Digital Leadership and Employee Innovation in Public Sector Colleges of South Punjab: A Study of Managerial Challenges and Strategic Practices

Muhammad Ali Siddiqi
Masiddiqi2@gmail.com
Lecturer, Lahore School of Aviation, University of Lahore.

Dr Aamir Jawad Munir
Aamir.jawad49@mail.com
Assistant Professor, Department of Management Sciences, National College of Business Administration and Economics, Sub Campus, Bahawalpur.

Corresponding Author: * Muhammad Ali Siddiqi Masiddiqi2@gmail.com

ABTRACT

This research paper has explored the importance of digital leadership in encouraging employee innovativeness in the South Punjab colleges of higher education in the public sector, particularly the issue of managerial challenges and strategic practices. With growing digitalization in the higher education sector, leadership has become critical in encouraging innovation, performance of organizations, and employee engagement. Nevertheless, digital leadership practices were not adopted effectively in the developmental regions of the world due to the structural, technological, and managerial limitations involved in the operation of public sector colleges. The purpose of the study was to understand how the institutional leaders overcame all these challenges and used strategic methods by motivating the employees to be innovative. Based on an exploratory research design, the data collection was done by purposive sampling of 19 major stakeholders, including principals, heads of departments, senior faculty members, and the administrative personnel of the colleges in the public sector in Bahawalpur, Multan, and Dera Ghazi Khan. Semi-structured interviews, document reviews, and observation notes were used so that there is total data collection. Triangulation was used to analyze the received data to increase credibility and validity. It was found that the lack of digital infrastructure, lack of training opportunities, resistance to change, and poor institutional support systems were still significant obstacles to effective digital leadership. Simultaneously, the participatory leadership styles, ongoing professional growth, and collaboration on digital platforms, supported organizational cultures were found as the essential strategic practices to facilitate the innovation of employees. The research added value by offering context-specific evidence on the topic of digital leadership and innovation in higher education in the public sector, and presents applicable recommendations as to how the institutional leaders aiming to advance the digital transformation and innovative capacity can implement them.

Keywords: Digital Leadership; Employee Innovation; Strategic Management; Managerial Practices; Public Sector Colleges; Higher Education Management; Organizational Culture; South Punjab

INTRODUCTION

Background of the Study

The modern organizational world has been more influenced by the fast digitalization and unending technological disruption that has revolutionized the traditional forms of management and leadership in the public and private sectors (Nuraini, 2025). The new digital trends and changing stakeholder demands have forced organizations to constantly change their structures, business process operations, and human

resources to meet the requirements. The role of leadership in such an active environment has grown beyond the traditional managerial roles and has become a strategic asset towards innovation, agility, and long-term organizational performance (Ayanponle et al., 2024).

With the upsurge in competition and heightened demands to improve the quality-of-service delivery, organizations had to use digital technologies to become more efficient, transparent, and improve service quality. In turn, innovation became one of the key factors of organizational success during the digital age (Akuntansi et al., 2025). The leaders were now supposed to incorporate digital tools and platforms into organizational systems and, at the same time, handle the process of human capital development and organizational change. In such a changing context, Digital Leadership (DL) has become an organizationally important competence in dealing with the digital transformation initiatives. Digital leadership was defined as the competence of leaders to combine the knowledge in technology with the strategic vision, the skills of communication, and change management to drive the organizational value (Dai et al., 2023). Digital leaders facilitated institutions to make technological changes, using collaboration, experimentation, and building digital skills in employees. They improved the speed of organizational agility and preparedness of employees to embrace innovative practices through good communication and visionary thinking (Mamdouh, 2025).

One of the significant results of successful digital leadership was the Employee Innovative Performance (EIP), which was the ability of employees to create, spread, and adopt new ideas, practices, and procedures in the organization (Yang et al., 2025). EIP was a sign of proactive and innovative work behavior and led to learning and ongoing improvement in the organization. Academic and administrative personnel, in their institutions of higher learning, played the role of major carriers of knowledge and agents of innovation whose creativity and initiative had direct impacts on the effectiveness of the institution (Wang et al., 2025). Digital leaders enabled innovative performance by making digital resources available, promoting knowledge sharing, and offering a chance to develop professionally. Nevertheless, the impact of digital leadership on employee innovation was hardly direct and depended on the internal organizational environment (Alharbi, 2026). In this aspect, Digital Organizational Culture (DOC) mediated on the transformation of leadership practices into novel results. DOC meant common values, beliefs, and norms that encouraged the application of digital technologies, lifelong learning, collaboration, and experimentation (Fakhfakh et al., 2025). Leaders had an impact on this culture by being role models of digital behaviors, rewarding innovation, and creating psychological safety (Riza et al., 2025).

Besides internal conditions, external contextual ones also influenced the success of digital leadership and innovation programs. The Regulatory Environment was a significant space of boundary condition that enabled or inhibited organizational transformation. Managerial autonomy and experimentation in the public sector organizations was frequently constrained by the complicated administrative processes, compliance demands, and political interference. These limits dissuaded taking risks and the pace of digital adoption, which undermined the efficacy of leadership. Higher Education Institutions (HEIs) as a form of the public sector provided a particularly topical background to study the process of digital leadership and innovation. The digital technologies were felt to be part of teaching, learning, administration, and research work in these institutions (Mohamed & Fayad, 2025). But empirical results among colleges in the public sector in Pakistan were still very few, particularly when compared to those in the private sector and in the developed economies (Yang et al., 2025).

In South Punjab, especially in Bahawalpur, Multan, and Dera Ghazi Khan, there were still significant obstacles in the attainment of digital practices in the public sector colleges. These were poor technological infrastructure, digital incompetence, change resistance, and bureaucratic administrative structures (Mohamed & Fayad, 2025). As a result, there was a tendency among employees to fail to use digital tools efficiently to innovate academically and administratively. Even though prior research involved the aspects

of digital leadership and employee innovation individually, there were still very few studies that explored the combined impacts of these factors in the context of the public sector higher education institutions in the developing world. In particular, there was limited empirical evidence on the mediating effect of the Digital Organizational Culture, as well as the moderating effect of the Regulatory Environment (Wang et al., 2025).

LITERATURE REVIEW

Digital Leadership and Employee Innovative Performance

Digital leadership is a category of leadership practices that support organizations to be digitally transformed by aligning the technical capacities, the strategic purpose, organizational designs, and human resources to generate digital value. To make organizations adaptable and high-performing, digital leaders employ digital platforms, data-oriented systems, and agile management practices. Westernman et al. (2014) highlighted that the concept of digital leadership implies integrating digital technologies into the fundamental processes, and, at the same time, transforming the organizational culture and employee skills (Odunayo Adewunmi Adelekan et al., 2024). Digital literacy, information management, coordination of a virtual team, and collaboration based on technology are some of the new digital leadership competencies. Leaders foster experimentation, the implementation of new technologies, and assist employees in obtaining digital skills. Digital leadership in educational institutions comprises learning management systems, online collaboration, and pedagogical innovation (Sammon and Saudi, n.d.).

In terms of its relevance in organizational studies, bibliometric studies have indicated that research on digital leadership has tremendously increased since 2010. Empirical data show that digital leadership has a positive impact on organizational learning, motivation levels of employees, and innovation performance. With the creation of favorable digital conditions, leaders increase the likelihood of change acceptance and make employees more willing to explore new ideas (Mwita & Joanthan, 2017). Digital leaders can influence the attitude of the employees to innovation through provision of strategic guidance, technology, and psychological support to employees. They promote trust and collaboration through those means, making innovative work behavior impossible without those: transparent communication and decision-making processes (Odunayo Adewunmi Adelekan et al., 2024). Employee Innovative Performance is the behavior of employees concerning new methods of creating, marketing, and adopting new ideas, processes or services that enhance the effect of the organization. Janssen (2000) conceptualized EIP as an idea generation, idea promotion and idea realization. EIP manifests in educational institutions as new approaches to teaching, creation of digital content, enhancement of the administrative process, and student-centered services (M. Y. Hadi, 2025).

Antecedents of EIP have been determined to include support in leadership, empowerment, opportunity to participate in training, autonomy, access to digital tools and psychological safety. Considering the Job Demands Resources point of view, the sufficient job resources help to improve the motivation and innovativeness of employees, but the overload of work and strict rules undermine the innovative behavior (M. Y. Hadi, 2025). According to research in the field of higher education, leadership practices, digital competence, and collaborative culture are considered to have a significant impact on the innovative performance of teachers and administrators. The employees of digitally competent leaders, in turn, are much more eager to suggest innovative solutions and implement new practices (Sacavém et al., 2025).

The positive correlation between digital leadership and innovative performance of employees has been established in many empirical studies. Digital leaders can be used to aid innovation by setting up technology infrastructure, supporting knowledge sharing, and engaging in collaborative learning. Digital leadership increases the innovative behavior of the employees by increasing self-efficacy, access to information, and communication channels. Digital leadership, in turn, fosters new educational practices and management

approaches by utilizing learning technologies and analytics to their full potential in the education field (Sammon and Saudi, n.d.).

Moreover, digital leaders decrease the fear of failure through the creation of a psychologically safe space that facilitates trial-and-error learning. Digital leadership styles linked to participatory leadership reinforce employee engagement in the decision-making process and ownership of the innovation processes. Bureaucratic barriers and scarce resources in the case of a public sector organization are commonly dissuasive to innovation. Nevertheless, good digital executives are able to alleviate them through the optimization of resources available, the development of new skills in employees, and encouraging them to seek new solutions. Here, digital leadership plays a key role in South Punjab, where the level of digital integration is low; it is necessary to foster the innovative performance of employees (Luo et al., 2025).

Altogether, the literature confirms that digital leadership is a critical antecedent of innovative performance of employees. Digital leaders generate conditions conducive to creativity, learning, and ever-improving by combining technological skills and positive leadership styles. This existing connection forms the theoretical basis of the current research (Putra et al., 2025).
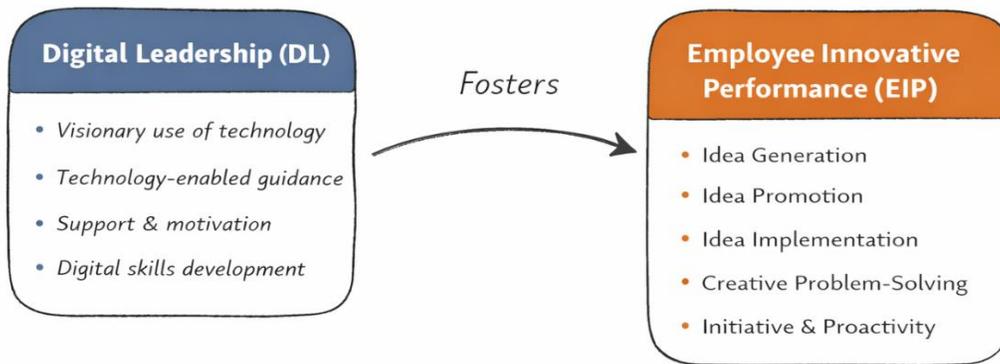
Problem Statement

Innovation has been accepted as an important institutional outcome and competitiveness determinant in the field of higher education more than ever, and especially in knowledge-based economies (S. Hadi et al., 2024). Pakistan's public sector colleges are under increased pressure to enhance the quality of education, efficiency in administration, and delivery of services, and keep up with the rapid technological developments. Although this is required, the trend of digital leadership practices has not been embraced and effectively applied in these institutions. The practice of digital leadership, which can be understood as the capacity of institutional leaders to use digital technologies strategically, direct employees to use digital tools, and create a culture of creativity and innovation, can be very effective in encouraging innovative performance of employees. Nonetheless, in the majority of South Punjab public colleges, a lack of digitally competent and visionary leadership inhibits the capacity of the employees to create, embrace, and apply creative ideas.

Hierarchical organization, centralized decision-making, and a rigid administrative process are the main features of the public sector colleges in Pakistan that tend to curtail the opportunity to experiment and solve problems creatively. College administrators often tend to concentrate on compliance and the day-to-day running of business in such a setting instead of enabling innovation. Subsequently, the digital programs like Learning Management Systems, online lectures, and administrative software are not fully utilized or implemented in a superficial manner, with little effect on the enhancement of the teaching, learning, or administration process. Faculty and administrative employees also have little motivation, guidance, and support to make digital tools become creative practices that can benefit performance in the institution. The discrepancy between the potential of digital technologies and real innovative output is an indicator of the acute necessity of enhancing digital leadership potential in the colleges of the public. Although the world literature shows that digital leadership has a positive impact on innovative behavior in employees, the context of the Pakistani public higher education system is not fully studied. There is scanty empirical research on the immediate impact of digital leadership on the creativity, initiative, and problem-solving skills of employees working in resource-constrained institutions with bureaucratic structures. This loophole limits policymakers and institutional leaders in adopting evidence-based strategies to boost employee innovation as well as the overall institutional performance.

Thus, this paper aims to explore the connection between digital leadership and innovative work of employees in South Punjab colleges in the public sector of Pakistan. By addressing the role of the leaders

in developing innovation within the scope of the digital initiatives, the research will seek to offer context-specific knowledge that can be utilized to improve the potential of the employees in the context of innovation, to make the employees of the organizations in Pakistan more modern and competitive.

Conceptual Framework

Digital Leadership and Employee Innovative Performance in Public Sector Colleges of South Punjab, Pakistan

Innovation has been accepted as an important institutional outcome and competitiveness determinant in the field of higher education more than ever, and especially in knowledge-based economies (S. Hadi et al., 2024). Pakistan's public sector colleges are under increased pressure to enhance the quality of education, efficiency in administration, and delivery of services, and keep up with the rapid technological developments. Although this is required, the trend of digital leadership practices has not been embraced and effectively applied in these institutions. The practice of digital leadership, which can be understood as the capacity of institutional leaders to use digital technologies strategically, direct employees to use digital tools, and create a culture of creativity and innovation, can be very effective in encouraging innovative performance of employees. Nonetheless, in the majority of South Punjab public colleges, a lack of digitally competent and visionary leadership inhibits the capacity of the employees to create, embrace, and apply creative ideas.

Hierarchical organization, centralized decision-making, and a rigid administrative process are the main features of the public sector colleges in Pakistan that tend to curtail the opportunity to experiment and solve problems creatively. College administrators often tend to concentrate on compliance and day-to-day running of business in such a setting instead of enabling innovation. Subsequently, the digital programs like Learning Management Systems, online lectures, and administrative software are not fully utilized or implemented in a superficial manner, with little effect on the enhancement of the teaching, learning, or administration process. Faculty and administrative employees also have little motivation, guidance, and support to make digital tools become creative practices that can benefit performance in the institution. The

discrepancy between the potential of digital technologies and real innovative output is the indicator of the acute necessity of enhancing digital leadership potential in the colleges of the public. Although the world literature shows that digital leadership has a positive impact on innovative behavior in employees, the context of the Pakistani public higher education is not fully studied. There is scanty empirical research on the immediate impact of digital leadership on the creativity, initiative, and problem-solving skills of employees working in resource-constrained institutions with bureaucratic structures. This loophole limits policymakers and institutional leaders in adopting evidence-based strategies to boost employee innovation as well as the overall institutional performance. Thus, this paper aims to explore the connection between digital leadership and innovative work of employees in South Punjab colleges in the public sector of Pakistan. By addressing the role of the leaders in developing innovation within the scope of the digital initiatives, the research will seek to offer context-specific knowledge that can be utilized to improve the potential of the employees in the context of innovation to make the employees of the organizations in Pakistan more modern and competitive.

Research Questions

RQ1: What are the key issues associated with the implementation of digital leadership and employee innovation in the public sector colleges?

RQ 2: What are the practical strategies and policy recommendations that can be made to enhance digital leadership and innovation in South Punjab colleges of the public sector?

Objective of the Study

1. To determine the key issues of the public sector colleges in adopting digital leadership and encouraging employee innovation.

2. To present viable strategies and policy suggestions to empower digital leadership and improve innovative performance within the colleges of South Punjab in the public sector.

Significance of the Study

Innovation has been accepted as an important institutional outcome and competitiveness determinant in the field of higher education more than ever, and especially in knowledge-based economies (S. Hadi et al., 2024). Pakistan's public sector colleges are under increased pressure to enhance the quality of education, efficiency in administration, and delivery of services, and keep up with the rapid technological developments. Although this is required, the trend of digital leadership practices has not been embraced and effectively applied in these institutions. The practice of digital leadership, which can be understood as the capacity of institutional leaders to use digital technologies strategically, direct employees to use digital tools, and create a culture of creativity and innovation, can be very effective in encouraging innovative performance of employees. Nonetheless, in the majority of South Punjab public colleges, a lack of digital Competent and visionary leadership inhibits the capacity of the employees to create, embrace, and apply creative ideas.

Hierarchical organization, centralized decision-making, and a rigid administrative process are the main features of the public sector colleges in Pakistan that tend to curtail the opportunity to experiment and solve problems creatively. College administrators often tend to concentrate on compliance and the day-to-day running of business in such a setting instead of enabling innovation. Subsequently, the digital programs like Learning Management Systems, online lectures, and administrative software are not fully utilized or implemented in a superficial manner, with little effect on the enhancement of the teaching, learning, or

administration process. Faculty and administrative employees also have little motivation, guidance, and support to make digital tools become creative practices that can benefit performance in the institution. The discrepancy between the potential of digital technologies and real innovative output is an indicator of the acute necessity of enhancing digital leadership potential in the colleges of the public. Although the world literature shows that digital leadership has a positive impact on innovative behavior in employees, the context of the Pakistani public higher education system has not fully studied. There is scanty empirical research on the immediate impact of digital leadership on the creativity, initiative, and problem-solving skills of employees working in resource-constrained institutions with bureaucratic structures. This loophole limits policymakers and institutional leaders in adopting evidence-based strategies to boost employee innovation as well as the overall institutional performance.

Thus, this paper aims to explore the connection between digital leadership and innovative work of employees in South Punjab colleges in the public sector of Pakistan. By addressing the role of the leaders in developing innovation within the scope of the digital initiatives, the research will seek to offer context-specific knowledge that can be utilized to improve the potential of the employees in the context of innovation, to make the employees of the organizations in Pakistan more modern and competitive.

RESEARCH METHODOLOGY

Using a qualitative methodology, this research addresses the following research question:

RQ1: What are the key issues associated with the implementation of digital leadership and employee innovation in the public sector colleges?

RQ 2: What are the practical strategies and policy recommendations that can be made to enhance digital leadership and innovation in South Punjab colleges of the public sector?

The qualitative stage of the current study addressed the issues that determine the employee innovative performance and the impact of digital leadership in the public sector higher education institutions (HEIs) in South Punjab, Pakistan. To ensure that they get the direct experiences and perceptions of the principals, the heads of the departments, the faculty members, and the administrative staffs on leadership practices, digital tool adoption, and institutional support on innovation, the researcher conducts semi-structured interviews and focus group discussions with the college principals, the heads of the departments, and the faculty members as well as the administrative staffs. The qualitative investigation was carried out with the purpose of finding the obstacles, facilitators, and viable interventions that influence the capability of the employees to be able to engage in solving creative problems, adopting new teaching or administrative practices, and applying digital technologies successfully within the current bureaucratic and regulatory framework. The method offered a deep, context-based understanding of the role of digital leadership practices in influencing organizational culture and fueling innovative behavior in the field of public education.

Population and Sampling of the Study

The qualitative stage of the research was to acquire a deeper insight into the role of digital leadership practices in employee innovative performance in the institutions of higher learning (HEIs) in South Punjab, Pakistan in the public sector. This step involved the reflection of the experiences, perceptions, and challenges of institutional leaders and faculty members in executing and reacting to digital leadership initiatives, and their effects in fostering creativity, knowledge exchange and innovation in teaching, research, and administrative endeavors.

The target population was principals of colleges, department heads, senior faculty, and teaching staff of the publicly run colleges of the three major areas of South Punjab: Bahawalpur, Multan, and Dera Ghazi Khan. The reason behind these respondents is that they are directly involved in institutional management, faculty supervision, academic operations, and interaction with digital tools and innovation-related practices. They were supposed to give profound insights into the role of leadership behavior, organizational culture, and institutional support in influencing the innovative abilities of the employees. The sampling strategy was purposive to make sure that the sample is information-laden and able to deliver in-depth views that can be of significance to the research questions. Furthermore, snowball sampling was applied selectively on the faculty members who are actively involved in the innovative practices or have difficulties in adopting digital initiatives. The composition of the sample is as presented in the table below:

Table No. 1

Participant Category	Role / Expertise Description	Region	Sampling Technique	Expected No. of Participants
College Principals / Heads	Provide insights on digital leadership practices, institutional policies, resource allocation, and challenges in promoting employee innovation	Bahawalpur, Multan, D.G. Khan	Purposive Sampling	6 (2 per region)
Department Heads / Administrators	Offer understanding of faculty management, implementation of digital initiatives, and fostering innovation	Bahawalpur, Multan, D.G. Khan	Purposive Sampling	6 (2 per region)
Senior Faculty Members	Provide classroom and departmental-level insights on innovation, leadership interaction, and adoption of digital tools	Bahawalpur, Multan, D.G. Khan	Purposive / Snowball Sampling	4 (2 Bahawalpur, 1 Multan, 1 DG Khan)
Faculty Engaged in Innovative Practices	Share firsthand experiences of challenges and enablers in applying digital tools and engaging in innovative activities	Bahawalpur, Multan, D.G. Khan	Purposive Sampling (criterion-based)	3 (1 per region)

A total of 19 participants were picked in South Punjab's three divisions, in the colleges of the public sector. Principals and administrators (12 participants) gave their opinions regarding institutional policy, digital leadership strategy, and organizational obstacles to innovation. Senior faculty members (4 participants) provided information about daily work procedures, adoption of digital, and innovation in the form of an aspect of the department. Three of the faculty participants who actively participated in innovative practices provided first-hand accounts regarding difficulties, inspirations, and organizational encouragement of the need to enhance creativity and digital performance. The mixture of purposive and snowball sampling helped to make sure that only information-saturated and contextually relevant participants were included and formed detailed and credible qualitative information in accordance with the research questions:

Thematic analysis was used in this research in interpreting the qualitative data, in that it offers a systematic and rigorous way of suggesting patterns, perceptions, and experiences in the data (Sandhiya, n.d.). This was done using the six-step process of familiarization with the data, initial coding, potential themes identified, reviewing and refining themes, defining and naming themes, and final analysis report. This systematic method also enabled the researcher to determine common patterns, subtle perceptions, and underlying

meanings as far as the digital leadership practices, employee innovative behaviors, and organizational challenges in the public sector HEIs.

The qualitative data reflected the attitudes of college principals, department heads, senior faculty, and faculty who were actively engaged in innovative practices in terms of the role of digital leadership in promoting creativity, knowledge sharing, and innovation in the process of teaching, research, and administration. Among the themes that were identified based on the data, there were leadership vision and support of innovation, engagement of employees by digital tools, and institutional barriers to innovation, as well as motivational factors that affect proactive and innovative behavior.

The new themes were triangulated to the extant literature on digital leadership and employee innovative performance in higher education to increase the credibility, trustworthiness, and rigor (Qualitative Research Methodology, Data Analysis and Interpretation, 2022; Qualitative Research Data Analysis and Interpretation, 2022). This was done to make sure that the results were consistent with previous studies and to make sure that the implications depicted the dynamic context-specific to the public sector colleges in South Punjab. Moreover, coded data were discussed with peers and repeatedly reviewed to ensure the interpretation was valid, minimize researcher bias, and improve the reliability of the thematic analysis. Consequently, the qualitative insights offer a detailed explanation of the impact of digital leadership practices on the innovative performance among employees under regulatory and organizational constraints of the public sector HEIs.

QUALITATIVE DATA THEMATIC ANALYSIS

Challenges Strategies to Enhance Digital Leadership and Employee Innovation

Digital leadership implementation in South Punjab colleges of the public sector is associated with various organizational, technological, and cultural challenges that may deter innovative performance of employees. These issues, as listed after a qualitative investigation of administrators, faculty members, and teachers, are the manifestations of the barriers at the institutional level when undertaking a digital transformation process in the real world. To solve these problems, the current research formulates contextualized solutions and policy solutions that help in strengthening digital leadership skills and an innovative organizational culture. The strategies will aim at reinforcing digital vision as well as competencies, fostering collaboration, and providing a conducive digital environment so that employees come out to be motivated and empowered to practice innovatively.

The following table is a thematic analysis of the most outstanding problems and the practical strategies aligned with them, drawing on the comments by the respondents and comparing them with the existing scholarly knowledge. The themes showcase the actual problems that exist in the South Punjab colleges and offer practical solutions to address them, and portray how digital leadership could be capitalized upon to boost employee innovative performance.

Thematic Analysis Table No. 2

Sr	Challenge	Strategy	Practical Implementation / Recommendations	Respondent Views	Triangulation with Literature
1	Lack of Digital Vision and Strategic Leadership	Strengthening Digital Vision and Strategic Leadership	Train administrators on digital transformation leadership. - Develop and communicate clear	"Many times, we are told to adopt new tools but without clear	DL is positively linked to innovative employee

		digital goals for the institution. - Encourage leaders to promote innovation aligned with institutional objectives.	direction; we need leadership that shows the vision and guides us step by step."	performance when leaders articulate a clear digital vision (Wang et al., 2025)
2	Insufficient Digital Competency	Building Digital Competencies	Conduct workshops and hands-on training for administrators and faculty. Create a Digital Competency Framework tailored for public colleges. Assign mentors to support faculty in digital adoption.	"We are willing to try new software and teaching tools, but most of us are not trained properly, so it takes time to use them effectively."	Digital literacy is crucial for translating leadership vision into innovative performance (Sammon & Saudi, n.d.)
3	Resistance to Change / Traditional Culture	Promoting a Change-Friendly Digital Culture	Encourage faculty participation in decision-making for digital initiatives. Introduce small-scale pilot programs to demonstrate success. Reward experimentation and learning from mistakes.	"Some teachers are hesitant to adopt new methods because they fear mistakes; involving them in decisions would help."	Organizational culture mediates the impact of DL on innovation (Sulistiyorini & Zahra, 2023)
4	Limited Infrastructure	Improving Digital Infrastructure	Upgrade IT systems (LMS, high-speed internet, digital classrooms). Provide cloud-based access to teaching and administrative tools. Partner with provincial digital initiatives for resources.	"Our internet and software systems are outdated, which makes digital teaching very challenging."	Access to infrastructure enhances the effectiveness of digital leadership in promoting innovation (Putra et al., 2025).
5	Lack of Training Opportunities	Enhancing Training Programs	Organize ongoing professional development sessions. Focus on digital pedagogy, innovation management, and adaptive leadership. Offer refresher courses to maintain skills.	"We rarely receive proper training; workshops with practical exercises would make a big difference."	Training strengthens employees' ability to apply digital tools creatively (*European Journal of Educational Research*, 2023)
6	Policy Rigidity /	Facilitating Flexible Policies	Advocate for reduced bureaucratic barriers in digital initiatives.	"Getting approval for any digital initiative takes	Regulatory flexibility enhances the

	Bureaucratic Hurdles		Establish a digital governance committee for fast-track approvals. Include faculty feedback in policy development.	months; we need simpler processes."	impact of DL on innovation (Begum et al., 2024).
7	Low Employee Motivation	Strengthening Motivation and Incentives	Introduce recognition and reward systems for innovative efforts. Connect innovation initiatives to career progression. Promote intrinsic motivation through faculty-led digital projects.	"We feel demotivated when extra effort in innovation is not acknowledged; recognition would encourage participation."	Motivation enhances the translation of digital leadership into innovative employee behavior (Tan et al., 2023).
8	Limited Collaboration	Encouraging Collaboration and Knowledge Sharing	Promote cross-departmental collaboration through digital platforms. - Establish online forums and communities of practice. Initiate mentorship programs for guidance in digital adoption.	"We often work in isolation; if we could share experiences digitally with other departments, it would be much easier to innovate."	Collaboration fosters knowledge sharing and enhances innovative performance (Wang et al., 2025).

FINDINGS

The thematic analysis of the qualitative data showed that there are eight key issues that hinder the successful adoption of digital leadership and employee innovation in South Punjab colleges within the public sector. Both structural and behavioral barriers are pointed out in each challenge, and the suggested strategies provide context-based solutions to the problem based on the experiences of the respondents and using the available literature. The results are important to comprehend how the institutional leadership can contribute to the creation of a culture of innovation and the successful implementation of digital initiatives in the results of employee performance.

Lack of a clear and precise digital vision turned out to be a big impediment. The respondents also stressed that, as the digital tools and initiatives are being introduced, there is no advice on long-term goals and alignment with the institutional objectives. In this regard, strategic leadership on the digital front is important to be enhanced. Administrators should learn to state transparent digital ambitions and facilitate innovation within the institutional priorities. They added: "Many times, we are informed to embrace new tools without a clear direction; we need leadership, which demonstrates the vision and steps us through one by one. This is in line with previous studies that point out that the effectiveness of digital leadership is greatly increased in cases where leaders convey a clear vision, thus influencing innovative employee behavior positively (Waty, 2024).

The research found that the absence of digital skills among people in the administration and faculty prevents the adoption of innovation. According to the respondents, they experienced trouble with using new software and teaching tools because of the lack of training: "Most of us do not feel adequately trained to use new software and teaching tools, so it takes time to make good use of them. As a solution to this, workshops,

practical training, and mentorship were suggested. This is supported by literature, which highlights the fact that digital literacy is a requirement during the transformation of leadership initiatives into innovative results (Tan et al., 2023).

One of the challenges was recognized as a traditional work culture and resistance to change. The reluctance and fear of making an error on the part of the faculty was mentioned as a reason to avoid going digital: "Some teachers are scared to implement new methods due to the fear of making a mistake; engaging them in decision-making processes would assist. Resistance can be minimized by promoting an amenable digital culture based on participatory decision-making, small-scale pilot programs, and rewarding experimentation. This aligns with the studies that show an organizational culture acts as a mediator of the effect of digital leadership on innovation (The Role of Digital Literacy in Leadership, 2021).

The lack of proper IT infrastructure was noted as one of the structural limitations. Respondents reported that old systems of the internet and software could not support digital teaching and innovation: "The internet and software systems are old, and this makes it very difficult to engage in digital teaching. Infrastructure upgrading, cloud-based access, and cooperation with provincial digital efforts were suggested as effective measures. Availability of quality infrastructure has also been confirmed to increase the performance of digital leadership and staff innovation (Tan et al., 2023).

One more impediment was the continuous professional development. Respondents also observed that they are not able to innovate due to a lack of proper training or improperly designed training: "We hardly get proper training; practice-based workshops would be a significant improvement. It is possible to enhance training programs addressing the issues of digital pedagogy, managing innovations, and developing adaptive leadership to provide employees with the skills to carry out successful digital transformation. The studies support the idea that training enhances the potential of employees to use digital tools in an innovative way and thus enhances innovative performance (Mamede and Branco, 2025).

Bureaucratic processes and inflexible policies were identified by the respondents as obstacles to digital efforts: "Any digital initiative will take months to be approved; simplified processes are required. Such strategies as promoting flexible policies, creating digital governance committees, engaging faculty input in relationship decisions, etc., would streamline approvals and innovate. Regulatory flexibility is supported by literature as an important way of making the digital leadership translate into innovative results (Aldhi et al., 2025; Ye, 2025).

One of the factors that was found to limit innovative behavior was a lack of motivation and recognition: when additional effort in innovation is not recognized and rewarded, recognition would make people join in. The improvement of incentives such as recognition, a link between innovation and career advancement, and intrinsic motivation, such as faculty-led digital projects were suggested. The previous literature confirms that motivated employees will be better placed to react positively to digital leadership and practice innovative practices (Muhamad Sagheem, 2024).

Lastly, a lack of good coordination among departments limits the sharing of knowledge and innovations. According to the respondents, they tend to work alone; they would have found it much easier to innovate digitally if they could share experiences with other departments. Innovation can be encouraged by encouraging collaboration via digital platforms, online forums, communities of practice, and mentorship programs. The studies support the idea that interpersonal cooperation and knowledge exchange promote strong innovative performance of employees with the help of successful digital leadership (Mollah et al., 2024; Anwar and Saraih, 2024).

The mentioned thematic analysis shows that the issues related to the leadership vision, digital skills, culture, infrastructure, training, policies, motivation, and collaboration all act against the realization of the innovative performance of employees. The strategies mentioned in this paper serve as a pathfinder to the digital leadership, organizational capacity building, and innovation conducive environment in the South Punjab universities in the public sector. The relevance and applicability of these strategies in the researched environment are validated and triangulated with the available literature to ensure the relevance and applicability of these strategies.

CONCLUSION

The paper shows that digital leadership has a powerful impact on the innovative performance of employees in the public sector colleges, and the impact is limited by the problems connected to the skills, infrastructure, culture, policies, motivation, and collaboration. With these challenges overcome with specific strategies, training, leadership development, cultural change, policy flexibility, and greater collaboration, the institutions in the public sector in South Punjab would be able to build an environment conducive to innovation. The results not only have theoretical implications, as they connect digital leadership and organizational culture with employee innovation, but also practical implications, such as practical interventions on how organizations can increase their performance and sustainability in the digital age.

BIBLIOGRAPHY

Akuntansi, J., Ramadian, A., Nurlinda, D. Z., & Ramadhina, N. (2025). *Digital transformation in HR Planning : Adaptation strategies and challenges in the Industrial Revolution 5.0 era*. https://doi.org/10.36406/jam.v22i1.137

Alharbi, S. (2026). *The Influence of Transformational Leadership Style on Employee Innovative Performance and Employee Innovative Behavior as Mediator in Saudi SMEs*. *16*(1), 369–393.

Author, C. (2025). *Human-Centered Digital Leadership as a Catalyst for Sustainable Transformation in Higher Education : A Strategic Framework*.

Ayanponle, L. O., Elufioye, O. A., Asuzu, O. F., & Leonard, N. (2024). *The future of work and human resources : A review of emerging trends and HR ' s evolving role*.

Begum, S., Khan, I. U., & Muhammad, N. (2024). *Impact Of Digital Leadership On Digital Transformation & Sustainable Performance*. *7*, 2054–2063.

Dai, Z., Li, J., Wang, F., Wang, L., & Wang, Y. (2023). *Organizational Management : Quiet Quitting ' s Mitigation Strategies for Organizational Response*. *19*, 25–32.

Driving Performance through Digital Transformation : Insights from Pakistan ' s Higher Education Institutions. (2025). 1013–1027.

European Journal of Educational Research. (2023). *13*(1), 207–218.

Hadi, M. Y. (2025). *Strategic Leadership in Digital Transformation : Organizational Capabilities and Performance Outcomes*. *3*(03), 1051–1063.

Hadi, S., Setiawati, L., Kirana, K. C., Lada, S. Bin, Heti, C., Rahmawati, T., & Tamansiswa, U. S. (2024). *The Effect of Digital Leadership and Organizational Support on Innovative Work Behavior : The Mediating Role of Emotional Intelligence*. 25(199), 74–83. https://doi.org/10.47750/QAS/25.199.09

Luo, H., Gu, Y., & Yao, Z. (2025). *Unleashing Innovative Potential through Digital Leadership : A Moderated Mediation Model of Work Engagement and Psychological Safety*. 14, 809–826.

Mamdouh, A. (2025). *Impact of Digital Leadership on Employee Performance with Mediation Roles of Digital Self-Efficacy and Employee Motivation*. 9(3), 109–129.

Mamede, H. S., & Branco, F. (2025). *The relationship between digital transformation and digital literacy - an explanatory model : Systematic literature José Arnaud*.

Mohamed, D., & Fayad, A. (2025). *DIGITAL TECHNOLOGY-DRIVEN LEADERSHIP BEHAVIOUR FOR SUSTAINABLE PERFORMANCE : EMPOWERING EMPLOYEE CREATIVITY*. 6(2), 1–13. https://doi.org/10.57585/GJEM.025.008

Muhamad Sagheem, S. H. and Z. L. (2024). *THE IMPACT OF DIGITAL LEADERSHIP AND DIGITAL RESOURCES ON INNOVATIVE WORKING BEHAVIOR*. 5(2), 80–96.

Mwita, M. M., & Joanthan, J. (2017). *Digital Leadership for Digital Transformation*. 1–20.

Nuraini, S. (2025). *Digital Leadership and Organizational Transformation : A Literature Review*. 7(2), 112–126.

Odunayo Adewunmi Adelekan, Olawale Adisa, Bamidele Segun Ilugbusi, Ogugua Chimezie Obi, Kehinde Feranmi Awonuga, Onyeka Franca Asuzu, & Ndubuisi Leonard Ndubuisi. (2024). Evolving Tax Compliance in the Digital Era: a Comparative Analysis of Ai-Driven Models and Blockchain Technology in U.S. Tax Administration. *Computer Science & IT Research Journal*, 5(2), 311–335. https://doi.org/10.51594/csitrj.v5i2.759

Putra, S., Setiadi, N. J., Gautama, I., Bandur, A., & Sundjaja, A. M. (2025). *The relationship between leadership , psychological safety , and innovation : A bibliometric review analysis*. 8(3), 2240–2254. https://doi.org/10.53894/ijirss.v8i3.6977

Qualitative Research : Methodology , Data Analysis and Interpretation. (2022). *10*(5), 249–256.

Riza, F., Yunita, J., & Soraya, L. I. (2025). *The Effect of Transformational Leadership and Digital Transformation on Innovative Work Behavior and Their Impact on Employee Performance : Literature Review*. 83–92. https://doi.org/10.18502/kss.v10i13.18942

Sacavém, A., Machado, A. D. B., & Palma-moreira, A. (2025). *Leading in the Digital Age : The Role of Leadership in Organizational Digital Transformation*. 1–21.

Sammon, D., & Saudi, I. A. (n.d.). *DIGITAL TRANSFORMATION LEADERSHIP CHARACTERISTICS : A LITERATURE ANALYSIS : DIGITAL TRANSFORMATION LEADERSHIP CHARACTERISTICS : A LITERATURE ANALYSIS*.

Sandhiya, V. (n.d.). *Qualitative Research Analysis: A Thematic Approach*. 289–310. https://doi.org/10.4018/979-8-3693-1135-6.ch014

Sulistiyorini, D., & Zahra, G. A. (2023). *The Effects of Leadership Style and Work Environment on Digital Leadership : A Literature Review. 2023*, 349–361. https://doi.org/10.18502/kss.v8i19.14385

Tan, G. P., Garcia, M. G., Maleriado, M. G. G., & Uy, F. T. (2023). *The Interplay of Digital Literacy and Leadership : Enhancing Organizational Success in a Digital World. 1*(11), 372–378. https://doi.org/10.5281/zenodo.14214043

The Role of Digital Literacy in Leadership. (2021).

Wang, Y., Park, J., & Gao, Q. (2025). *Digital leadership and employee innovative performance : the role of job crafting and person – job fit. April*, 1–16. https://doi.org/10.3389/fpsyg.2025.1492264

Waty, L. (2024). *NAVIGATING DIGITAL TRANSFORMATION: THE IMPACT OF LEADERSHIP, DIGITAL LITERACY, AND ORGANIZATIONAL CULTURE. 7*(2), 136–165.

Yang, M., Talha, M., Zhang, S., & Zhang, Y. (2025). *Exploring the Mechanisms Linking Digital Leadership to Employee Creativity : A Moderated Mediation Model.* 1–22.