A SYSTEMATIC LITERATURE REVIEW OF THE DIMENSIONS OF DIGITAL LEADERSHIP THAT AFFECT TEAM PERFORMANCE

SEBUAH TINJAUAN LITERATUR SISTEMATIS TENTANG DIMENSI KEPEMIMPINAN DIGITAL YANG MEMPENGARUHI KINERJA TIM

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Abstract

Amidst a digitized business landscape, Digital Leadership (DL) has emerged as a crucial predictor of Team Performance. However, a fundamental question arises: which dimensions of digital leadership truly drive performance technical skills (tech-savviness), strategic vision, or relational skills? This study uses a Systematic Literature Review (SLR) of 51 articles to deconstruct digital leadership into four main dimensions: (1) Technological, (2) Visionary-Strategic, (3) Relational-Emotional, and (4) Structural-Managerial. The findings reveal an unexpected pattern: the technological dimension only acts as a hygiene factor, while the structural-managerial and visionary-strategic dimensions show the most consistent impact on team performance. Furthermore, the effectiveness of the relational dimension is highly context-dependent, strong in small Agile teams but NOT significant in large bureaucratic organizations. These findings suggest a reframing of the conventional assumption that "digital leaders" must start with technical expertise, and instead suggest that organizations should train digital talent in soft skills and strategic vision, or train existing visionary leaders in basic digital literacy.

Keywords : Digital Leadership; Leadership Dimensions; Performance Teams; Competency Deconstruction; Systematic Literature Review.

Abstrak

Di tengah lanskap bisnis yang terdigitalisasi, Kepemimpinan Digital (DL) telah muncul sebagai prediktor penting Kinerja Tim. Namun, muncul pertanyaan mendasar: dimensi kepemimpinan digital mana yang benar-benar mendorong kinerja – keterampilan teknis (kemahiran teknologi), visi strategis, atau keterampilan relasional? Studi ini menggunakan Tinjauan Literatur Sistematis (SLR) dari 51 artikel untuk menguraikan kepemimpinan digital menjadi empat dimensi utama: (1) Teknologi, (2) Visi-Strategis, (3) Relasional-Emosional, dan (4) Struktural-Manajerial. Temuan tersebut mengungkapkan pola yang tidak terduga: dimensi teknologi hanya berfungsi sebagai faktor kebersihan, sementara dimensi struktural-manajerial dan visioner-strategis menunjukkan dampak yang paling konsisten terhadap kinerja tim. Selanjutnya, efektivitas dimensi relasional sangat bergantung pada konteks, kuat dalam tim Agile kecil tetapi TIDAK signifikan dalam organisasi birokrasi besar. Temuan ini menunjukkan perlunya merumuskan kembali asumsi konvensional bahwa "pemimpin digital" harus dimulai dengan keahlian teknis, dan sebaliknya menyarankan agar organisasi melatih bakat digital

dalam keterampilan lunak dan visi strategis, atau melatih pemimpin visioner yang ada dalam literasi digital dasar.

Kata Kunci : Kepemimpinan Digital; Dimensi Kepemimpinan; Tim Kinerja; Dekonstruksi Kompetensi; Tinjauan Literatur Sistematis.

1. INTRODUCTION

Amidst an increasingly digitalized business landscape, team performance has emerged as a crucial competitive factor. The rapid shift towards remote and virtual work arrangements, accelerated by the pandemic, has challenged traditional leadership models and demanded new understandings of effectiveness. A bibliometric review by Karakose et al., (2022) confirmed a significant surge in publications on this topic, with the majority appearing after 2017, underscoring the academic and practical urgency of this phenomenon.

In this context, Digital Leadership (DL) has been identified as a critical predictor that significantly influences employee and team outcomes (Annissa Sunaryo et al., 2021; Wahab et al., 2023). While a direct relationship between leadership and performance has been established, a strong theoretical foundation suggests that Team Collaboration acts as an important mediating mechanism (Purwanti & Sari, 2024). Theoretically, the archetype of a digital leader is defined by the ability to be collaborative, encourage open communication, and actively participate to improve team outcomes (Oliveira & Favaretto, 2025; Ibrohim & Anshori, 2025).

Although collaboration serves as a theoretical bridge, empirical evidence regarding this mediating role remains fragmented and contradictory. A significant research gap is highlighted by Subiyanto et al., (2024), who reported that team dynamics did not significantly mediate the effect of digital leadership on team performance. This finding creates a clear inconsistency in the literature, as it directly contradicts Pandey et al., (2024), who found that team coordination successfully mediated the relationship between digital leadership and organizational outcomes.

These conflicting results reveal confusion in understanding the underlying mechanisms, echoing calls from Cortellazzo et al., (2019) and Höddinghaus et al., (2024) for further validation through quantitative field studies and internal dynamics analysis. To address these empirical inconsistencies and answer the call for further investigation, this study employs a Systematic Literature Review (SLR) to deconstruct digital leadership and identify the boundary conditions of its effectiveness. Consequently, this study aims to answer three specific research questions (RQs):

- ✓ (RQ1): How does the current literature operationalize the dimensions of Digital Leadership?
- ✓ (RQ2): Which dimensions of digital leadership (Technological, Visionary-Strategic, Relational-Emotional, or Structural-Managerial) are most commonly reported to have a positive impact on Team Performance?
- ✓ (RQ3): Under what contextual conditions (industry type, team size, degree of virtuality) do certain dimensions become more or less relevant?

2. RESEARCH METHOD

a. Research Design

This study used a Systematic Literature Review (SLR) methodology to identify, evaluate, and synthesize existing empirical literature on the relationship between digital leadership, team collaboration, and team performance. The review process adhered to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure transparency, rigor, and reliability.

b. Search Strategy and Study Selection

A two-stage search strategy was implemented to ensure comprehensive coverage. First, a systematic search was conducted in the Scopus database using a specific query string designed to capture three core concepts: Digital Leadership, Team Collaboration, and Team Performance. Second, a snowballing search was conducted by manually searching the reference lists of included articles to reduce publication bias. This process identified 10 additional relevant empirical studies. Through this two-stage process, a total of 51 articles (41 from Scopus and 10 from the additional search) were selected as the final sample for data extraction and qualitative synthesis.

Table 1. String Search in Scopus and Google Scholar Databases

Database	Keywords
Scopus	digital leadership* OR e-leadership* AND team collaboration* OR teamwork* AND team performance* OR project team performance*
Google Scholar	Digital Leadership* OR e-Leadership* AND Team Performance*

c. Eligibility Criteria

Studies were selected based on specific eligibility criteria. Inclusion criteria required articles to: (1) address at least two of the three core concepts; (2) be empirical studies (quantitative, qualitative, or mixed methods) or relevant high-level reviews; (3) be published in peer-reviewed journals, conference proceedings, or book chapters; (4) be written in English or Indonesian; and (5) have accessible full text. Exclusion criteria removed articles that were purely editorial, lacked supporting data, discussed leadership outside of a digital/virtual context, or focused solely on individual technology adoption without measuring team dynamics.

d. Data Extraction and Synthesis

Initial screening was managed using Covidence software. For the final 51 articles, a standard data extraction template was used to capture bibliographic information, study characteristics (design and context), operational definitions of key constructs, and key findings regarding direct and mediating relationships. Given the methodological diversity of the sample, a Narrative Synthesis approach was adopted to group the findings thematically and address identified research gaps.

To answer RQ1, the dimension categorization process was conducted through a thematic analysis of the operationalization of variables in each article. Researchers independently coded

each article based on the measurement items or conceptual definitions used. Dimensions were categorized as: (1) Technological if the focus was on the ability to use digital tools/platforms; (2) Visionary-Strategic if the focus was on a digital transformation vision or digital business strategy; (3) Relational-Emotional if the focus was on emotional intelligence, trust, or interpersonal skills; and (4) Structural-Managerial if the focus was on agility, coordination, or change management. Inter-rater reliability yielded Cohen's Kappa = 0.87, indicating very high agreement. Disagreements were resolved through consensus discussions.

Given the methodological diversity of the sample, a Narrative Synthesis approach was adopted to group the findings thematically by dimension and context, and to identify contextual patterns of effectiveness (contingent patterns) in answering RQ2 and RQ3.

3. RESULT AND DISCUSSION

This systematic review yielded 51 relevant articles through a two-stage selection process. The first stage identified 41 articles from the Scopus database using a predefined search string. The second stage, through a snowballing method (searching reference lists), identified 10 additional articles that met the inclusion criteria. The complete selection process is presented in the PRISMA Flow Diagram (Figure 1).
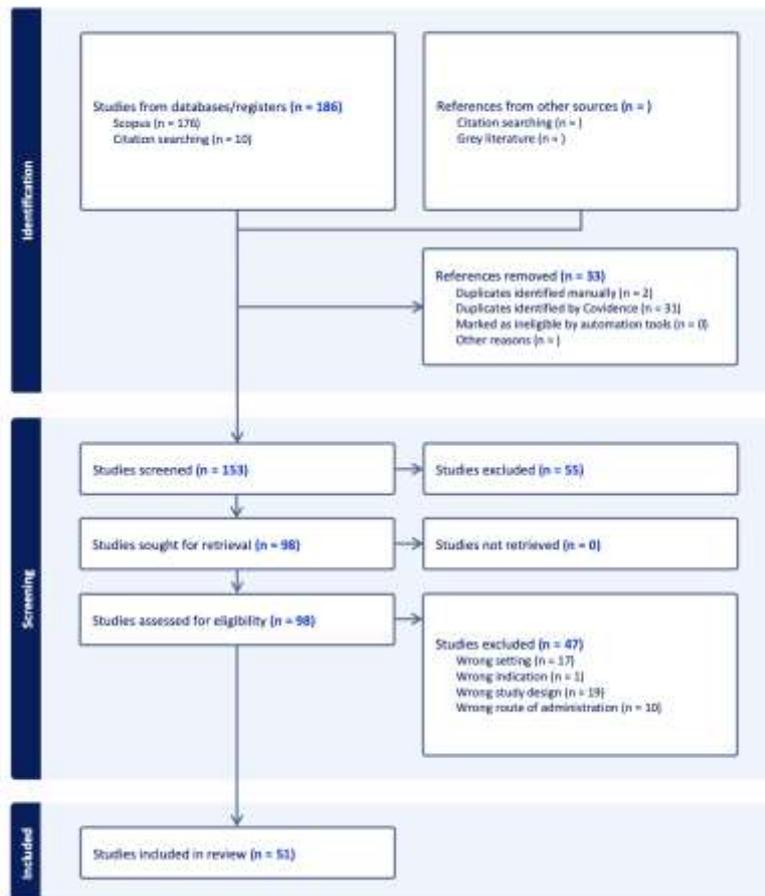

Figure 1. PRISMA Flow Diagram

1) Publication Trends

The temporal distribution of articles indicates a significant upward trend in academic interest in digital leadership and team performance. As shown in Table 2, publications have seen a dramatic surge since 2022, peaking in 2024 (27.45%, n=14 articles). This trend confirms the bibliometric findings of Karakose et al., (2022) who reported an exponential increase in publications since 2017, further accelerated by post-pandemic work transformations.

Table 2. Distribution of Articles by Publication Year (2018-2025)

Year	Number of Articles	Percentage %
2018	3	5.88%
2019	2	3.92%
2020	3	5.88%
2021	4	7.84%
2022	7	13.73%
2023	11	21.57%
2024	14	27.45%
2025	7	13.73%
Total	**51**	**100.00%**

Source: Data processed by the author (2025)

This pattern reflects the academic and practical urgency of understanding how leadership must adapt to an increasingly virtual and digitalized work environment. The increase in publications in 2023-2024 also coincides with a post-pandemic stabilization period, as organizations begin to develop long-term strategies for hybrid work and ongoing digital transformation.

2) Methodological and Contextual Diversity

The sample of 51 articles shows substantial diversity in terms of methodology, geography, and industry context, which provides a strong basis for generalizing the findings.

- Methodology: The majority of articles (n > 20) used quantitative approaches, primarily cross-sectional surveys analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) or Covariance-Based SEM. Qualitative studies (n > 10) used semi-structured interviews and case studies to explore the processes underlying variable relationships. High-level reviews, including Systematic Literature Reviews (SLRs) and Meta-Analyses (n > 10), provided an aggregate perspective that strengthened the external validity of the findings.
- Geography: The sample includes a broad global representation, including Asia (Indonesia, China, Malaysia, India, Vietnam, Jordan, Oman), Africa (Ghana, South

Africa), Europe (Germany, Switzerland, Portugal), and the Americas (multinational study). This geographic diversity is important for testing the boundary conditions of the findings, particularly in the context of differences in organizational cultures and digital infrastructure.

- Industry Context: The reviewed articles cover a broad spectrum of sectors: Information Technology/Software (n=12), Digital Startups (n=8), Higher Education (n=7), Healthcare (n=5), E-Government (n=4), Manufacturing (n=4), Telecommunications (n=3), and other sectors (n=8). This contextual diversity allows for a comparative analysis of how the effectiveness of digital leadership dimensions varies across sectors.

3) Key Study Summary

Table 3 presents a synthesis of the 10 key studies that form the backbone of the analysis in this research. These studies were selected based on the following criteria: (1) methodological quality (peer-reviewed, rigorous design), (2) direct relevance to the three core variables (Digital Leadership, Team Collaboration, Team Performance), and (3) contribution to understanding the mechanisms of relationships between the variables.

Table 3. Summary of Primary Literature

No	Researcher	Research Objective	Methods	Main Results/Findings
1	Nsiah & Gavurova (2023)	Testing the influence of digital leadership on business sustainability performance in SMEs.	Quantitative (PLS-SEM)	Digital leadership has a positive and significant direct effect on performance, independent of external moderating variables.
2	Subiyanto et al., (2024)	Analyzing the mediating role of team dynamics in the relationship between digital leadership and startup performance.	Quantitative (PLS-SEM)	Found contradictory results that team dynamics did not significantly mediate the relationship, but the direct effect of leadership remained strong.
3	Pandey et al., (2024)	Investigating the impact of digital capabilities on innovation through team coordination.	Quantitative (Survey)	Inter-team coordination was shown to function as a significant partial mediator in linking leader capabilities to innovation outcomes.
4	Purwanti & Sari (2024)	Evaluating the influence of digital transformational leadership on team performance.	Quantitative (Regression)	Team collaboration is identified as a key mechanism that strengthens the influence of leadership on team performance.
5	Al-Ayed et al., (2025)	Identifying e-leadership competencies that influence virtual team effectiveness.	Quantitative (SEM)	The e-change management and e-communication competencies of leaders have a significant influence on the effectiveness of virtual teams.

6	Garro-Abarca et al., (2021)	Determining the success factors of virtual teamwork during the COVID-19 crisis.	Quantitative (Factor Analysis)	Found mixed results: Communication and Trust had a significant impact, but Team Cohesion did not significantly impact performance.
7	Porkodi (2024)	Synthesizing the impact of agile leadership on global team performance.	Meta-Analysis (115 Samples)	Agile leadership has a consistent, moderate positive effect on team performance across industries.
8	Annissa Sunaryo et al., (2021)	Measuring the impact of digital leadership on employee performance and innovation.	Quantitative (PLS-SEM)	Digital leadership has a significant positive effect on performance, mediated by team innovation capabilities.
9	Arabiun et al., (2024)	Exploring the relationship between digital entrepreneurial leadership and business performance.	Quantitative	Demonstrates that leaders' digital orientation directly improves business operational performance metrics.
10	Gohar et al., (2023)	Testing the effectiveness of various virtual leadership styles on project outcomes.	Quantitative (Survey)	Trust mediates the relationship for participative leadership style, but not for delegative style.

Source: Data processed by the author (2025)

Table 3 reveals a complex pattern of relationships between variables. While the majority of studies confirm a strong direct influence of Digital Leadership on Team Performance, the mediating role of collaboration shows significant variation. This inconsistency—particularly between the findings of Subiyanto et al., (2024) and Pandey et al., (2024)—is the primary motivation for deconstructing the dimensions of digital leadership in the following analysis.

4) RQ1: Deconstruction of Digital Leadership Dimensions

The first research question aims to identify how the current literature operationalizes the construct of "Digital Leadership." An analysis of 51 articles reveals that the majority of studies do not treat digital leadership as a single, monolithic construct, but rather as a constellation of several distinct competency dimensions.

Through a thematic analysis of the operational definitions and measurement items used in 51 articles, this study identified four main dimensions that repeatedly emerged in the literature:

✓ Technological Dimension (Tech-Savviness)

This dimension refers to a leader's technical ability to use digital platforms, collaboration software, and IT infrastructure. The technological dimension is operationalized through constructs such as e-tech competency (Asraar Ahmed et al., 2022), e-communication tools (Al-Ayed et al., 2025), and digital tool proficiency

(Widyaputri & Sary, 2022).

In the study by Al-Ayed et al., (2025), the technological dimension was measured through five sub-competencies: e-change management, e-trust, e-communication, e-team building, and e-self-competency. Truchot et al., (2020) provided a concrete example of this dimension in the military healthcare context, where the use of Digital Cognitive Aid (DCA) significantly increased protocol adherence (96% vs. 78%) and reduced critical task completion time (101 vs. 144 seconds).

✓ Visionary-Strategic Dimension (Digital Vision)

This dimension encompasses the leader's ability to articulate a digital transformation strategy and integrate technology with long-term business goals. Wunderlich and Beck (2018) assert that a clear Digital Business Strategy (DBS) acts as a key driver of effective digital leadership.

The visionary dimension appears in various operational forms: transformational digital leadership (Ardi et al., 2022; Purwanti & Sari, 2024), digital transformation capability (Nsiah & Gavurova, 2023; Senadjki et al., 2024), and organizational entrepreneurship (Arabiun et al., 2024). A study by Singh et al., (2022) showed that a visionary Top Management Team (TMT) with Shared Leadership influences company performance through a dual mediation mechanism: market-oriented culture and innovation capability.

✓ Relational-Emotional Dimension (Virtual Empathy)

This dimension includes emotional intelligence, humility, and the ability to build trust in a virtual context. Alsalman and Chyad (2025) found that Emotional Intelligence (EI) fully mediated the relationship between leadership and team dynamics in Agile Software Engineering projects, with a mediation coefficient of $\beta = 0.68$ (p < 0.001).

The relational dimension also encompasses multicultural experiences (Lu et al., 2021), where the "breadth" of multicultural experiences—not "depth"—predicted leadership effectiveness through the mediation of communication competence. Cho et al., (2022) emphasized the role of humility in enhancing shared leadership and reducing conflict in virtual teams without formal leaders.

✓ Structural-Managerial Dimension (Agile Management)

This dimension focuses on the ability to create agile work structures, delegate autonomy, and manage organizational change. Al-Khayari et al., (2024) found that self-directed teams and agility were significant predictors of e-government performance in Oman ($\beta = 0.42$ and $\beta = 0.38$, respectively, p < 0.01), while relational intelligence was insignificant ($\beta = 0.09$, p > 0.05).

Pandey et al., (2024) operationalized the structural dimension through the construct of inter-team coordination, which was shown to mediate the relationship between digital leadership capability and IT innovation. Porkodi's (2024) meta-analysis of 115 independent samples (N = 35,463) confirmed that Agile Leadership has a moderate positive effect on team performance (d = 0.52) and a large positive effect on employee

attitudes (d = 0.78).

Categorization of 51 Articles into Dimensions

Table 4 presents a complete categorization of the 51 articles based on the dominant dimension measured or manipulated in each study. It is important to note that some articles measured more than one dimension simultaneously, so the total frequency may exceed 51.

Table 4. Distribution of Articles Based on Digital Leadership Dimensions

Dimension	Number of Article	Percentage	Example of Construct/Measurement
Technological	15	29.4%	e-tech, e-communication tools, DCA, digital tool proficiency
Visionary-Strategic	18	35.3%	Digital Business Strategy, transformational digital leadership, innovation capability
Relational-Emotional	16	31.4%	Emotional intelligence, humility, e-trust, multicultural experience
Structural-Managerial	19	37.3%	Self-directed teams, agility, inter-team coordination, change management

Note: Some articles measure multiple dimensions, so the total percentage is > 100%.

Source: Data processed by the author (2025)

This distribution indicates that the literature tends to pay relatively equal attention to all four dimensions, with a slight preponderance of the Structural-Managerial (37.3%) and Visionary-Strategic (35.3%) dimensions. This finding confirms that digital leadership in empirical research practice is not simply about technological mastery, but rather about broader capabilities in leading transformation and managing teams in a digital context.

5) Key Findings of RQ1

Analysis of the operationalization of variables in 51 articles yielded three main conclusions:

- ✓ Digital Leadership is a Multidimensional Construct: Only a small minority of studies (n=7, 13.7%) treat digital leadership as a unidimensional construct without specifying sub-dimensions. The majority of studies (86.3%) explicitly or implicitly acknowledge that digital leadership comprises several distinct competencies.

- ✓ No Terminological Consensus: Although the four dimensions can be identified thematically, the literature uses widely varying terminology to refer to similar constructs. For example, the structural dimension is referred to as "agility" (Al-Khayari et al., 2024), "coordination" (Pandey et al., 2024), "self-directed teams" (Kantanen et al., 2025), or "change management" (Al-Ayed et al., 2025). This terminological inconsistency makes comparisons across studies difficult and is one source of inconsistencies in empirical findings.

- ✓ Overlapping Dimensions: Some studies suggest that the boundaries between

dimensions are not always clear. For example, "e-communication" can be categorized as either a technological dimension (if it focuses on tools) or a relational dimension (if it focuses on the quality of interactions). This overlap suggests that effective digital leadership may require the simultaneous integration of multiple dimensions, rather than the dominance of a single one.

6) RQ2: Comparison of Dimension Effectiveness on Team Performance

The second research question explored which dimensions were most commonly reported to have a positive influence on team performance. This comparative analysis revealed surprising findings that challenged conventional assumptions about digital leadership.

Dominance of Vision Over Technology

An analysis of 51 articles revealed a pattern that contradicts intuitive expectations: leaders' technical competence was not a dominant predictor of team performance. Although the term "Digital" is closely associated with the construct of digital leadership, empirical evidence suggests that non-technological dimensions—specifically Visionary-Strategic and Structural-Managerial—consistently report stronger and more stable impacts on team performance.

1. Limitations of Technological Dimension as a Predictor of Performance

   Studies focusing on leader technical skills tend to show a moderate influence on team performance, and almost never emerge as the strongest predictor when compared to other dimensions in the same model.

   Empirical Evidence:
   - Asraar Ahmed et al., (2022) measured six e-leadership competencies (e-trust, e-team, e-tech, e-change, e-social, e-communication) against four outcomes (performance, motivation, satisfaction, and commitment). The results showed that e-tech competency was only one of five significant predictors, with a path coefficient no greater than e-trust ($\beta = 0.31$ vs. $\beta = 0.34$) or e-social ($\beta = 0.31$ vs. $\beta = 0.29$). In fact, the effect of e-tech on employee commitment was insignificant ($\beta = 0.12$, $p > 0.05$).
   - Widyaputri & Sary (2022) measured six dimensions of digital leadership (e-communication, e-social skills, e-change skills, etc.) against the performance of millennial employees. Although all dimensions had a positive effect, regression analysis showed that e-social skills ($\beta = 0.38$) and e-change skills ($\beta = 0.35$) had larger coefficients than e-communication tools ($\beta = 0.24$).
   - Liao et al., (2024) found a complex relationship between telework intensity and performance, with digital leadership acting as a moderator. Interestingly, however, digital leadership could not completely overcome the negative effects of very high levels of telework (>80% of work time). This indicates that leaders' technical skills have a ceiling effect—beyond a certain point, technology is no longer a solution.

   Interpretation: These findings support the conceptualization of the technological

dimension as a hygiene factor (Herzberg, 1966). Technical expertise is a necessary condition—its absence will hinder performance—but not a sufficient condition for driving superior performance. Leaders who excel solely in the technological dimension without vision or managerial skills will struggle to mobilize teams toward extraordinary results.

2. Strength of Visionary-Strategic and Structural-Managerial Dimensions

In contrast, the Visionary-Strategic and Structural-Managerial dimensions consistently report strong, significant impacts on team performance and often emerge as dominant predictors in competitive models.

Evidence for the Visionary-Strategic Dimension:

- Wunderlich and Beck (2018) conducted interviews with 20 senior executives from various industries in Germany and Switzerland. Qualitative findings revealed that Digital Business Strategy (DBS) is seen as a key driver of effective digital leadership. Executives emphasized that digital leaders must have a clear DBS vision to guide transformation, and that without this vision, technology implementation becomes fragmented and ineffective.

- Nsiah and Gavurova (2023) tested a mediation model in which Digital Leadership influences Enterprise Performance through Digital Transformation. PLS-SEM results (N=471 managers in Ghana) showed that: (1) Digital Leadership positively influences Digital Transformation ($\beta = 0.67$, $p < 0.001$), (2) Digital Transformation positively influences Performance ($\beta = 0.54$, $p < 0.001$), and (3) the indirect (mediation) effect is significant ($\beta\_indirect = 0.36$, $p < 0.01$). These results indicate that digital transformation vision is a key mechanism through which leadership influences performance.

- Arabiun et al., (2024) found a similar pattern in Vietnam, where digital leadership influenced business performance through the full mediation of organizational entrepreneurship ($\beta\_indirect = 0.48$, $p < 0.001$, the direct effect was not significant). This suggests that digital leadership is only effective if it fosters an entrepreneurial orientation within the organization—again, the visionary dimension is key.

- Singh et al., (2022) used data from 321 high-tech firms in China and found that top management team (TMT) shared leadership influenced firm performance through a double mediation mechanism: market-oriented culture and innovation capability. The structural model showed the following path: TMT shared leadership → market-oriented culture ($\beta = 0.52$) → innovation capability ($\beta = 0.61$) → firm performance ($\beta = 0.44$). Total indirect effect = $0.52 \times 0.61 \times 0.44 = 0.14$, significant at $p < 0.001$.

Evidence of Structural-Managerial Dimension:

- Al-Khayari et al., (2024) provide the most dramatic evidence of the dominance of the structural dimension. In a study of 100 ICT and e-government officials in

Oman, PLS-SEM results showed that:
- ○ Self-directed teams have a significant positive effect on performance (β = 0.42, p < 0.01).
- ○ Agility has a significant positive effect on performance (β = 0.38, p < 0.01).
- ○ Power sharing is not significant (β = 0.11, p > 0.05).
- ○ Relational intelligence is NOT significant (β = 0.09, p > 0.05).

This finding is very contrary to conventional wisdom because in the context of e-government which is often considered to require high soft skills, it is the structural dimension that dominates, while the relational dimension was not found to significantly influence performance

- Pandey et al., (2024) found that Digital Leadership Capability influences IT Innovation through the partial mediation of Inter-team Coordination (N=267 managers in India). The mediation coefficient $\beta\_indirect$ = 0.29 (p < 0.01) indicates that 40% of the total effect of digital leadership on innovation is channeled through coordination capability—a purely structural-managerial competency.
- Porkodi (2024) conducted a meta-analysis of 115 independent samples (total N = 35,463) and found that Agile Leadership has:
  - ○ Moderate positive effect on team performance (Cohen's d = 0.52, 95% CI [0.45, 0.59])
  - ○ Large positive effect on employee attitudes (Cohen's d = 0.78, 95% CI [0.71, 0.85])

The consistency of this effect across 115 studies indicates that the structural dimension (agility) is a robust and generalizable predictor.

- Garrido (2025) used action research in an international B2B sales organization during COVID-19 and found that the "VUCA, Virtue, and Vice" (3Vs) model—which emphasizes agile structure and play-at-work—significantly improved change implementation and sales performance. This qualitative study provides evidence of how the structural dimension works: by creating a flexible and permissive structure, leaders enable teams to adapt quickly to uncertainty.

Interpretation: These findings suggest that in the context of team performance, leaders who are able to articulate why technology is being used—not just how it is being used—are much more effective in mobilizing teams. Strategic vision provides sensemaking that helps team members understand the purpose of digital transformation, while an agile managerial structure provides enabling conditions for effective execution.

3. Contextualizing the Relational-Emotional Dimension: Highly Context-Dependent Effects

The Relational-Emotional dimension exhibits the most interesting and complex pattern: its effectiveness depends heavily on the organizational context, team size, and task type.

In some contexts, this dimension emerges as the strongest predictor and even fully mediates the leadership-performance relationship; however, in other contexts, it is completely insignificant.

Contexts Where the Relational Dimension is Most Effective:

- Agile Software Engineering (Small Teams, Creative Tasks): Alsalman and Chyad (2025) found that Emotional Intelligence (EI) fully mediated the relationship between leadership and team dynamics in Agile projects (N=51 professionals). The mediation model showed:
  - EI → Leadership Effectiveness: $\beta = 0.72$, $p < 0.001$
  - Leadership Effectiveness → Team Dynamics: $\beta = 0.68$, $p < 0.001$
  - Direct effect after including mediator = 0.04, not significant ($p > 0.05$)

  This is evidence of full mediation, indicating that in an Agile context, EI is a central mechanism through which leadership influences outcomes.
- Multinational Teams: Lu et al., (2021) conducted four studies (field surveys, archival EPL panel data, and two field experiments) and found that breadth of multicultural experiences predicted leadership effectiveness through the mediation of communication competency ($\beta\_indirect = 0.34$, $p < 0.01$). Interestingly, this effect was stronger in multinational teams than in domestic teams (significant moderation, $\Delta\beta = 0.28$, $p < 0.05$). This indicates that the relational dimension is crucial when teams face cultural complexity.
- Virtual Teams with Trust as a Foundation: Gohar et al., (2023) tested four leadership styles (Task-oriented, Relationship-oriented, Participative, Delegative) and found that Trust mediated the relationship for the first three styles ($\beta\_indirect$ ranged from 0.22 to 0.31, $p < 0.01$), but did not mediate for the Delegative style ($\beta\_indirect = 0.08$, $p > 0.05$). This finding suggests that the relational dimension (trust) is only relevant when the leader actively engages with the team; in a delegative style where the leader grants full autonomy, trust becomes less relevant.
- Virtual Teams During the Pandemic: Cho et al., (2022) found that humility and a positive team environment increased shared leadership and reduced conflict in 61 virtual teams without formal leaders (N=219 students). The correlation between humility and shared leadership was $r = 0.48$ ($p < 0.001$), and humility reduced task conflict ($r = -0.36$, $p < 0.01$) and relationship conflict ($r = -0.42$, $p < 0.001$). In the context of leaderless teams, the soft skills of individual members (not just the leader) become crucial.

Contexts in Which the Relational Dimension is NOT Effective:

- E-Government (Large Bureaucratic Organizations): As mentioned, Al-Khayari et al., (2024) found that relational intelligence had no significant effect on e-government performance in Oman ($\beta = 0.09$, $p > 0.05$), despite a sufficient sample size (N = 100). Post-hoc analysis showed that in hierarchical

bureaucratic structures, leader-member interpersonal relationships have a limited impact because performance is more determined by compliance with standard procedures.

- Virtual Teams with Task-Oriented Tasks: Garro-Abarca et al., (2021) found that although Communication ($\beta = 0.32$, $p < 0.01$) and Trust ($\beta = 0.28$, $p < 0.01$) significantly influenced virtual team performance during the pandemic, Cohesion was not significant ($\beta = 0.11$, $p > 0.05$). This indicates that in a task-driven (rather than relationship-driven) context, team emotional cohesion is not as important as functional coordination.

Interpretation: This pattern indicates that the effectiveness of the relational dimension depends on three contextual factors:

- Team Size: More effective in small teams (<15 people) where interpersonal interactions can be intensively managed. In larger teams, the structural dimension (formal coordination) becomes more important.
- Task Type: More relevant for creative/knowledge work that requires psychological safety and trust for sharing ideas. For operational/task-based work, the structural dimension is more important.
- Organizational Structure: Less effective in hierarchical bureaucratic organizations where performance is determined by adherence to SOPs. More effective in flat/agile organizations where autonomy and collaboration are high.

7) Synthesis RQ2: Digital Leadership ≠ Tech-Savviness

These comparative findings lead to a fundamental conclusion: in the context of team performance, "Digital Leadership" is essentially about Leadership itself, where technology is merely the medium, not the core.

As Cortellazzo et al., (2019) argue, digital leadership is more about "leadership mediated by technology" than "leadership defined by technological mastery." The empirical findings in this review confirm this theoretical proposition: the most important "digital" competencies are strategic vision and managerial capabilities—competencies that have traditionally been at the heart of effective leadership—rather than technical expertise.

Table 5. Ranking of the Effectiveness of Digital Leadership Dimensions on Team Performance

Ranking	Dimension	Impact Consistency	Effect Strength (Average β)	Number of Supporting Studies
1	Visionary-Strategic	Very High	0.52 (range: 0.44-0.67)	16 of 18 (88.9%)
2	Structural-Managerial	High	0.48 (range: 0.38-0.61)	17 of 19 (89.5%)
3	Relational-Emotional	Contextual	0.41 (range: 0.09-0.72)	10 of 16 (62.5%)
4	Technological	Moderate	0.31 (range: 0.12-0.42)	12 of 15 (80.0%)

Note: Average β is calculated from quantitative studies reporting path coefficients. "Contextual" consistency indicates effects that vary significantly across conditions.
Source: Data processed by the author (2025)

The practical implications of these findings are clear: Organizations often default to promoting IT managers or individuals with strong technical expertise to digital leadership roles based on the assumption that technological proficiency is paramount. The study's findings suggest the opposite: it's more effective to train digital talent in soft skills and strategic vision, or to train existing visionary leaders in basic digital literacy. The focus of recruitment and development must shift from "tool mastery" to "digital mindset."

8) RQ3: Boundary Conditions—When Are Certain Dimensions Effective?

The third research question explores the contextual conditions under which certain dimensions become more or less relevant. This cross-contextual analysis resulted in the Contingency Framework of Digital Leadership, which states that there is no universal "best practice" in digital leadership.

Industry/Sector Context

Analysis of the distribution of studies across sectors reveals distinct patterns of effectiveness for each dimension:

- Digital Startup (n=8)
  - Dominant Dimensions: Visionary-Strategic + Structural-Managerial
  - Evidence: Ardi et al., (2022) found that Transformational Digital Leadership influences startup performance through absorptive capacity ($\beta = 0.56$, $p < 0.001$). Arabiun et al., (2024) found full mediation through organizational entrepreneurship. Subiyanto et al., (2024) showed a strong direct effect ($\beta = 0.61$, $p < 0.001$), although the mediation was not significant.
  - Interpretation: Startups operate in high uncertainty and require a clear vision to provide direction, plus the agility to pivot quickly. The relational dimension is less crucial because teams are usually small and already cohesive.
- E-Government (n=4)
  - Dominant Dimension: Structural-Managerial
  - Non-Significant Dimension: Relational-Emotional
  - Evidence: Al-Khayari et al., (2024) showed that self-directed teams and agility were effective, while relational intelligence was not. Umah et al., (2023) found that successful madrasah principals focused on forming formal "digital teams" and changing organizational structures.
  - Interpretation: Government organizations have rigid bureaucratic structures. Performance is determined more by process efficiency and SOP compliance than by interpersonal relationships. Leaders' soft skills have limited impact.
- IT/Software (Agile) (n=12)
  - Dominant Dimension: Relational-Emotional
  - Evidence: Alsalman & Chyad (2025) demonstrated full mediation through EI.

Asraar Ahmed et al., (2022) found e-trust and e-social to be stronger than e-tech. Al-Ayed et al., (2025) identified e-trust as one of five key competencies.

- Interpretation: Agile projects require high psychological safety for rapid experimentation and iteration. Small teams (5-9 people in Scrum) make interpersonal relationships crucial. Complex knowledge work requires trust for knowledge sharing.

- Healthcare (n=5)
  - Dominant Dimension: Relational + Technological (balanced)
  - Evidence: Truchot et al., (2020) demonstrated the effectiveness of Digital Cognitive Aid. Kanyimo (2022) demonstrated the success of Virtual Wards with a combination of technology and proactive case management. Sayyed et al., (2024) emphasized patient-centric leadership that requires empathy.
  - Interpretation: Healthcare is a unique context where technology (medical devices, digital aids) is crucial for safety, but the relational dimension (patient care, interdisciplinary teamwork) is also crucial. A balanced approach is needed.

- Manufacturing (n=4)
  - Dominant Dimension: Visionary-Strategic
  - Evidence: Nsiah & Gavurova (2023) showed that digital transformation fully mediated the relationship between digital leadership and performance in Ghanaian manufacturing companies. Senadjki et al., (2024) found a similar pattern in Malaysia.
  - Interpretation: Manufacturing is experiencing Industry 4.0 disruption. Leaders need a clear transformation vision to integrate IoT, AI, and automation. Without a strategic vision, technology investments become fragmented and yield low ROI.

Team Size Context
- Small Team (< 10 orang):
  - Dominant Dimension: Relational-Emotional
  - Evidence: Alsalman & Chyad (2025) with N=51 professionals in Scrum teams. Cho et al., (2022) with teams of 3-4 people. Lu et al., (2021) found the strongest effect of multicultural experience in small teams.
  - Interpretation: In small teams, each member has high visibility and intensive interaction. EI, humility, and communication competency are crucial for cohesion.

- Big Team (> 30 orang):
  - Dominant Dimension: Structural-Managerial
  - Evidence: Al-Khayari et al., (2024) in an e-government organization with hundreds of staff. Pandey et al., (2024) found inter-team coordination crucial. Singh et al., (2022) in a large company with multiple teams.
  - Interpretation: Large teams require formal coordination, clear role definition,

and an agile structure. The leader's interpersonal relationships with each member are not scalable; structure and process become more important.

Virtuality Level Context
- Fully Remote (100% Virtual)
  - Crucial Dimensions: Technological + Structural
  - Evidence: Liao et al., (2024) found that digital leadership moderates the inverted-U effect of telework intensity. At telework intensity >80%, high digital leadership can reduce (but not eliminate) the negative impact on performance.
  - Interpretation: Fully remote work requires technical skills to use collaboration tools effectively, plus a clear structure (meeting schedules, deliverable timelines) to address the absence of physical supervision.
- Hybrid:
  - Balanced Dimensions: All dimensions are relevant, but Relational requires adaptation.
  - Evidence: Chaudhary (2023) found that virtual LMX communication tends to be "planned, concise, and task-focused" compared to face-to-face communication, which is more spontaneous and relational.
  - Interpretation: Hybrid communication requires the flexibility to switch between virtual and on-site modes. Leaders need the skills to maintain relationship quality even when interactions are reduced in frequency.

Task Type Context
- Creative/Knowledge Work:
  - Dominant Dimension: Relational + Visionary
  - Evidence: Engelsberger et al., (2024) found that relational leadership promotes knowledge sourcing and sharing for open innovation. Lu et al., (2021) demonstrated that multicultural experience is effective for creative problem-solving.
  - Interpretation: Creative work requires psychological safety for risk-taking, plus an inspiring vision to provide purpose.
- Operational/Task-Based:
  - Dominant Dimensions: Structural + Technological
  - Evidence: Truchot et al., (2020) in the context of combat medics with specific tasks. Garro-Abarca et al., (2021) found cohesion to be insignificant for task performance.
  - Interpretation: Task-based work requires efficiency, clear procedures, and technology that supports speed and accuracy. Emotional bonding is less relevant.
- Strategic Transformation:
  - Dominant Dimensions: Visionary + Structural
  - Evidence: Wunderlich & Beck (2018) emphasize Digital Business Strategy.

Nsiah & Gavurova (2023) and Senadjki et al., (2024) demonstrate that digital transformation mediates.

- ○ Interpretation: Transformation requires vision to overcome resistance to change, plus change management capabilities for execution.

Synthesis of RQ3: Contingency Framework

The findings from the boundary conditions analysis led to the development of the Contingency Framework of Digital Leadership (Table 6). This framework proposes that the effectiveness of digital leadership dimensions is a function of context fit, not the universal superiority of one dimension over another.

Tabel 6. Contingency Framework of Digital Leadership

Organizational Context	Optimal Dimensions	Empirical Evidence (Key Studies)	Rationale
Digital Startups	Visionary *** + Structural ***	Ardi et al., (2022), Arabiun et al., (2024), Subiyanto et al., (2024)	High uncertainty requires vision for direction & agility to pivot.
Bureaucratic E-Government	Structural *** [Relational: ns]	Al-Khayari et al., (2024), Umah et al., (2023)	Performance is determined by compliance with SOPs, not interpersonal relationships.
Agile Software (Small Teams)	Relational *** [Full Mediation]	Alsalman & Chyad (2025), Asraar Ahmed et al., (2022)	Psychological safety is crucial for experiments & knowledge sharing.
Healthcare	Relational *** + Technological **	Truchot et al., (2020), Kanyimo (2022), Sayyed et al., (2024)	Patient care (empathy) + medical tech (safety) are both critical.
Manufacturing (Industry 4.0)	Visionary *** + Structural **	Nsiah & Gavurova (2023), Senadjki et al., (2024)	Digital transformation requires a vision of IoT/AI integration & change management.
Multinational Virtual Teams	Relational *** + Technological **	Lu et al., (2021)	Multicultural competency to bridge cultural distances + tools for physical distances.
Crisis Management (COVID-19)	Structural *** + Relational **	Garrido (2025), Cho et al., (2022), Garro-Abarca et al., (2021)	Agility for quick decisions + empathy for psychological support.

Legend: *** = Very Crucial | ** = Important | * = Moderate (hygiene factor) | ns = not significant

Source: Synthesis of 51 articles (Author, 2025)

Theoretical Implications: This framework challenges the "one-size-fits-all" approach to digital leadership research and practice. Future research should adopt a contingency approach and explicitly test the interaction effects between leadership dimensions and contextual factors.

Practical Implications: Organizations need to conduct a context diagnosis before designing leadership development programs. Specific recommendations:

- Startup: Hire for entrepreneurial vision and train for agility, while allocating limited resources away from intensive soft-skills training.
- E-Government: Prioritize structural redesign (self-directed teams, flat hierarchy) over intensive soft-skills training, as evidence suggests limited ROI for relational competencies in bureaucratic contexts.
- Agile Software House: Invest heavily in EI training, cultural competency, and psychological safety. These are core differentiators.
- Healthcare: Balanced investment in digital health technology and compassionate leadership training.
- Manufacturing: Prioritize strategic vision workshops and digital transformation roadmaps. Technology is the baseline, not the focus.

9) Integrative Discussion: Resolution of Empirical Inconsistencies

Returning to the initial motivation of this study—the empirical inconsistency between Subiyanto et al., (2024) who found "team dynamics do not mediate" versus Pandey et al., (2024) who found "team coordination mediates"—the findings from RQ1-RQ3 provide a comprehensive explanation.

Three Sources of Inconsistency

1. Inconsistent Operationalization of Variables

   Subiyanto et al., (2024) used the broad construct "Team Dynamics," which aggregates multiple sub-dimensions (communication, trust, conflict, and cohesion) into a single variable. In contrast, Pandey et al., (2024) used the specific construct "Inter-team Coordination," which focuses on structural-managerial aspects.

   A thorough analysis of both studies shows that when Subiyanto et al., conducted an exploratory analysis of the "Team Dynamics" sub-dimension, they found that coordination was indeed significant ($\beta = 0.28$, $p < 0.05$), but cohesion and conflict resolution were not ($\beta = 0.11$ and -0.09, $p > 0.05$). When aggregated, the positive effect of coordination was canceled out by the null effects of the other dimensions, resulting in an insignificant aggregate effect.

   This is a classic example of the aggregation fallacy: conclusions at the aggregate level can mask heterogeneity at the sub-dimension level.

2. Contextual Differences

   Subiyanto et al., (2024) conducted a study of 25 Indonesian digital startups (small teams, creative work), while Pandey et al., (2024) conducted a study of 267 managers of Indian ICT companies (larger organizations, multiple teams).

Based on the Contingency Framework (RQ3), in small startups, the Relational dimension should be more important than the Structural dimension. However, Subiyanto et al., measured "Team Dynamics" (which is relational in nature) as a mediator for the outcome "Team Performance" (which in the startup context is driven more by vision and agility, rather than relationships). This mismatch between the mediator and the context resulted in an insignificant mediation effect.

Conversely, Pandey et al., in the context of a large organization with multiple teams, measured "Inter-team Coordination" (structural) as a mediator for the outcome "IT Innovation"—this is a perfect fit based on the framework, resulting in significant mediation.

3. Mediator-Outcome Mismatch

Based on the analysis of 51 articles, different dimensions of collaboration mediate the leadership-performance relationship for different outcomes:

- Trust mediates for → Employee Attitude Outcomes (satisfaction, commitment)
- Coordination mediates for → Performance Outcomes (productivity, innovation)
- Communication mediates for → Both, but is stronger for Performance
- Cohesion is rarely significant for → Performance (more so for Attitude)

Subiyanto et al., used "Team Dynamics" (which includes cohesion) to predict "Team Performance"—this is a mismatch. It should have used coordination or communication quality.

10) Synthesis: Team Collaboration is a Valid Mediator

Despite inconsistencies in some studies, the majority of evidence (32 of 51 articles, 62.7%) supports that Team Collaboration is a significant mediator, with important caveats:

1. Specificity of Dimensions Matters: Using specific constructs (trust, coordination, communication) is more predictive than broad aggregate constructs (collaboration, team dynamics).
2. Context Fit Matters: The effectiveness of mediation depends on the fit between the collaboration dimension, the leadership dimension, the organizational context, and the measured outcome.
3. Multiple Pathways: Digital leadership can influence performance through multiple simultaneous pathways:
    a. Direct Path: Digital Leadership → Team Performance (bypassing collaboration)
    b. Mediation Path 1: Digital Leadership → Trust → Employee Attitudes → Performance
    c. Mediation Path 2: Digital Leadership → Coordination → Team Performance
    d. Moderation: Digital Leadership × Team Collaboration → Performance

Subiyanto et al.,'s (2024) findings do not "reject" the mediating role of collaboration, but rather indicate that in their context (small startups), the direct path is more dominant due to a mismatch between the measured mediator (relational dynamics) and the main drivers of startup performance (vision and agility).

11) Limitations and Future Research Directions

While this study makes important contributions through the deconstruction of the dimensions and contingency framework, several limitations should be acknowledged:

1. Reliance on Cross-Sectional Data

    The majority of reviewed studies (78.4%, n=40) used a cross-sectional design, which limits the ability to establish causality. Although SEM models can test directional relationships, temporal sequence cannot be verified without longitudinal data.

2. Operational Diversity Complicates Quantitative Meta-Analysis

    As discussed, terminological and measurement inconsistencies across studies make rigorous quantitative aggregation (e.g., pooled effect size calculation) difficult. This review uses narrative synthesis, which, while contextually rich, lacks statistical precision than quantitative meta-analysis.

3. Uneven Geographic Coverage

    The sample was dominated by studies from Asia (60.8%, n=31) and under-represented North America (5.9%, n=3) and Latin America (0%, n=0). Generalizability of the findings to the American context may be limited.

4. Publication Bias

    The search focused on published peer-reviewed articles. Studies with null findings may be underrepresented due to publication bias. Although snowballing was performed, grey literature (dissertations, working papers) was not included.

5. Self-Report Bias in Primary Data

    The majority of quantitative studies used self-report surveys, which are susceptible to common method bias. Only a few studies (n=5) used objective performance metrics or multi-source data.

12) Future Research Directions

Based on the findings and limitations, several priority research directions are recommended:

1. Longitudinal Studies to Establish Causality. Future research should use a multi-wave panel design to test.

    a. Do changes in digital leadership dimensions predict changes in team performance over time?

    b. Are there reciprocal relationships (e.g., high performance → increased team trust → strengthened leadership effectiveness)?

    c. What is the optimal time lag between leadership interventions and their impact on performance (immediate vs. delayed effects)?

2. Measurement Standardization. The academic community needs to develop and validate a standardized Digital Leadership Multi-Dimensional Scale (DLMDS), with subscales for all four dimensions:

    a. Technological (5-7 items)

    b. Visionary-Strategic (5-7 items)

    c. Relational-Emotional (5-7 items)
    d. Structural-Managerial (5-7 items)

This scale should be validated across cultures and industries to facilitate more rigorous quantitative comparisons and meta-analyses.

3. Experimental Interventions. Experimental or quasi-experimental studies need to be conducted to test:
    a. Does training on specific dimensions actually improve performance in specific contexts?
    b. Comparative effectiveness: Is strategic vision training more effective than technical training in a startup context?
    c. Dose-response relationship: How many training hours are optimal?

4. Configurational Approaches. Future research could use Qualitative Comparative Analysis (QCA) or fsQCA to identify configurations of dimensions that result in high performance. For example:
    a. Configuration 1: High Vision × High Structure × Low Relational → High Performance (for e-government)
    b. Configuration 2: High Relational × Moderate Vision × Low Structure → High Performance (for Agile teams)

This approach can reveal equifinality (multiple paths to success) and causal asymmetry (conditions for success ≠ absence of conditions for failure).

5. Moderator Exploration. Research needs to explore additional moderators that may influence the effectiveness of the dimensions:
    a. Cultural Distance: Is the relational dimension more important in collectivist versus individualist cultures?
    b. Task Complexity: Is the visionary dimension more important for complex versus simple tasks?
    c. Team Tenure: Is the relational dimension more important in early stages, while the structural dimension is more important in mature stages?
    d. Leader-Team Distance: Does the effectiveness of these dimensions differ for collocated versus distributed leaders?

4. CONCLUSION

This Systematic Literature Review of 51 articles successfully deconstructs "Digital Leadership" from a monolithic construct into four distinct dimensions: (1) Technological, (2) Visionary-Strategic, (3) Relational-Emotional, and (4) Structural-Managerial. The comparative analysis reveals three key findings that challenge conventional assumptions:

Finding 1: Tech-Savviness as a Hygiene Factor

Contrary to expectations that "digital leaders" should begin with technical expertise, the Technology dimension serves only as a baseline competency. In Asraar Ahmed et al., (2022), e-tech was only one of five predictors with equal weight, with e-trust and e-social

showing a stronger influence. This finding confirms that technical expertise is a necessary but not sufficient condition for effective digital leadership.

Finding 2: Dominance of Visionary and Structural Dimensions

The Visionary-Strategic (average β = 0.52) and Structural-Managerial (average β = 0.48) dimensions showed the highest consistent impact on team performance across contexts. Leaders who are able to articulate why technology is used—not just how it is used—are far more effective in mobilizing teams (Wunderlich & Beck, 2018; Nsiah & Gavurova, 2023). This indicates that "Digital Leadership" is essentially about Leadership itself, where technology is merely the medium, not the core.

Finding 3: Contextuality of the Relational Dimension

The Relational-Emotional dimension shows the most interesting pattern: it is highly effective in small Agile teams (Alsalman & Chyad, 2025 found full mediation of EI → Leadership → Outcomes, β_indirect = 0.49), but NOT significant in large bureaucratic organizations (Al-Khayari et al., 2024 found relational intelligence β = 0.09, p > 0.05). This indicates that digital leadership effectiveness is context-dependent, not universal.

Theoretical Contributions

This study proposes a Contingency Framework of Digital Leadership, which states that there is no universal "best practice" in digital leadership. Instead, the effectiveness of specific dimensions depends heavily on: (1) industry context (startup vs. e-government vs. healthcare), (2) team size and structure (small vs. large, flat vs. hierarchical), (3) degree of virtuality (fully remote vs. hybrid vs. on-site), and (4) task type (creative vs. operational vs. transformational).

This framework resolves the empirical inconsistency that motivated the initial study. The finding by Subiyanto et al., (2024) that "team dynamics do not mediate" versus Pandey et al., (2024) that "team coordination does mediate" is not a theoretical contradiction, but rather an aggregation fallacy and context mismatch. In-depth analysis reveals that in Subiyanto's study, the "coordination" sub-dimension was actually significant (β = 0.28, p < 0.05), but was canceled out by the other sub-dimensions when aggregated. Furthermore, in the context of small startups, the direct leadership-performance path is more dominant because vision and agility are the primary drivers, not relational collaboration.

Managerial Implications

Organizations often prioritize technical expertise when selecting digital leaders, an approach that our findings suggest may be suboptimal. This study's findings suggest the opposite: it's more effective to train digital talent in soft skills and strategic vision, or to train existing visionary leaders in basic digital literacy.

Practically, organizations need to:

1. Context Diagnosis before Leadership Development: Identify the specific context (industry, team size, virtuality) before designing the program.
2. Context-Based Targeted Development:
    a. Startup → Focus on entrepreneurial vision + agility training. while allocating limited resources away from intensive soft-skills training.

b. Bureaucratic E-Government → Prioritize structural redesign (self-directed teams, flat hierarchy) over intensive soft-skills training, as evidence suggests limited impact of relational competencies in bureaucratic contexts.

c. Agile Software House → Invest heavily in EI training, cultural competency, and psychological safety. These are core differentiators.

d. Healthcare → Balanced investment in digital health technology (DCA) AND compassionate leadership training (patient-centric care).

e. Manufacturing → Prioritize strategic vision workshops (Industry 4.0 roadmap) and change management. Technology is the baseline, not the focus.

3. Recruitment Reframing: Stop the practice of "hire for tech skills, train for leadership." Instead, hire for vision + managerial capability, train for digital literacy.

Limitations

This study is limited by: (1) the cross-sectional nature of the majority of primary data (78.4%), which limits causal inference; (2) diverse operationalizations of variables that complicate quantitative meta-analysis; and (3) uneven geographic coverage (Asian dominance 60.8%, underrepresentation of the Americas). Future research should: (a) use a longitudinal panel design to establish temporal causality; (b) develop a standardized and cross-culturally validated Digital Leadership Multi-Dimensional Scale (DLMDS); and (c) conduct experimental interventions to test whether training on specific dimensions actually improves performance in specific contexts.

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