Almana : Jurnal Manajemen dan Bisnis
Volume 9 No. 3/ December 2025: 559-568
p-ISSN: 2579-4892/ e-ISSN: 2655-8327
DOI: 10.36555/almana.v9i3.2963

Strategies for Strengthening Digital Leadership in an Effort to Improve the Performance of Higher Education

Ade Mubarok*[1], Iman Sudirman[1], Heru Setiawan[1]
Universitas Pasundan, Indonesia[1]
*Corresponding Email: adem@ars.ac.id

Abstract: The ability of higher education institutions to utilize digital technologies is increasingly important in responding to the demands of the Fourth Industrial Revolution. Universities are now expected not only to adapt to rapid technological shifts but also to innovate so that learning remains aligned with the evolving needs of the workforce. The degree to which technology is used to strengthen educational services, support strategic goals, and improve operational efficiency significantly affects overall institutional performance. Because of this, universities require a clear and sustainable digital strategy, as strong digital leadership can accelerate transformation and enhance institutional competitiveness. This study adopts a qualitative approach, beginning with identifying the research focus and selecting informants who possess relevant knowledge of the issues examined. Data were collected through interviews and documentation, then analyzed systematically and continuously to identify emerging themes. The credibility of the findings was strengthened using triangulation, which involved comparing data from different sources, methods, and times. The results show that digital leadership practices in both institutions are still in the developmental stage and not yet fully optimized. To strengthen digital leadership, this study recommends integrating transformational leadership principles, encouraging disruptive innovation, improving digital literacy, and establishing a Digital Transformation Office supported by internal policies that promote wider technology adoption.

Article History:
Submitted: November 18, 2025
Revised: December 08, 2025
Accepted: December 10, 2025
Published: December 30, 2025

Keywords:
Digital Leadership
Digital Transformation
Higher Education
Institutional Performance
Transformational Leadership

Mubarok, A., Sudirman, I., & Setiawan, H. (2025). Strategies For Strengthening Digital Leadership in An Effort to Improve the Performance of Higher Education. *Almana : Jurnal Manajemen dan Bisnis*, *9*(3), 559-568. https://doi.org/10.36555/almana.v9i3.2968

INTRODUCTION

The development of digital technology in the post–Industry 4.0 era has driven significant changes in the governance and business processes of higher education institutions (Sudiro & Putri, 2023). Universities are required not only to adopt technology but also to build organizational culture, competencies, and strategies that support comprehensive digital transformation (Ehlers, 2020). In this context, digital leadership becomes a crucial determinant shaping the direction of institutional change, as it involves the leader's ability to formulate a digital vision, manage innovation, and mobilize the academic community toward technology-based adaptation (Iveroth, 2020).

p-ISSN: 2579-4892
e-ISSN: 2655-8327

The implementation of digital leadership in higher education remains uneven and often misaligned with institutional strategic needs, such as improving the quality of academic services, operational efficiency, and human resource competitiveness. Digital leadership requires not only technological understanding but also strategic insight into how technology can enhance institutional performance (Chatterjee, 2023). However, the implementation of digital leadership in many Indonesian higher education institutions continues to face various challenges, including limited infrastructure, low digital literacy, cultural resistance, and unsystematic digital transformation policies (Schiuma, 2022). This phenomenon is evident at STP ARS International and AKPAR BSI Bandung, which, despite showing initiatives toward digitalization, still experience performance barriers due to suboptimal digital leadership strategies (Ruel, 2021). This condition can also be observed through the SINTA scores of both institutions, which remain relatively ineffective.

Based on the preliminary study, several strategic issues highlight the need for an in-depth analysis of the implementation of digital leadership in the two institutions. First, a comprehensive evaluation of current digital leadership practices is required. Second, higher education institutions that adopt strong digital leadership strategies tend to demonstrate more adaptive performance in responding to changes in the educational environment. Third, the institution's ability to overcome structural and cultural barriers related to strengthening digital leadership is expected to directly influence the effectiveness and efficiency of digital transformation strategies. Fourth, there is a clear need to formulate strategies for strengthening digital leadership to sustainably improve the performance of STP ARS International and AKPAR BSI Bandung. These four propositions form the logical basis and argumentative foundation for why this research needs to be conducted (Jayawardena, 2020).

This study has significant theoretical and practical contributions. Theoretically, it enriches the discourse on human resource management and educational management by providing a deeper understanding of the concept of digital leadership and its relevance to enhancing the performance of higher education institutions. Practically, this study offers data-driven recommendations for STP ARS International and AKPAR BSI Bandung in formulating strategies to strengthen digital leadership, while also supporting the development of institutional policies based on educational digitalization in the post-Industry 4.0 era. The findings also provide a foundation for further research related to digital leadership, innovation, and performance.

Based on the context, phenomena, and propositions described, this study specifically aims to analyze the implementation of digital leadership, identify obstacles arising in the digital transformation process, and formulate strategies to strengthen digital leadership that can enhance institutional performance at STP ARS International and AKPAR BSI Bandung.

METHODS

This study employs a qualitative approach with a descriptive-analytical method to comprehensively understand the strategies for strengthening digital leadership at two vocational higher education institutions, namely STP ARS International and AKPAR BSI Bandung. The descriptive-analytical method was chosen because it allows the researcher to systematically depict actual conditions based on ongoing phenomena (Sugiyono, 2021). The research approach is inductive, drawing general conclusions from the analysis of various empirical findings at the two institutions.

Specifically, this study uses a multiple case study design, involving two main units of analysis. This approach is applied because the phenomenon under investigation—strategies for strengthening digital leadership and their impact on institutional performance—occurs distinctly at two different institutions with similar contextual

characteristics. A multiple case study allows for logical replication across cases, resulting in richer and deeper research findings (Binder, 2022). The study is exploratory-descriptive in nature, aiming to uncover patterns, themes, and relationships among variables related to the implementation of digital leadership (Fadli, 2022).

This qualitative research applies the criteria of credibility, transferability, dependability, and confirmability to ensure data validity. Informants were selected through purposive sampling, including university leaders, heads of study programs, senior lecturers, administrative staff, and IT teams familiar with digitalization processes and institutional performance. Inclusion criteria include informants directly involved in digital leadership policies or implementation, with a minimum of two years of work experience, and willingness to be interviewed. Exclusion criteria comprise individuals who do not play a role in campus digitalization or cannot provide sufficient data. Data were collected through in-depth interviews, focus group discussions (FGDs), and document studies of campus policies, performance reports, and digitalization documents. Data were processed using interactive analysis, which includes data reduction, data presentation, and conclusion drawing, and then validated through source and method triangulation. The analysis results were integrated across cases to build a comprehensive understanding of strategies for strengthening digital leadership in improving institutional performance.

By combining a descriptive-analytical approach, multiple case study design, comprehensive data collection techniques, and strict validity mechanisms, this research method provides a solid foundation for analyzing and understanding strategies to strengthen digital leadership in enhancing higher education performance, particularly in the context of STP ARS International and AKPAR BSI Bandung.

RESULTS AND DISCUSSION

The findings of this study reveal that efforts to strengthen digital leadership at STP ARS International and AKPAR BSI Bandung cannot be achieved solely through enhancing technological capacity. Both institutions require a more comprehensive transformation that includes organizational governance, the development of human resource competencies, the establishment and expansion of strategic partnership networks, and the implementation of consistent performance transparency mechanisms. In addition, the institutions need a sustainable organizational learning system to ensure the continuity of digital transformation processes. Field findings indicate a growing awareness in both institutions that digital leadership must be strengthened in a structured and systematic manner to respond to rapid changes while improving institutional performance across operational, academic, and service dimensions.

The implementation of digital leadership at STP ARS International and AKPAR BSI Bandung has shown significant progress, although it is not yet fully integrated. STP ARS International has developed an LMS, SIAKAD, and a digital tourism-based curriculum that supports academic and administrative transformation. However, the effectiveness of digitalization remains limited by suboptimal system integration, varying levels of digital literacy among lecturers, and the absence of a dedicated digital transformation unit. Conversely, AKPAR BSI Bandung has adopted a vocational approach supported by applications and digital simulations in hospitality learning but faces challenges in data-driven monitoring, uneven availability of infrastructure, and the lack of a long-term digital roadmap.

Interview results indicate that both institutions have attempted to build a digital ecosystem through administrative digitalization, online learning, platform-based evaluations, and staff development programs. Nevertheless, a fully embedded digital organizational culture has yet to be achieved, and the use of data in decision-making

p-ISSN: 2579-4892
e-ISSN: 2655-8327

remains limited. Budget constraints, insufficient IT personnel, and the absence of a digital transformation unit also hinder the sustainability of innovation in both institutions.
The research findings support the proposition that digital leadership plays a crucial role in improving operational effectiveness and learning quality. At STP ARS International, digital leadership drives the development of technology-based systems and curricula, while at AKPAR BSI Bandung, digitalization strengthens practical learning and academic service responsiveness. However, these successes have not yet been accompanied by significant improvements in academic performance, particularly in scientific publications and SINTA achievements, which remain low in both institutions.

Table 1. Comparative Analysis: Digital Leadership Implementation at STP ARS International and AKPAR BSI Bandung

Aspect	STP ARS International	AKPAR BSI Bandung
Digital System Integration	Not fully integrated across units	LMS and SIAKAD are available, but not fully integrated
Lecturer Digital Literacy	Literacy levels vary; senior lecturers face difficulties	Training is provided, but adoption remains uneven
Digital Organizational Culture	Not yet widespread; internal resistance exists	Digital culture is developing, but not yet strong
LMS Utilization	Actively used, but not optimal across all courses	LMS is active, but monitoring is limited
Technological Infrastructure	Adequate, but network distribution needs improvement	Good connectivity, but not evenly available across all areas
Digital Development Budget	Limited; no dedicated R&D funding	Limited resources for new system development
Digital Competency Roadmap	Not available; training is unstructured	Training is ad hoc and not competency-based
Change Management	No structured change communication strategy	Minimal internal education on digital transformation
Use of Data Analytics	Minimal use of data for policy decision-making	No integrated analytics system available
Digital Organizational Structure	No dedicated digital transformation unit	No specific role or unit for digital transformation

Source*:* Data that has been processed by the author (2025)

Table 1 illustrates the condition of digital leadership at STP ARS International and AKPAR BSI Bandung across various strategic and operational aspects. STP ARS International demonstrates stronger digital system integration through the structured use of LMS and SIAKAD to support learning processes and institutional management. Meanwhile, AKPAR BSI Bandung has made progress in the digitalization of administrative services and vocational learning, although it still faces challenges related to uneven digital literacy and infrastructure quality.

These findings reinforce the validity of the first proposition, which states that an evaluation of digital leadership is necessary for both institutions. Technological innovations have been implemented; however, they are not yet accompanied by adequate governance mechanisms and change management strategies, resulting in a digital transformation that has not reached an optimal level of maturity.

STP ARS International has a more progressive vision of digital transformation, but continues to face obstacles related to inter-unit coordination and disparities in digital literacy. AKPAR BSI Bandung excels in vocational aspects but is weaker in data-driven monitoring and infrastructure distribution. Therefore, the evaluation of digital leadership should focus on strengthening digital transformation structures, developing human resource competencies, integrating systems, and enhancing the use of data analytics. A contextual and targeted evaluation is required to strengthen institutional capacity and increase the competitiveness of both institutions within an increasingly digitalized higher education ecosystem.

The adoption of digital leadership at STP ARS International and AKPAR BSI Bandung has contributed to strengthening institutional adaptability in the dynamic landscape of vocational higher education. STP ARS International positions digitalization as a strategic component of its institutional vision through the implementation of an LMS, curriculum digitalization, and the enhancement of digital tourism competencies. These efforts have accelerated learning transformation and governance processes, although their implementation remains constrained by system integration issues, variations in lecturers' digital literacy, and the absence of a dedicated digital transformation unit.

AKPAR BSI Bandung has demonstrated similar progress through the digitalization of academic services, LMS utilization, and the strengthening of application-based vocational learning. This approach has effectively improved the flexibility and effectiveness of online learning. However, several challenges persist, including weak data-driven monitoring systems, limited technological infrastructure, and the absence of a long-term digital roadmap.

Field findings also indicate that digital leadership in both institutions plays a role not only in technological modernization but also in shaping adaptive and collaborative work cultures. The implementation of blended learning, the use of interactive media, and the integration of digital simulations in teaching have increased student engagement and participation. These findings reinforce the proposition that digital leadership fosters an innovative and responsive learning ecosystem aligned with the needs of the digital generation.

Nevertheless, several persistent weaknesses continue to hinder the effectiveness of digital leadership. At STP ARS International, issues include the fragmentation of digital systems across units, low digital literacy among senior lecturers, and limited research output and academic publications. Meanwhile, AKPAR BSI Bandung faces constraints in IT human resources, insufficient analytical data support, and suboptimal digital quality assurance systems. Both institutions also lack clear long-term planning for the sustainability of digital initiatives.

Overall, the study confirms that digital leadership plays a significant role in enhancing adaptability, operational effectiveness, and learning quality in both vocational higher education institutions. However, the sustainability of digital transformation requires stronger system integration, improved human resource digital literacy, the use of data analytics, and the development of a structured and visionary digital transformation roadmap.

p-ISSN: 2579-4892
e-ISSN: 2655-8327

Table 2. Comparative Analysis of Digital Leadership Indicators at STP ARS International and AKPAR BSI Bandung

Aspect	STP ARS International	AKPAR BSI Bandung
Digital Learning System	Has an internal LMS; lecturers actively develop content, but not all courses are fully integrated.	Uses LMS efficiently; lecturer and student engagement are relatively good, but interactivity remains low.
Digital Curriculum	The curriculum incorporates digital tourism courses; revisions are still limited to several study programs.	Beginning to integrate digital hospitality content, but research-based innovation is still minimal.
Technological Infrastructure	Adequate internet connectivity and labs are available, but equipment upgrades are not evenly distributed.	Infrastructure is adequate; however, system maintenance and updates are not yet optimal.
Digital Leadership	Leaders have a strong digital vision, but cross-unit coordination is sometimes misaligned.	Leaders encourage technology adoption, but it has not fully become part of the organizational work culture.
Lecturer Competence	Relatively high; regular digital training is provided, but not all lecturers participate actively.	Varies; some lecturers still struggle with technology despite having participated in training.
Student Autonomy	Students are active in digital projects; however, not all study programs provide sufficient space for independent experimentation.	Students are becoming more adaptive; however, independent motivation to use digital tools remains inconsistent.
Industry Partnerships	Collaborations with digital industries exist, but not yet in the form of long-term MoUs.	There are internship partnerships, but industry involvement in learning remains low.
Evaluation and Monitoring	A digital dashboard is used, but data analytics are not fully utilized for policymaking.	Online assessment systems are functioning well; however, learning reflection processes are not yet systematic.
Digital Organizational Culture	Digital culture is developing; resistance remains at the administrative staff level.	Digital culture is not yet widespread; initiatives still rely heavily on leadership.
Learning Innovation	Interactive and engaging; however, still limited to lecturers who are comfortable with technology	Uses videos and interactive media; however, not all lecturers apply these innovations consistently.

Source*:* Data that has been processed by the author (2025)

The summary table shows that STP ARS International and AKPAR BSI Bandung have begun strengthening their digital performance systems, particularly in LMS and SIAKAD integration as well as technology-based learning. STP ARS International excels in curriculum innovation and digital ecosystem development, although it still faces challenges in research performance and publication output. AKPAR BSI Bandung stands out in its application-based vocational approach but encounters obstacles in research productivity, data-driven monitoring, and infrastructure readiness.

These findings support the proposition that digital leadership enhances institutional performance and adaptability. Consistent digital leadership at both campuses has accelerated the transformation of learning and academic services. However, the effectiveness of implementation remains influenced by gaps in digital literacy, weak inter-

unit integration, and the absence of a long-term digital roadmap. Overall, digital leadership contributes positively to the learning ecosystem and innovation culture, yet the sustainability of transformation requires stronger research capacity, enhanced human resource competencies, and more systematic data-based evaluation.

Furthermore, the ability of both institutions to overcome digitalization challenges demonstrates a relatively strong level of institutional resilience. Despite limitations in human resources, infrastructure, and funding, STP ARS International and AKPAR BSI Bandung have been able to respond to challenges through adaptive and collaborative strategies. At STP ARS, digital literacy has been strengthened through training programs and peer mentoring, reflecting collective learning practices aligned with the concept of Communities of Practice (Erhan, 2022). Meanwhile, AKPAR BSI Bandung has optimized its limited resources by prioritizing digital investments in high-impact areas, consistent with the notion of high-leverage initiatives (Abbu, 2020).

Both institutions have also adopted participatory leadership patterns and the use of monitoring dashboards to strengthen data-driven decision-making. This approach aligns with the concept of transformational participatory leadership (Akid, 2023) and evidence-based governance practices, which position data as the foundation of operational policy. These findings affirm that the ability to manage constraints reflectively and systematically is a key element of digital resilience, enabling vocational institutions to remain adaptive and competitive within a dynamic higher education ecosystem.

In addition to the institutions' ability to address digitalization challenges, strategic analysis using IFAS–EFAS calculations further clarifies their digital transformation readiness. STP ARS International obtained an IFAS score of 3.45 and an EFAS score of 3.60, placing the institution in Quadrant I (Grow & Build Strategy). This position indicates that internal strengths, including human resource capacity, digital learning ecosystem, and infrastructure readiness, can be mobilized aggressively to capitalize on external opportunities. Thus, digital transformation strategies may focus on innovation expansion, system integration, and the continuous strengthening of dynamic capabilities.

Conversely, AKPAR BSI Bandung achieved an IFAS score of 2.85 and an EFAS score of 3.10, placing it in Quadrant II (Selective Growth Strategy). This condition reflects that while external opportunities are promising, internal strengths must be enhanced—particularly in digital literacy, technological infrastructure, and digital governance stability—before full-scale transformation can be accelerated. Strengthening internal capacity, therefore, becomes a strategic priority to ensure the effective implementation of digital leadership.

These results complement earlier findings, reinforcing that an institution's ability to address digital leadership challenges is an important indicator of institutional resilience. STP ARS International and AKPAR BSI Bandung demonstrate that limitations in human resources and infrastructure can become catalysts for organizational learning through participatory approaches, strategic efficiency, and data-driven decision-making. The IFAS–EFAS quadrant analysis emphasizes that digital resilience and agility are key factors determining the strategic direction of digital transformation for both institutions as they navigate the technologically driven higher education landscape.

Technology Governance and Vendor Partnership

Interview results with expert informants reveal the need for more agile yet accountable governance in technology procurement. The recommended approach includes the use of framework agreements for recurring solution categories, the establishment of Service Level Agreements (SLAs) that are relevant to the higher education context, the inclusion of exit clauses to protect institutions when the promised value is not achieved, and the implementation of a proof of value (PoV) before entering into long-term contracts.

p-ISSN: 2579-4892
e-ISSN: 2655-8327

At STP ARS International, the pilot-first principle has been applied to analytics and edtech solutions through a 60–90-day Proof of Value (PoV) evaluation that assesses the impact on learning analytics, industry project orchestration, and job–skills matching. Only solutions proven effective through PoV testing are then scaled up. Meanwhile, AKPAR BSI Bandung prioritizes license consolidation, prevention of application overlaps, and the use of open-source solutions to maintain innovation flexibility and cost efficiency. Both institutions have also begun implementing vendor scorecards to periodically monitor the performance of technology partners based on SLAs and support quality, ensuring that technology procurement decisions are more data-driven rather than influenced by vendor promotion.

Strengthening Human Resource Capabilities and Sustained Leadership

The study also shows that digital transformation cannot progress without sustained leadership. Expert informants emphasized the use of people analytics to monitor workload distribution, digital literacy levels, and potential single points of failure within the HR structure. At STP ARS International, this approach is combined with cross-unit rotation and executive mentoring, positioning high-potential lecturers or administrators as leaders of priority workstreams. At AKPAR BSI Bandung, upskilling sprints are focused on improving dashboard literacy, disciplined use of e-forms, and basic cybersecurity, accompanied by cross-unit job shadowing to accelerate digital competency diffusion. Both institutions have begun preparing quarterly reports containing digital readiness indices, workload distribution, and the percentage of strategic positions with active succession plans. These findings reinforce the literature indicating that the success of digital leadership is strongly dependent on human resource quality and leadership continuity within the organization.

Collaborative Ecosystems as Catalysts for Transformation

The research finds that institutional adaptability increases significantly when higher education institutions are connected to edtech ecosystems, industry partners, professional associations, and benchmark universities. STP ARS International has established small joint labs with industry partners for live briefs, co-teaching, and testing analytics tools aligned with market needs. Success indicators of this model include increased relevance of assignments, improved usability of analytics data, and stronger alignment between graduate competencies and industry requirements.

In contrast, AKPAR BSI Bandung leverages peer learning with more digitally mature institutions within the LLDIKTI Region 4 through best practice clinics and reciprocal visits. These findings affirm that outcome-oriented partnerships can serve as innovation accelerators, reducing experimentation costs and shortening learning curves.

Digital Transformation Risk Management

Expert informants highlighted that transformation success depends not only on innovation but also on institutional capacity to manage risk. STP ARS International and AKPAR BSI Bandung have begun developing risk registers that map risk probability and impact, responsible owners, mitigation strategies, and early-warning indicators. At STP ARS International, key risks relate to cross-system data integration and compliance with industry privacy requirements. AKPAR BSI Bandung, meanwhile, faces risks related to system downtime during registration periods and high dependence on manual processes. Risk heatmaps are reviewed monthly in leadership meetings to ensure that mitigation decisions prioritize high-value areas. These findings align with risk-based governance approaches in digital governance literature.

Performance Transparency and Public Accountability

The study finds that public trust and internal discipline increase when institutions build evidence-based transparency mechanisms. STP ARS International implements a digital service charter that includes service promises, real-time performance dashboards, and student career achievements aligned with a skills taxonomy. AKPAR BSI Bandung publicly displays dashboards of SLA performance, ticket resolution trends, and unit-level productivity. The researcher found that routine exposure to performance data shifts organizational culture from narrative-driven to accountability-driven, strengthening institutional reputation and enhancing decision-making quality.

Organizational Learning Mechanisms Based on Retrospectives

The final findings indicate that stable digital transformation requires a systematic organizational learning cycle. STP ARS International conducts cross-unit retrospectives every quarter to identify successes, barriers, and practices that require standardization. New standards are then documented in a digital playbook to ensure replication across study programs. AKPAR BSI Bandung standardizes e-forms, dashboard templates, and service workflows, making performance audits easier and enabling objective comparison across units. These findings reinforce the theory that a continuous learning culture is central to building a learning organization in a digital context.

Overall Interpretation

The research findings demonstrate that strategies for strengthening digital leadership cannot be understood solely through technological dimensions but require a systemic approach that incorporates governance, human resource capabilities, external partnerships, risk management, accountability, and organizational learning. The successful strategies implemented at STP ARS International and AKPAR BSI Bandung indicate alignment with theoretical frameworks of digital leadership, which emphasize digital vision, continuous innovation, human resource competence, and institutional adaptability (Kurniawan, 2023).

The study also confirms the proposition that higher education institutions adopting strong digital leadership strategies possess greater capacity to improve performance and respond to the evolving dynamics of the educational environment. Moreover, empirical data show that the effectiveness of digital transformation is highly influenced by organizational culture readiness and leadership continuity. Thus, the combination of field findings and existing theory leads to the conclusion that digital leadership is not merely a strategic requirement but a foundational pillar for building adaptive, innovative, and competitive higher education institutions in the post-Industry 4.0 era.

CONCLUSION

Based on the results of the analysis and discussion, this study concludes that the strengthening of digital leadership at STP ARS International and AKPAR BSI Bandung remains in the development phase and has not yet been fully implemented. STP ARS International has demonstrated progress through the development of digital infrastructure and collaboration with industry; however, its digital leadership practices are still not well structured. Meanwhile, AKPAR BSI Bandung faces greater challenges, as leadership remains conventional and technological integration in management is not yet optimal. Low digital literacy among leaders and limited use of data constitute major barriers for both institutions. The institutional performance of the two vocational higher education institutions, measured through scientific publications, technology adoption, and responsiveness to change, remains relatively low. STP ARS International shows growth potential as digital transformation initiatives have begun, yet its SINTA scores and international publications remain limited. AKPAR BSI Bandung has made progress

p-ISSN: 2579-4892
e-ISSN: 2655-8327

in digitalizing vocational learning; however, it has contributed very little to international academic output in the past five years, resulting in a low level of technology-based academic competitiveness.

REFERENCES

Abbu, H. (2020). DIGITAL LEADERSHIP - Character and Competency Differentiates Digitally Mature Organizations. In *Proceedings - 2020 IEEE International Conference on Engineering, Technology and Innovation, ICE/ITMC 2020*. https://doi.org/10.1109/ICE/ITMC49519.2020.9198576

Akid, I. El. (2023). The Challenges of Digital Leadership—a Critical Analysis in Times of Disruptive Changes. In *Springer Proceedings in Business and Economics* (pp. 117–129). https://doi.org/10.1007/978-3-031-20148-6_12

Binder, J. (2022). Digital pioneers in rural regional development: A bibliometric analysis of digitalisation and leadership. *Raumforschung Und Raumordnung*, *80*(3), 266–278. https://doi.org/10.14512/rur.103

Chatterjee, S. (2023). Digital workplace and organization performance: Moderating role of digital leadership capability. *Journal of Innovation and Knowledge*, *8*(1). https://doi.org/10.1016/j.jik.2023.100334

Ehlers, U. D. (2020). Digital Leadership in Higher Education. *Journal of Higher Education Policy and Leadership Studies*, *1*(3), 6–14. https://doi.org/10.29252/johepal.1.3.6

Erhan, T. (2022). From conventional to digital leadership: exploring digitalization of leadership and innovative work behavior. *Management Research Review*, *45*(11), 1524–1543. https://doi.org/10.1108/MRR-05-2021-0338

Fadli, R. (2022). *Manajemen Sumber Daya Manusia Di Dalam Perusahaan*. books.google.com. https://books.google.com/books?hl=en&lr=&id=UH2KEAAAQBAJ&oi=fnd&pg=PA7&dq=kualitas+sdm+budaya+organisasi+daya+saing+perusahaan&ots=yx8iiyrgpk&sig=e2yy4lAD-t3InJeUpbyWDSQc5HI

Iveroth, E. (2020). Leadership and digital change: The digitalization paradox. In *Leadership and Digital Change: The Digitalization Paradox*. https://doi.org/10.4324/9780429296420

Jayawardena, C. D. W. (2020). Synthesis of digital transformation beyond technology perspective: Digital strategy, leadership & culture. *Journal of Critical Reviews*, *7*(10), 349–357. https://doi.org/10.31838/jcr.07.10.74

Kurniawan, Z. (2023). Daya Saing Sumber Daya Manusia Di Era Digitalisasi. *Jurnal EBI*. https://jurnal.cic.ac.id/index.php/ebi/article/view/182

Ruel, H. (2021). Digital business strategizing: the role of leadership and organizational learning. *Competitiveness Review*, *31*(1), 145–161. https://doi.org/10.1108/CR-11-2019-0109

Schiuma, G. (2022). The transformative leadership compass: six competencies for digital transformation entrepreneurship. *International Journal of Entrepreneurial Behaviour and Research*, *28*(5), 1273–1291. https://doi.org/10.1108/IJEBR-01-2021-0087

Sudiro, A., & Putri, O. A. (2023). *Manajemen sumber daya manusia*. books.google.com. https://books.google.com/books?hl=en&lr=&id=vn-xEAAAQBAJ&oi=fnd&pg=PP1&dq=kualitas+sdm+budaya+organisasi+daya+saing+perusahaan&ots=4TTeSuJSv6&sig=WHB5W2EYwsrGptaZsgYYeZwFABI

Sugiyono, P. D. (2021). Metode Penelitian Bisnis: Pendekatan Kuantitatif, Kualitatif, Kombinasi, dan R&D. *Penerbit CV. Alfabeta: Bandung*.