



**THE EVOLUTION OF DIGITAL LEADERSHIP RESEARCH:
A SYSTEMATIC LITERATURE REVIEW ON EMPLOYEE PERFORMANCE**

Asri Winanti Madyoningrum ^{a*}, Gibson Manalu ^b

^a Program Studi S1 Manajemen: asri.winanti@almadani.ac.id, Sekolah Tinggi Ilmu Ekonomi Al-Madani

^b Program Studi S1 Manajemen: gibson.manalu@stekom.ac.id, Universitas Sains dan Teknologi Komputer

* Penulis Korespondensi: Asri Winanti Madyoningrum

ABSTRACT

A comparative analysis of five empirical studies reveals a complex pattern of findings regarding the influence of digital leadership on employee performance. Consensus suggests that in corporate and manufacturing contexts, digital leadership has a significantly positive effect, particularly when mediated by increased organizational commitment and employee empowerment. However, this finding is not universal. Studies in the public sector show that digital leadership does not have a significant direct effect, indicating that the bureaucratic context and organizational readiness are critical limiting factors. Furthermore, its effectiveness has been shown to depend on contingency factors such as employee digital literacy and the quality of the organization's digital culture, which can act as either enablers or inhibitors. Therefore, it can be concluded that the success of digital leadership depends heavily on the alignment between leader competencies, subordinate digital capabilities, and the organizational culture's readiness for transformation.

Keywords: *Digital Leadership, Employee Performance, Organizational Commitment, Organizational Context, Digital Literacy.*

1. INTRODUCTION

The rapid acceleration of digital transformation, propelled by Industry 4.0 and the global pandemic, has fundamentally reshaped organizational landscapes worldwide. This evolution demands not merely technological adoption but a profound shift in leadership paradigms to navigate volatile, uncertain, complex, and ambiguous (VUCA) environments [1]. In this context, digital leadership has emerged as a critical strategic element, defined as a leadership model that integrates digital competencies and culture to leverage technology for achieving business objectives and driving organizational change [2]; [3].

Empirical research underscores the significant influence of digital leadership on key organizational outcomes, particularly employee performance. Studies within the manufacturing sector indicate that digital leadership, characterized by skills in digital communication, virtual team building, and change management, exerts a positive direct impact on employee performance [4]. Furthermore, this relationship is often strengthened through mediating mechanisms such as enhanced organizational commitment, where digital leaders foster a sense of belonging and dedication among employees [4]; [5].

However, the efficacy of digital leadership is not universally consistent and appears to be highly contingent on organizational context and the maturity of the digital ecosystem. Contrary to findings in dynamic, tech-oriented sectors, research within a public works and spatial planning agency in Indonesia revealed that digital leadership did not have a significant direct effect on employee [3]. This discrepancy suggests that in environments with potentially lower digital readiness or more rigid bureaucratic structures, the traditional pathways through which leadership influences performance may remain dominant, or the implementation of digital leadership may be superficial.

Beyond the leader's direct actions, the digital competence of the workforce itself serves as a crucial foundation. Digital literacy, the ability to access, understand, and critically use digital information—is identified as a significant positive predictor of employee performance, especially among Millennial and Generation Z employees in technology-driven startups like GoTo Group [6]. This implies that the benefits of digital leadership are maximized when paired with a digitally proficient workforce capable of effectively utilizing the tools and platforms championed by leadership.

Another pivotal factor is the organizational culture that surrounds digital initiatives. A supportive digital culture can amplify the positive effects of leadership and literacy. Yet, research also presents a cautionary note; an improperly managed digital culture, one that creates pressure for constant connectivity without adequate work-life balance support, can negatively impact performance and fail to moderate the relationship between digital leadership and outcomes [6]. This highlights that technology and leadership must be embedded within a human-centric cultural framework.

Employee motivation is further amplified by effective digital leadership. Leaders who utilize digital tools to empower employees, provide autonomy, and recognize contributions can significantly boost intrinsic motivation [7]; [8]. This motivational boost, in turn, translates into higher engagement, productivity, and overall job performance, creating a virtuous cycle where technology-enabled leadership fosters a more driven and effective workforce.

The characteristics of digital leaders themselves are distinct from those of traditional leaders. They are envisioned as visionaries, change motivators, and innovators who possess strategic thinking, creativity, and a profound curiosity to learn continuously within complex digital ecosystems [1]; [9]. Their decision-making is increasingly data-driven, moving beyond subjective judgment to leverage analytics for strategic guidance [10].

Despite the growing body of evidence, a clear research gap persists regarding the contextual boundaries and contingent factors that determine the success of digital leadership initiatives. The contrasting findings between manufacturing, public sector, and startup environments [4]; [3]; [6], call for a more nuanced investigation. Specifically, more research is needed to understand how organizational readiness, sector-specific dynamics, and the interplay between leadership, employee digital literacy, and organizational culture jointly shape performance outcomes.

Therefore, this study is situated at the intersection of these critical variables. It aims to delve deeper into the multifaceted relationship between digital leadership and employee performance by examining the potential mediating roles of organizational commitment and employee motivation, while also considering the moderating influence of digital literacy and organizational culture. By synthesizing insights from diverse contexts, manufacturing, public services, and digital startups, this research seeks to develop a more integrated and contextualized understanding of how digital leadership can be effectively harnessed to enhance employee performance in the contemporary digital era, addressing the inconsistencies in the existing literature.

2. LITERATURE REVIEW

2.1 Digital Leadership

Digital leadership represents a paradigm shift from traditional leadership models, necessitated by the demands of Industry 4.0 and pervasive digital transformation. It is defined as a leadership approach that strategically utilizes an organization's digital assets to achieve business goals and drive transformational change [2]; [4]. This concept extends beyond mere technical proficiency; it is a combination of digital competency and a digital-oriented culture that enables leaders to guide organizations through technological disruption [3]. Key dimensions of digital leadership, as operationalized in contemporary research, include digital communication skills, digital social skills, virtual team building, digital change management, and technological skills [11]; [4]. Effective digital leaders are characterized as visionaries and change motivators who foster innovation, leverage data for decision-making, and maintain a learning mindset to navigate volatile, uncertain, complex, and ambiguous (VUCA) environments [1]; [9]. Their role is crucial in creating a work environment that supports flexibility, collaboration, and adaptation to technological advancements.

2.2 Employee Empowerment

Employee empowerment is a managerial process that involves delegating authority, autonomy, and responsibility to employees, enabling them to make decisions and take initiative in their work to achieve organizational objectives [12]; [4]. It is founded on the principle that involving employees in the processes that affect their work leads to greater engagement and effectiveness. Research conceptualizes empowerment through psychological dimensions such as meaningfulness (the value of work goals), competence (self-efficacy in performing tasks), self-determination (autonomy in work processes), and impact (the ability to influence strategic outcomes) [4]. Empowerment is not merely a structural delegation of power but a motivational technique that enhances intrinsic motivation by fulfilling employees' needs for autonomy and mastery [3]. When leaders, particularly those with an empowering or digital leadership style, share power and encourage participation, they unlock employee potential, fostering creativity, flexibility, and a proactive approach to problem-solving [13].

2.3 Organizational Commitment

Organizational commitment refers to the psychological bond or attachment an employee feels toward their organization, reflecting their identification with its goals and values and their desire to maintain membership [4]. It is a multidimensional construct typically comprising three components: affective commitment (emotional attachment and involvement), continuance commitment (perceived cost associated with leaving), and normative commitment (obligation to remain) [4]. Commitment is a critical mediator in organizational behavior because it translates leadership actions and workplace conditions into desired employee outcomes. A strong organizational commitment is associated with employees' willingness to exert extra effort, demonstrate loyalty, and align their personal goals with those of the organization [14]; [4]. It acts as a stabilizing force, reducing turnover intentions and channeling employee energy toward performance. Studies confirm that both digital leadership and employee empowerment are significant antecedents that can strengthen this [15]; [4].

2.4 Digital Literacy

Digital literacy is defined as the individual's ability to access, manage, understand, integrate, communicate, evaluate, and create information safely and appropriately through digital technologies [16]; [6]. It transcends basic operational skills (e.g., using software) to encompass higher-order cognitive skills such as information navigation, critical evaluation of online content, and strategic use of digital resources to achieve personal, educational, and professional goals [6]. In an organizational context, especially within digital-native companies like startups, digital literacy is a fundamental competency that enables employees to perform tasks efficiently, innovate, and adapt to new tools and platforms. Research identifies its dimensions as operational internet skills, formal internet skills, information internet skills, and strategic internet skills [16]; [6]. For the Millennial and Generation Z workforce, high digital literacy is often a given, but its effective application within a specific organizational digital culture is what directly contributes to productivity and performance [6].

2.5 Employee Performance

Employee performance is the outcome of work behavior, encompassing the effectiveness, efficiency, and quality with which an employee fulfills their assigned roles and responsibilities. It is the measurable contribution of an individual toward achieving organizational objectives. Performance is a multidimensional construct. A widely used framework includes dimensions such as quality of work, quantity of output, timeliness, cost-effectiveness, and interpersonal impact [17]; [4]. Other models distinguish between task performance (core job duties), contextual performance (behaviors that support the organizational, social, and psychological environment, such as helping colleagues), and adaptive performance (adjusting to change) [6]. Performance is the ultimate dependent variable in many management studies, influenced by a confluence of factors including leadership, motivation, skills, and workplace conditions. Superior performance is the primary conduit through which human capital contributes to organizational competitiveness and success.

2.6 Motivation

Motivation is the internal and external set of forces that initiate, direct, and sustain goal-oriented behavior. In the workplace, it explains the intensity, direction, and persistence of an employee's effort. Literature distinguishes between intrinsic motivation (driven by internal satisfaction, interest, or a sense of purpose) and extrinsic motivation (driven by external rewards like pay or recognition). Prominent theories, such as Herzberg's Two-Factor Theory, identify motivators (e.g., achievement, recognition, the work itself) and

hygiene factors (e.g., salary, work conditions) that influence job satisfaction and, consequently, performance [7]; [6]. Motivation is a critical mediator and outcome; effective digital leadership can enhance motivation by providing empowering environments and meaningful work, while empowered and motivated employees are more likely to exhibit high performance and organizational commitment [18]. It serves as the psychological engine that translates capability and opportunity into action and results.

3. RESEARCH METHODOLOGY

This study uses a Systematic Literature Review (SLR) approach to identify, evaluate, and synthesize scientific evidence from various relevant studies related to financial literacy, financial behavior, technology, and other factors influencing investment decision-making. The SLR method was chosen because it provides a transparent, replicable, and systematic framework for collecting and analyzing data from various scientific sources.

The first stage, Planning, begins with formulating a Research Question (RQ) and developing a structured protocol tailored to the research topic. The second stage, Conducting, involves identifying relevant literature, screening abstracts, and extracting data. The final stage, Reporting, concludes the research findings.

a. Planning

This stage begins with formulating a question as a reference for searching, selecting, and analyzing literature data for the research question. The question is formulated based on the needs of the chosen topic. The following is the formulation of the questions in this study:

Table 1. Research Question

RQ 1	How does digital leadership create a safe psychological environment for enhanced performance?
RQ 2	Does a digital culture strengthen or weaken the effectiveness of digital leadership?
RQ 3	How can digital leadership be adapted for effectiveness in the public sector?

b. Conducting

The conducting stage involves several stages or steps. The first step is identifying literature to obtain relevant sources to answer the Research Questions (RQ1, RQ2 and RQ3). The sources used in this study were national and international journals discussing internal and external factors affecting financial report quality. The journal search process was conducted using a search engine (Google Chrome) at <https://scholar.google.com/>.

The second step is the Inclusion and Exclusion Criteria. This stage is used to determine whether the data found is suitable for use in SLR research. The criteria consist of publication years within the last five years (2021-2025), obtained through the website <https://scholar.google.com/>, and journals used only related to digital leadership, employee performance, organizational commitment, organizational context, and digital literacy.

The third step is quality assessment. In SLR research, the data collected will be evaluated based on the following quality assessment criteria:

Table 2. Quality Assesment

No.	Quality Assessment Criteria	Enter Criteria	
		Yes	No
QA1	Are journal articles published between 2021-2025 ?	√	
QA2	Is the journal paper related to digital leadership, employee performance, organizational commitment, organizational context, and digital literacy ?	√	
QA3	Can the journal be accessed via the site https://scholar.google.com/ ?	√	

The next step is to determine article categories with exclusion criteria and inclusion criteria. This is one of the mapping study activities to exclude irrelevant articles and include relevant articles [19]. In this study, we formulated exclusion and inclusion criteria to facilitate mapping in the literature retrieval process.

Table 3. Inclusion and Exclusion Criteria

Inclusion	Exclusion
1. Research focused on digital leadership, employee performance, organizational commitment, organizational context, and digital literacy.	1. Studies that are not relevant to the context of personal investment or individual financial decisions.
2. Indonesian and English.	2. Languages other than Indonesian and English.
3. Research journals and books only.	3. Theses, Dissertations, and Dissertations.

Next, summarize previous journals or research that meet the quality assessment, inclusion, and exclusion criteria. Previous research is the writing of relevant scientific papers or journals that will serve as material for conducting studies on the same or similar issues.

Table 4. Previous Research

Author & Year	Research Title	Research Method	Key Findings
Samuel & Ramli [4]	The Influence of Digital Leadership and Employee Empowerment on Employee Performance Mediated by Organizational Commitment in the Manufacturing Industry	Quantitative; Purposive sampling of 305 employees; Data analysis using Structural Equation Modeling (SEM) with SmartPLS 3.0.	Digital Leadership and Employee Empowerment have a direct positive effect on Employee Performance, mediated by Organizational Commitment. Organizational Commitment significantly affects Employee Performance.
Sulhan et al. [3]	The Influence of Transformational Leadership, Empowering Leadership and Digital Leadership on Employee Performance	Quantitative; Survey of 110 respondents; Data analysis using multiple linear regression with SPSS 23.	Transformational Leadership and Empowering Leadership have a significant positive effect on Employee Performance. Digital Leadership does not have a significant effect on Employee Performance in the studied public sector context.
Fatonah et al. [7]	The Importance of Digital Leadership and Motivation on Employee Performance	Qualitative; Comprehensive literature review.	Organizational success in the digital era is determined by the effective integration of digital leadership that transforms culture and strategies to increase employee intrinsic motivation, which directly impacts productivity and competitiveness, including in the context of higher education.

Khaira [6]	The Role of Digital Literacy and Digital Leadership on Employee Performance: A Case Study of Millennials and Gen Z at GoTo Group	Quantitative; Purposive sampling of 140 employees; Data analysis using Structural Equation Modeling - Partial Least Squares (SEM-PLS).	Digital Literacy, Digital Leadership, and Digital Culture have a positive and significant direct effect on Employee Performance. However, Digital Culture does not moderate the relationship between Digital Literacy/Digital Leadership and Performance.
Rumapea et al.. [1]	Digital Leadership in Improving Organizational Employee Performance	Qualitative; Literature review based on journal articles, books, and relevant online publications.	Effective digital leadership enhances employee performance by strategically utilizing technology to create a flexible, collaborative, and innovative work environment. It strengthens employee commitment through technology-based empowerment and motivation.

c. Reporting

The reporting stage is the final stage in a Systematic Literature Review (SLR) research. This stage involves writing the results of the systematic literature review in written form according to a predetermined format.

4. RESULTS AND DISCUSSION

The systematic review of the provided literature reveals a clear and meaningful evolution in the study of digital leadership and its impact on employee performance. Initially, research focused on establishing a direct, positive correlation, framing digital leadership as a novel, technologically-enhanced style that inherently improves efficiency and output. This phase, represented by early assertions in the field, treated digital competence as a straightforward performance lever [4]. However, the research trajectory quickly matured beyond this simplistic model. Scholars identified that the relationship is almost never direct but is fundamentally mediated by critical psychological states. Organizational commitment emerged as a paramount mediator, with studies demonstrating that digital leadership enhances performance primarily by strengthening employees' emotional attachment and sense of obligation to the organization [4]; [1]. Concurrently, employee empowerment and motivation were established as key conduits, where digital tools are used by leaders to grant autonomy and foster intrinsic motivation, thereby driving performance [18]; [7].

A significant leap in the field's sophistication was the recognition of contextual contingencies. The finding by Sulhan et al. [3], that digital leadership had an insignificant effect in a public sector context served as a critical corrective, challenging universalist claims. This highlighted that organizational culture, sectoral norms, and digital readiness are powerful boundary conditions. The research focus thus expanded from asking if digital leadership works to questioning under what conditions it is effective. This led to the incorporation of digital literacy as a crucial employee-level antecedent. Research by Khaira [6] confirmed that the leader's digital efforts are most fruitful when the workforce itself possesses high competency in navigating and utilizing digital information, shifting the paradigm toward a leader-employee digital capability "fit."

Furthermore, the exploration of digital culture as a moderating variable added a layer of complexity. Contrary to initial assumptions that a digital culture is inherently positive, evidence suggests it is a double-edged sword. A culture emphasizing constant connectivity without support can diminish wellbeing and performance, negating leadership benefits, whereas a supportive, innovative digital culture acts as a positive amplifier [6]. This underscores that the human and cultural dimensions of digital transformation are more decisive than the technology itself. The evolution is also marked by theoretical integration, where

digital leadership is increasingly studied not in isolation but in conjunction with established styles like transformational and empowering leadership, acknowledging that technological savvy augments rather than replaces fundamental human-centric leadership functions (Sulhan et al., 2023; [5]; [4]).

Methodologically, the field has progressed from basic regression analyses to the use of sophisticated Structural Equation Modeling (SEM), enabling researchers to test complex models with multiple mediators and moderators simultaneously, as seen in Samuel & Ramli [4] and Khaira [6]. In summary, the research evolution charts a path from a technology-centric, direct-effect model to a nuanced, human-centric framework. This framework acknowledges mediated pathways (through commitment and motivation), critical contingencies (context and employee literacy), and the paramount importance of organizational culture. Future research trajectories, as identified, must now pursue longitudinal, cross-cultural, and qualitative studies to move from descriptive correlation to prescriptive understanding, solidifying digital leadership as a mature and critical domain in organizational studies.

5. KESIMPULAN DAN SARAN

Research on digital leadership has developed from a basic emphasis on technology and measurable results to a more sophisticated approach that examines the complicated interactions and behavior of people and organizations. Digital leadership is now understood to improve employee performance via psychological channels such as commitment and empowerment. It is dependent on context, such as the organizational environment and the field of work. There are some public sector institutions where it has been ineffective. In addition, employee digital literacy is a vital precursor, and digital culture has a moderating effect that can be both positive and negative concerning performance improvement. Digital leadership, therefore, is best conceptualized as a people-centered approach that employs technology to enhance motivation, trust, and psychologically safe environments for sustained performance.

Future studies must focus on longitudinal and causal research to advance from correlational findings, as well as cross-cultural research to capture contextual differences, and qualitative research on everyday leadership routines. For practitioners, development programs must aim for a blend of digital, transformational, and empowering leadership. Organizations, too, should simultaneously build foundational digital literacy at the enterprise level and construct a human-centric digital culture that optimally fosters and supports collaboration and wellbeing. A diagnostic assessment of organizational readiness is critical prior to any actionable steps to ensure contextual fit and to optimize the return on any digital leadership prop initiatives.

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