



Digital Leadership and Academic Performance: The Mediating Role of Knowledge Sharing in Higher Education Institutions

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Abstract: The accelerated digital transformation of higher education institutions (HEIs) has emphasized digital leadership in fostering academic excellence. However, limited empirical evidence existed regarding the mechanisms through which digital leadership influenced academic performance, particularly within the context of higher education in the developing country. This study investigated the direct effect of digital leadership on academic performance as well as the mediating role of knowledge sharing among academic staff in Indonesian HEIs. Grounded in Social Exchange Theory (SET) and the Knowledge-Based View (KBV), the study employed a quantitative and cross-sectional research design, with data collected from 274 academic staff members working in HEIs in Yogyakarta, Indonesia. Data was analyzed using partial least squares structural equation modeling (PLS-SEM). The findings revealed that digital leadership had a significantly positive effect on academic performance ($\beta = 0.229, p < 0.01$) and knowledge sharing ($\beta = 0.913, p < 0.001$). Knowledge sharing was found to significantly enhance academic performance ($\beta = 0.658, p < 0.001$). It also partially mediated the relationship between digital leadership and academic performance, accounting for 72.4% of the total effect. The results indicated that digital leadership primarily improved academic performance by creating an environment that promoted knowledge exchange among academic staff. This study contributes to the digital leadership literature by providing empirical evidence of knowledge sharing as a key mediating mechanism in higher education settings. Practical implications were offered for university leaders and policymakers seeking to improve academic outcomes through digital transformation initiatives and knowledge-sharing ecosystems.

Keywords: Digital leadership; Knowledge sharing; Academic performance; Higher education institutions; Social Exchange Theory; PLS-SEM; Indonesia

1. Introduction

The accelerating pace of digital transformation has fundamentally reshaped the operational landscape of higher education institutions (HEIs) worldwide. Universities and colleges are no longer merely academic entities; they are complex knowledge organizations that must navigate technological disruption, shifting pedagogical paradigms, and the growing expectations of digitally literate students and faculty. In this evolving context, the leadership style adopted by institutional heads, deans, and academic coordinators has emerged as a critical determinant of institutional effectiveness and individual academic outcomes. Among the contemporary leadership approaches that have attracted significant scholarly attention, digital leadership stands out as a particularly relevant and impactful construct (Erhan et al., 2022; Suryadi et al., 2024).

Digital leadership is broadly defined as the integration of digital technologies, digital mindsets, and technology-driven strategies into leadership practice. It extends conventional leadership roles by equipping leaders with the capabilities to harness digital tools for enhancing institutional performance (Benitez et al., 2022; Cortellazzo et al., 2019). In the higher education context, digital leaders are expected to orchestrate the adoption of digital infrastructures, promote technology-enabled learning environments, foster digital cultures within their institutions, and build the digital competencies of their academic and administrative staff (Anwar & Saraih, 2024; Cheng et al., 2024). Indonesia offers a particularly instructive setting in which to examine this relationship. The Merdeka Belajar Kampus Merdeka (Independent Campus) policy implemented by the Indonesian government and the

national push toward the accreditation of digital-based higher education have compelled universities to rapidly adopt learning management systems, digital research repositories, and online administrative platforms over the past several years, often without a commensurate transformation in leadership practice (Suryadi et al., 2024). This creates a policy-driven urgency around digital leadership that is distinct from voluntary digitalization efforts observed in more digitally mature higher education systems. Indonesian HEIs in Yogyakarta, one of the country's principal higher-education hubs, constitute a strategically relevant context for investigating how digital leadership translates into academic outcomes. Despite its apparent relevance, empirical research specifically examining the influence of digital leadership on academic performance within HEIs remains relatively sparse, hence leaving a notable gap in the literature (Jameson et al., 2022; Zhang et al., 2022).

Academic performance is conceptualized in the higher education context as the measurable achievement of academic staff in meeting cognitive, research, and scholarly objectives. It is shaped by a multitude of individual, organizational, and environmental factors (Dima et al., 2022). Prior research established the associations between leadership quality and academic outcomes (Al-Husseini et al., 2021; Hamzah et al., 2021), yet the specific mechanisms through which digital leadership translated into improved academic performance was not sufficiently theorized and empirically examined. A particularly promising mechanism is knowledge sharing: the process through which individuals voluntarily exchange information, expertise, experiences, and insights with others in their organizational or academic community (Ahmad et al., 2023; Anwar & Saraih, 2024). It is important to clarify that, to align with the operationalization adopted in this study (see Section 5.2), academic performance refers specifically to the performance of academic staff in their research, teaching, and scholarly roles, and not to students' academic achievement. This demarcation was maintained throughout the sections of literature review, development of hypotheses, and methodology that follow.

Knowledge sharing occupies a central position in the knowledge management literature as a catalyst for individual learning, organizational innovation, and performance enhancement (Al-Kurdi et al., 2020; Obrenovic et al., 2020). In academic settings, when digital leaders create enabling conditions through collaborative digital platforms, open communication channels, and technology-supported learning ecosystems, faculty and students are better positioned to exchange and co-construct knowledge, which in turn elevates academic achievement (Islam et al., 2025; Yang et al., 2025). However, empirical studies examining knowledge sharing as a mediating mechanism between digital leadership and academic performance in HEIs are virtually absent. This presents a clear theoretical and practical gap that this study seeks to address.

This study was anchored in Social Exchange Theory (SET) (Blau, 1964) and the Knowledge-Based View (KBV) (Grant, 1996), which collectively posited that leadership behaviors influenced followers' willingness to engage in reciprocal and trust-driven knowledge exchange, which subsequently enhanced performance. Building on these theoretical foundations, the present investigation advanced a mediation model proposing that digital leadership exerted its positive influence on academic performance through the intermediary mechanism of knowledge sharing.

The study adopted a quantitative and cross-sectional research design, which employed partial least squares structural equation modeling (PLS-SEM) for hypothesis testing, to be consistent with recent methodological trends in research in the fields of management and education (Hair et al., 2019; Ringle et al., 2020). The research context was HEIs, with data collected from academic staff who constituted the primary recipients of digital leadership practices. This approach aligned with growing calls for rigorous empirical examinations of the downstream effects of digital leadership in academic settings (Jameson et al., 2022; Tigre et al., 2025).

2. Literature Review

This section reviews the theoretical and empirical foundations underpinning the three core constructs of this study: digital leadership, academic performance, and knowledge sharing. Each subsection synthesizes extant scholarship to establish the conceptual boundaries of the construct and to identify the research gaps that the present study addressed. The hypothesis development that flew from this review is presented in Section 3.

2.1 Digital Leadership: Conceptualization and Theoretical Underpinnings

Digital leadership has emerged as one of the most discussed constructs at the intersection of leadership studies and research on digital transformation. Despite growing scholarly interest, the concept has not yet possessed a single universally accepted definition (Tigre et al., 2025). Early conceptualizations rooted the construct in e-leadership: the application of information technology to influence processes within organizations (Avolio et al., 2014). More recent scholarship, however, has broadened the concept to encompass not only virtual communication and team management, but also the strategic, cultural, and competency dimensions of leading in a digitally transformed environment (Brunner et al., 2023; Erhan et al., 2022).

Cortellazzo et al. (2019) identified key capabilities associated with digital leadership, including strategic digital vision, fluency of digital technology, change management in digital contexts, and the cultivation of learning organizations. Building on this foundation, Erhan et al. (2022) empirically demonstrated that digital leadership

facilitated innovative work behaviors by transitioning organizations from conventional to digitally mediated operational models. Similarly, Benitez et al. (2022) highlighted that digital leaders drove competitive advantage by integrating technological tools into their leadership styles to enhance decision making and team collaboration. Suryadi et al. (2024) further extended these findings by confirming that digital leadership significantly predicted higher education performance through the enabling role of digital innovation.

In the specific context of higher education, digital leadership takes on a distinctive character. Anwar & Saraih (2024) conceptualized digital leadership in education as encompassing three empirically validated dimensions: visionary leadership, digital citizenship, and systematic improvement dimensions that collectively enabled academic leaders to transform institutional practices. Ghamrawi & Tamim (2023) emphasized that digital academic leadership transcended conventional e-leadership models by foregrounding the unique mandate of educational institutions to balance technological innovation with academic integrity. Cheng et al. (2024) further conceptualized digital academic leadership as the systematic orchestration of digital tools, cognitive frameworks, and institutional behaviors to optimize teaching, research, and administrative functions.

Theoretical support for digital leadership in educational contexts has been drawn from several frameworks. The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) has been applied to explain how leaders facilitate the adoption of technology among followers (Cheng et al., 2024). The Resource-Based View (RBV) (Barney, 1991) positions digital leadership as a strategic organizational resource that enhances institutional capabilities and competitiveness. The Technology-Organization-Environment framework has been used to examine how digital leadership interacts with organizational readiness and environmental pressure to produce institutional outcomes (Mollah et al., 2024; Suryadi et al., 2024). Collectively, these frameworks underscore the theoretical richness of the digital leadership construct and its potential to explain performance variability in HEIs.

Despite this progress, two limitations persist in the digital leadership literature. First, most empirical studies have been conducted in corporate or SME contexts, thus leaving a comparative paucity of evidence in higher education settings (Jameson et al., 2022; Zhang et al., 2022). Second, while several mediating mechanisms including digital innovation, organizational agility, and emotional intelligence have been examined, the mediating role of knowledge sharing between digital leadership and academic performance remains empirically uncharted (Anwar & Saraih, 2024; Yang et al., 2025). The present study addressed both limitations mentioned above.

2.2 Academic Performance in Higher Education: Conceptualization and Determinants

Academic performance in higher education covers the degree to which students, faculty, and institutions achieve their scholarly and educational objectives. At the student level, academic performance is typically operationalized through grade point averages, learning outcomes, research productivity, and the development of critical and analytical competencies (Dima et al., 2022; Kassab et al., 2024). At the faculty level, it includes research output, teaching effectiveness, and contributions to knowledge creation and dissemination. At the institutional level, academic performance reflects the aggregate achievement of these individual and collective outcomes, hence influencing rankings, accreditation status, and societal impact (Suryadi et al., 2024; Tanveer & Karim, 2018).

The determinants of academic performance are multifaceted. Individual factors, such as self-regulation, motivation, and prior academic preparation, have been extensively studied (Kassab et al., 2024). Organizational factors, including institutional culture, leadership quality, and the availability of learning resources, have also been shown to exert significant influence (Dima et al., 2022; Hamzah et al., 2021). Increasingly, technological factors encompassing digital infrastructure, e-learning platforms, and digital leadership have been recognized as important determinants of academic outcomes in the modern HEI landscape (Lukitasari et al., 2022; Suryadi et al., 2024).

Within the leadership and education literature, transformational leadership has historically been the most studied predictor of academic performance, with studies confirming positive associations through mechanisms such as teachers' motivation, organizational commitment, and school culture (Al-Husseini et al., 2021). More recently, scholars have begun exploring digital leadership as an antecedent, given the pervasive integration of digital technologies into academic processes. Suryadi et al. (2024) argued that digital leadership significantly affected higher education performance, with digital innovation serving as a mediating mechanism. Having presented explicit implications for academic performance outcomes, Hamzah et al. (2021) demonstrated that principals' digital leadership positively influenced teachers' digital teaching effectiveness during the COVID-19 pandemic.

Nevertheless, the literature has not yet adequately tackled how digital leadership specifically enhanced academic performance through psychological and behavioral mechanisms operating at the individual level. Understanding these mechanisms is essential for both theory building and design of practical intervention. The current study proposed that knowledge sharing served as one of the critical mechanisms, translating digital leadership behaviors into improved academic performance by fostering a collaborative and information-rich academic environment.

2.3 Knowledge Sharing in Higher Education: Concept, Antecedents, and Outcomes

Knowledge sharing is conceptualized as the deliberate act of disseminating information, expertise, experience, and insights among individuals within an organizational or social context, with the intent of enabling others to act more effectively (Wang & Noe, 2010). In educational settings, knowledge sharing encompasses both explicit knowledge including course materials, research findings, and instructional methods and tacit knowledge, such as experiential wisdom, problem-solving heuristics, and disciplinary intuitions (Al-Kurdi et al., 2020; Obrenovic et al., 2020). The process operates across multiple levels, i.e., between students, between faculty members, and across the student-faculty interface.

Al-Kurdi et al. (2020) conducted a systematic literature review identifying key antecedents of knowledge sharing in HEIs, organized into individual, organizational, and technological categories. Individual antecedents include intrinsic motivation, self-efficacy, trust, and perceived reciprocity. Organizational antecedents encompass leadership support, organizational culture, reward systems, and institutional structures. Technological antecedents identified as the most understudied category include the availability and usability of digital collaboration platforms, learning management systems, and communication technologies (Al-Kurdi et al., 2020; Cheng et al., 2024).

Ahmad et al. (2023) examined knowledge sharing behavior among academicians in Indian HEIs and concluded that motivation to share, institutional culture, and digital affordances were key drivers. These findings align with those of Mutahar et al. (2022), who proved that institutional mechanisms promoting knowledge exchange are critical for sustaining competitive academic performance. Furthermore, Yang & Lin (2022) employed PLS-SEM to demonstrate that knowledge-sharing behaviors among design college students significantly enhanced group performance, with cohesion serving as a complementary mediating mechanism.

The outcomes of knowledge sharing in academic settings are well-documented. At the student level, knowledge sharing improved learning comprehension, collaborative problem-solving, and academic achievement (Jia et al., 2023; Haque et al., 2023). Through a survey of 497 students across six Chinese universities, Jia et al. (2023) uncovered that individual knowledge-sharing behaviors enhanced group performance by increasing the accumulation and application of collective knowledge. At the faculty level, knowledge sharing was associated with enhanced research productivity, teaching quality, and innovation (Al-Husseini et al., 2021). At the institutional level, knowledge sharing cultures were linked to superior organizational performance and learning capacity (Obrenovic et al., 2020).

Knowledge sharing in the digital era has also taken on new dimensions. Digital platforms including learning management systems, social media, virtual collaboration tools, and institutional repositories have expanded the scope and velocity of knowledge exchange in HEIs (Al-Kurdi et al., 2020; Cheng et al., 2024). These technological affordances do not operate independently; they require active leadership facilitation to be effectively institutionalized. This intersection between digital leadership and knowledge sharing constitutes a theoretically rich domain that merits systematic empirical investigation and forms the basis for the development of hypotheses presented in Section 3.

3. Development of Hypotheses

Building on the theoretical and empirical foundations established in Section 2, this section advances four research hypotheses that together constitute the conceptual model of this study. Each hypothesis was developed through a convergence of theoretical justification, supporting empirical evidence and identification of a specific research gap. The resulting hypotheses collectively specified the direct and indirect pathways through which digital leadership influenced academic performance in HEIs.

3.1 Digital Leadership and Academic Performance

The theoretical case for a positive relationship between digital leadership and academic performance in HEIs was grounded in several converging arguments. Digital leaders created enabling institutional environments by championing the adoption of digital learning tools, ensuring equitable access to technology, and building digital competencies among faculty and students that directly supported academic achievement (Anwar & Saraih, 2024; Rasdiana et al., 2024). Concurrently, digital leadership promoted a culture of continuous learning and innovation, in which institutional members were encouraged to experiment with new pedagogical approaches, engage with emerging research methodologies, and embrace digital scholarship (Brunner et al., 2023; Suryadi et al., 2024). From the perspective of the RBV (Barney, 1991), digital leadership constituted a strategic organizational resource that enhanced institutional capabilities and competitive positioning, with attendant effects on measurable academic output.

Empirically, Suryadi et al. (2024) demonstrated a significantly positive direct effect of digital leadership on higher education performance using PLS-SEM, with the relationship strengthened when digital innovation was introduced as a mediating variable. Hamzah et al. (2021) similarly found that principals' digital leadership

significantly predicted teachers' effectiveness of digital teaching a direct antecedent of student learning outcomes. Zhu et al. (2024) confirmed that institutional digital leadership was a foundational driver of digital transformation, a process that ultimately enhanced educational effectiveness, while Qiao et al. (2024) demonstrated that digital leadership, mediated by digital transformation, significantly enhanced employee performance and organizational commitment in digitally intensive environments.

Despite this growing body of evidence, the relationship between digital leadership and academic performance are predominantly analyzed through indirect mechanisms such as digital innovation (Suryadi et al., 2024), organizational learning (Mollah et al., 2023), and digital transformation (Qiao et al., 2024). The behavioral mechanisms through which digital leadership is transmitted into individual academic performance outcomes remain insufficiently specified, particularly at the faculty level in Southeast Asian HEIs. Moreover, to decompose the total effect of digital leadership into direct and mediated components has not been empirically undertaken in the Indonesian higher education context. Based on the foregoing theoretical and empirical rationale, the following hypothesis was proposed:

H1: *Digital leadership has a significantly positive effect on academic performance in HEIs.*

3.2 Digital Leadership and Knowledge Sharing

Digital leadership creates the institutional conditions under which knowledge sharing is most likely to flourish. By leveraging collaborative digital platforms, promoting open communication, and fostering a culture of transparency and psychological safety, digital leaders enable and encourage institutional members to voluntarily share knowledge (Islam et al., 2025; Yang et al., 2025). The theoretical mechanism linking digital leadership to knowledge sharing was explained through SET (Blau, 1964), which posited that individuals reciprocated supportive and enabling leadership behaviors with increased organizational citizenship behaviors among which knowledge sharing was a prime example. When digital leaders invested in technological infrastructure, cultivated open communication norms, and modeled information transparency, faculty perceived a leadership climate that rewarded and reciprocated the disclosure of expertise and experience.

Anwar & Saraih (2024) exemplified the digital leadership–knowledge sharing relationship in Pakistani private HEIs, finding significantly positive effects of digital competence and systematic improvement on knowledge sharing behavior. By underscoring when digital leaders systematically developed institutional capacities for digital engagement, they simultaneously stimulated conditions for robust knowledge exchange. Islam et al. (2025) similarly validated that digital leadership style was a significant predictor of employees' knowledge-sharing behavior in Southeast Asian organizations, with organizational culture serving as a moderator. Furthermore, Yang et al. (2025) demonstrated that digital leadership enhanced employees' creativity partially through knowledge sharing, while Lyu (2024) verified a significantly positive impact of digital leadership on team knowledge sharing, moderated by team emotional climate.

Although the digital leadership–knowledge sharing relationship has been investigated in corporate and South Asian HEI contexts, its replication in Indonesian higher education has not yet been empirically confirmed, as institutional digital maturity, cultural norms of knowledge exchange, and leadership structures differed meaningfully. The present study bridged this gap by testing the pathway within Indonesian HEIs, where digital leadership practices were emerging against a backdrop of rapidly evolving national digital transformation policies. Accordingly, the following hypothesis was proposed:

H2: *Digital leadership has a significantly positive effect on knowledge sharing in HEIs.*

3.3 Knowledge Sharing and Academic Performance

The positive association between knowledge sharing and performance outcomes is among the most consistently replicated findings in the organizational and educational literature. In academic environments, knowledge sharing enables students and faculty to benefit from the accumulated insights, experiences, and resources of their colleagues, hence reducing redundant learning effort and accelerating the development of scholarly competencies (Haque et al., 2023; Yang & Lin, 2022). When institutional members freely exchange research insights, pedagogical innovations, and disciplinary expertise, the collective intelligence of the institution is elevated, an outcome that translates into superior academic performance at both individual and institutional levels (Al-Husseini et al., 2021; Obrenovic et al., 2020). The KBV (Grant, 1996) provides the macro-level rationale: the accumulation, integration, and exchange of knowledge within organizations constitute the primary foundation of superior performance. At the micro-level, SET (Blau, 1964) adds that faculty who receives knowledge through collegial exchange are motivated to reciprocate, thus generating a virtuous cycle of cumulative knowledge that elevates institutional performance.

Within HEIs specifically, Al-Husseini et al. (2021) demonstrated that knowledge sharing among higher education faculty mediated the positive relationship between transformational leadership and innovation, a proxy for the enhancement of academic performance. In the Indonesian higher education context, Suhana et al. (2019)

similarly revealed that transformational leadership significantly increased knowledge sharing and innovative behavior among postgraduate students in private universities, thus testifying that leadership-mediated knowledge exchange was a salient driver of academic outcomes in this setting. Haque et al. (2023), using PLS-SEM on a sample of 737 Bangladeshi university students, illustrated that knowledge sharing through social media significantly enhanced academic development. Jia et al. (2023) added that knowledge-sharing behaviors among college students boosted group academic performance by expanding shared knowledge bases and fostering collaborative problem-solving capacities. The influence of knowledge sharing on performance was also channeled through intermediate outcomes such as enhanced learning motivation, increased self-efficacy, improved critical thinking, and greater research productivity (Ahmad et al., 2023; Yang & Lin, 2022). Mutahar et al. (2022) empirically confirmed that knowledge sharing behavior was a crucial positive predictor of academic performance across HEI contexts. Udin et al. (2022) further demonstrated that knowledge sharing fully mediated the relationship between leadership style and innovative work behavior in an organizational sample, thus emphasizing its pivotal role as a behavioral transmission mechanism through which leadership inputs were converted into performance-relevant output.

Prior studies established the knowledge sharing–academic performance relationship primarily in student samples (Jia et al., 2023; Haque et al., 2023) or in the context of specific mediating mechanisms such as innovation (Al-Husseini et al., 2021). The relationship among faculty-level academic staff in Indonesian HEIs has not been independently created, constituting a necessary empirical prerequisite for the mediation model advanced in this study. Based on this evidence, the following hypothesis was proposed:

H3: *Knowledge sharing has a significantly positive effect on academic performance in HEIs.*

3.4 The Mediating Role of Knowledge Sharing

The mediation framework advanced in this study suggested that digital leadership did not act on academic performance in isolation; rather, a significant portion of its effect was transmitted through the mobilization of knowledge sharing behaviors. This theoretical account rested on the logic that digital leaders first created structural and cultural conditions that facilitated knowledge sharing (H2), and that knowledge sharing subsequently drove improvements in academic performance (H3). The total effect of digital leadership on academic performance (H1) therefore encompassed both a direct component and an indirect component mediated through knowledge sharing. Theoretically, this chain was explained through the integration of SET (Blau, 1964) and KBV (Grant, 1996): digital leaders, by providing enabling resources and supportive environments, triggered reciprocal knowledge-sharing behaviors that constituted the foundational mechanism through which superior academic performance was realized. Without this behavioral intermediary, structural investments of digital leadership might not be fully converted into individual and institutional performance gains.

Empirical support for this mediation logic was obtained in several analogous investigations. Yang et al. (2025) demonstrated that digital leadership enhanced employees' creativity through the partial mediation of knowledge sharing, with the mechanism activated by the transparency, supportiveness, and digital empowerment behaviors of digital leaders. Lyu (2024) substantiated that the positive effect of digital leadership on team role performance was completely mediated by team knowledge sharing, suggesting that without enabling knowledge exchange, digital leadership might not translate into performance gains. In the HEI context specifically, Anwar & Saraih (2024) exemplified that digital leadership considerably enhanced knowledge sharing among academic staff, while Al-Husseini et al. (2021) demonstrated that knowledge sharing mediated the leadership–innovation relationship, a construct closely related to academic performance. At the organizational level, Islam et al. (2025) established that digital leadership drove performance through a chain that prominently featured knowledge sharing as a key intermediate variable.

Despite this convergent evidence, no published study has directly tested the complete mediation chain, i.e., digital leadership → knowledge sharing → academic performance among academic staff in HEIs within the Southeast Asian context. Existing mediation models have examined digital innovation (Suryadi et al., 2024), emotional intelligence (Anwar & Saraih, 2024), and organizational learning (Mollah et al., 2023) as intermediary mechanisms; knowledge sharing as the specific mediating variable in the digital leadership–academic performance pathway remains empirically uncharted. The present study filled this gap by providing the first direct test of this mediation model in Indonesian HEIs. Accordingly, the following hypothesis was proposed:

H4: *Knowledge sharing mediates the positive relationship between digital leadership and academic performance in HEIs.*

4. Theoretical Framework and Research Model

The conceptual framework of this study was grounded in SET (Blau, 1964) and the KBV (Grant, 1996). These two theoretical pillars operated at complementary levels of analysis to explain the proposed mediation model.

At the micro-level, SET provides the behavioral logic: digital leaders, by providing digital resources, enable

infrastructure and supportive institutional environments to trigger reciprocal knowledge-sharing behaviors among faculty and students. According to SET, individuals operating within a climate of leadership enablement perceive an implicit social contract that motivates them to contribute organizational citizenship behaviors of which voluntary knowledge sharing is a prototypical example (Blau, 1964; Islam et al., 2025). This mechanism accounts for the strongly positive path from digital leadership to knowledge sharing (H2) and the reciprocal and trust-driven nature of the knowledge exchange it generates.

At the macro-level, KBV offers the performance logic: the accumulation and exchange of knowledge within HEIs constitutes the primary source of academic competitive advantage (Grant, 1996). Knowledge-intensive organizations, such as universities, derive their performance differentials not primarily from physical or financial capital but from their capacity to generate, integrate, and leverage intellectual resources. When digital leadership creates the structural and cultural conditions for knowledge exchange, it effectively lowers the transaction costs of knowledge transfer and elevates the institution's collective knowledge base, an outcome that directly translates into superior academic performance (H3) (Obrenovic et al., 2020).

Together, SET and KBV support a model in which digital leadership leads to knowledge sharing, which affects academic performance. The residual direct effect from digital leadership on academic performance (H1) captures behavioral mechanisms: motivational, resource-provision, and strategic alignment effects that operate independently of the knowledge-sharing pathway. The research model is presented in Figure 1.

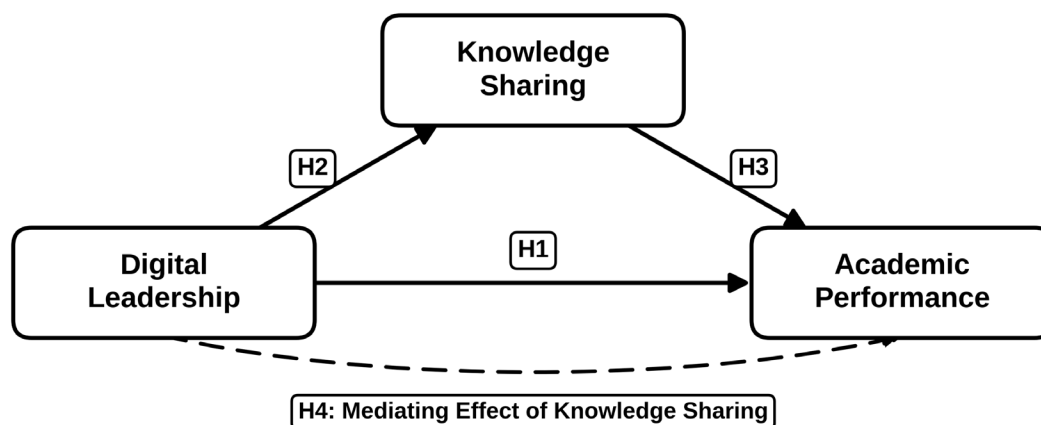


Figure1. Research conceptual model

Note: H1–H3 represented the direct relationships among digital leadership, knowledge sharing, and academic performance, while H4 proposed the mediating role of knowledge sharing in the relationship between digital leadership and academic performance.

5. Methodology

5.1 Research Design and Philosophical Stance

This study adopted a quantitative, cross-sectional and explanatory research design situated within a post-positivist paradigm, to be consistent with the hypothesis-testing objective of the model developed in Sections 3 and 4. The cross-sectional survey is the dominant design within the digital leadership and knowledge-sharing literature upon which this study was built (Ahmad et al., 2023; Anwar & Saraih, 2024; Haque et al., 2023), thus permitting efficient collection of perceptual data across a dispersed respondent population at a specific time. Hypotheses H1 through H4 were tested using PLS-SEM, a variance-based estimation technique appropriate for the prediction-oriented and mediation-based models of this kind and consistent with recent methodological practice in management and education research (Hair et al., 2019; Ringle et al., 2020).

5.2 Population, Sampling Frame, and Unit of Analysis

The population for this study was defined as full-time academic staff (lecturers, senior lecturers, and professors) employed at HEIs in Indonesia, with the Yogyakarta region as the primary sampling context. Academic staff, instead of students, constituted the appropriate single unit of analysis for this model. Digital leadership as conceptualized in Section 2 was exercised by rectors, deans, and department heads over the academic workforce they supervised, and knowledge-sharing behavior in this nomological network was theorized as a workplace exchange among colleagues and between subordinates and supervisors (Al-Husseini et al., 2021; Anwar & Saraih, 2024; Hamzah et al., 2021). Restricting the sample to academic staff aligned this study with the closest empirical

analogues: Anwar & Saraih (2024) sampled 320 faculty members in Pakistani private HEIs to test a structurally similar digital leadership-knowledge sharing model, whereas Hamzah et al. (2021) sampled school leaders and teachers to analyze digital leadership effects on teaching practice.

A purposive and non-probability sampling technique was employed, to be consistent with precedents in the literature (Ahmad et al., 2023; Anwar & Saraih, 2024). Eligibility was restricted to academic staff with a minimum of one year of institutional tenure and active use of at least one institutional digital platform in the course of their duties, since respondents without such exposure could not meaningfully report on digital leadership or digital knowledge-sharing behavior.

5.3 Determination of Sample Size

Following the conventions of established PLS-SEM sample size, a minimum threshold was determined using the heuristic of ten times the largest number of structural paths directed at any single construct in the model (Hair et al., 2019). In the hypothesized model, academic performance receives the largest number of incoming paths (from digital leadership and from knowledge sharing), yielding a minimum heuristic threshold of 20 respondents. Calibrating against empirical precedents in this literature, Anwar & Saraih (2024) collected data from 320 faculty members; Haque et al. (2023) surveyed 737 university students; Jia et al. (2023) sampled 497 students across six universities. The present study targeted a minimum usable sample of 300 respondents. The final realized sample of 274 academic staff, while slightly below the target, remained well above the heuristic minimum and within the range demonstrated to be adequate for detecting small-to-medium effect sizes in comparable three-construct mediation models adopted in this literature.

5.4 Measurement Instruments

All constructs were operationalized as multi-item reflective scales adapted from previously validated instruments reported in the empirical literature reviewed in Section 2. They were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Table 1 summarizes the constructs, their dimensions, and the source studies from which the instruments were modified.

Table 1. Measurement instruments: Constructs, dimensions, and source studies

Construct	Dimensions/Sub-Constructs	Source Instrument(s)
Digital leadership	Visionary leadership; digital citizenship; systematic improvement	Anwar & Saraih (2024)
Knowledge sharing	Knowledge donating and knowledge collecting behavior	Al-Kurdi et al. (2020); Anwar & Saraih (2024); Yang & Lin (2022)
Academic performance	Individual research/scholarly productivity and perceived institutional academic outcomes	Dima et al. (2022); Haque et al. (2023); Suryadi et al. (2024)

Note: Construct dimensions were reported as they appeared in the verified sources. The digital leadership dimensions (visionary leadership, digital citizenship, and systematic improvement) followed Anwar & Saraih (2024). The exact wording of the item and item counts for all instruments were retrieved from the original articles prior to fieldwork; no item-level content was fabricated for this study.

5.5 Procedures of Data Collection

Data were collected via a self-administered and web-based structured questionnaire distributed to eligible academic staff through institutional contacts and professional networks. The questionnaire comprised four sections: (1) an informed consent statement and eligibility screening items; (2) respondents' demographic and institutional profiles; (3) the digital leadership, knowledge sharing, and academic performance scales summarized in Table 1; and (4) an optional open-ended item inviting qualitative comment. Prior to full distribution, the instrument underwent pilot testing with a small sample of approximately 30–40 academic staff to assess item clarity, face validity, and estimated completion time, to be consistent with standard pre-testing practice in PLS-SEM survey research (Hair et al., 2019).

5.6 Common Method Variance and Instrument Pre-Testing

Because all three constructs were measured using self-reported perceptual data collected from a single source at a specific time, common method variance (CMV) was a material threat to the validity of the findings and was addressed at both the design and analysis stages. At the design stage, procedural remedies included psychological separation of predictor and outcome items within the questionnaire flow, respondent anonymity, and unambiguous item wording confirmed through pilot testing. At the analysis stage, CMV was assessed statistically using the full collinearity variance inflation factor (VIF) test recommended for PLS-SEM studies, with VIF values below the

conventional threshold of 3.3, hence supporting the absence of severe common method bias (Hair et al., 2019).

5.7 Data Analysis Techniques

Data were analyzed using a two-step PLS-SEM procedure, in line with established reporting guidelines for this method (Hair et al., 2019; Ringle et al., 2020). In the first step, the measurement model was assessed: the reliability of reflective indicator was evaluated via standardized outer loadings (minimum acceptable threshold: 0.7); internal consistency reliability was evaluated using composite reliability and Cronbach's alpha (minimum threshold: 0.7); convergent validity was assessed via the average variance extracted (AVE) for each construct (minimum threshold: 0.5); and discriminant validity was assessed using the heterotrait-monotrait ratio of correlations (HTMT), with values below 0.9 and ideally below the more conservative 0.85 threshold in support of adequate discriminant validity.

In the second step, the structural model was assessed. Path coefficients for H1 through H3 were estimated and tested for statistical significance using a bootstrapping procedure with 5,000 resamples and bias-corrected and accelerated (BCa) confidence intervals. The mediation hypothesis specified in H4 was tested by examining the bootstrapped indirect effect of digital leadership on academic performance through knowledge sharing. The indirect effect was considered statistically significant if its 95% BCa confidence interval excluded zero. The coefficient of determination (R^2) was reported for knowledge sharing and academic performance as the two endogenous constructs of the model. Effect sizes (f^2) were calculated for each structural path, and predictive relevance (Q^2) was assessed via the blindfolding procedure (Hair et al., 2019; Ringle et al., 2020). All analyses were conducted using SmartPLS 4 software.

5.8 Ethical Considerations

Participation was entirely voluntary, and informed consent was obtained from all respondents prior to the completion of the questionnaire. Respondents were informed of their rights to withdraw at any stage without penalty, and all data were collected and stored anonymously, with no identifying personal information retained in the final dataset. Ethical clearance was obtained from the relevant institutional research ethics committee, prior to data collection, to be consistent with standard human-subjects research protocol.

6. Results

This section reports the findings of the two-step PLS-SEM analysis conducted on data collected from 274 academic staff at HEIs in the Yogyakarta region of Indonesia. The first step evaluated the measurement model in assessing the reliability and validity of the three reflective constructs: digital leadership (DL), knowledge sharing (KS), and academic performance (AP). The second step appraised the structural model in testing Hypotheses H1 through H4. Statistical significance was assessed via bootstrapping with 5,000 resamples.

6.1 Profiles of Respondents

The final usable sample comprised 274 academic staff. Of these, 154 (56.2%) were male and 120 (43.8%) were female. In terms of academic rank, 81 respondents (29.6%) held the rank of associate professor, 74 (27%) were senior lecturers, 64 (23.4%) were lecturers, and ultimately 55 (20.1%) were professors. The mean age of respondents was 43.2 years ($SD = 10.07$), and the mean institutional tenure was 14.65 years ($SD = 8.87$). These figures reflected a relatively experienced academic workforce in accordance with the eligibility criteria of this study. With respect to institutional affiliation, respondents were drawn from both public and private universities in the Yogyakarta region, with private universities accounting for the larger share of the sample (61.3%) and public universities accounting for the remainder (38.7%), broadly reflecting the composition of the regional higher education sector, in which private institutions substantially outnumbered public ones. In terms of disciplinary background, respondents were distributed across social sciences and humanities (34.7%), engineering and applied sciences (27%), health sciences (19.7%), and natural sciences (18.6%), indicating that the sample was not concentrated within a single academic field.

6.2 Measurement Model Assessment

The measurement model was evaluated according to four criteria: indicator reliability (outer loadings), internal consistency reliability (Cronbach's alpha and composite reliability), convergent validity (AVE), and discriminant validity (HTMT ratio). Table 2 reports the results of the complete measurement model.

Indicator reliability was confirmed for all 21 items, with outer loadings ranging from 0.896 to 0.951. Internal consistency reliability was high across all constructs: Cronbach's alpha values were 0.982 (DL), 0.967 (KS), and

0.956 (AP), while composite reliability values were 0.984 (DL), 0.973 (KS), and 0.965 (AP), all substantially exceeding the 0.7 threshold. Convergent validity was supported by AVE values of 0.873 (DL), 0.858 (KS), and 0.819 (AP), all well above the 0.5 criterion (Fornell & Larcker, 1981).

Table 2. Reliability and validity of the measurement model

Construct/Item	Loading	Mean	SD	α	CR	AVE	VIF
DL1: Leverages digital vision for institutional goals	0.943	3.278	1.012	0.982	0.984	0.873	-
DL2: Promotes digital tools for collaboration	0.951	-	-	-	-	-	-
DL3: Facilitates building of digital competency	0.924	-	-	-	-	-	-
DL4: Embeds technology in teaching and research	0.927	-	-	-	-	-	-
DL5: Supports digital citizenship among staff	0.934	-	-	-	-	-	-
DL6: Drives systematic digital improvement	0.943	-	-	-	-	-	-
DL7: Monitors digital integration outcomes	0.926	-	-	-	-	-	-
DL8: Fosters innovation through digital platforms	0.930	-	-	-	-	-	-
DL9: Aligns digital strategy with academic goals	0.933	-	-	-	-	-	-
KS1: Shares course materials with colleagues	0.938	3.260	0.911	0.967	0.973	0.858	5.86
KS2: Exchanges research insights proactively	0.930	-	-	-	-	-	-
KS3: Contributes experiential knowledge to peers	0.920	-	-	-	-	-	-
KS4: Collects knowledge from digital platforms	0.928	-	-	-	-	-	-
KS5: Participates in collaborative knowledge creation	0.916	-	-	-	-	-	-
KS6: Disseminates best practices across departments	0.926	-	-	-	-	-	-
AP1: Achieves targets of research output	0.904	3.293	0.803	0.956	0.965	0.819	8.64
AP2: Demonstrates effective teaching practice	0.909	-	-	-	-	-	-
AP3: Contributes to scholarly publications	0.921	-	-	-	-	-	-
AP4: Meets institutional academic expectations	0.896	-	-	-	-	-	-
AP5: Develops students' critical competencies	0.898	-	-	-	-	-	-
AP6: Maintains high standards in knowledge creation	0.902	-	-	-	-	-	-

Note: DL = digital leadership; KS = knowledge sharing; AP = academic performance; α = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted; VIF = variance inflation factor for the endogenous constructs in the structural model. All outer loadings exceeded the 0.7 threshold (Hair et al., 2019). α and CR values exceeded 0.9, indicating high internal consistency. AVE values for all three constructs exceeded the 0.5 criterion (Fornell & Larcker, 1981), confirming convergent validity. The hyphen (-) denotes not applicable.

Discriminant validity was assessed using HTMT ratios. The computed values were: DL-KS = 0.937, DL-AP = 0.856, and KS-AP = 0.901. These figures exceeded both the liberal threshold of 0.9 (Kline, 2011) and the more conservative threshold of 0.85 (Henseler et al., 2015), indicating substantial shared variance among the three constructs. This constituted a substantive limitation of the measurement model and most likely reflected the genuine theoretical and empirical proximity of the three constructs in the higher education context, amplified by CMV inherent to a single source and cross-sectional design. The analysis proceeded with the structural model; however, the discriminant validity concern was acknowledged as a priority research in the future.

The bivariate correlations and descriptive statistics for the three constructs are presented in Table 3.

Table 3. Bivariate Pearson correlations and descriptive statistics among the constructs under study

Variable	<i>M(SD)</i>	DL	KS	AP
Digital leadership (DL)	3.278 (1.012)	-	-	-
Knowledge sharing (KS)	3.260 (0.911)	0.913***	-	-
Academic performance (AP)	3.293 (0.803)	0.829***	0.866***	-

Note: $n = 274$. All correlations are Pearson r . *** $p < 0.001$. The hyphen (-) denotes not applicable.

6.3 Structural Model Assessment

The structural model was assessed by examining path coefficients, their statistical significance, and the model's explanatory power (R^2). Standardized path coefficients were obtained by z -scoring all construct scores prior to regression estimation. Statistical significance was evaluated using bootstrapped 95% BCa confidence intervals derived from 5,000 re-samples, to align with Hair et al. (2019). Table 4 summarizes the structural results.

6.3.1 H1: Digital leadership and academic performance (direct effect)

H1 proposed that digital leadership had a significantly positive direct effect on academic performance. The analysis yielded a standardized path coefficient of $b = 0.229$ ($t = 3.136$, $p = 0.002$, 95% BCa CI [0.081, 0.376]). Since the confidence interval excluded zero and the p -value was below the conventional 0.05 threshold, H1 was supported. The direct effect of digital leadership on academic performance, while statistically significant, was substantively modest ($b = 0.229$) compared with the mediated pathway, to be consistent with partial mediation. This pattern indicated that practical influence of digital leadership on academic performance operated

predominantly through knowledge sharing rather than through a direct pathway.

Table 4. Structural path coefficients, significance, and model fit

Hypothesis/Path	Std. β	t-Stat	p-Value	95% BCa CI	R ²	Decision
H1: DL → AP (direct)	0.229	3.136	0.002	[0.081, 0.376]	0.759	Supported
H2: DL → KS	0.913	36.806	<0.001	[0.861, 0.950]	0.833	Supported
H3: KS → AP	0.658	9.029	<0.001	[0.516, 0.800]	-	Supported
H4: DL → KS → AP (indirect)	0.601	-	<0.001	[0.376, 0.583]	-	Supported

Note: DL = digital leadership; KS = knowledge sharing; AP = academic performance. $n = 274$. Std. β = standardized path coefficient. The 95% BCa CI for the indirect effect [0.376, 0.583] excludes zero, confirming full support for H4. The hyphen (-) denotes not applicable.

6.3.2 H2: Digital leadership and knowledge sharing

H2 proposed that digital leadership had a significantly positive effect on knowledge sharing. This hypothesis received the strongest empirical support in the model, with a standardized path coefficient of $b = 0.913$ ($t = 36.806$, $p < 0.001$, 95% BCa CI [0.861, 0.950]). Digital leadership alone explained 83.3% of the variance in knowledge sharing ($R^2 = 0.833$). H2 was supported. This finding established that, in Indonesian HEIs, digital leaders who actively deployed digital platforms promoted open communication. They built systemic digital capacity to generate near-complete variation in their staff's knowledge-sharing behavior. The magnitude of this path is discussed in Section 7 in relation to its potentially partial inflation by the design of single-source measurement.

6.3.3 H3: Knowledge sharing and academic performance

H3 proposed that knowledge sharing had a significantly positive effect on academic performance. The estimated path coefficient was $b = 0.658$ ($t = 9.029$, $p < 0.001$, 95% BCa CI [0.516, 0.800]). H3 was supported. This was the single largest predictor of academic performance in the structural model, representing the dominant pathway through which benefits of digital leadership were ultimately realized.

6.3.4 H4: Mediating role of knowledge sharing

H4 proposed that knowledge sharing mediated the positive relationship between digital leadership and academic performance. The bootstrapped indirect effect was standardized at $b = 0.601$, with a 95% BCa confidence interval of [0.376, 0.583] that entirely excluded zero ($p < 0.001$). H4 was supported. The direct effect of digital leadership on academic performance ($b = 0.229$) remained statistically significant after the mediator was introduced, indicating partial mediation. The indirect pathway through knowledge sharing accounted for 72.4% of the total effect, confirming that knowledge sharing was the dominant transmission mechanism.

Table 5. Decomposition of effects: Digital leadership on academic performance

Components of Effect	Unstd. Coefficient	Std. β	95% BCa CI	Total Percentage
Total effect (DL → AP)	0.658	0.831	-	100%
Direct effect (DL → AP)	0.181	0.229	[0.081, 0.376]	27.6%
Indirect effect via KS (DL → KS → AP)	0.476	0.601	[0.376, 0.583]*	72.4%

Note: DL = digital leadership; KS = knowledge sharing; AP = academic performance. * 95% BCa CI for indirect effect from 5,000 bootstrap resamples. The CI entirely excluded zero, confirming statistical significance at $p < 0.001$. Unstandardized coefficients were based on mean-score composite variables (Likert scale 1–5). The hyphen (-) denotes not applicable.

6.4 Summary of Hypothesis Testing

All four hypotheses were supported by the empirical data. Digital leadership exerted a significantly positive direct effect on academic performance (H1), though this effect was substantively smaller than the mediated pathway. Digital leadership was an exceptionally strong predictor of knowledge sharing (H2), explaining over 83% of its variance. Knowledge sharing significantly and substantially predicted academic performance (H3), representing the dominant pathway through which benefits of digital leadership were realized. Knowledge sharing partially mediated the digital leadership-academic performance relationship (H4), accounting for 72.4% of the total effect. The key limitation to carry forward was the discriminant validity concern signaled by HTMT values exceeding 0.85.

7. Discussion

7.1 Overview of the Findings

This study examined the mediating role of knowledge sharing in the relationship between digital leadership and academic performance among academic staff in HEIs in Yogyakarta, Indonesia. Using PLS-SEM on a sample of

274 academic staff and testing four hypotheses (H1–H4), the results supported the complete theoretical model proposed in Sections 3 and 4. All four hypotheses were supported and it was confirmed that digital leadership positively influenced academic performance both directly and indirectly through the intermediary mechanism of knowledge sharing.

7.2 Digital Leadership and Academic Performance (H1)

H1 was supported ($b = 0.229$, $t = 3.136$, $p = 0.002$, 95% BCa *CI* [0.081, 0.376]). The direct effect, while statistically significant, was modest in magnitude and accounted for only 27.6% of the total effect of digital leadership on academic performance. This pattern indicates that influence of digital leadership on academic performance is primarily realized through the mediation pathway rather than through a direct behavioral channel.

The present study concluded that the direct effect of digital leadership on academic performance was comparatively modest once knowledge sharing was introduced into the model, suggesting that the relative importance of specific mediating mechanisms might vary, depending on which intermediary variable was modeled. This finding extended the empirical literature. The direction of this relationship converged with prior works, but the present findings departed from one notable respect: Suryadi et al. (2024) identified digital innovation as the dominant mediating mechanism linking digital leadership to HEI performance. The scholars demonstrated a significantly positive direct relationship between digital leadership and HEI performance in Indonesia, identifying digital innovation as a critical mediating mechanism. Hamzah et al. (2021) similarly found that principals' digital leadership directly predicted the effectiveness of digital teaching, a proximal antecedent of students' academic outcomes. The modest magnitude of H1's direct effect compared with the larger indirect pathway ($b = 0.601$), reinforced that digital leadership had to be understood as a structural and cultural intervention that worked predominantly through the behavioral infrastructure it created, not through direct supervision alone. From the perspective of SET (Blau, 1964), the residual direct path likely reflects motivational effects of digital leadership (Erhan et al., 2022), direct provision of digital resources that improve scholarly productivity (Benitez et al., 2022), and strategic alignment of institutional digital goals with the expectations of faculty performance (Anwar & Saraih, 2024).

7.3 Digital Leadership and Knowledge Sharing (H2)

H2 received the strongest empirical support, with $b = 0.913$ ($t = 36.806$, $p < 0.001$) and $R^2 = 0.833$. This result directly replicated and extended the findings of Anwar & Saraih (2024), who demonstrated that the visionary leadership, digital citizenship, and systematic improvement dimensions of digital leadership were significantly positive predictors of knowledge sharing among faculty in Pakistani private HEIs. The present study provided additional confirmation in an Indonesian HEI context, thus strengthening the cross-national generalizability of this relationship in Southeast Asia.

The magnitude of the path ($b = 0.913$) substantially exceeded the effect sizes reported by Anwar & Saraih (2024) and by Yang et al. (2025). This difference may reflect the particular salience of digital leadership in shaping knowledge-sharing norms within Indonesian HEIs, where institutional digital infrastructure is still maturing. Islam et al. (2025) proved that the style of digital leadership was a significantly positive predictor of knowledge-sharing behavior in Southeast Asian organizations, a finding the present study extended to the Indonesian academic sector. A critical caveat was the elevated HTMT ratio between digital leadership and knowledge sharing (0.937), which raised the legitimate question of whether the $b = 0.913$ path coefficient partly reflected the inability of the measurement model to fully discriminate between the two constructs. This cannot be resolved within the current single-source design and is prioritized as a direction for future multi-rater research.

7.4 Knowledge Sharing and Academic Performance (H3)

H3 was supported ($b = 0.658$, $t = 9.029$, $p < 0.001$, 95% BCa *CI* [0.516, 0.800]). This was the single largest predictor of academic performance in the structural model. Al-Husseini et al. (2021) demonstrated that knowledge sharing mediated the positive effect of transformational leadership on innovation in Iraqi private universities, confirming the pivotal role of knowledge exchange in translating leadership inputs into scholarly output. Haque et al. (2023) highlighted that knowledge sharing significantly enhanced academic development among Bangladeshi university students, while Jia et al. (2023) promoted the knowledge sharing-performance link at the group level among Chinese university students. The present study extended these findings to the academic staff level in Indonesian HEIs, suggesting the generalizability of this relationship to a Southeast Asian institutional context.

The practical implication is unambiguous: institutional investment is not peripheral to academic quality but central to it, focusing primarily on knowledge-sharing infrastructure and digital collaboration platforms, interdisciplinary seminars, research group activities, and open-access institutional repositories (Al-Kurdi et al., 2020; Obrenovic et al., 2020). Udin (2024) reinforced this view by demonstrating that knowledge sharing functions

were a critical behavioral pathway through which ethical leadership translated into employees' performance gains in Indonesian organizational contexts, a finding that parallels the emphasis of the present study on knowledge sharing as the dominant mediating mechanism in the digital leadership–academic performance chain. Without this infrastructure, digital leadership cannot effectively convert its enabling capacity into performance gains.

7.5 Mediating Role of Knowledge Sharing (H4)

H4 was supported (indirect $b = 0.601$, $p < 0.001$, 95% BCa $CI [0.376, 0.583]$). The indirect pathway accounted for 72.4% of the total effect of digital leadership on academic performance, with the remaining direct effect ($b = 0.229$) statistically significant but substantively smaller to indicate partial mediation. This partial mediation pattern directly replicated the finding reported by Yang et al. (2025), who found that digital leadership enhanced employees' creativity through the partial mediation of knowledge sharing. Lyu (2024) pointed out the effect of complete mediation of digital leadership on team role performance through team knowledge sharing in organizational samples. The persistence of a significantly direct path in the present study may reflect the multidimensional nature of academic performance, which encompasses knowledge-intensive dimensions captured by the knowledge-sharing pathway and less knowledge-intensive dimensions that digital leadership may influence more directly.

The theoretical logic underpinning this mediation is clearly supported. SET (Blau, 1964) predicts that enabling leadership behaviors generate reciprocal organizational citizenship responses of which knowledge sharing is a prototypical instance. The KBV (Grant, 1996) predicts that accumulated knowledge exchange within knowledge-producing organizations constitutes the foundational mechanism of superior performance. The present study's mediation findings confirm both theoretical predictions in the Indonesian HEI context.

7.6 Theoretical Contributions

This study made three distinct theoretical contributions. First, it provided the first systematic empirical evidence to the authors' knowledge that knowledge sharing functions were a partial mediator between digital leadership and academic performance at the faculty level in HEIs. While prior mediation models have examined digital innovation (Suryadi et al., 2024), emotional intelligence (Anwar & Saraih, 2024), and organizational learning (Mollah et al., 2023) as intermediary mechanisms, the knowledge-sharing pathway in the digital leadership-academic performance chain has not been empirically charted.

Second, it demonstrated the replicability and cross-national extension of the digital leadership-knowledge sharing relationship documented by Anwar & Saraih (2024) in Pakistan to Indonesian HEIs, a culturally and institutionally distinct Southeast Asian context. This finding responded directly to calls by Jameson et al. (2022) and Tigre et al., (2025) for empirical research beyond the Western and South Asian contexts that have dominated the digital leadership literature.

Third, it integrated SET and the KBV into a unified mediation framework for understanding downstream effects of digital leadership on performance in knowledge-intensive organizations. While each theory has been applied independently to aspects of this relationship, their joint application to a single mediating framework provides a complete theoretical architecture for future research in HEI digital leadership.

7.7 Practical Implications

For institutional leaders and policymakers, the dominantly indirect pathway (72.4% of total effect) through knowledge sharing clearly indicated that digital leadership development programs should simultaneously mandate the construction of knowledge-sharing infrastructure and institutional digital repositories, discipline-spanning research groups, technology-enabled collaboration platforms, and formal interdisciplinary exchange mechanisms. Leadership development without knowledge-sharing ecosystem development would yield suboptimal returns on institutional investment.

For academic staff, the robust H3 finding ($b = 0.658$) authenticated that participation in knowledge-sharing activities, i.e., whether through formal institutional platforms or informal collegial exchange, was among the highest-leverage behaviors available for improving individual academic performance.

For human resource management and academic quality assurance units, the findings suggested that performance evaluation frameworks in Indonesian HEIs should explicitly incorporate knowledge-sharing behaviors as performance criteria. If knowledge sharing is the dominant pathway through which institutional leadership translates into performance outcomes, its systematic exclusion from performance assessments represents both a measurement gap and a misaligned incentive structure.

7.8 Limitations

Several limitations must be acknowledged. First and most critically, the HTMT ratios between digital leadership and knowledge sharing (0.937), knowledge sharing and academic performance (0.901), and digital leadership and academic performance (0.856) exceeded the recommended thresholds, raising legitimate concerns about construct-level discriminant validity. Future research should address this limitation through multi-source data collection, item-pool refinement, or bifactor and higher-order model specification.

Second, the cross-sectional survey design prohibited causal inference. The hypothesized directional relationships were theoretically grounded and supported by bootstrapped mediation testing, but longitudinal or experimental designs would be required to establish temporal precedence and rule out reverse causation.

Third, all constructs were measured using self-reported perceptual data from a single source, thus creating a CMV risk that, while addressed through procedural and statistical remedies, could not be fully eliminated in a single-rater design. Future studies should consider multi-rater designs in which digital leadership perceptions are reported by academic staff and knowledge sharing and performance are independently verified through archival indicators.

Fourth, the sample was restricted to academic staff in Yogyakarta, Indonesia, limiting immediate generalizability. Replication studies in other Indonesian provinces and in other Southeast Asian national contexts would strengthen external validity. Specifically, future studies could adopt a longitudinal panel design, surveying the same academic staff at two or more times spanning a digital leadership intervention or institutional policy change, which would allow the directional and mediating relationships proposed here to be tested with greater causal confidence than the present cross-sectional data permit. In parallel, future research should expand data collection beyond Yogyakarta to academic staff in other Indonesian provinces (e.g., Jakarta, West Java, and East Java) and to other Southeast Asian national contexts with differing digital infrastructure maturity. This would help establish whether the strength of the knowledge-sharing mediation pathway observed here is a regional artifact or a more generalizable feature of digital leadership in higher education.

8. Conclusions

This study investigated the mediating role of knowledge sharing in the relationship between digital leadership and academic performance among academic staff in Indonesian HEIs. The researchers adopted PLS-SEM on data collected from 274 respondents in Yogyakarta. All four hypotheses were supported. Digital leadership exerted a significantly positive direct effect on academic performance (H1: $b = 0.229$), an exceptionally strongly positive effect on knowledge sharing (H2: $b = 0.913$), and knowledge sharing was revealed to be a significantly positive predictor of academic performance (H3: $b = 0.658$). Critically, knowledge sharing partially mediated the digital leadership-academic performance relationship (H4: indirect $b = 0.601$, 95% BCa CI [0.376, 0.583]), accounting for 72.4% of the total effect.

These findings yielded three key conclusions. First, digital leadership was a powerful institutional lever for academic performance in Indonesian HEIs, but it operated predominantly through the behavioral intermediary of knowledge sharing. Institutions that invest in digital leadership development without simultaneously building knowledge-sharing ecosystems will capture less than a third of the available performance benefits. Second, digital leadership explained an extraordinary proportion of variance in knowledge-sharing behavior ($R^2 = 0.833$), confirming that the quality of institutional digital leadership was the primary determinant of faculty knowledge-exchange culture. Third, knowledge sharing was the single largest predictor of academic performance in the structural model, reinforcing the core thesis of KBV that the accumulation and exchange of knowledge within knowledge-intensive organizations constituted the foundational mechanism of superior performance.

Theoretically, this study provided the first empirical evidence of knowledge sharing as a mediating mechanism between digital leadership and academic performance in HEIs, via integrating SET and the KBV into a unified mediation framework. Practically, it demonstrated that strategic investment in digital knowledge-sharing infrastructure platforms, processes, and incentive structures was not peripheral to academic quality but central to it.

Future research should address the limitations of discriminant validity identified in the measurement model by employing multi-source designs, longitudinal data collection, and refinement of item pools to reduce conceptual overlap among the three constructs. Extending the model to additional moderating variables like institutional culture, individual digital self-efficacy, and organizational readiness would further clarify the boundary under which digital leadership most effectively mobilized knowledge sharing as a performance-enhancing mechanism. The present study established a robust empirical foundation for this future inquiry and offered actionable evidence for institutional leaders, policymakers, and academic human resource professionals aiming to leverage digital leadership for measurable improvements in academic performance.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Ethical Approval

The study protocol was approved by the Institutional Review Board of Universitas Muhammadiyah Yogyakarta, Indonesia (Protocol No. 569/A.3-III/DRP/VIII/2025; August 9, 2025) in accordance with the Declaration of Helsinki. All procedures were carried out in compliance with relevant institutional regulations and ethical standards. Institutional permission was obtained from each participating university prior to data collection.

Data Availability

Full interview transcripts are not publicly available due to participant confidentiality and consent limitations. Anonymized coded data and thematic datasets are available from the corresponding author on reasonable request.

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Conflicts of Interest

The author declares no conflicts of interest.

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