaptability, data-driven decision-making, and innovation leadership.
 - ii. Foster a Culture of Innovation and Agility: Universities must cultivate environments that encourage experimentation, risk-taking, and continuous learning. Agile practices and flexible structures should be institutionalized to enable rapid responses to technological and environmental changes.
 - iii. Strengthen Digital Infrastructure and Access: Adequate investment in digital platforms, tools, and infrastructure is essential to support leadership initiatives. This includes high-speed internet, collaborative technologies, and access to advanced analytics tools.
 - iv. Promote Cross-Functional Collaboration: Encourage collaboration across academic, administrative, and technical departments to ensure that digital initiatives are aligned with institutional goals and benefit from diverse perspectives.
 - v. Establish Feedback and Recognition Systems: Implement mechanisms to capture feedback from stakeholders on digital leadership effectiveness, and recognize out-standing
- digital initiatives. This helps sustain motivation and institutional engagement with digital transformation.
- vi. Integrate Digital Strategy into Institutional Planning: Digital leadership should not function in isolation. Institutions are advised to embed digital transformation goals within their strategic plans to ensure long-term alignment and commitment at the highest levels.

9. Limitations and Future Directions of Research

- i. While this study offers valuable insights into the relationship between digital leadership, strategic agility, and organizational performance, **it is not without limitations**
- ii. The research relied on cross-sectional data from a single institution (the University of Jeddah), which limits the generalizability of the findings to other sectors or regions. Future studies could benefit from a multi-institutional or cross-sectoral approach to enhance external validity.
- iii. The study employed self-reported measures, which may introduce common method bias despite the efforts to ensure anonymity and clarity. Future research should consider incorporating objective performance indicators or multi-source data (e.g., interviews, archival data) for more robust validation.
- iv. Although the study confirmed significant relationships among the constructs, it did not explore moderating factors such as organizational culture, digital maturity, or leadership style. Future research could test these moderators to better understand under what conditions digital leadership is most effective.
- v. Finally, this study was conducted at a specific point in time. A longitudinal design in future research would allow for the examination of how digital leadership and strategic agility evolve and influence long-term organizational performance.

Although this study offers important insights into the relationship between digital leadership, strategic agility, and organizational performance, there are still several promising directions for future research. First, longitudinal studies are recommended to examine how digital leadership capabilities evolve and their sustained effects on organizational agility and outcomes. This would help determine causality and the temporal dynamics of digital transformation

initiatives. Second, future research could incorporate additional mediating and moderating variables, such as digital maturity, innovation capability, or organizational culture, to unpack the mechanisms through which leadership influences performance. This would expand the theoretical scope and increase explanatory power. Third, the role of artificial intelligence (AI), data-driven decision-making, and advanced analytics in shaping digital leadership effectiveness deserves further investigation. As these

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

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