

Digital Leadership and Its Role in Change Management at the Palestinian Higher Education Institutions

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ABSTRACT

Higher education institutions in the Gaza Strip face persistent structural and operational challenges caused by prolonged instability, limited resources, and recurrent disruptions, making organizational change and digital transformation difficult to sustain. This study examines the role of digital leadership in enhancing change management within Palestinian higher education institutions, focusing on how technology-driven leadership behaviors strengthen institutional adaptability in fragile environments. A quantitative research design was employed using a structured questionnaire administered to academic and administrative staff across several universities, yielding 283 valid responses. Structural equation modeling was used to analyze the influence of four dimensions of digital leadership: visionary leadership, digital learning culture, digital citizenship, and systematic development on change management outcomes. The results indicate that digital leadership has a significant and positive effect on change management, with visionary leadership emerging as the strongest predictor. These findings highlight the importance of clear digital direction, continuous learning, and responsible digital practices in advancing organizational transformation. The study further shows that digital leadership is firmly embedded within Palestinian higher education institutions and contributes meaningfully to the navigation of contextual constraints. Overall, the research underscores the strategic necessity of institutionalizing digital leadership practices to support digital transformation, enhance organizational resilience, and sustain effective change management in crisis-affected higher education systems.

Keywords: Digital leadership, Change management, Palestinian universities, Gaza Strip

INTRODUCTION

Higher education institutions have emerged as key drivers of societal transformation, shaping the minds and capacities of the emerging generation (Al-Tahitah, A., et al, 2020). As agents of change, these institutions are uniquely positioned to cultivate individuals who are entrepreneurial, innovative, and resilient, capable of overcoming challenges and contributing meaningfully to community development.

In light of the accelerating pace of technological advancement, equipping students with the tools and mindset needed to lead in the digital era has become imperative. At the heart of this transformation lies leadership, arguably the most powerful catalyst for meaningful and sustained change. Numerous studies have emphasized the critical role of leadership not only in initiating change but also in guiding it to remain relevant in an increasingly digital world.

Digital leadership is now widely recognized as a strategic driver of transformation across various domains. By leveraging digital tools, platforms, and mindsets, digital leaders can inspire innovation, streamline processes, and align organizational change with society's evolving needs. More importantly, digital leadership fosters dynamic interaction between leaders and their followers, creating fertile ground for inclusive, technology-driven change.

This study seeks to explore the role of digital leadership in managing change, particularly within contexts where transformation is not a luxury but a necessity. In fragile and conflict-affected settings such as the Palestinian context where communities are grappling with the prolonged impacts of siege and war there is an urgent need for agile, forward-thinking leadership that can bridge existing gaps and lay the foundations for rebuilding. Digital leadership may hold the key to crafting a resilient and future-oriented society that meets the pressing needs of its institutions and people.

Problem Statement:

Higher education institutions serve as vital engines for cultivating human capital by equipping individuals with the knowledge, skills, and competencies essential for future leadership and meaningful societal participation (Al-Tahitah, A. et al, 2021). As centers of learning and innovation, these institutions are expected to contribute to social and economic progress, particularly by developing graduates who can play a central role in rebuilding and advancing their communities.

In Palestine, however, these institutions operate under profound and persistent challenges. High unemployment rates, political instability, and the compounded impact of repeated conflicts—especially the recent war and the ongoing blockade of the Gaza Strip—have severely affected the higher education landscape. Despite these adversities, there remains a deeply rooted societal belief in education as a key driver of resilience, national reconstruction, and sustainable development. Faced with intensifying competition and growing demands for quality and relevance, Palestinian universities are under increasing pressure to implement effective change management strategies. These efforts require not only institutional restructuring but also the presence of capable and forward-thinking academic and administrative staff. Such individuals are instrumental in motivating students, overcoming resistance to change, and translating reform efforts into meaningful outcomes. In this context, change is not solely a technical or procedural challenge; it is fundamentally a human-centered process that hinges on leadership effectiveness (Al-Enezi, 2004).

At the same time, the rapid pace of digital transformation has significantly altered how universities function, communicate, and serve their stakeholders. Digital leadership has emerged as a key facilitator in this evolution—not merely through the adoption of technology, but by strategically using digital tools to foster innovation, engage communities, and revitalize institutional processes. Recent research (Al-Qahtani & Al-Areefi, 2024; Eid, 2024; Musaigwa & Kalitany, 2024; Rahmadani, 2025) highlights the growing role of digital leadership in managing change, especially by promoting a forward-looking vision, empowering teams, and supporting data-informed decision-making.

Within this complex landscape, there is a pressing need to examine how digital leadership contributes to managing change in Palestinian higher education institutions. This inquiry is particularly timely given the dual necessity of institutional renewal and national recovery. Accordingly, this study seeks to address the following central question: What role does digital leadership play in managing change among staff in Palestinian higher education institutions?

Research Objectives:

This study aims to achieve the following objectives:

1. To examine the current state of digital leadership practices within Palestinian higher education institutions.
2. To explore the approaches and strategies adopted for managing change in these institutions.
3. To investigate the relationship between digital leadership and change management in the context of Palestinian higher education.
4. To identify the role that digital leadership plays in facilitating and guiding organizational change within higher education institutions.

Research Model and Hypotheses:

This study explores the relationship between two key concepts: digital leadership encompassing dimensions such as visionary leadership, the culture of learning in the digital era, digital citizenship, technology-driven professional development, systematic development and improvement, and change management. The core objective is to assess how digital leadership shapes and supports effective practices for managing change.

From a theoretical standpoint, the distributed leadership theory provides a valuable lens for understanding this dynamic. Unlike traditional hierarchical leadership models, distributed leadership recognizes that in today's fast-paced digital environments, leadership functions are shared among multiple individuals rather than concentrated in a single figure. This approach highlights the importance of tapping into the diverse digital skills and knowledge spread across organizational members. Digital leaders who adopt this perspective harness collective expertise to foster innovation and guide transformational change within their institutions (Ming & Mansor, 2024). Consequently, distributed leadership plays a pivotal role in bridging digital leadership and change management by promoting shared responsibility, collaboration, and collective agency within organizations. In digital contexts, leadership is no longer centralized but dispersed across digital teams, enabling faster adaptation to technological shifts and organizational transformation (Harris, 2014). Distributed leadership enhances digital capacity by empowering individuals at multiple levels to contribute to decision-making, fostering a culture of agility and innovation crucial for successful change management (Bolden, 2011; Spillane, 2006). By leveraging digital tools and decentralizing leadership functions, organizations can more effectively manage change processes, reduce resistance, and sustain long-term transformation (Lumby, 2013). In practice, a review of prior research indicates a growing body of evidence confirming the significant impact of digital leadership in facilitating organizational change (e.g., Musaigwa & Kalitany, 2024; Rahmadani, 2025). Despite this growing recognition, the examination of such a relationship within higher education institutions, particularly in the Palestinian context, remains limited and warrants further scholarly investigation.

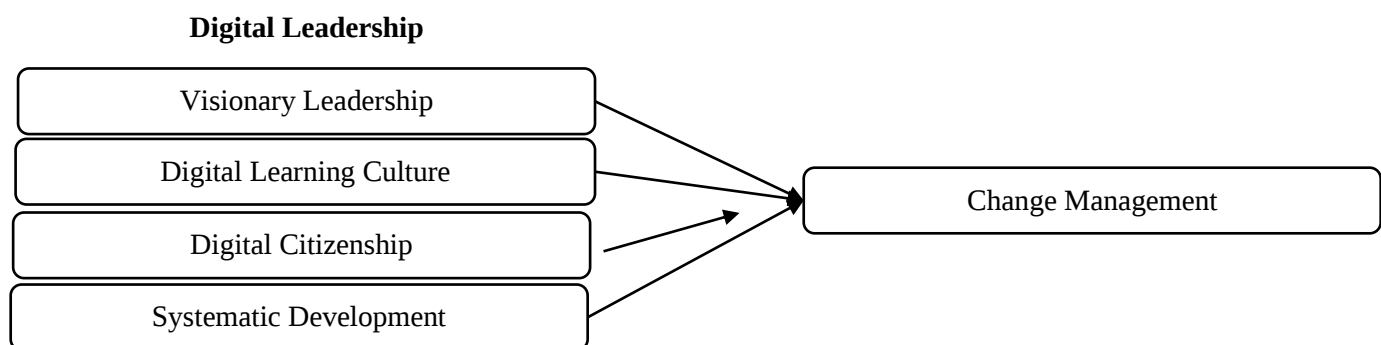


Figure (1): The Research Framework

Accordingly, the conceptual framework of this study proposes a model that explores the effect of the dimensions of digital leadership on change management, as illustrated in Figure (1). Based on this framework, the following hypotheses are formulated:

- H1:** There is a statistically significant relationship at the ($\alpha \leq 0.05$) level between digital leadership and change management in Palestinian higher education institutions.
- H2:** The dimensions of digital leadership have a statistically significant impact at the ($\alpha \leq 0.05$) level on change management in Palestinian higher education institutions.

Significance of the Study:

The significance of this study lies in its focus on the relationship between digital leadership and change management within Palestinian higher education institutions—particularly in light of the accelerating shift toward digitization and the growing need for leadership models capable of navigating such transitions. Its importance is further amplified by the unique Palestinian context, which faces ongoing genocide and crises that demand innovative leadership tools to rebuild institutions and guide effective change. This study addresses a

notable research gap regarding the role of digital leadership in Palestinian higher education settings, offering insights that can support institutional performance and inform change management and tools aligned with the demands of the digital era.

Literature Review and Previous Research:

Digital Leadership: Leadership is widely recognized as a crucial capability that enables individuals to influence others through a combination of moral, cognitive, and personal qualities aimed at achieving organizational objectives (Al-Adwan, 2013). Bratton (2020) further frames leadership as a dynamic, interactive process grounded in human collaboration, where consensus and shared purpose drive desired outcomes. Together, these perspectives emphasize leadership as inherently relational, goal-oriented, and vital for organizational success. As the concept of leadership deals with all various aspect of development in the digital era, it reacts to impact and may effected by the digitalization. In this regard, the term "digital" originally stems from technology, referring to the conversion of signals and information into formats interpretable by digital systems. Digitization, defined by Al Atom (2020) and supported by Zahran (2020), involves transforming various data forms into digital formats. Building on this, digital leadership pertains to strategically embedding digital technologies—such as mobile devices, communication platforms, and web applications into organizational practices to foster innovation and sustainable change.

Accordingly, Yusof et al. (2019) describe digital leadership as the synergistic interaction among leaders, technological tools, and institutional resources to enhance organizational outcomes. Scholars including Mahmoud (2015), and Khan (2016) highlight its significant benefits in educational and administrative settings: increased stakeholder engagement, enhanced quality and efficiency, streamlined workflows, and diminished bureaucratic obstacles. For example, digital platforms facilitate parental involvement in students' academic progress, strengthening home–school collaboration. Moreover, digital leadership improves time management, simplifies administrative processes, and enhances internal and external communication. Mahmoud (2015) emphasizes its strategic role in reducing redundancies, improving decision-making, and optimizing resource use. The adoption of digital tools minimizes dependence on paper-based systems and addresses longstanding challenges in data management and document preservation.

Far from a supplementary role, digital leadership has become a strategic necessity in modern education. Al-Shahri (2018) warns that neglecting digital transformation risks institutional relevance and competitiveness. Within this framework, digital leadership embodies a progressive model ensuring organizational adaptability, stakeholder engagement, and sustainable success. Digital leaders are expected to cultivate advanced technological skills to effectively motivate teams, promote knowledge sharing, and foster innovation across spatial and temporal boundaries.

Dimensions of Digital Leadership: The literature identifies five interconnected dimensions critical for successful digital leadership implementation in higher education:

1. **Visionary Leadership:** Central to digital leadership, visionary leadership entails articulating a clear, credible, and inspiring vision aligned with institutional goals (Kasanah, 2019). By involving stakeholders in co-creating this vision, leaders ensure resources and practices support long-term digital transformation (Lim & Teoh, 2022).
2. **The Culture of Learning in the Digital Age:** Abdelkader (2019) defines this as the knowledge and skills that enable individuals to access and use digital resources effectively. Educational leaders play a pivotal role in fostering environments equipped with modern tools supporting continuous learning and adaptability, preparing faculty and students for 21st-century challenges.
3. **Digital Citizenship:** Refers to the ethical and responsible use of digital technologies. Saleem (2018) stresses the need for guidelines maximizing benefits while mitigating risks. Digital leaders promote digital ethics, cybersecurity awareness, and respectful online interaction, cultivating a socially responsible academic community.

4. **Systematic Development and Improvement:** Mahmoud (2022) describes this as leveraging digital technologies to continually enhance institutional performance. Through data analytics and digital tools, leaders improve decision-making, optimize staff productivity, and bolster organizational efficiency (Zhong, 2017). This dimension also involves talent retention and building external partnerships to sustain digital progress (ISTE, 2014).

Change Management: Change management is essential for institutional sustainability and competitiveness, enabling organizations to adapt to internal and external pressures while pursuing excellence (Mabin et al., 2001). Common strategies include total quality management, restructuring, and technology integration (Pellettiere, 2006). Burke (2010) distinguishes revolutionary change, driven by abrupt disruptions, from evolutionary change, marked by gradual improvements. Huy (2001) emphasizes the role of timing and content in shaping change. Effective change management requires meticulous planning, implementation, and stabilization at organizational and individual levels (Alayan, 2015; Okemba, 2018). It is defined as a strategic process to transition from current to desired states with minimal disruption and maximal efficiency (Al-Hammadi, 1999). In an era of rapid technological advances, change management increasingly aligns with organizational agility and innovation (Mohammed, 2014). Gutiérrez (2023) asserts that successful change management boosts institutional responsiveness, adaptability, and global competitiveness (Baufest, 2023).

Dimensions of Organizational Change Management: Organizational change is often explored through three core dimensions:

1. **Change in Organizational Structure:** Involves intentional adjustments to hierarchies, workflows, and communication to enhance efficiency or respond to external demands. Success depends on addressing cultural and human factors alongside structural redesigns (Burnes, 2020; Aguinis & Kraiger, 2019).
2. **Change in Individuals:** Focuses on behavioral, cognitive, and emotional shifts influenced by personal motivations and environment (Hudson & Fraley, 2018). Prochaska and Velicer (2018) model outlines five stages: precontemplation, contemplation, preparation, action, and maintenance. Sustainable change requires psychological flexibility and consistent behavior aligned with individual traits (Hayes et al., 2020).
3. **Technological Change:** Adoption of advanced technologies such as AI and IoT is vital for efficiency and innovation (Algazo, 2024). Successful integration depends on employee readiness, training, and engagement (WalkMe, 2023; Gutiérrez, 2023).

Digital Leadership and Change Management: Recent studies highlight digital leadership's strategic role in facilitating effective change management. For instance, Musaigwa and Kalitanyi (2024) found that inclusive leadership enhances employee participation critical to organizational transformation. Hassan et al. (2023) showed digital leadership improves agility and reduces resistance to change in UAE technology firms. Zhang and Li (2022) revealed leaders with strong digital skills cultivate innovation cultures that bolster organizational change capacity in Chinese manufacturing. Schiuma et al. (2024) identified six core competencies blending technical expertise with human-centered leadership, enabling digital transformation. In Indonesia's banking sector, Susanti et al. (2020) demonstrated digital leadership's positive impact on change management effectiveness and employee performance, fostering adaptability and resilience. Collectively, these findings confirm that digital leadership, through technology use, inclusive engagement, and nurturing adaptive cultures, acts as a catalyst for sustainable change management.

The reviewed literature affirms digital leadership's critical role in advancing change management, especially in education. Its dimensions—visionary leadership, digital learning culture, digital citizenship, technology-based professional development, and systematic improvement—consistently enhance efficiency, innovation, and responsiveness to technological shifts. Meanwhile, change management's structural, individual, and technological dimensions highlight the complexity of organizational transformation and the need for strategic leadership. Despite growing research on digital leadership's role in change, empirical studies within higher education, especially in Palestine, remain scarce. Most focus on corporate or international contexts, leaving a gap regarding how digital leadership operates amid academic institutions facing unique structural, cultural, and technological challenges.

While existing studies consistently confirm the positive role of digital leadership in facilitating organizational change, a critical gap remains in understanding how these relationships operate in fragile and conflict-affected environments such as Palestine. Most prior research has been conducted in stable, corporate, or developed country contexts, which may not fully capture the institutional constraints, resource limitations, and socio-political pressures present in Gaza. Furthermore, previous studies tend to emphasize technological aspects while giving less attention to the human and cultural dimensions of digital leadership in crisis settings. Therefore, this study contributes by extending the discussion beyond conventional contexts and offering a more context-sensitive understanding of how digital leadership enables change under extreme conditions.

Therefore, this study aims to fill this gap by examining digital leadership's impact on change management in Palestinian higher education, contributing theoretical and practical insights to support institutional sustainability and competitiveness in the digital age.

RESEARCH METHODOLOGY

Research Method

This study will adopt a quantitative research method, consistent with the positivist research philosophy, to examine the causal relationships among the three latent variables: digital leadership (independent variable), and change management (dependent variable).

The study population will consist of employees working in higher education institutions in the Gaza Strip, Palestine. Data will be collected using a structured questionnaire that will be distributed to staff members across various accredited higher education institutions operating in Gaza. Using the survey method will ensure consistency in data collection and facilitate the analysis of relationships among the study variables.

Therefore, the quantitative method, supported by of Structural Equation Modeling (SEM) analysis, will be adopted as the most suitable research strategy to achieve the objectives of this study within the context of Palestinian higher education institutions in the Gaza Strip.

Population, Sample, and Sampling Method

According to official statistics, 17 higher education institutions operate in the Gaza Strip, employing around 5,800 academic and administrative staff (Ministry of Higher Education and Scientific Research, 2023). Despite variations in institutional size and specialization, these institutions share a high level of structural and functional homogeneity, as they operate under similar administrative systems, face comparable contextual constraints, and pursue common educational objectives. This cohesion makes the population suitable for examining the relationship between digital leadership and change management within Gaza's higher education sector.

Given the exceptional conditions in Gaza—marked by the ongoing blockade, mobility restrictions, and the impact of the current war—the convenience sampling method was employed as the most practical and contextually appropriate approach. A total of 400 electronic questionnaires were distributed across multiple universities and colleges, out of which 283 valid responses were received, representing a 70.8% response rate.

The relatively moderate response rate can be attributed to the difficult circumstances in the Gaza Strip, including intermittent power outages, unstable internet access, displacement of academic staff, and limited communication during the war. Despite these challenges, the obtained sample size was sufficient for structural equation modeling and provides a reliable basis for statistical analysis and generalization of the findings.

Study Instrument

The primary data for this study were collected using a structured questionnaire designed to measure the variables of the study Digital Leadership as the independent variable and Change Management as the dependent variable. The questionnaire was developed after a thorough review of relevant literature and previously validated instruments used in similar studies in the fields of leadership, technology, and organizational change.

The instrument consisted of three main sections.

- The first section included demographic information such as gender, age, qualification, job title, years of experience, and institution type.
- The second section measured Digital Leadership, which was adapted from the studies of Al-Fadhli (2019) and Al-Harbi (2020). This section included 25 statements covering five dimensions: visionary leadership, digital learning culture, digital citizenship, systematic development, and technology-based professional development.
- The third section measured Change Management, adapted from Kotter (2019) and Zhong (2016), and consisted of 20 statements representing three dimensions: organizational structure, individual change, and technological change.

All items were rated on a five-point Likert scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The instrument was originally prepared in English, then translated into Arabic and back-translated to ensure language accuracy and conceptual equivalence.

Data Analysis and Hypotheses Testing:

Descriptive Analysis

To ensure content validity, the questionnaire was reviewed by a panel of academic experts in management and education, who provided feedback on wording clarity and item relevance. A pilot test was conducted with 30 respondents from higher education institutions in Gaza to evaluate reliability and clarity.

The reliability of the instrument was confirmed through Cronbach's Alpha and Composite Reliability (CR) tests, both of which indicated excellent internal consistency. The coefficients were as follows:

- Digital Leadership: Cronbach's $\alpha = 0.971$, CR = 0.972
- Change Management: Cronbach's $\alpha = 0.972$, CR = 0.974

All items recorded factor loadings above 0.70, and Average Variance Extracted (AVE) values exceeded 0.50, confirming convergent validity. Discriminant validity was established through the Fornell–Larcker criterion and HTMT ratio. Therefore, the instrument was considered statistically valid and reliable for measuring the constructs of digital leadership and change management in higher education institutions within the Gaza Strip.

Table 1: Descriptive Statistics for Digital Leadership and Change Management

Variable	Dimensions	Mean	Std. Deviation	Interpretation
Digital Leadership	Visionary Leadership	3.73	0.75	Moderate to High
	Digital Learning Culture	3.74	0.76	Moderate to High
	Digital Citizenship	3.75	0.73	Moderate to High
	Systematic Development	3.73	0.73	Moderate to High
	Overall Mean	3.74	0.68	Moderate to High
Change Management	Organizational Structure	3.56	0.75	Moderate
	Technological Change	3.56	0.80	Moderate
	Individual Change	3.71	0.75	Moderate
	Overall Mean	3.61	0.70	Moderate

The descriptive analysis indicates that respondents perceive digital leadership practices at a moderate to high level (overall mean = 3.74, SD = 0.68). This suggests that leaders in Gaza's higher education institutions actively employ digital strategies, visionary direction, and system-based approaches to guide institutional performance. In contrast, change management scored a moderate level (overall mean = 3.61, SD = 0.70), reflecting that while digital leadership is evident, the full implementation of organizational change is still developing. The relatively balanced but lower scores in technological and structural change imply contextual limitations—such as infrastructure challenges and unstable conditions—that restrict transformation despite leadership efforts. These

findings suggest a positive alignment between digital leadership and change management, reinforcing the statistical relationship confirmed in the structural model ($\beta = 0.655$, $p < 0.001$). The consistency between descriptive and inferential results supports the robustness of the study's theoretical model and provides a strong foundation for interpreting the influence of digital leadership on organizational transformation.

Hypothesis Testing

Hypothesis 1 (H1)

There is a statistically significant relationship at the ($\alpha \leq 0.05$) level between digital leadership and change management in Palestinian higher education institutions in Gaza.

The results revealed a strong and statistically significant positive relationship between digital leadership and change management ($\beta = 0.655$, $T = 14.762$, $p < 0.001$). The model explained 71.9% of the variance ($R^2 = 0.719$) in change management, indicating substantial explanatory power. The effect size ($f^2 = 0.43$) was large, and the predictive relevance ($Q^2 = 0.392$) confirmed strong model accuracy. Therefore, H1 is supported, confirming that digital leadership significantly enhances institutional capacity to plan, implement, and sustain organizational change within higher education institutions in Gaza.

Table 2: Effect of Digital Leadership on Change Management

Path	Path Coefficient (β)	T-value	p-value	Decision
Digital Leadership $\rightarrow$ Change Management	0.655	14.762	< 0.001	Supported

Hypothesis 2 (H2)

The dimensions of digital leadership have a statistically significant impact at the ($\alpha \leq 0.05$) level on change management in Palestinian higher education institutions in Gaza.

To test this hypothesis, the four dimensions of digital leadership were analyzed individually to determine their specific impact on change management. The results are summarized below.

Table 3: Effect of Digital Leadership Dimensions on Change Management

Digital Leadership Dimension	Path Coefficient (β)	T-value	p-value	Decision
Visionary Leadership	0.301	7.462	< 0.001	Supported
Digital Learning Culture	0.214	5.814	< 0.001	Supported
Digital Citizenship	0.167	3.920	< 0.001	Supported
Systematic Development	0.226	6.031	< 0.001	Supported

Table 4: Path Coefficient and Significance Level for the Relationship between Digital Leadership and Change Management

Hypothesis	Relationship	Original Sample (O)	Standard Deviation (STDEV)	T Statistics ($ O/STDEV $)	P Values	R ²	Decision
H1	Digital Leadership $\rightarrow$ Change Management	0.655	0.039	17.007	< 0.001	0.78	Accepted

Interpretation of Results

The results presented in Table (3) were obtained through the bootstrapping procedure using SmartPLS 4.0, which assesses the statistical significance of the structural paths within the model. Bootstrapping is a non-parametric resampling method that estimates standard errors and t-values without assuming data normality, making it particularly suitable for social science research relying on survey data.

The findings indicate a strong and statistically significant positive relationship between Digital Leadership and Change Management among Palestinian higher education institutions. The path coefficient ($\beta = 0.655$) suggests that for every one-unit increase in digital leadership, there is an approximate 0.66-unit increase in the effectiveness of change management practices, assuming other factors remain constant.

The T-value (17.007) far exceeds the critical value of 1.96, and the p-value (< 0.001) confirms that this relationship is highly significant at the 0.01 level. Hence, Hypothesis H1 is accepted, validating that digital leadership exerts a substantial and positive influence on organizational change processes.

Furthermore, the coefficient of determination ($R^2 = 0.719$) demonstrates that 71.9% of the variance in change management is explained by digital leadership, which reflects a high level of explanatory power according to Chin's (1998) classification. This finding underscores the robustness of the structural model and highlights the pivotal role of digital leadership in driving transformation within academic institutions.

DISCUSSION AND CONCLUSION

Discussion of the Findings

The study's findings provide strong empirical support for both hypotheses (H1 and H2). The confirmation of H1 establishes that digital leadership, as an integrated construct, exerts a significant and positive influence on change management ($\beta = 0.655$, $p < 0.001$). This demonstrates that when leaders embrace digital strategies and innovative practices, they enhance institutional adaptability and resilience—particularly vital in Gaza's higher education context, which faces chronic instability and limited resources.

The confirmation of H2 extends this understanding by identifying which dimensions of digital leadership most strongly influence change. Visionary Leadership was the most influential, aligning with Kotter's (2019) model of transformational change. Systematic Development ranked second, consistent with Al-Harbi (2020), while Digital Learning Culture and Digital Citizenship confirmed the importance of continuous learning and ethical engagement (Al-Fadhli, 2019; Zhong, 2016). Collectively, these results highlight that digital leadership functions through both strategic and cultural pathways, enabling successful organizational transformation despite adversity.

These findings can be further interpreted through the lens of distributed leadership theory, which emphasizes shared responsibility and collective engagement in decision-making. The strong influence of digital leadership—particularly visionary leadership—supports the notion that leadership in digital environments is no longer centralized but distributed across multiple actors. This reinforces the argument that collaborative digital practices enhance institutional adaptability and reduce resistance to change. Moreover, the findings align with transformational leadership theory, where vision, inspiration, and innovation are key drivers of successful organizational change.

From a practical perspective, the findings suggest that higher education institutions should prioritize the development of digital leadership competencies among academic and administrative leaders. This includes investing in digital training programs, fostering collaborative digital environments, and integrating technology into strategic planning processes. Institutions operating in crisis contexts can particularly benefit from adopting flexible and decentralized leadership approaches to enhance responsiveness and resilience.

Recommendations of the Study

Based on the findings and statistical results, the study offers several recommendations to strengthen digital leadership practices and enhance effective change management in Palestinian higher education institutions:

1. Institutionalize Digital Leadership Training

Universities should establish continuous professional development programs focusing on digital leadership competencies, including visionary thinking, strategic digital planning, and technology-based decision-making. Regular workshops and e-leadership certification programs can help academic and administrative leaders stay aligned with global digital transformation trends.

2. Promote a Digital Learning Culture

Higher education institutions are encouraged to cultivate a culture that values digital innovation, creativity, and continuous learning. This can be achieved by integrating digital tools in teaching, research, and management, and by rewarding innovative digital practices that contribute to institutional effectiveness.

3. Strengthen Systematic Digital Development

Universities should adopt structured digital strategies that include clear objectives, implementation timelines, and performance indicators. Institutional digital transformation plans must align with national education strategies to ensure coherence and sustainability.

4. Encourage Ethical and Responsible Digital Citizenship

Institutional leaders should promote responsible digital behavior and ethical technology use among faculty, staff, and students. This includes developing clear digital ethics policies, ensuring data privacy, and maintaining professional conduct in virtual environments.

5. Enhance Technological Infrastructure

To support leadership and change initiatives, institutions should invest in upgrading their digital infrastructure, including internet connectivity, cloud-based platforms, and learning management systems. Strengthened infrastructure is essential for the effective execution of digital leadership strategies.

Limitation and Future Study

While this study contributes valuable insights into the relationship between digital leadership and change management within Palestinian higher education institutions, several limitations should be acknowledged:

1. **Geographical and Contextual Scope:** The study was confined to higher education institutions located in the Gaza Strip. Therefore, the results may not fully represent other regions or countries with different socio-economic, political, or educational environments. Contextual factors such as conflict, resource limitations, and infrastructural instability may have influenced the perceptions of respondents.
2. **Cross-Sectional Design:** The data were collected at a single point in time, which limits the ability to infer long-term causal relationships between digital leadership and change management. Future research employing longitudinal or mixed-method designs could better capture dynamic changes and temporal effects.
3. **Use of Self-Reported Data:** The study relied on self-administered electronic questionnaires, which may introduce bias due to respondents' subjective perceptions or social desirability tendencies. Incorporating qualitative data—such as interviews or focus groups—could help validate and deepen the quantitative findings.
4. **Sampling Constraints:** Due to the difficult conditions in Gaza, convenience sampling was adopted. Although this method enabled adequate data collection, it may limit the generalizability of results. Future studies should consider random or stratified sampling when feasible to enhance representativeness.
5. **Limited Variables:** The study focused only on digital leadership as an independent variable and change management as the dependent variable. Other organizational factors—such as innovation climate, employee engagement, or institutional resilience—were not included but could further clarify the mechanisms through which digital leadership drives change.

Suggestions for Future Study

Future research is encouraged to adopt mixed-method approaches combining quantitative and qualitative data to gain deeper insights into the mechanisms through which digital leadership influences change management. Additionally, comparative studies across different regions or countries would provide a broader understanding of how contextual factors shape the effectiveness of digital leadership practices. Further, the future studies are encouraged to:

1. **Expand the Context:** Future research could extend this investigation to universities in the West Bank or neighboring countries to compare how differing political, cultural, and infrastructural contexts influence the digital leadership–change management relationship.
2. **Include Mediating and Moderating Variables:** Researchers are encouraged to explore additional constructs (e.g., organizational culture, digital readiness, innovation capability, or leadership style) as mediators or moderators that might explain how and when digital leadership affects change management outcomes.

3. Assess Post-Crisis Digital Transformation: Considering the ongoing challenges in Gaza, future studies could examine how digital leadership contributes to institutional recovery, resilience, and continuity planning in post-crisis settings.
4. Compare Different Educational Levels and Sectors: Further research may analyze digital leadership and change management across different educational levels (schools, vocational institutes) or even across non-educational sectors to evaluate cross-sectoral applicability.

In summary, while this study provides robust empirical evidence of the significant impact of digital leadership on change management, its limitations highlight opportunities for future exploration.

Subsequent research that incorporates broader contexts, diversified methodologies, and additional variables will not only validate these findings but also deepen theoretical understanding and practical application of digital leadership in dynamic and crisis-affected environments.

CONCLUSION

The findings confirm that digital leadership significantly influences change management within Palestinian higher education institutions. Moreover, all four dimensions—Visionary Leadership, Digital Learning Culture, Digital Citizenship, and Systematic Development—exert statistically significant effects on the effectiveness of change initiatives. These results emphasize that transformational success in higher education depends on leaders who combine strategic digital vision with systematic development and a strong learning culture, while promoting responsible digital citizenship among staff. The validation of both hypotheses reinforces the strategic importance of digital leadership in driving organizational adaptability, innovation, and resilience, particularly under crisis conditions such as those prevailing in Gaza.

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