DIGITAL TRANSFORMATION AND ADMINISTRATION INNOVATION

Citation: Yazdanparast, S. M., Shami Zanjani, M., & Mousakhani, M. (2026). Definition and Dimensions of Digital Culture in Large Telecommunications Companies. *Digital Transformation and Administration Innovation,* 4(3), 1-20.

Received date: 2025-10-09 Revised date: 2026-01-17 Accepted date: 2026-01-25 Published date: 2026-05-01

Definition and Dimensions of Digital Culture in Large Telecommunications Companies

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Abstract

Digital culture, as one of the vital components in managing digital transformation within large organizations, requires precise understanding and identification of its dimensions. This study aims to define and examine the dimensions of digital culture in large companies in the telecommunications industry. To this end, a mixed-methods research design was employed, including a systematic literature review and qualitative interviews with 28 managers and experts in the telecommunications field. In the literature review phase, out of 87 relevant articles, 74 articles were selected and analyzed after rigorous screening. The interview data were examined using qualitative content analysis. The findings indicate that digital culture consists of a set of key dimensions such as flexibility, organizational agility, risk-taking, participation and collaboration, data orientation, continuous learning, and innovation, each of which plays a significant role in shaping the digital cultural environment of organizations. Providing a comprehensive definition and a precise framework of digital culture dimensions can serve as a foundation for future research and the development of managerial models in the field of information technology.

Keywords: digital culture dimensions, digital transformation, telecommunications industry

1. Introduction

The acceleration of digital transformation has profoundly reshaped organizational structures, strategies, and competitive dynamics across industries. Digital technologies such as artificial intelligence, big data analytics, cloud computing, and platform-based systems have not only altered operational processes but have also redefined how value is created, delivered, and sustained in contemporary organizations (Berawi, 2018; Bhimani et al., 2020; Kane, 2023). As organizations increasingly integrate digital technologies into their core activities, it has become evident that technological investment alone is insufficient to ensure successful transformation. Instead, attention has shifted toward the underlying organizational and cultural conditions that enable or constrain digital transformation initiatives (Baculard et al., 2017; Bitzer et al., 2021; Hoffman et al., 2024).

Organizational culture has emerged as a decisive factor in shaping digital transformation outcomes. Culture influences how employees perceive change, adopt technologies, share knowledge, and engage in innovation-oriented behaviors (Armenakis et al., 1993; Beer & Nohria, 2000). In the context of digital transformation, scholars increasingly emphasize the concept of digital culture as a distinct yet integrative cultural configuration that aligns values, norms, behaviors, and capabilities with the

demands of a digitally mediated environment (Kane, 2023; Westerman et al., 2014). Digital culture goes beyond traditional organizational culture by embedding agility, experimentation, data-driven thinking, collaboration, and continuous learning into the organizational fabric (Bouncken et al., 2023; Cyfert et al., 2025).

Recent research highlights that organizations with well-developed digital cultures are more likely to achieve superior innovation performance, operational resilience, and long-term competitiveness (Cao et al., 2025; Farmakis et al., 2025; Hasan et al., 2025). Conversely, organizations that neglect cultural adaptation often encounter resistance to change, underutilization of digital tools, and fragmentation between technological potential and organizational practice (Asgharnia et al., 2024; Karimi et al., 2023). This growing body of evidence underscores the need to conceptualize, operationalize, and systematically evaluate digital culture as a multidimensional organizational phenomenon.

Despite increasing scholarly attention, the concept of digital culture remains theoretically fragmented and empirically underdeveloped. Existing studies adopt diverse perspectives, ranging from digital leadership and digital maturity to innovation capability and workforce competencies, often without an integrated framework (Agostino & Costantini, 2022; Asadi & Shami Zanjani, 2022; Madresi et al., 2023a). This fragmentation has led to inconsistencies in how digital culture is defined, measured, and applied across organizational contexts, particularly in large and complex industries such as telecommunications, banking, and public services (Karami et al., 2025; Rangriz et al., 2023; Taghavi et al., 2025).

The telecommunications industry represents a particularly salient context for examining digital culture. As a foundational infrastructure sector, telecommunications firms operate at the intersection of rapid technological change, regulatory complexity, large-scale operations, and high customer expectations (Arifiani, 2020; Asgharnia et al., 2024). Digital transformation in this industry extends beyond network modernization to include digital service innovation, data-driven customer engagement, platform ecosystems, and agile organizational models (Farmakis et al., 2025; Nkgowe et al., 2025). In such environments, digital culture plays a critical role in enabling cross-functional collaboration, intergenerational knowledge exchange, and sustained innovation (Bellotti et al., 2022; Bouncken et al., 2023).

A growing stream of literature emphasizes that digital culture is not a monolithic construct but rather a configuration of interrelated dimensions. These dimensions commonly include trust, openness to change, data orientation, employee empowerment, ethical responsibility, learning orientation, agility, innovation, and customer centricity (Fouladvand & Omoumi Milan, 2025; Ghafoori et al., 2024; Pourgholi, 2025). Each of these elements contributes uniquely to shaping how organizations absorb digital technologies and translate them into strategic and operational outcomes (Argote et al., 2023; Birkinshaw et al., 2008).

Trust, for example, underpins digital collaboration and knowledge sharing in environments characterized by virtual work, algorithmic decision-making, and data exchange (Acquisti et al., 2015; Adomako & Nguyen, 2023). Openness to change and psychological readiness influence employees' willingness to experiment, learn from failure, and engage in continuous improvement (Armenakis et al., 1993; Susanti et al., 2022). Similarly, data-driven orientation enables organizations to leverage analytics for strategic foresight, personalization, and operational excellence (Ayokanmbi & Sabri, 2021; Ghafoori et al., 2024).

Leadership also plays a central role in shaping and sustaining digital culture. Digital transformation requires leadership approaches that combine strategic vision, ethical conduct, empowerment, and adaptability (Akbari et al., 2025; Avolio et al., 2020). Leaders act as cultural architects by modeling digital behaviors, fostering psychological safety, and aligning organizational structures with transformation goals (Rahmati-Kahrhroodi et al., 2021; Shirazi et al., 2021). Empirical studies consistently demonstrate that leadership support mediates the relationship between digital initiatives and organizational performance through cultural mechanisms (Akbari et al., 2025; Cyfert et al., 2025).

Another critical dimension of digital culture concerns learning and capability development. Continuous learning, digital fluency, and skill renewal are essential for navigating rapidly evolving technological landscapes (Abidi et al., 2024; Billett, 2002). Organizations that institutionalize learning systems and knowledge-sharing mechanisms are better positioned to sustain

digital transformation and avoid capability obsolescence (Argote et al., 2023; Baptista et al., 2020). In this regard, digital culture functions as an enabling context that transforms learning from a peripheral activity into a strategic organizational capability (Madresi et al., 2023b).

Ethics and responsibility have also gained prominence within discussions of digital culture. Issues related to data privacy, algorithmic transparency, cybersecurity, and social responsibility demand ethical frameworks that are embedded in organizational culture rather than treated as compliance add-ons (Acquisti et al., 2015; Hoffman et al., 2024). Digital culture thus intersects with governance, accountability, and sustainability, shaping how organizations balance innovation with societal expectations (Hasan et al., 2025; Sahar et al., 2025).

Despite these advances, several gaps remain in the literature. First, many studies focus on isolated aspects of digital culture without offering a comprehensive, integrative framework (Cosa & Torelli, 2024; Karami et al., 2024). Second, empirical evidence from large telecommunications organizations—particularly in emerging and regulated markets—remains limited (Asgharnia et al., 2024; Pourmoghadam et al., 2025). Third, there is a need for methodological approaches that combine systematic literature synthesis with expert insights to capture both theoretical breadth and contextual depth (Karami et al., 2024; Reisberger, 2024).

Addressing these gaps is essential for advancing both theory and practice. A robust conceptualization of digital culture can inform managers, policymakers, and regulators seeking to design, evaluate, and institutionalize digital transformation strategies (Arbabi Esfahani et al., 2024, 2025). Moreover, identifying the key dimensions of digital culture provides a foundation for developing measurement models, diagnostic tools, and policy frameworks tailored to complex organizational environments (Fotouhnejad & Shami Zanjani, 2025; Rangriz et al., 2023).

Given the strategic importance of telecommunications firms in national digital ecosystems and the increasing reliance on digital infrastructures, understanding the cultural drivers of digital transformation in this sector is both timely and consequential (Arifiani, 2020; Nkgowe et al., 2025). By synthesizing existing knowledge and incorporating expert perspectives, research can move beyond fragmented insights toward a coherent and actionable understanding of digital culture.

Accordingly, the aim of this study is to systematically identify, conceptualize, and integrate the key dimensions of digital culture in large telecommunications organizations through a meta-synthesis of the literature complemented by expert insights, in order to develop a comprehensive and theoretically grounded framework for understanding digital culture in the context of digital transformation.

2. Methods and Materials

In this study, the meta-synthesis method was used for data collection. The search for articles was conducted in the Scopus, Emerald, ScienceDirect, Springer, and ProQuest databases, using multiple search terms across these databases. In the next stage, in order to complement the findings obtained from the meta-synthesis method and the initial research framework, interviews were conducted with experts in the relevant field.

In the first step, to clarify the definition of digital culture, the aforementioned databases were searched using relevant keywords and terms, and all articles and books containing definitions of digital culture were collected. A total of 34 sources were identified in the specified databases. Subsequently, the identified sources were reviewed based on article inclusion and exclusion criteria. The titles, abstracts, and full contents of the articles were examined, and studies that did not provide a precise definition of digital culture were excluded. At this stage, 14 articles were excluded due to lack of relevance to the research questions, and 20 articles proceeded to the next stage for further review. The remaining articles were then assessed in terms of content quality, and those that offered a clear, non-redundant definition of digital culture within the domains of digital transformation and management knowledge were extracted.

In the next step, in order to extract the components of digital culture, the aforementioned databases were searched using relevant keywords and terms, and all articles related to the components of digital culture were collected. A total of 147 sources were identified in the specified databases. The identified sources were then reviewed based on the inclusion and exclusion criteria. These criteria are presented in the following table.

Table 1. Inclusion and Exclusion Criteria for Articles Addressing the Research Question on Digital Culture Components

Criterion	Inclusion	Exclusion
Research language	Persian and English	Languages other than Persian and English
Time period	From the beginning of 2000 to the end of 2024	Before 2000
Study domain	Digital culture	Outside the scope of digital culture
Context examined	Dimensions of digital culture in large companies	Cultural dimensions within traditional frameworks
Type of study	Articles published in reputable academic journals and valid applied studies	Conference papers, personal opinions, and non-credible articles

The 147 identified articles were carefully reviewed through several stages to determine their alignment with the research questions. Accordingly, articles that were not relevant to the research questions were excluded during these stages, and ultimately, the most relevant articles were selected for extracting answers to the research questions. The review process included examining article titles, abstracts, and full texts, with alignment to the inclusion criteria assessed at each stage. The stages of the review process in this study were as follows.

Duplicate articles across databases were removed, resulting in 143 remaining articles out of the initial 147. The titles, abstracts, and full contents of these articles were reviewed, and studies that were not relevant to the research questions were excluded. At this stage, 44 articles were excluded due to lack of relevance to the research questions, and 7 articles were excluded because their credibility could not be clearly established by the researcher. As a result, 92 articles entered the next stage for further review.

The remaining articles were then assessed in terms of content quality. For this purpose, the Critical Appraisal Skills Programme (CASP) five-point scale was employed, using a checklist consisting of 10 questions to assist the researcher in evaluating the rigor, validity, and significance of the studies. The questions addressed the assessment of research objectives, methodological rationale, research design, sampling method, data collection procedures, reflexivity or the relationship between the researcher and participants, ethical considerations, rigor of data analysis, clarity of findings, and the overall value of the research. When using this tool, each article was reviewed and assigned a score ranging from one to five based on the extent to which it met the above criteria.

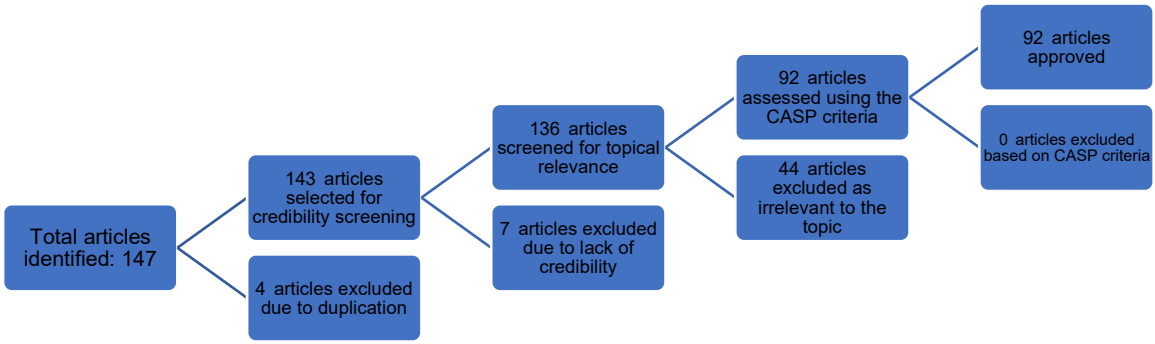

Figure 1. Article Selection Process

After completing the article evaluation stages, an in-depth review of the selected articles was initiated. The next stage involved organizing the extracted information. Each dimension and component of digital culture identified from the selected articles was considered as a code. Grouping similar codes led to the formation of sub-concepts as an intermediate step. These sub-concepts were then categorized based on thematic similarity, ultimately yielding the main concepts representing the components of digital culture.

In the subsequent stage, in order to complement the findings obtained from the meta-synthesis method and the initial research framework, interviews were conducted with experts in the relevant field. The purpose of these interviews was to examine the research topic from the perspectives of the interviewees and to analyze the underlying reasons and nature of their viewpoints. For this purpose, interviews were conducted with 28 telecommunications experts who were familiar with the concepts of digital transformation. These participants were drawn from two large Iranian telecommunications companies and included specialists,

managers, and consultants from various functional areas. After transcription, the interview data were analyzed using qualitative content analysis, and the demographic information of the participants is presented in the following table.

Table 2. Demographic Characteristics of Interview Participants

Variable	Category	Frequency	Percentage
Gender	Male	23	82%
	Female	5	18%
Educational level	Bachelor's degree	2	7%
	Master's degree	15	54%
	Doctoral degree	11	39%
Work experience	Less than 5 years	3	11%
	5–10 years	7	25%
	11–20 years	14	50%
	More than 20 years	4	14%
Job position	Consultant	3	11%
	Specialist	12	43%
	Middle manager	5	18%
	Senior manager	8	29%

3. Findings and Results

The definitions extracted at this stage are presented in the following table.

Table 3. Definitions of Digital Culture

Year of Publication	Definition of Digital Culture in the Field of Management and Digital Transformation	Authors
2024	Digital culture is defined as the transformative impact of electronic human resource management (E-HRM) during the era of digital transformation, leading to changes in managerial practices and organizational interactions.	Mozaffar
2024	The strategic design of digital culture is examined as a key instrument for facilitating digital transformation in organizations, emphasizing the importance of creating a supportive environment for digital change.	Butt, Imran, Helo, Kantola
2023	Digital culture is an enabler of digital transformation within organizations.	Frickens
2023	Digital culture goes beyond technology and encompasses a set of behaviors and beliefs that facilitate innovation and digital transformation in organizations; it requires an explanatory and predictive model for comprehensive understanding.	Leal-Rodríguez, Sanchís-Pedregosa, Moreno-Moreno, Leal-Millán
2023	Digital culture is introduced as a response to the challenges of the digital revolution and as a key topic on the research agenda in the field of digital transformation.	Lazzarotti
2023	Digital culture in small and medium-sized enterprises (SMEs) involves the interaction of factors such as organizational structure, leadership, and organizational culture, contributing to success in the digital transformation process.	Lussu, Cortimiglia, Ghezzi
2021	Digital culture is recognized as the foundation of digital transformation and refers to the adoption of new ways of working through the use of digital tools within organizations.	Vial
2021	In management, digital culture is defined as organizations' capability to absorb and leverage digital technologies in order to achieve business objectives.	Wessel, Baiyere, Ologeanu-Taddei, Cha, Blegind Jensen
2021	Digital culture refers to the alignment and coherence of organizational culture with digital tools and digital transformation initiatives.	Fieref, Broekhuizen, Barth, Bhattacharya, Dong, Fabian, Hanlein
2020	Digital culture refers to shared values and beliefs that support digital innovation and continuous change.	Sebastian, Ross, Beath, Mocker, Moloney, Fonstad
2020	Digital culture denotes the behavioral and organizational changes required to effectively use digital technologies in organizational management.	Hess, Matt, Benlian, Wiesböck
2019	In digital transformation, digital culture is defined as the adoption of new technologies and the creation of a suitable environment for innovation and organizational change.	Warner, Wäger
2019	In management, digital culture refers to aligning organizational culture with digital technologies to achieve digital transformation.	Nambisan, Wright, Feldman
2019	Digital culture is defined as a set of values and beliefs that facilitate digital change within organizations.	Zaki
2018	Digital culture is recognized as the foundation for organizational change in digital transformation and includes the adoption of new technologies and innovation.	Li, Su, Zhang, Mao
2015	Digital culture is identified as a combination of practices and mindsets that companies and organizations adopt within their digital processes.	Kane, Palmer, Phillips, Kiron
2015	Digital culture refers to an organizational culture that has the ability to rapidly adapt to changes driven by digital technologies.	Matt, Hess, Benlian
2014	Digital culture refers to a set of organizational values and norms that facilitate digital innovation and technology adoption within organizations.	Westerman, Bonnet, McAfee
2014	Digital culture refers to the adoption and use of digital technologies to enhance organizational performance and create value.	Fitzgerald, Kruschwitz, Bonnet, Welch
2013	Digital culture refers to behaviors, mindsets, and innovation practices that are essential for success in the digital era.	Bharadwaj, El Sawy, Pavlou, Venkatraman

Based on the analyses conducted through the meta-synthesis method and interviews with experts in the telecommunications field, a set of key dimensions of digital culture was identified, which are summarized in the following figure.

These dimensions are briefly introduced and explained in the subsequent sections.

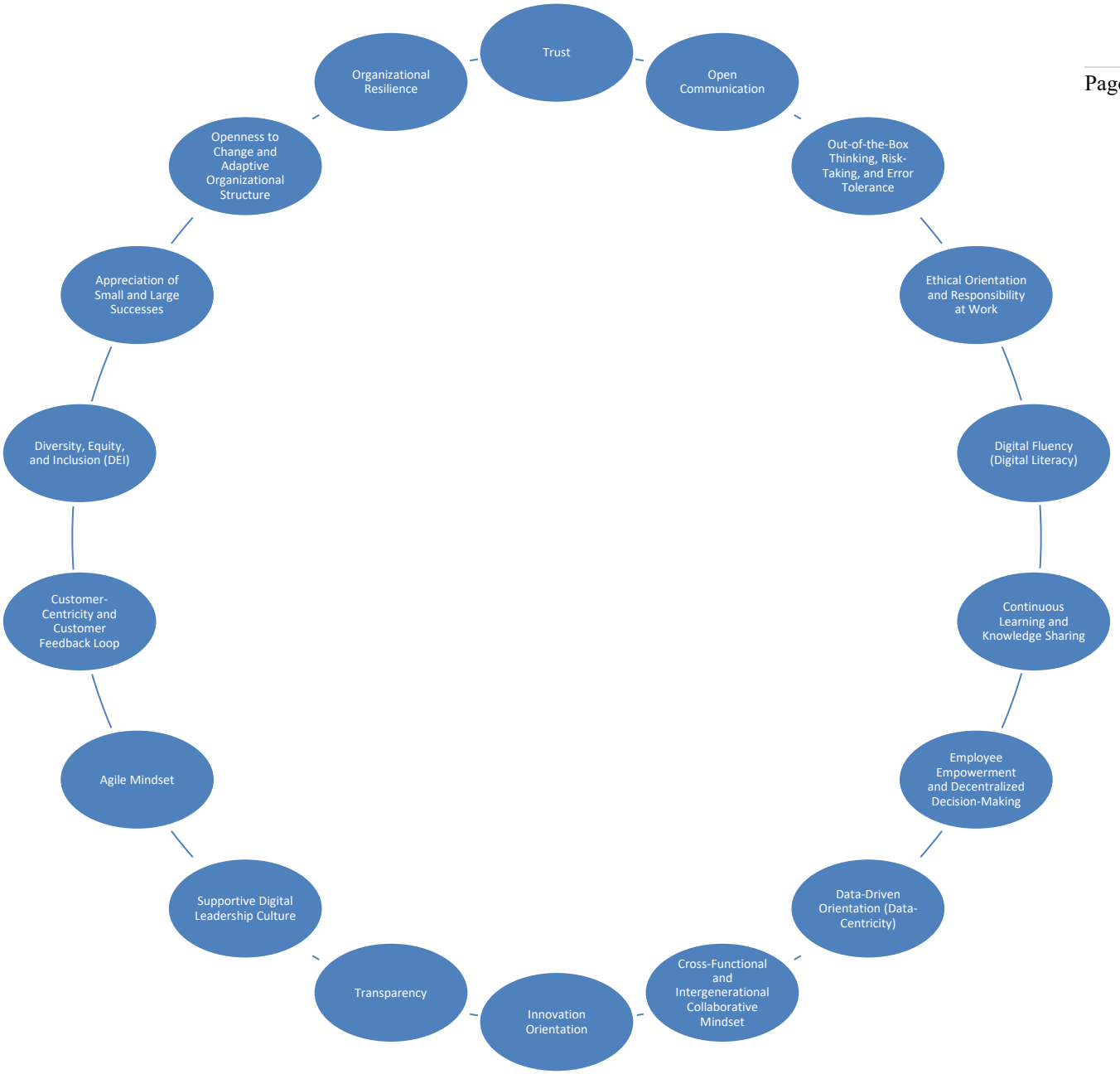

Figure 2. Identified Dimensions of Digital Culture

The key dimensions identified for digital culture are as follows.

Trust

Trust, as the most fundamental element of digital culture, shapes collaboration and communication processes, and organizations can build stable relationships grounded in mutual respect within a complex digital environment by strengthening transparency and integrity (Adomako & Nguyen, 2023).

In modern organizations, trust is an inseparable part of digital culture, both in internal relationships among employees and in external interactions with stakeholders.

Intra-organizational interpersonal trust provides the basis for collaboration, knowledge sharing, and innovation, and it facilitates improvements in organizational performance.

This trust is the foundation of effective teamwork in digital work environments characterized by virtual communication and remote collaboration (Bailey & Kurland, 2002; Baptista et al., 2020).

From an external perspective, trust extends to relationships with customers, suppliers, and partners, strengthening collaboration, information sharing, and value creation beyond organizational boundaries (Adomako & Nguyen, 2023).

In the digital era, establishing trust with external stakeholders is vital for achieving shared objectives and collective success (Farmakis et al., 2025).

Trust goes beyond face-to-face interactions and also encompasses virtual exchanges; factors such as website quality, privacy protection, and transaction security affect online trust (Acquisti et al., 2015).

Such trust is essential for e-commerce, online collaborations, and the development of virtual communities (Baptista et al., 2020).

Organizations should cultivate trust in their digital culture by prioritizing transparency, reliability, and integrity.

Trust is formed through consistent behavior, competence, and benevolence.

Leaders play a pivotal role in building trust by promoting open communication and ethical conduct (Avolio et al., 2020).

Open Communication

Open communication in organizations functions as a catalyst for building strong relationships between employees and the organization, and it strengthens active participation, collaboration, and continuous interaction.

The importance of open communication channels in increasing employees' commitment and loyalty is notable; when employees feel heard and respected, their sense of belonging and loyalty to the organization increases, and a culture of closeness and connection is formed (Susanti et al., 2022).

In addition, open communication encourages active participation and collaboration among employees and enhances creativity, problem-solving, and innovation.

Organizations that adopt transparent and open communication practices experience higher levels of workforce participation and collaboration (Susanti et al., 2022).

Creating an environment for the free exchange of ideas and recognizing contributions leads to leveraging collective intelligence and creativity and ensures continuous organizational growth (Amabile & Kramer, 2011).

In the digital era, digital tools and platforms facilitate open communication.

Digital communication technologies such as video conferencing, instant messaging, and collaborative workspaces play an important role in improving collaboration among geographically dispersed teams (Bailey & Kurland, 2002; Baptista et al., 2020).

These channels remove geographic barriers and strengthen cross-departmental interaction.

Ongoing interaction, reinforced by open communication, nurtures a culture of agility and adaptability in organizations and prepares them to respond effectively to market changes and emerging opportunities (Bitzer et al., 2021).

Organizations that prioritize continuous dialogue and active feedback are more capable of managing uncertainty and steering innovation (Cyfert et al., 2025).

By fostering a culture of learning and continuous improvement, these organizations can remain ahead and sustain their competitive advantage (Argote et al., 2023).

Accordingly, open communication plays a key role in shaping digital culture and strengthens employee participation, collaboration, and continuous interaction.

By focusing on open communication channels, organizations can build strong relationships with employees and realize innovation and sustainable growth (Fouladvand & Omoumi Milan, 2025).

Thinking Outside the Box, Risk-Taking, and Error Tolerance

Thinking outside the box, risk-taking, and tolerance for error are central aspects of digital culture in organizations that enable hypothesis building, risk management, and continuous learning.

Encouraging creative thinking and seeking unconventional solutions to complex problems allows organizations to excel in identifying new opportunities and advancing innovation (Amabile & Kramer, 2011; Birkinshaw et al., 2008).

Calculated risk-taking is also necessary for leading in a rapidly changing digital environment, and risk-taking behavior is positively associated with organizational performance and innovation.

Encouraging employees to take risks and explore new ideas strengthens a culture of innovation and agility (Cao et al., 2025).

Error tolerance is particularly important as part of the learning process; employees' ability to acknowledge mistakes without fear of punishment makes innovation, experimentation, and continuous improvement possible (Susanti et al., 2022).

Hypothesis building enables organizations to make data-informed decisions and plays an important role in strategic planning and reducing risks arising from ambiguity.

Effective risk management—especially in digital environments characterized by rapid technological change and disruptive innovations—is essential, and implementing robust risk-management approaches increases organizational resilience and adaptability (Baculard et al., 2017).

By creating appropriate conditions for creativity, risk-taking, and error tolerance, and by supporting continuous learning, leaders enhance employees' skills and knowledge so that organizations become more agile and successful in responding to market changes (Avolio et al., 2020; Birkinshaw et al., 2008).

If you intend to search the related scientific literature, you may use key phrases such as "creative thinking in digital culture," "risk-taking and innovation in organizations," "error tolerance and organizational learning," "risk management in the digital era," and "the role of leadership in strengthening creativity and risk-taking."

Ethics Orientation and Responsibility at Work

Ethics orientation and responsibility at work are foundational pillars of digital culture in organizations and shape behaviors, decision-making, and organizational identity.

Ethical leadership, by promoting integrity, transparency, and justice, strengthens trust and commitment to ethical standards within the organization (Avolio et al., 2020).

This ethical conduct goes beyond individual actions and includes organizational policies, procedures, and governance mechanisms that contribute to an ethical climate and strengthen employee accountability (Hoffman et al., 2024).

In the digital era, ethical considerations have become especially salient in areas such as data privacy, cybersecurity, and digital marketing.

By adhering to privacy and data-security principles, organizations build customer trust and protect their reputation (Acquisti et al., 2015).

Accountability also includes being answerable for actions and decisions, and it promotes a culture of integrity and professionalism through reinforcing clear expectations, performance feedback, and consequences for unethical behavior (Hoffman et al., 2024).

Privacy, as a core element of digital ethics, requires confidentiality protection and regulatory compliance, and it creates specific challenges in remote work and digital collaboration contexts, encouraging organizations to adopt secure communication technologies and relevant training.

Social and environmental responsibility are essential dimensions of organizational ethics that steer organizations toward sustainable business practices, stakeholder engagement, and societal improvement.

Emerging digital technologies can play an effective role in improving transparency, monitoring, and accountability in these areas.

Digital Fluency (Digital Fluency)

Digital fluency encompasses the knowledge, skills, and competencies required for the effective use of digital technologies and is recognized as a foundational element of digital mastery in organizations (Abidi et al., 2024).

These capabilities enable individuals to engage critically with digital information and technologies and to use digital tools and platforms for communication, collaboration, and knowledge sharing, which ultimately improves productivity and performance (Argote et al., 2023).

Digital fluency goes beyond technical skills and also includes critical thinking, problem-solving, and information literacy skills (Argote et al., 2023).

In addition, a culture of lifelong learning within organizations is necessary to maintain and enhance digital fluency.

Investing in training and development prepares employees to adapt to emerging technologies and increasing digital complexity (Billett, 2002).

Continuous learning and upskilling are vital for sustaining digital fluency.

Organizations that promote a culture of learning and innovation are more successful in developing digital mastery (Susanti et al., 2022).

Digital fluency also plays an important role in enhancing digital inclusion and reducing inequalities in access to technology.

By ensuring equitable access to digital resources and promoting digital fluency among a diverse workforce, organizations strengthen inclusion and diversity and increase innovation.

Beyond digital fluency, technology acceptance, digital skill development, and cultivating a digital mindset are considered psychological pillars of "digital readiness" within organizations.

Technology acceptance plays an important role in the successful use of digital tools.

Organizations that provide user-friendly interfaces, offer training and support, and respond to users' concerns can increase technology acceptance and digital readiness (Susanti et al., 2022).

Developing digital skills is essential for empowering employees to use technology effectively.

Providing targeted training in areas such as digital literacy, data analytics, and coding equips organizations to cope with technological change and improve decision-making (Ayokanmbi & Sabri, 2021).

Cultivating a digital mindset is necessary for driving innovation and organizational transformation.

Organizations that encourage a growth mindset and reward risk-taking strengthen a culture of innovation and improve digital readiness across the organization (Birkinshaw et al., 2008).

Organizations must also address psychological barriers to digital readiness, such as digital inequality and resistance to change.

Change-management strategies, employee involvement, transparent communication, and addressing concerns can be effective in overcoming resistance.

Through these approaches, the adoption of digital technologies and practices is facilitated.

Overall, technology acceptance, digital skill development, and cultivating a digital mindset are necessary for enhancing digital readiness and ensuring organizational success in today's digital landscape.

By investing in infrastructure, targeted training, promoting innovation, and managing change, organizations empower their workforce for digital transformation and thriving in the digital era.

Interdepartmental Thinking Among Employees

Interdepartmental collaborative thinking among employees—including cross-functional collaboration and intergenerational collaboration—is a vital aspect of digital culture in organizations.

It contributes to knowledge sharing, innovation, and organizational agility.

When employees across different departments collaborate effectively, they bring diverse perspectives, expertise, and insights into problem-solving and decision-making processes, thereby strengthening creativity and contributing to organizational success (Adomako & Nguyen, 2023; Argote et al., 2023).

In addition, intergenerational collaboration plays a fundamental role in leveraging the strengths and experiences of employees across different age groups.

By creating opportunities for mentoring, reverse mentoring, and intergenerational teamwork, organizations can capitalize on the collective knowledge and expertise of a multigenerational workforce, thereby enabling innovation and adapting to evolving market needs (Bellotti et al., 2022).

In the digital era, technology functions as an enabler of cross-functional and intergenerational collaboration by facilitating communication, knowledge sharing, and collaboration across organizational boundaries.

Digital tools such as collaboration platforms, video conferencing, and project management software enable seamless communication and coordination among employees regardless of their department or location and strengthen a culture of teamwork and collaboration (Bailey & Kurland, 2002; Baptista et al., 2020).

Moreover, organizational leaders play a pivotal role in strengthening cross-functional and intergenerational collaboration by promoting a culture of openness, participation, and cooperation.

Leaders who focus on communication, trust-building, and relationship-building initiatives create an environment in which employees feel empowered to collaborate across departments and generations, which enhances collective success and organizational resilience (Avolio et al., 2020).

Cross-functional collaborative thinking and intergenerational collaboration are essential dimensions of digital culture that contribute to organizational agility, innovation, and competitiveness.

By strengthening a collaborative culture, leveraging digital technologies, and promoting leadership support, organizations can benefit from collective intelligence and diverse workforce perspectives and thereby achieve sustainable growth and success in the digital era.

Innovation

Innovation is a cornerstone of digital culture in organizations and, in the digital era, generates creativity, flexibility, and competitive advantage.

By fostering a culture of innovation, organizations can unlock the creative potential of their workforce, drive continuous improvement, and remain ahead in today's fast-paced business environment (Amabile & Kramer, 2011; Birkinshaw et al., 2008).

Moreover, innovation in a digital context extends beyond product development and includes process innovation, business model innovation, and organizational innovation.

Organizations that invest in dynamic capabilities—such as the ability to sense and respond to market change, reconfigure resources, and innovate continuously—are better positioned to thrive in uncertain and turbulent environments (Ahenkora & Adjei, 2012).

In the digital era, technology acts as a catalyst for innovation, enabling organizations to leverage emerging technologies such as artificial intelligence, data analytics, and the Internet of Things to create transformative change.

Organizations that embrace digital transformation and invest in digital capabilities are more likely to innovate successfully and create value for customers and stakeholders (Bhimani et al., 2020; Cao et al., 2025).

In addition, cultivating a culture of experimentation and risk-taking is essential for promoting innovation in organizations.

By encouraging employees to test new ideas, learn from failures, and embrace uncertainty, organizations can create an environment in which innovation flourishes and novel ideas are nurtured (Beer & Nohria, 2000; Birkinshaw et al., 2008).

Innovation is a vital element of digital culture that drives organizational success and sustainability in the digital era.

By fostering an innovation culture, leveraging digital technologies, developing dynamic capabilities, and promoting experimentation and risk-taking, organizations can identify new opportunities, drive growth, and sustain their competitive position in an increasingly digital and dynamic business landscape (Ahenkora & Adjei, 2012; Birkinshaw et al., 2008; Cao et al., 2025).

Transparency

Transparency is a core pillar of digital culture in organizations that enables trust, accountability, and collaboration among stakeholders.

Organizational transparency, by strengthening open interactions and providing timely and accurate information, supports the development of internal and external trust and cohesion (Hoffman et al., 2024).

Transparent communication practices enable organizations to share information openly, clarify goals and expectations, and involve employees in decision-making processes, thereby promoting a culture of openness and trust (Susanti et al., 2022).

Furthermore, transparency in a digital context extends beyond internal communication and also encompasses external transparency, including transparency in business practices, governance, and sustainability reporting.

Organizations that embed transparency in digital disclosures and online platforms demonstrate their commitment to accountability and stakeholder engagement, thereby strengthening trust and enhancing their market reputation (Hoffman et al., 2024).

In the digital era, technology acts as an enabler of transparency by allowing organizations to disseminate information more effectively and involve stakeholders in dialogue and collaboration (Baptista et al., 2020).

Digital infrastructures such as enterprise social networks, intranet portals, and online dashboards provide mechanisms for organizations to share information transparently, collect stakeholder feedback, and enhance transparency in decision-making processes (Agostino & Costantini, 2022).

In addition, transparency is closely linked to ethical leadership and organizational culture.

Leaders who prioritize transparency—by role-modeling openness and holding themselves accountable—build employees' trust and confidence and thereby promote a culture of transparency and ethical conduct across the organization (Avolio et al., 2020).

Transparency is a foundational dimension of digital culture that enhances trust, accountability, and collaboration in organizations.

By adopting transparent communication practices, leveraging technology to facilitate transparency, and nurturing ethical leadership, organizations can strengthen their reputation, improve stakeholder relationships, and achieve sustainable success in the digital era (Agostino & Costantini, 2022; Hoffman et al., 2024).

A Leadership-Support Culture for Transformation

A supportive leadership culture is a key element for successfully guiding digital transformation in organizations.

It enables employees to adapt to technological change, embrace innovation, and navigate complexity.

Research emphasizes the pivotal role of leadership support in facilitating digital transformation initiatives and overcoming resistance to change (Armenakis et al., 1993; Cyfert et al., 2025).

Leaders who support digital initiatives provide the necessary resources and support and cultivate a culture of experimentation and learning, creating an environment in which employees feel empowered to adopt digital technologies and drive organizational change.

Moreover, leadership support for digital transformation extends beyond individual actions and also encompasses organizational structures, processes, and practices.

Studies highlight the importance of aligning leadership behaviors with organizational goals and values to cultivate a supportive culture for digital transformation (Akbari et al., 2025; Susanti et al., 2022).

Leaders who articulate a clear vision, set strategic priorities, and establish accountability mechanisms create a sense of purpose and direction and guide employees through the complexities of digital transformation.

Beyond providing direction and support, leaders play an essential role in building trust and psychological safety within teams, which is necessary for fostering innovation and experimentation.

A supportive environment in which employees feel safe to express themselves, share concerns, and collaborate openly facilitates creativity, problem-solving, and innovation in digital contexts (Amabile & Kramer, 2011; Susanti et al., 2022).

Leaders should also model openness to adopting digital technologies and adapting to changing conditions.

Research on leadership approaches in contemporary organizations highlights that leaders who demonstrate integrity, transparency, and adaptability strengthen employees' trust and confidence and cultivate a culture of commitment to digital transformation (Akbari et al., 2025; Avolio et al., 2020).

A leadership-support culture for transformation is a fundamental dimension of digital culture that drives organizational success in the digital era.

By supporting digital initiatives, aligning leadership behaviors with organizational objectives, strengthening psychological safety, and modeling adaptive and ethical leadership, leaders can create an environment in which employees feel empowered to embrace digital technologies, drive innovation, and achieve sustainable growth and success.

Agile Mindset

An agile mindset is one of the key pillars of digital culture in organizations. By emphasizing flexibility, collaboration, and innovation, it enables success in confronting uncertainty and environmental change.

Organizations that cultivate this mindset among their employees are better able to cope with the complexities of digital transformation and to thrive in dynamic and competitive environments (Cyfert et al., 2025).

The core characteristic of an agile mindset is the acceptance of trial and error, continuous learning from failure, and adaptation to changing market conditions.

Applying agile principles such as close collaboration with stakeholders, iterative development, and a strong focus on feedback and continuous improvement increases responsiveness to customer needs, enhances customer satisfaction, and strengthens a culture of innovation and adaptability (Binboga & Gumussoy, 2024; Bouncken et al., 2023).

An agile mindset is not limited to project management; rather, it encompasses broader dimensions of organizational culture, leadership style, and workforce capabilities.

Leaders play a vital role in strengthening this mindset by creating trust-based environments, supporting team autonomy, encouraging experimentation, and removing barriers to change, thereby providing the conditions necessary for agility to flourish (Avolio et al., 2020; Kocak & Pawlowski, 2023).

Institutionalizing an agile mindset requires changes in organizational structures, processes, and ways of thinking.

The use of cross-functional teams, iterative planning, continuous feedback loops, and a focus on organizational learning play an important role in the success of agile initiatives (Argote et al., 2023; Baptista et al., 2020).

In addition, defining key performance indicators (KPIs) and clear metrics for monitoring progress helps teams make more informed decisions, identify areas for improvement, and align their performance with overarching organizational objectives (Cosa & Torelli, 2024).

Accountability for outcomes is another cornerstone of the agile mindset; by emphasizing ownership, responsibility, and self-management, it empowers teams to innovate, act effectively, and strive for excellence (Avolio et al., 2020).

Ultimately, organizational agility is not possible without flexibility and readiness to adjust direction in response to change.

Organizations that encourage their teams to respond rapidly, tolerate ambiguity, and iterate in a timely manner are better positioned to create sustained value and keep pace with market transformations (Baptista et al., 2020; Cyfert et al., 2025).

An agile mindset not only transforms how teams think and act but also shapes leadership behaviors and cultural dynamics.

Customer Orientation

Customer orientation, with a strong focus on the customer feedback loop, is regarded as a core pillar of digital culture in organizations and serves as a foundation for enhancing customer satisfaction, strengthening loyalty, and achieving sustainable business growth.

Organizations that prioritize customer needs, preferences, and feedback are better able to deliver superior customer experiences, build long-term relationships, and achieve a distinctive market position (Farmakis et al., 2025).

The customer feedback loop plays a critical role in enabling organizations to collect, analyze, and act upon real-time feedback.

By leveraging digital technologies such as customer relationship management (CRM) systems, social media monitoring tools, and online surveys, organizations can gain deep insights into customer needs, identify areas for improvement, and align their products and services with evolving market expectations (Ghafoori et al., 2024).

Beyond collecting feedback, organizations must also focus on closing the feedback loop by responding to customer concerns and opinions.

Timely and effective responses not only reinforce customers' sense of being heard but also enhance trust and loyalty, signaling the organization's commitment to customer centricity and continuous improvement of the customer experience (Hoffman et al., 2024).

The customer feedback loop is not limited to traditional tools such as surveys but also includes social media, online reviews, and customer-centered digital communities.

In the digital era, a large share of customer interactions and feedback occurs on digital platforms; therefore, active monitoring and effective engagement in these spaces can strengthen brand image, increase interaction, and foster a sense of belonging among customers (Bhimani et al., 2020; Cyfert et al., 2025).

Ultimately, adopting a customer-centric approach and institutionalizing feedback-loop systems are key prerequisites for success in today's digitalized environment.

By focusing on customer needs, effectively collecting and utilizing feedback, and fostering a culture of responsiveness and interaction, organizations can elevate the customer experience, build long-term loyalty, and achieve sustainable competitive advantage.

Diversity, Equity, and Inclusion (DEI)

Diversity and inclusion are fundamental elements of digital culture in organizations and play a critical role in enhancing innovation, creativity, and organizational flexibility.

Organizations that embrace diversity across dimensions such as demographics, perspectives, individual experiences, and cultural backgrounds can benefit from a broader range of insights and ideas.

This cognitive diversity can significantly improve decision-making quality and problem-solving capabilities, particularly in digital contexts (Bouncken et al., 2023).

Alongside diversity, inclusion is essential for creating an environment in which all employees feel valued, respected, and empowered.

An inclusive culture allows individuals to participate actively with confidence and to express their unique talents and perspectives.

Organizational leadership plays a central role in this process; leaders who value diverse viewpoints and foster interaction, collaboration, and mutual respect create environments conducive to personal growth, creativity, and talent development (Avolio et al., 2020).

In the digital era, diversity and inclusion extend beyond internal organizational structures and must also be reflected in product design, service delivery, and customer interaction practices.

Organizations that consider cultural, social, and behavioral diversity in product development and marketing are better positioned to enhance customer satisfaction, loyalty, and brand positioning in the market (Adomako & Nguyen, 2023).

Digital technologies also serve as powerful enablers of inclusion.

Tools such as remote work arrangements, flexible scheduling, and virtual collaboration platforms create opportunities for broader participation from diverse groups.

This is particularly important for employees with special needs, family responsibilities, or physical limitations.

Strategic use of these technologies can support inclusive work environments, improve work–life balance, and attract diverse talent (Bailey & Kurland, 2002; Baptista et al., 2020).

Overall, promoting diversity and inclusion is a vital prerequisite for building a dynamic and innovative digital culture.

By embracing differences, creating participatory and respectful environments, considering diversity in product development, and strategically leveraging technology, organizations can unlock human potential, accelerate innovation, and move toward sustainable growth and success (Bouncken et al., 2023).

Appreciating Small and Large Achievements

In digital organizational cultures, recognizing both small and large achievements is a vital element that enhances employee motivation, reinforces positive behaviors, and improves overall organizational morale (Amabile & Kramer, 2011).

Organizations that value progress and accomplishments—even minor ones—can cultivate a culture of appreciation and create supportive environments in which employees feel valued and motivated to contribute actively (Beer & Nohria, 2000).

Celebrating achievements plays an important role in strengthening employee commitment and engagement with organizational goals.

Employees who feel recognized and appreciated tend to be more engaged and committed and perform their roles with greater motivation, leading to improved productivity and organizational success in the digital era (Avolio et al., 2020).

Moreover, celebrating achievements contributes to strengthening a culture of collaboration and teamwork.

Collective celebrations can foster a sense of belonging, cohesion, and trust among team members and support cooperation and mutual support in pursuing shared objectives (Ancona & Caldwell, 1992).

Recognition of achievements is also a powerful tool for reinforcing desired behaviors and encouraging continuous improvement.

Acknowledging and rewarding accomplishments not only validates past successes but also motivates employees to exert greater effort, innovate, and exceed expectations, thereby driving organizational growth and innovation in digital environments (Amabile & Kramer, 2011).

Accordingly, recognizing small and large achievements is essential for building and strengthening a culture of appreciation and excellence in digital organizations.

By acknowledging progress, reinforcing positive behaviors, promoting collaboration, and supporting continuous improvement, organizations can create motivating and supportive work environments in which employees feel valued, empowered, and inspired to achieve their full potential (Avolio et al., 2020; Beer & Nohria, 2000).

Openness to Change

Openness to change and adaptive organizational structures are core components of digital culture in organizations and provide the foundation for agility, flexibility, and innovation in response to rapid market transformations.

Organizations that foster a culture of change acceptance create environments in which employees are more willing to embrace new ideas, technologies, and ways of working, thereby enhancing organizational adaptability and agility in the digital era (Armenakis et al., 1993).

Adaptive organizational structures play a critical role in enabling organizations to respond effectively to change and uncertainty.

Organizations characterized by flexible structures, decentralized decision-making, and cross-functional teams can rapidly reallocate resources and respond to emerging opportunities (Birkinshaw et al., 2008).

In this context, cultivating a culture of experimentation, continuous learning, and tolerance for failure is equally important.

Organizations that promote a growth mindset and support innovation encourage employees to experiment and learn, thereby achieving sustainable competitive advantage in digital environments (Amabile & Kramer, 2011).

Digital technologies such as automation, data analytics, and artificial intelligence further enhance organizational flexibility and agility.

By facilitating decision-making, optimizing processes, and generating predictive insights, these technologies enable organizations to anticipate market changes and respond more rapidly (Anthony & Putz, 2021).

The establishment of digital project management offices, the development of digital leadership, and the implementation of transformational strategies in both public and private sectors represent examples of successful structural adaptation during digital transformation.

These initiatives demonstrate the critical role of leadership approaches, technological support, and organizational structure in enhancing agility and adaptability in digital contexts (Akbari et al., 2025; Cyfert et al., 2025).

Overall, openness to change and adaptive organizational structures are vital components of organizational success in fast-paced and evolving digital environments.

Organizations that institutionalize these values within their culture are better positioned to achieve sustainable growth, continuous innovation, and long-term competitiveness in today's complex and uncertain landscape.

Resilience

Resilience, as one of the main pillars of digital culture in organizations, plays an important role in enabling them to cope with uncertainty, adapt to change, and thrive in dynamic environments.

Organizations that institutionalize a culture of resilience can anticipate unexpected events, build preparedness, and respond effectively.

This contributes to continuity of performance and the preservation of operational sustainability in turbulent digital contexts (Bitzer et al., 2021; Cyfert et al., 2025).

Resilience is not limited to reacting to crises; it also includes the capacity to learn from obstacles and failures and convert them into opportunities for growth.

Organizations that encourage continuous learning, experimentation, and knowledge sharing create a culture in which employees are empowered to adapt to change, innovate, and navigate challenges (Argote et al., 2023; Billett, 2002).

Moreover, strengthening resilience requires building structures, systems, and networks that can withstand disruptions.

The use of digital technologies—such as automation and digitally enabled process redesign—can be an effective mechanism for enhancing organizational resilience by increasing flexibility and responsiveness through the digitization of processes (Attaran et al., 2019; Bitzer et al., 2021).

In addition, low-cost and creative innovation can support organizational robustness during digitalization.

A focus on cost-effective innovation is particularly relevant for small and medium-sized organizations in emerging markets as a practical pathway for addressing challenges and sustaining continuity (Hasan et al., 2025; Sahar et al., 2025).

The role of digital transformation in strengthening resilience is not limited to technical dimensions.

Digital transformation can also elevate digital leadership, improve employee performance, and enhance organizational commitment, which collectively increases robustness in the face of challenges (Akbari et al., 2025; Cyfert et al., 2025).

Ultimately, digitalization can provide a foundation for stronger adaptability, the use of predictive data, and smarter decision-making, thereby improving resilience.

As emphasized in recent research, digital transformation can function as a strategic platform for reinforcing organizational capacity to withstand crises (Cyfert et al., 2025; Sahar et al., 2025).

By cultivating a culture of resilience, strengthening organizational learning, designing robust structures, and strategically leveraging digital technologies, organizations can advance adaptability, innovation, and sustainable success in the digital era.

Continuous Learning

Continuous learning and knowledge sharing among employees are key pillars of digital culture in organizations.

These factors enable organizations to innovate, adapt to rapid change, and maintain competitive positioning in highly volatile and competitive environments.

Within such a culture, employees are continuously encouraged to acquire new knowledge, develop relevant skills, and adapt to emerging technologies and market trends (Billett, 2002).

Organizations that prioritize continuous learning can strengthen both individual and organizational capabilities and perform more effectively in digital transformation processes.

This learning is formed not only through formal training but also through informal activities, hands-on experience, and daily interactions (Billett, 2002).

In parallel, intra-organizational knowledge sharing is crucial for leveraging collective expertise and plays a key role in improving decision-making, accelerating problem-solving, and facilitating innovation.

Organizations that enable knowledge sharing—by establishing infrastructures for cross-functional collaboration, feedback sessions, learning groups, and collaborative technologies—create environments in which knowledge flows easily and employee isolation and “siloed work” are reduced (Argote et al., 2023).

Beyond formal training, informal learning and the transfer of experience also strengthen digital culture.

Organizations can design mentoring programs, communities of practice, and internal social platforms that allow employees to share ideas, learn from one another’s experiences, and apply new insights in daily work.

Digital technologies also play a major enabling role in learning and knowledge sharing.

Tools such as online learning platforms, knowledge management systems, cloud-based collaboration tools, and enterprise social networks make it possible to store, retrieve, transfer, and access knowledge rapidly.

By removing time and location constraints, these technologies make learning more inclusive and agile, and they allow knowledge to circulate as a strategic organizational asset that supports better decision-making and innovation (Argote et al., 2023; Baptista et al., 2020).

Overall, continuous learning and knowledge sharing are core structural pillars of digital culture.

Organizations that develop these components can not only keep pace with rapid environmental change but can also make innovation an inseparable part of organizational identity and operate more dynamically and successfully in digital arenas.

Employee Empowerment and Broader Decision Rights

Employee empowerment and the delegation of broader decision rights are key elements of digital culture in organizations.

This approach, by creating autonomy, psychological ownership, and decision latitude, provides a strong foundation for innovation, commitment, and meaningful employee participation (Akhter, 2021).

In environments where employees are supported by management and are permitted to take initiative, the likelihood of creativity and organizational advancement increases substantially (Amabile & Kramer, 2011).

Empowerment not only strengthens innovation but also increases organizational agility and rapid responsiveness to change.

When decision rights are distributed across organizational levels and employees play active roles in decisions, organizations can adapt more quickly to changing market conditions and capitalize on emerging opportunities (Cyfert et al., 2025).

This approach also enhances job satisfaction, motivation, and employee loyalty and improves organizational performance by strengthening employee commitment (Akhter, 2021).

In addition, digitally enabled coaching can function as a key empowerment mechanism in digital contexts by enabling flexible delivery of targeted training, continuous feedback, and individualized development planning (Billett, 2002).

By reducing time and location barriers, supporting individualized needs, and enabling peer-to-peer learning opportunities, digital coaching can effectively enhance skills and performance (Billett, 2002).

It can also support the creation of a learning ecosystem by strengthening collaboration, knowledge sharing, and belongingness (Argote et al., 2023).

Data-Driven Orientation

Data-driven orientation is widely recognized as a core pillar of digital culture in organizations and emphasizes the strategic importance of data-informed decision-making, insight generation, and innovation (Ayokanmbi & Sabri, 2021; Ghafoori et al., 2024).

By prioritizing data as a strategic asset and integrating it into decision-making processes, organizations can uncover valuable insights, identify opportunities, and steer digital transformation in the contemporary business landscape (Ghafoori et al., 2024).

In addition, data-driven orientation enables organizations to develop deeper customer understanding and deliver more personalized experiences.

By analyzing customer data, organizations can identify behavioral patterns, preferences, and feedback, and then adapt products, services, and marketing strategies to evolving customer needs and expectations, which strengthens loyalty and satisfaction in the digital era (Bhimani et al., 2020; Ghafoori et al., 2024).

Data-driven practices can also improve efficiency and operational excellence.

Organizations that embed data-informed decision-making into their processes can optimize workflows, streamline operations, and create continuous performance improvement, ultimately increasing agility and competitiveness (Cyfert et al., 2025; Ghafoori et al., 2024).

Moreover, data-driven orientation supports the discovery of new opportunities and forecasting market trends, facilitating innovation and business model renewal.

Using large-scale data from diverse sources helps organizations identify emerging trends, detect market gaps, and develop innovative products and services aligned with changing customer preferences (Ayokanmbi & Sabri, 2021; Bhimani et al., 2020).

Data-informed decision-making enables organizations to identify opportunities and threats more accurately, discover hidden patterns and relationships, and make more effective decisions accordingly.

Therefore, by embracing data as a strategic asset, organizations can generate valuable insights, improve customer experience, enhance operational performance, and strengthen innovation, thereby supporting sustainable growth and success in the digital era (Ayokanmbi & Sabri, 2021; Ghafoori et al., 2024).

4. Discussion and Conclusion

The findings of this study provide a comprehensive and integrative understanding of digital culture as a multidimensional construct that plays a pivotal role in enabling successful digital transformation in large organizations, particularly within technology-intensive and infrastructure-based sectors. The results demonstrate that digital culture is not a peripheral or supportive element of transformation but rather a core organizational capability that shapes how technologies are interpreted,

adopted, and translated into sustained organizational value. This finding aligns with prior research emphasizing that digital transformation is fundamentally a socio-organizational process rather than a purely technological one (Baculard et al., 2017; Kane, 2023).

One of the central results of this study is the identification of trust and transparency as foundational dimensions of digital culture. The analysis revealed that trust operates at multiple levels—interpersonal, interdepartmental, and interorganizational—and directly facilitates collaboration, knowledge sharing, and digital coordination. This result is consistent with earlier studies highlighting the importance of trust in digitally mediated work environments, where virtual interactions, data sharing, and algorithmic systems replace traditional face-to-face controls (Acquisti et al., 2015; Adomako & Nguyen, 2023). Transparency, particularly in decision-making processes and data usage, was found to reinforce trust and accountability, supporting prior evidence that transparent digital practices enhance organizational legitimacy and stakeholder confidence (Agostino & Costantini, 2022; Hoffman et al., 2024).

The findings further indicate that open communication and cross-functional collaboration constitute a critical enabler of digital culture. Organizations characterized by open communication channels and strong interdepartmental interaction were better positioned to leverage diverse expertise and respond adaptively to rapid technological and market changes. This result corroborates earlier work suggesting that boundary-spanning communication and collaboration enhance innovation and collective problem-solving in complex organizations (Ancona & Caldwell, 1992; Argote et al., 2023). In digital contexts, such collaboration becomes even more salient due to the interdependence between IT units, business functions, and external partners (Bitzer et al., 2021; Bouncken et al., 2023).

Another significant finding concerns the role of agility-oriented and innovation-supportive mindsets within digital culture. The results demonstrate that organizations fostering experimentation, risk-taking, and tolerance for failure are more capable of navigating uncertainty and sustaining innovation over time. This aligns with the dynamic capabilities perspective, which emphasizes the ability to sense, seize, and reconfigure resources in turbulent environments (Ahenkora & Adjei, 2012; Birkinshaw et al., 2008). The presence of agile mindsets within organizational culture supports continuous iteration, rapid learning, and adaptive strategy formulation, consistent with prior research on agile and digitally enabled organizations (Cyfert et al., 2025; Farmakis et al., 2025).

The study also highlights ethical orientation and responsibility as integral components of digital culture. As organizations increasingly rely on data analytics, artificial intelligence, and digital platforms, ethical considerations related to privacy, security, and responsible data use become deeply embedded in cultural norms. The findings confirm that organizations with strong ethical cultures are better equipped to manage digital risks while maintaining trust among employees, customers, and regulators. This supports previous literature emphasizing the convergence of digital transformation, governance, and ethical accountability (Acquisti et al., 2015; Hasan et al., 2025). Ethical digital culture thus emerges as both a risk-mitigation mechanism and a source of long-term organizational legitimacy (Hoffman et al., 2024; Sahar et al., 2025).

A further key result relates to digital fluency, continuous learning, and knowledge sharing. The findings indicate that digital culture is sustained through ongoing capability development rather than one-time skill acquisition. Organizations that institutionalize learning processes, promote digital fluency, and enable systematic knowledge exchange demonstrate higher levels of transformation maturity. This result is strongly aligned with research emphasizing learning-oriented cultures as prerequisites for digital adaptability and innovation (Abidi et al., 2024; Billett, 2002). Knowledge-sharing mechanisms were found to reduce silos and enhance collective intelligence, echoing integrative frameworks of organizational learning and knowledge management (Argote et al., 2023; Baptista et al., 2020).

The analysis further confirms the importance of employee empowerment and distributed decision-making within digital culture. Empowered employees were shown to exhibit higher engagement, faster responsiveness, and greater ownership of digital initiatives. This finding is consistent with prior studies demonstrating that empowerment enhances agility and innovation by reducing hierarchical bottlenecks and enabling localized problem-solving (Avolio et al., 2020; Beer & Nohria, 2000). In digitally transforming organizations, empowerment also facilitates the effective use of digital tools by placing decision authority closer to data and operational realities (Ayokanmbi & Sabri, 2021; Ghafoori et al., 2024).

Leadership emerged as a central integrative mechanism linking multiple dimensions of digital culture. The findings show that leadership support, vision alignment, and role modeling significantly influence the internalization of digital values and behaviors. Leaders were found to act as cultural catalysts by legitimizing experimentation, reinforcing ethical standards, and aligning organizational structures with digital goals. This result is strongly supported by existing evidence on digital leadership and transformational leadership in technology-driven change contexts (Akbari et al., 2025; Rahmati-Kahrhroodi et al., 2021). The mediating role of leadership between digital strategy and organizational outcomes further confirms the cultural nature of digital transformation (Cyfert et al., 2025; Shirazi et al., 2021).

The findings also underscore the relevance of resilience and adaptability as cultural attributes in digital environments. Organizations characterized by resilient digital cultures demonstrated a greater ability to absorb shocks, recover from disruptions, and reconfigure processes in response to crises. This aligns with recent research highlighting resilience as a strategic outcome of digitally enabled organizational cultures (Ghafoori et al., 2024; Nkgowe et al., 2025). Digital culture thus contributes not only to innovation and efficiency but also to organizational sustainability and continuity in volatile environments.

Taken together, the results support the view that digital culture is a systemic configuration of interrelated dimensions rather than a collection of isolated traits. The interaction between trust, learning, empowerment, ethics, agility, and leadership creates reinforcing feedback loops that either accelerate or hinder digital transformation. This integrative perspective addresses fragmentation in prior studies and extends existing conceptual models by demonstrating how cultural elements co-evolve within digitally transforming organizations (Cosa & Torelli, 2024; Karami et al., 2024).

From a theoretical standpoint, the findings contribute to the literature by consolidating diverse streams—organizational culture, digital transformation, leadership, and innovation—into a coherent framework. By grounding digital culture in both behavioral and structural dimensions, the study advances understanding beyond technology-centric or capability-based explanations (Berawi, 2018; Bhimani et al., 2020). Moreover, the sectoral focus enhances contextual sensitivity, responding to calls for industry-specific digital culture research (Asgharnia et al., 2024; Pourmoghadam et al., 2025).

Despite its contributions, this study has several limitations. First, the reliance on qualitative synthesis and expert perspectives, while valuable for theory development, may limit generalizability across all organizational contexts. Second, the focus on large organizations may not fully capture the dynamics of digital culture in small and medium-sized enterprises. Third, cultural dimensions were identified conceptually rather than empirically validated through large-scale quantitative testing, which may limit causal inference.

Future research should empirically test the proposed digital culture framework using quantitative methods such as structural equation modeling or multilevel analysis. Longitudinal studies would be particularly valuable for examining how digital culture evolves over time and interacts with stages of digital transformation. Comparative studies across industries and national contexts could further enhance understanding of contextual moderators shaping digital culture. Additionally, future work could explore the micro-level psychological mechanisms through which digital culture influences individual behavior and performance.

Practitioners should view digital culture as a strategic asset rather than an abstract concept and actively integrate cultural considerations into digital transformation initiatives. Managers are encouraged to invest in leadership development, continuous learning systems, and ethical governance structures that reinforce digital values. Organizations should regularly assess cultural readiness alongside technological readiness and align structures, incentives, and communication practices with desired digital behaviors. By intentionally cultivating digital culture, organizations can enhance agility, resilience, and long-term competitiveness in an increasingly digital environment.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

Acknowledgments

Authors thank all who helped us through this study.

Conflict of Interest

The authors report no conflict of interest.

Funding/Financial Support

According to the authors, this article has no financial support.

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