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Original Article

The Impact of Digital Leadership on Employee Performance in the Education Sector of Iraq: The Mediating Role of Digital Transformation

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Abstract

Background: The rapid technological developments are interfering with the conventional academic activities. Colleges and universities are required to be computerized in order to stay relevant. Nevertheless, transformation cannot be effectively adapted without new technology; it also needs a good leader. **Objectives:** The present investigation aims at measuring the impact of digital leadership on employee performance, with a special focus on the mediating function of digital transformation in the private sector of higher education. **Methods:** A quantitative and cross-sectional design was used; the data sources for primary data were collected using a structured questionnaire for a purposive sample of 128 academic and administrative staff of private colleges and universities in Iraq. Partial Least Squares Structural Equation Modeling (SmartPLS) was used to test the hypotheses. **Results:** Empirical findings show that digital leadership has a significant positive direct impact on the digital transformation initiatives and the individual employee's performance. Moreover, the findings support the fact that digital transformation is a crucial intermediary mechanism that helps convert strategic vision, technical support, and innovative ambience fostered by digital leaders into tangible improvements in the productivity of the workforce and execution of tasks. **Conclusion:** The study theoretically contributes to the resource-based view by showing that the process of structural technological upgrades is in essence made up of human-centric activities that are orchestrated under adept leadership. Consequently, the study provides a strategic framework for university administrators to consider and clarify that capital expenditures in digital platform infrastructure need to be tied to proactive leadership development efforts to upgrade the performance of the staff.

Keywords: *Digital Leadership; Digital Transformation; Employee Performance; Higher Education; Iraq; PLS-SEM*

Introduction

Technological development continues to challenge traditional working practices in every industry around the world; organizations are therefore forced to invest in new technologies in order to maintain competitive advantage. In the present academic and industrial scenario, the integration of digitalization is no more peripheral to an organization's survival and growth and is a core element in this process (Salam, 2020). This paradigm shift certainly is seen in the higher education sector, particularly. Private Higher Education Institutions (HEIs), operating in very competitive and fast-changing markets, are under enormous stress to modernize their academic and administrative operations (Yang & Prasansaph, 2024). The transition from teaching/learning and administrative approaches as per

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tradition to a shared digital ecosystem demands, on the part of the educators, the transition beyond the instrumental acquisition of the technology to a strategic shift, impelled by effective leadership (Jameel, 2021). Consequently, knowing how organizational leaders handle this transition and the consequent impact that it has on the workforce has become a critical need to be understood from both theoretical and practical angles (Ahmad *et al*., 2021). Theoretical perspectives highlight the successful usage of new technologies being inextricably linked to the human element; thus, it is important to explore how leadership paradigms affect the outcome for an individual in digitized areas.

This research focuses on the convergence of Digital Leadership (DL), Digital Transformation (DT), and Employee Performance (EP) - core constructs in contemporary organizational behavior. Unlike the conventional approaches to management, digital leadership requires special competencies to develop digital strategies, foster innovative work cultures, and lead organizations through technological disruptions. Prior studies have suggested that effective digital leaders catalyze employee adaptability, creativity, and motivation and, in turn, result in effective task execution (Mamdouh *et al*., 2025; Öngel *et al*., 2023). Within private higher education, the performance of academic and administrative staff members directly affects the quality of education, student satisfaction, and accreditation of the institution (Ramaditya *et al*., 2023). Empirical evidence consistently illustrates how the introduced technologies can hinder or support job performance depending on the way leaders manage and integrate these technologies (Anggiani & Fatonah, 2025; Sagbas *et al*., 2023). Accordingly, this study conceptualizes DT as a pivotal mediating mechanism, which is not only seen as the digitization of existing procedures but as a profound organizational capability that reconfigures value delivery. Literature emphasizes that digital leadership alone may not immediately result in improved performance without the concrete reorganization and technology integration characteristic of digital transformation (Namatovu & Kyambade, 2025; Qiao *et al*., 2024). Consequently, the theoretical framework suggests that digital leaders implement their vision by spearheading digital transformation efforts, which then provide workers with the requisite technologies and procedures to enhance their performance (Al-Wedyan *et al*., 2025; Senadjki *et al*., 2024).

Despite the recent rise in scholarly debate on digitalization, a critical review of the current literature shows significant gaps in terms of theoretical and contextual issues. A significant number of previous studies have mostly concentrated on the macro-level results of digital transformation, such as corporate financial performance, general operational efficiency, or extensive organizational resilience (Senadjki *et al*., 2024; Zhang *et al*., 2025). Alternatively, studies that have examined the micro-level behavioral outcome have often located their work within a corporate, manufacturing, or public sector setting (Namatovu & Kyambade, 2025; Öngel *et al*., 2023; Van Chien *et al*., 2025). In the service industry, particularly in private higher education, there is still a glaring lack of empirical studies that methodically investigate the role of DT in the link between DL and individual EP. While some recent studies have acknowledged the impact of digital mechanisms on strategic performance in universities, the specific triad of digital leadership, structural DT, and holistic EP remains underexplored (Al-Wedyan *et al*., 2025; Jing *et al*., 2025; Zabalawi *et al*., 2024). This research responds to this theoretical gap by shifting the focus from the macro-level organizational metrics to the micro-level realities of academic and administrative staff, adding richness to the current knowledge about internalizing and operationalizing technological transitions by human capital in the higher education sector.

The main issue this study looks at is the ongoing gap between big expenditures in digital technology and the actual improvement of employee performance in private colleges and universities (Jameel *et al*., 2021; Yang & Prasansaph, 2024). To stay competitive, many private institutions of higher learning spend significant amounts of money on the latest in learning management systems, automated administrative software, and modern communications infrastructure (Mohamed Hashim *et al*., 2022). Nevertheless, such investments in technology often do not lead to increased staff efficiency and enhanced quality of instruction. This lack of success is mainly due to limited digital leadership and the half-baked execution of digital transformation initiatives (Al-Wedyan *et al*., 2025). When institutions attempt to install complex digital systems without leadership that possesses the required digital vision and technical self-efficacy and change management capabilities, the employees of the newly installed

system often suffer from technostress, role ambiguity, and resistance to change (Elsawy & Abu-Alhaija, 2026). The consequences of failing to work out this issue are severe. Private universities stand to lose a lot of money through obsolete or underutilized technological infrastructure, loss of workforce morale, and finally, institutional reputation and institutions' treaties with student enrollment (Qasim *et al*., 2021). So, figuring out how digital leadership really affects EP through DT is a major operational task.

The main aim of this study is to find out how DL affects employee performance by looking at the role of digital transformation in the private higher education sector. This is based on the stated problem and research gaps. To achieve this overall goal, the study outlines many specific research goals. Therefore, this study has the following four main objectives. It first examines the direct impact of digital leadership on the performance of academic and administrative personnel. Second, it assesses how digital leadership influences the successful execution of institutional digital transformation. Third, the research investigates the direct effect of digital transformation on employee performance. The study further assesses the mediating role of digital transformation in the structural pathway between digital leadership and individual employee performance, hence providing a whole package that explains mechanisms that underpin digital success in contemporary academia.

Literature Review

Digital Leadership

DL breaks out from traditional leadership models by connecting technological foresight with human-centered management skills. It summarizes the leader's ability to communicate a vision for the institution's digital future, support an innovative culture, and guide the institution strategically through technological disruptions. Recent scholarship has identified visionary leadership, digital citizenship, and commitment to systemic improvement as the key constituents of digital leadership (Mamdouh *et al*., 2025). Importantly, such leadership is not about IT infrastructure management but is concerned with providing the right tools in the infrastructure to empower employees to solve digital challenges. Researchers tend to operationalize this construct by measuring the extent to which leaders are actively engaged in digital tools, support for subordinates developing their skills in using digital tools, and role-model behavior in digital adoption (Öngel *et al*., 2023; Qiao *et al*., 2024). This construct is the basis for the premise that in order to mitigate the uncertainties inherent in rapid technological change, successful contemporary leaders must, at the same time, be both emotionally intelligent and digitally competent (Elsawy & Abu-Alhaija, 2026).

Employee Performance

Employee performance is the dependent variable and is seen as the best way to measure how well individuals and organizations are doing. Contemporary literature transcends limited definitions of task execution, conceptualizing employee performance as a multidimensional construct that includes both in-role task performance and extra-role contextual behaviors, such as adaptability, innovative work behavior, and digital collaboration (Jameel & Ahmad, 2019; Sagbas *et al*., 2023). In rapidly modernizing areas like higher education and financial services, employee performance indicates the efficiency and creativity with which workers fulfill their duties while adjusting to evolving operational requirements (Al-Wedyan *et al*., 2025). Traditionally, it is judged by self-reported or supervisor-assessed indices of quality of work, prioritization of tasks, problem-solving skills, and a commitment to ongoing professional growth (Mamdouh *et al*., 2025; Wang *et al*., 2025). In organizations with a lot of digital technology, employees need to not only fulfill conventional productivity standards but also be able to easily incorporate new digital methods into their everyday lives without being too stressed out by technology (Nguyen, 2025).

Digital Transformation

Digital transformation, serving as the mediating variable, is characterized as a significant organizational capability and strategic realignment rather than a mere procurement of hardware or software. It entails the fundamental transformation of operational processes, value delivery mechanisms, and the workplace culture through the integration of advanced digital technologies. Digital transformation is different from simple digitization, which only changes analog data into digital formats. Digital

transformation is a systemic change that affects how employees work together, make decisions, and do their jobs (Wen & Li, 2024). Theoretical frameworks, including the Resource-Based View (RBV), characterize digital transformation as a dynamic organizational resource that requires ongoing management and alignment with institutional objectives (Kankanamge *et al*., 2026; Wang *et al*., 2024). In empirical studies, it is usually measured by checking the level to which digital systems have naturalized in day-to-day operations, whether digital initiatives have been given top priority by the organization, and whether the operation has become more agile and resources have become more efficient (Al-Wedyan *et al*., 2025; Kankanamge *et al*., 2026). Consequently, digital transformation serves as the structural context in which digital leadership is enacted, and employee performance is realized.

Hypotheses Development

Digital Leadership and Employee Performance

The close association between digital leadership and EP is founded on social exchange theory and the job demands-resources model. Theoretically, when leaders present a compelling digital vision and the resources for technological adaptation, they preempt the ambiguity and anxiety that is often felt during transition at work (Shin *et al*., 2023). Digital leaders act as the facilitator that can provide important job resources (including training, psychological support, and clear strategic direction) that buffers the cognitive demands from learning new systems. Leaders increase their employees' intrinsic motivation and self-efficacy by creating a workplace space where they encourage and facilitate digital exploration for their employees (Dou *et al*., 2023). This psychological empowerment has a natural flow to improved results in behaviors because employees become more confident and capable of executing their tasks in innovative and efficient ways. Consequently, the theoretical assertion contends that the encouraging and visionary characteristics of digital leadership directly enhance individual productivity and contextual performance (Elsawy & Abu-Alhaija, 2026).

A substantial body of recent empirical literature consistently validates the beneficial impact of DL on EP. Research on the contemporary workforce has shown that digital leadership serves as a vital precursor to individual creativity, motivation, and job performance (Mamdouh *et al*., 2025; Öngel *et al*., 2023). For example, studies carried out in service and technical industries point out that the performance of their subordinates is significantly improved by adaptive digital leaders through the improvement of their technical self-efficacy and job satisfaction (Anggiani & Fatonah, 2025; Elsawy & Abu-Alhaija, 2026). Furthermore, exploration into the predictors of innovative behavior affirms that leaders who promote digital initiatives foster an environment in which employees feel safe in taking calculated risks, thus uplifting task execution (Sagbas *et al*., 2023; Wang *et al*., 2025). Bringing these findings together shows that there is a general agreement: no matter what industry it is, digital leadership always leads to better employee performance.

Prior empirical studies have consistently shown a positive and significant relationship between digital leadership and performance in different contexts. For example, a study by Van Chien *et al*. (2025), which took place in the coal mining sector, found that digital leadership plays a vital role in improving the operational efficiency of the company as well as the performance of the employees. Similarly, Namatovu and Kyambade (2025), in the context of the public sector, found that digital leadership significantly enhances performance outcomes through technological adoption and harmonization of organizational strategies with digital activities. These findings from different sectors imply that digital leadership is a key factor for better performance, which provides strong empirical evidence for the suggested relationship.

H1: Digital leadership has a significant positive impact on employee performance.

Digital Leadership and Digital Transformation

Dynamic capabilities theory can help us understand how digital leadership and digital transformation are related. According to this perspective, an organization's capacity for integration, building, and reconfiguration of internal competencies, which can be applied to cope with rapidly changing environments, is very much dependent on its upper echelons. In theory organizations are subject to

inertia and resistance by employees when the technology is overhauled (Namatovu & Kyambade, 2025). Consequences of this are that systemic transformation rarely emerges organically; it must be intentionally designed from the top-down. Digital leaders activate the dynamic ability of digital transformation. Through resource allocation and structural realignment, they create a digital-first culture (Senadjki *et al*., 2024). These leaders act as visionary change agents and break down psychological and structural barriers, thus integrating technological adoption at the organizational level.

Empirical studies in the past have given strong evidence to the leading role of leadership in ensuring digital transformation. Research in a variety of settings, such as the organizations of the public, regularly proves that the implementation of the digital transformation initiatives cannot take place without the adoption of digital leadership as a precondition (Namatovu & Kyambade, 2025). Researchers exploring the technological adoption experience focus on the fact that the competencies, experience, and strategic vision of digital leaders are the primary factors that influence the level of digital maturity of an organization (Senadjki *et al*., 2024). In addition, studies on environmental sustainability and operational approaches have found out that digital leadership plays a significant role in the volume and magnitude of digital resource usage, and thus, organizations can engage in more sustainable and innovative operational approaches (Kankanamge *et al*., 2026). Taken together, it is possible to infer that without robust digital leadership, it is only natural that digital transformation will not progress or become a meaningful integration of the organization.

H2: Digital leadership has a significant positive impact on digital transformation.

Digital transformation and employee performance

The proposed relationship between digital transformation and employee performance is theoretically grounded in the Technology Acceptance Model (TAM) and task-technology fit theories. When an organization undergoes successful digital transformation, it essentially upgrades the structural and instrumental resources available to its workforce (Senadjki *et al*., 2024). Digital transformation replaces old, slow manual processes with faster, more efficient automated systems. This cuts down on administrative work and mistakes made by people (Al-Wedyan *et al*., 2025). Theoretically, such an alignment with advanced digital tools and daily job tasks increases the operational efficiency of the organization and allows employees to have relevant real-time data for better and faster decision-making (Van Chien *et al*., 2025). Consequently, the process of modernization of the work environment enables the employee to transition the focus of the cognitive resources from the routine procedural task to higher-value strategic and innovative activities, leading directly to an improvement of the overall performance of the employee and the quality of the output.

Empirical evidence validates the claim that organizational digital transformation enhances individual performance metrics. Recent studies have shown that the use of digital collaborative capabilities and the use of digital infrastructure have a relatively high impact on the operational performance of employees in different sectors such as mining, logistics, and higher education (Nguyen, 2025; Van Chien *et al*., 2025). Researchers have discovered that the active implementation of digital transformation tools, like e-learning management systems and automated administrative platforms, directly enhances the strategic performance, decision-making skills, and daily productivity of both academic and administrative personnel within the university setting (Al-Wedyan *et al*., 2025). Likewise, comprehensive research on digital ecosystems underscores that involving employees in the digital transformation process is significantly correlated with enhanced job performance and organizational commitment (Qiao *et al*., 2024). Other empirical evidence based on past studies has persistently emphasized the important positive effect of digital transformation on performance outcomes in various situations. For example, study Senadjki *et al*. (2024), which was conducted in Malaysia within the scope of general enterprises, reported that digital transformation improves the organizational performance through efficiency and innovation abilities. Likewise, Namatovu and Kyambade (2025) conducted research in the public sector in Uganda and discovered that digital transformation is a key factor in performance improvement with the implementation of cutting-edge technologies and process

optimization. These findings in different settings are strong empirical support for the positive relationship between digital transformation and performance.

H3: Digital transformation has a significant positive impact on employee performance.

Mediating role of Digital Transformation

Digital transformation plays a mediating role between digital leadership and employee performance, whose influence can be well described through the prism of resource orchestration theory. Although digital leadership offers a sense of direction, psychological helping, and vision of change, these factors are not enough to bring about long-lasting performance changes in the employees unless there are structural and technological shifts. Theoretically, digital transformation can be viewed as the key process by which the intentions of leaders can be converted into practical systems and processes. In this regard, digital leaders propel and lead change, but change of organizational infrastructure is the only aspect that ultimately empowers employees with requisite tools and capabilities to improve their performances. Therefore, digital transformation serves as a connector between strategic leadership at the macro-level and operational implementation at the micro-level, which in turn realizes the influence of leadership on employee performance.

This mediating relationship is highly supported by empirical evidence. The previous research shows that the influence of digital leadership on organizational performance is not direct but is largely mediated by successful execution of digital transformation initiatives (Senadjki *et al*., 2024). Applying this point of view to the personal level, recent studies prove that the digital transformation also mediates the correlation between leadership and the performance of employees. Both the results of the public and private sector organizations show that the digital leadership enhances the performance results mainly through the promotion of structural and technological changes that employees later apply in their working process (Namatovu & Kyambade, 2025; Qiao *et al*., 2024). Moreover, the analysis of the work of Generation Z and contemporary SMEs indicates that the most successful leadership approaches can only achieve high-performance results in the cases of their successful conversion into the practical digitalized systems and high-involvement technological practices (Anggiani & Fatonah, 2025; Wang *et al*., 2024). Collectively, these results are very strong empirical evidence in favor of the mediating mechanism suggested.

Prior empirical studies have produced strong evidence in favor of the mediating role of digital transformation in the relationship between digital leadership and employee performance in various contexts. For instance, study Kankanamge *et al*. (2026), conducted in the e-waste sector, identified digital transformation as a major agent that facilitates the improvement of the green operational performance outcomes that come with digital leadership. Similarly, Namatovu and Kyambade (2025), in the public sector in Uganda, found that digital transformation has a significant mediating effect on the relationship between leadership practices and performance. In addition, Qiao *et al*. (2024), which was carried out in South Korea in various sectors, affirmed that most of the performance effects of digital leadership are transmitted through the successful implementation of digital transformation initiatives. These findings for different industries and national contexts support the importance of digital transformation as a critical mediating factor.

H4: Digital transformation significantly mediates the relationship between digital leadership and employee performance.

Figure 1 shows the conceptual framework for this study where the hypothesized relationships among the core variables are mapped. As shown in the model, Digital Leadership (DL) is the Independent Variable (IV) that is hypothesized to have a direct effect on employee performance Dependent Variable (DV) as well as an indirect effect through the mediating variable of digital transformation. This structural model captures visually the primary theoretical argument of the study, which is that the effect of a leader's digital vision on workforce outcomes is significantly channeled through actual structural implementation of digital technologies.

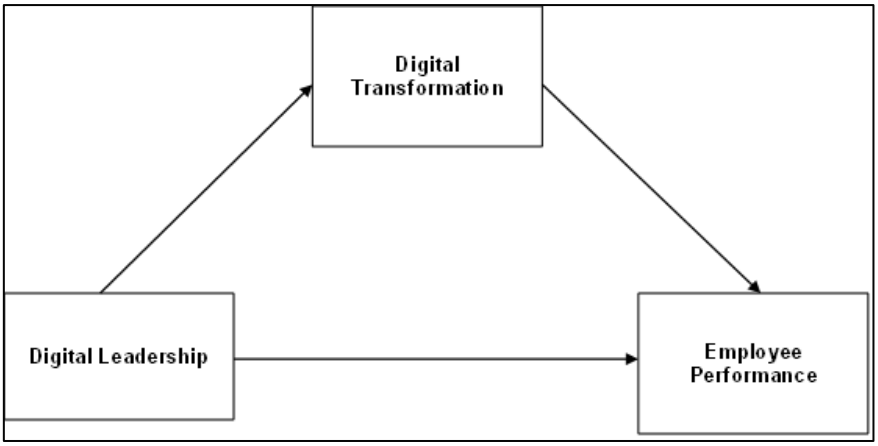

Figure 1: Conceptual Framework

Methodology

Research Design

This research adopts a quantitative approach of a deductive research method to investigate and empirically find out the proposed hypotheses. A quantitative design is highly appropriate for this research because it facilitates the objective measurement of the proposed theoretical constructs digital leadership, digital transformation, and employee performance and allows for the statistical testing of the structural relationships between them. By using a deductive methodology, the study moves from pre-existing organizational behavior and information systems theories, including the Resource-Based View and dynamic capabilities, to very particular empirical observations. Furthermore, the research draws upon cross-sectional time horizon research; that is, the data were dispersed to the target population at one point in time. This approach has been chosen because of its practical efficiency in collecting a large amount of data for the aim of assessing the current attitude and behavior related to the fastness of implementing the implemented technology, which is included in the primary objectives of this study.

Research Setting and Population

The empirical context for this investigation is the context of the higher education sector, where the research subjects are private colleges and universities located in Iraq. This venue has relevance and is timely as the private HEIs in the region are presently functioning in a highly competitive market that requires rapid modernization and the adoption of digital learning and administrative ecosystems. The target population is the academic faculty and administrative staff in these private Iraqi institutions. The study population will include academic and administrative employees of the HEIs of the private sector. This group has been specifically chosen because they are the major consumers of digital systems, and thus, they are directly affected by the digital leadership practices practiced by the institutional management. Their proactive involvement in the digital transformation efforts, as well as their experience of being exposed to the leadership approaches, makes them a rather relevant and authoritative source of data. As a result, their experiences and performance results are very insightful in terms of dynamic interaction between the digital transformation phenomenon and leadership styles in the context of higher education.

Data Sampling and Sample Size

In order to be selective and be informed, this paper used a purposive sampling method. a non-probability sampling method facilitated the specific target distribution of the survey among academic and administrative members, who have either participated in or been subjected to digital transformation efforts that occurred directly in their organizations, which increased the validity and relevance of the results gathered. After the process of data collection, the process of data screening and cleaning was realized, including the elimination of unfinished and careless answers. Consequently, 128 valid responses were obtained as a final sample.

This is a strong and sufficient sample to conduct a sophisticated statistical analysis, especially the Structural Equation Modelling (SEM). It meets the commonly accepted 10-times rule and is compatible with the recommended threshold based on the G*Power analysis of the models with several constructs. In this respect, the sample has adequate statistical power to identify significant relations, as well as to support the validity of the results of the study.

Data Collection

Primary data were obtained using a self-administered and structured questionnaire. The questionnaire was designed to be short and easy to use in order to facilitate a high response rate from busy academic professionals. It was divided into two main parts: the first one covered the capture of demographic and professional profiles (such as job role, tenure, and educational background, for example), and the second one centered on the measurement of the main theoretical variables. To guarantee the reliability and validity of the data, the items of the questionnaire were carefully adapted from existing scales from previously reviewed literature. Using a standard 5-point Likert scale, participants were asked to rate how much they agreed with different statements. Participants indicated their answers using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The survey was digitized and distributed using professional networks and institutional communication channels in order to reach as many of the targeted private colleges and universities as possible.

Measurement of Variables

Table 1: Measurement of Variables

Variables	No. of Items	References
Digital Leadership	6	(Kankanamge *et al*., 2026; Qiao *et al*., 2024)
Digital Transformation	5	(Kankanamge *et al*., 2026; Qiao *et al*., 2024)
Employee Performance	6	(Jameel, 2021; Qiao *et al*., 2024)

Table 1 displays the number of items for each variable, along with the references from which these items were adapted and adopted.

Data Analysis

The data collected was analyzed using the PLS-SEM, which was facilitated by the SmartPLS software. PLS-SEM has been chosen as the main analytical method because it is extremely suitable for predictive research models and complicated networks that include mediating variables. The analysis evolved into two stages that were systematic. First, the measurement model was tested to ensure the reliability of the indicators and internal consistency. After the theoretical model of measurement was confirmed, the structural model was evaluated, and a bootstrapping procedure involving 5,000 subsamples was conducted to ascertain the statistical significance of the particular indirect effects.

Results

As outlined in Table 2, the demographic characteristics of the 128 respondents show that the sample is largely male (64.1%) and a mature workforce, with the majority of the respondents over 40 years of age (55.4%). Reflecting the demanding requirements of the higher education sector, the cohort is highly educated; almost two-thirds have a PhD (64.1%), and the remainder a master's degree (35.9%). On academic rank, the sample provides a fairly even cross-section of early-to-middle stages of career progression and is spread fairly evenly among Assistant Lecturers (32.0%), Assistant Professors (30.5%), and Lecturers (28.1%), as well as a smaller proportion of full Professors (9.4%). Collectively, these demographics validate the fact that the results of this study are derived from a very qualified and experienced cohort of academics, which ensures a reliable measurement of digital leadership and structural transformation in their institutions.

Table 2: Demographic Profile of the Respondents (N = 128)

Demographic Variable	Category	Frequency (N)	Percentage (%)
Gender	Male	82	64.1%
	Female	46	35.9%

Age	Less than 30 years	24	18.8%
	30 - 40 years	33	25.8%
	More than 40 years	71	55.4%
Academic Degree	Master's Degree	46	35.9%
	PhD	82	64.1%
Academic Title	Assistant Lecturer	41	32.0%
	Lecturer	36	28.1%
	Assistant Professor	39	30.5%
	Professor	12	9.4%

Measurement Model

Table 3 and Figure 2 reported the measurement model evaluated according to reliability and convergent validity. The findings reveal that there are adequate measures of internal consistency and validity of all constructs.

To begin with, the outer loadings of all measurement items are higher than the recommended threshold of 0.70 (Hair *et al*., 2019); the digital leadership loadings were between 0.723 and 0.892, digital transformation between 0.740 and 0.864, and employee performance between 0.701 and 0.833. These values affirm that all the indicators are sufficient to measure their respective constructs.

In terms of internal consistency reliability, all the constructs have a high level of reliability, as the values of the Cronbach alpha exceed the desired cutoff of 0.70 (Nunnally & Bernstein, 1994). The Cronbach's alpha reported were digital leadership 0.920, digital transformation 0.906, and employee performance 0.887. Likewise, the composite reliability of all constructs is higher than the acceptable level of 0.70 (Hair *et al*., 2019), which are 0.917, 0.905, and 0.885, respectively, and this is more evidence that internal consistency is strong.

The value of the Average Variance Extracted (AVE) of all the constructs is higher than 0.50, which is the minimum value of convergent validity (Fornell & Larcker, 1981). Digital leadership scored 0.650, digital transformation 0.656, and employee performance 0.562. These findings show that all the constructs have more than 50% of the variance of the indicators, thus proving sufficient convergent validity. Altogether, the results of Table 3 show that the measurement model corresponds to the accepted criteria of reliability and convergent validity.

Table 3: Construct Validity and Reliability

Variable	Code	Outer Loadings	Cronbach's Alpha	Composite Reliability	AVE
Digital Leadership	DL1	0.757	0.920	0.917	0.650
	DL2	0.832			
	DL3	0.723			
	DL4	0.858			
	DL5	0.759			
	DL6	0.892			
Digital Transformation	DT1	0.845	0.906	0.905	0.656
	DT2	0.740			
	DT3	0.814			
	DT4	0.864			
	DT5	0.781			
Employee Performance	EP1	0.715	0.887	0.885	0.562
	EP2	0.749			
	EP3	0.701			
	EP4	0.764			
	EP5	0.730			
	EP6	0.833			

The Heterotrait-Monotrait ratio (HTMT) was used to determine the discriminant validity, which is in Table 4. By the standards, the threshold of 0.90 is considered the limit of HTMT values (Henseler *et al*., 2015), though it is recommended that the cutoff value should be lower at 0.85 (Kline, 2016).

The outcomes show that all the values of HTMT are significantly lower than the recommended values. In particular, digital transformation versus digital leadership has the value of 0.664, digital transformation

versus EP has a value of 0.778, and digital leadership versus EP has the value of 0.715. These values make it evident that every construct is empirically different to the others. Hence, Table 4 results show that discriminant validity is achieved, indicating that the constructs utilized in this research are conceptually and statistically different and can be analyzed in terms of a structural model.

Table 4: HTMT

	Digital Transformation	Digital Leadership	Employee Performance
Digital Transformation			
Digital Leadership	0.664		
Employee Performance	0.778	0.715	

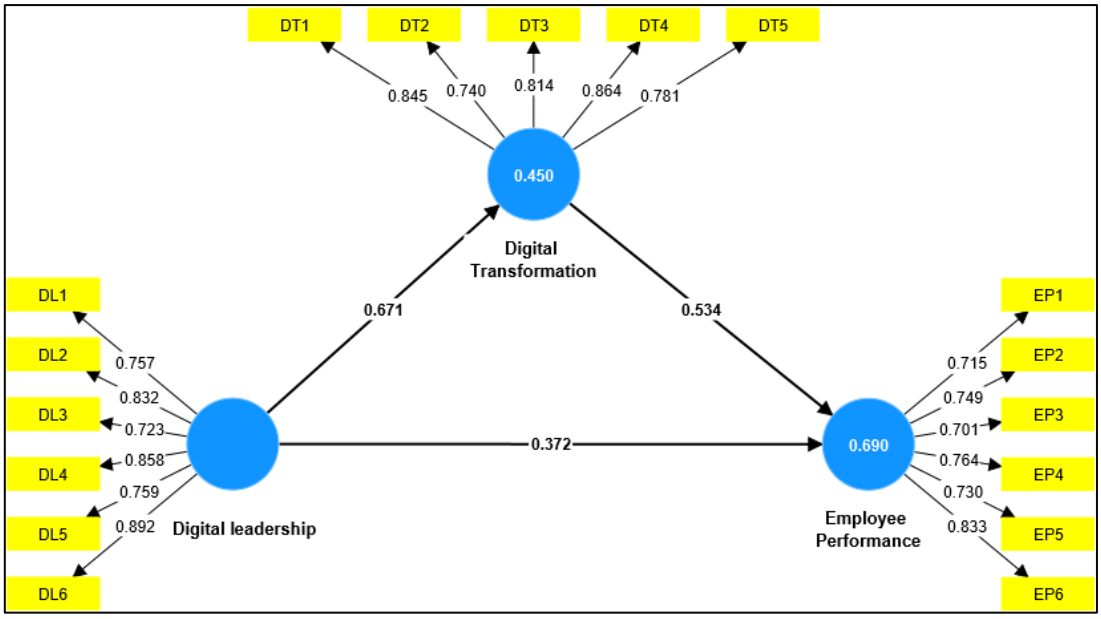

Figure 2: Measurement Model

Structural Model

The coefficient of determination (R2), and the effect size (F2) were used to evaluate the structural model as shown in Figure 2 and Figure 3. The values of R2 show how much of the variance is explained in the endogenous constructs in the model. The findings indicate that the R2 of digital transformation is 0.450, which implies that digital leadership can explain 45% of the variation in digital transformation. It may be regarded as a moderate level of explanatory power (Hair *et al*., 2019). At the same time, employee performance showed an R2 value of 0.690, so the digital leadership and digital transformation together account for 69% of the variance in employee performance, which implies a significant degree of predictive power. Also, the effect size (F2) was estimated to determine the contribution of every exogenous construct to the endogenous variables. Cohen (2013) explains that the F2 numbers of 0.02, 0.15, and 0.35 are small, medium, and large effects, respectively. The findings reveal that digital transformation is significantly influenced by digital leadership (F2 = 0.819), which implies that leadership is a key factor in making transformation initiatives. Moreover, the impact of digital transformation on employee performance (F2 = 0.505) is significant, and, therefore, the importance of digital transformation in increasing the outcomes of employee performance cannot be overlooked. There is also the moderate effect of digital leadership on employee performance (F2 = 0.244), which implies that, although leadership directly affects performance, it also affects performance significantly through digital transformation. Altogether, these results reveal that the model has high explanatory and predictive capability, as digital leadership and digital transformation can be considered the driving forces of employee performance.

Table 5 and Figure 3 show the relationships between the variables of the structural model and the results of hypothesis testing. Path coefficients (β), *t*-values, and *p*-values generated by bootstrapping procedures were used to determine the significance of the proposed relationships.

The findings show that there is a strong positive impact of digital leadership on employee performance (β = 0.372, t = 3435, p < 0.001); thus, H1 is supported, which evidences the suggested relationship. This implies that the greater the degree of digital transformation, the better the employee performance results. Moreover, there is a high and statistically significant positive effect of digital leadership on the digital transformation (β = 0.671, t = 12.747, p < 0.001). Thus, H2 supported this fact, establishing that digital leadership is a critical element that augments digital transformation initiatives in organizations. Moreover, employee performance is also positively influenced directly and significantly by digital leadership (β = 0.534, t = 4.479, p = < 0.001); thus, H3 is supported, which also shows that leadership has a direct and indirect impact on the performance of employees. As to the mediating effect, the relationship between digital leadership and employee performance via digital transformation is also strong (β = 0.358, t = 3.942, p < 0.001); thus, H4 is supported. This finding supports the fact that digital transformation mediates the relationship between digital leadership and the performance of employees partially.

Table 5: Test Results of Hypotheses

Hypotheses Path		Original Sample	Sample Mean	Standard Deviation	T Statistics	*P* Values	Results
H1	DL -> EP	0.372	0.369	0.108	3.435	0.001	Supported
H2	DL -> DT	0.671	0.673	0.053	12.747	0.000	Supported
H3	DT -> EP	0.534	0.537	0.119	4.479	0.000	Supported
Indirect Effect							
H4	DL -> DT -> EP	0.358	0.362	0.091	3.942	0.000	Supported

Note: DT= Digital Transformation; EP= Employee Performance; DL= Digital leadership

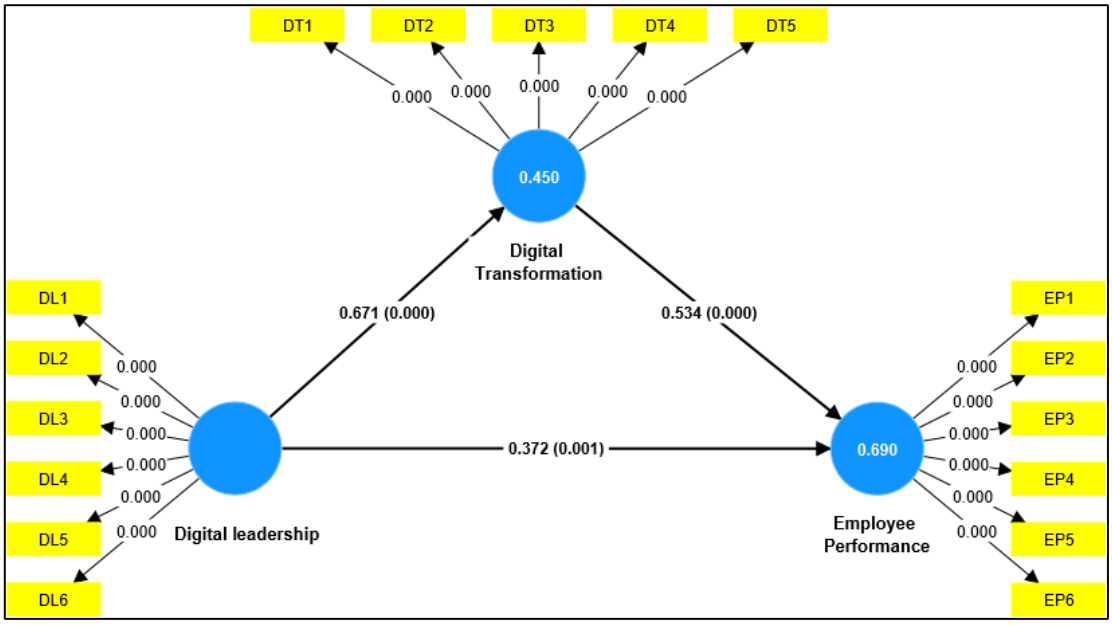

Figure 3: Structural Model

Discussion

The main goal of this study was to find out how digital leadership affects employee performance by looking at the role of digital transformation in the private higher education sector. The results of statistical analysis provided strong support of mean estimates of all formulated hypotheses, thus providing a validation of the theoretical framework. The findings suggest that in an era of fast-changing

technological disruption, acquired digital infrastructure is not sufficient to ensure better workforce productivity. Instead, successful adaptation needs an ecosystem that works together, with visionary digital leadership as the catalyst and structural digital transformation as the key tool that gives academic and administrative staff the power to do better work. The empirical results of this research highlight that the human side of leadership is a crucial aspect to be considered when overcoming digital paradigm shifts. The findings can serve as a strong support of the first hypothesis (H1) of the research, which stated that the impact of digital leadership is a strong positive influence on employee performance. This result indicates that in cases when university leaders can communicate the prominent vision in digital terms, show successful exploitation of the advanced technologies, and provide the employees with the psychological and technical assistance, the latter exhibit improved task performance, flexibility, and situational effectiveness. Instead of developing feelings of uncertainty or technostress, which are generally related to the implementation of new systems, employees who feel empowered and confident in their jobs are more likely to be found under good digital leadership.

This result is in line with several empirical findings (Namatovu & Kyambade, 2025; Sagbas *et al*., 2023; Van Chien *et al*., 2025; Wang *et al*., 2025). The same has been established in previous studies, as digital leadership is found to be a major similar motivator of employees, technological self-efficiency, and job performance. In addition, the research with the emphasis on innovative work behavior suggests that the leaders who actively support digital initiatives develop psychologically safe working conditions, which subsequently improve engagement and productivity of employees. Altogether, this evidence helps to support the primary role of digital leadership in facilitating the ability of employees to effectively adapt to and achieve success in digitally changed organizational settings.

Hypothesis 2 (H2), the positive impact of digital leadership on digital transformation, is also confirmed, validating the dynamic capability perspective, which states that systemic change needs to be deliberately engineered from the top down. In the case of private universities, adaptation of comprehensive e-learning platforms or systems of automated processing confronts a natural institutional inertia. Digital leaders break down these barriers by allocating resources properly, creating a new culture for their organizations, and advocating for the integration of new technology into day-to-day operations. This integrates perfectly with existing literature, which consistently identifies the vision and ability of organizational leaders as being the key drivers behind an institution's digital maturity. Previous research on both public sector organizations and private companies has determined that digital leadership is an essential requirement for effective and enduring digital transformations (Kankanamge *et al*., 2026; Namatovu & Kyambade, 2025; Senadjki *et al*., 2024).

In evaluating the third hypothesis (H3), the results confirmed that digital transformation has a significant positive impact on employee performance. Previous research has determined that digital transformation has a significant positive impact on employee performance (Nguyen, 2025; Qiao *et al*., 2024; Van Chien *et al*., 2025). As institutions become successful at naturalizing digital systems within their institutions' operational frameworks, they are essentially upgrading the instrumental resources available to their workforce. By replacing traditional, time-consuming manual workflows with streamlined digital ones, administrative and academic staff can free up their mental resources to focus on more important, strategic, and teaching tasks. The importance of this study to higher education is noteworthy; it is consistent with previous research that demonstrates the strategic performance, decision-making, and daily productivity gains that result from proactive implementation of automated administrative platforms. Wider literature supports the fact that employee engagement in transformed digital ecosystems is highly correlated to improved job performance across industry.

Hypothesis 4 (H4) that examined the mediating role of digital transformation was conclusive empirical evidence. This result is the central contribution of the study because it shows that the impact of digital leadership on workforce outcome is mediated by the actualization of digital transformation. A leader can have a great digital vision, but if that vision is not translated into specific technological and structural changes, it will not have any impact on the day-to-day operations and performance of the employees. Digital transformation bridges the macro-level strategic directives of the leadership with the micro-level operational realities of the staff. This mediating pathway has quite a lot of precedents in recent

scholarship. Foundational studies have established that the impact of digital leadership on macro-level firm performance is driven through successful digital execution (Senadjki *et al*., 2024). In the same way, recent research shows that digital transformation affects the relationship between leadership and individual outcomes in both the public and private sectors (Namatovu & Kyambade, 2025; Qiao *et al*., 2024). Because of the support of all hypotheses as per the theoretical framework, there were no unexpected or contradictory findings; however, the extraordinary strength of the mediation effect emphasizes just how important the structural implementation phase is, compared with just rhetoric of leadership.

The theoretical implications of these findings are important. Primarily, this study extends the Resource-Based View and dynamic capabilities theory by illustrating how intangible human capital (digital leadership) interacts with structural capabilities (digital transformation) to produce micro-level behavioral outcomes. While a significant portion of the existing literature has focused on how digital transformation impacts macro-level financial metrics or overall organizational resilience (Kankanamge *et al*., 2026; Senadjki *et al*., 2024), this research shifts the academic lens to the individual employee. By testing this moderated mediation model within the private higher education sector, the research, for the first time, fills a critical information systems research and organizational behavior research gap by demonstrating that technology transitions are fundamentally human-centric processes.

The research provides a strategic framework for university administrators, policymakers, and human-resource managers. It highlights the operational imperative that large investments in capital to build digital infrastructure are delivering poor returns in the absence of concomitant training in targeted leadership development. Private colleges and universities need to develop digital leadership skills in deans and department heads and administrative directors. Training initiatives should be far more than technological literacy and should include change management, digital empathy, and effective communication of a compelling digital vision. Moreover, organizations need to remain user-centric in digital change to ensure the introduction of new processes is accompanied by detailed training and support to reduce any resistance and maximize performance improvements.

In summary, through the synthesis of empirical data and theoretical discourse, digital leadership is found to be the strategic engine and digital transformation the necessary transmission mechanism through which employee performance is ultimately propelled. By addressing integration issues, capable leaders allow their workforce to flourish in a digital academic environment, providing an all-encompassing knowledge of a contemporary organizational ecosystem and providing a basis for insights drawn at the end of this study.

Limitations

This study has some limitations despite its contributions. The cross-sectional type of research design does not allow proving causal connections, and the use of the focus on the private HEIs does not allow generalizing the results. The suggested study is welcomed because it promotes longitudinal designs to reflect the dynamic quality of digital transformation over a period and replicates the suggested model to other fields, including banking and health. Also, the inclusion of moderating variables, including organizational culture or readiness of employees to use digital tools, can be used to get more profound information about the underlying mechanisms of the proposed relationships. It is important to note that in the digital world, technological progress and leadership are inseparable. It is not only the use of best technologies that results in sustainable organizational success but also having visionary leaders who can translate these technologies into significant forces of improved employee performance.

Conclusion

This research paper focused on the role of digital leadership in influencing the performance of employees, especially focusing on the mediating effect of digital transformation in the context of the private higher education sector. The empirical results confirm all hypotheses suggested, meaning that digital leadership ensures substantial positive improvement of both digital transformation projects and employee performance. Notably, the process of digital transformation was revealed to be the critical

mediating variable, successfully able to transform the strategic vision, technical support, and innovative climate created by the digital leaders into the quantifiable positive changes in the productivity and performance of employees.

Theoretically, the proposed research has contributed to the RBV and dynamic capabilities theory; it has changed the analytical perspective on the organizational results at the macro-level to analyze the behavior of employees at the micro-level. In the findings, it is emphasized that digital transformation is a humanized process per se, as it is anchored in leadership skills that allow organizations to utilize technological resources efficiently.

The study is very insightful to university administrators and policymakers. The findings highlight the fact that digital infrastructure investments are not enough to attain the best performance-based results. Rather, organizations should focus on the creation of digital leadership skills, especially those in the change management and strategic alignment dimension, in order to realize the success of the digital transformation initiatives.

Conflict of Interest

The authors declare that they have no competing interests.

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