MSELS Management Systems Evolution and Leadership Studies

VOL. 2 | NO. 2 | 2025

The Transition from Bureaucratic Management to Intelligent Organizational Systems: A Grounded Theory Approach

Yalda Mansouri[1], Ardavan Bayat[1]*, Fereshteh Ansari[2]

1. Department of Industrial Management, Shahid Chamran University of Ahvaz, Ahvaz, Iran
2. Department of Business Management, Razi University, Kermanshah, Iran

Abstract

This study aimed to develop a grounded theoretical model explaining how organizations move from rule-bound bureaucratic management toward intelligent organizational systems characterized by data-driven decision-making, adaptive coordination, and digitally mediated knowledge flows. This qualitative study was conducted using a grounded theory approach. Data were collected through semi-structured interviews with 24 managers, senior experts, digital transformation specialists, and organizational development professionals working in public, semi-public, and private organizations in Tehran, Iran. Participants were selected through purposive and theoretical sampling to capture diverse experiences of bureaucratic structures, digital transformation, intelligent systems, and organizational redesign. Interviews continued until theoretical saturation was reached, which occurred after the twenty-first interview, followed by three confirmatory interviews. Data were analyzed using open, axial, and selective coding with the support of NVivo software. Constant comparison, memo writing, participant validation, and peer review were used to enhance credibility and analytical rigor. The analysis generated five main categories: procedural rigidity and bureaucratic overload, data-driven sensemaking and intelligent decision architecture, capability reconfiguration, platform-based coordination, and ethical-adaptive governance. The core category was identified as "intelligence-mediated organizational adaptability." The findings showed that transition does not occur merely through the introduction of digital technologies; rather, it requires the reconstruction of decision rights, knowledge flows, managerial identity, employee capabilities, and governance mechanisms. Participants emphasized that intelligent systems become effective only when formal rules are combined with learning routines, algorithmic transparency, cross-functional collaboration, and human judgment. The study suggests that the transition from bureaucratic management to intelligent organizational systems is a sociotechnical and evolutionary process. Intelligent organizing emerges when organizations move beyond procedural control and develop adaptive structures that integrate data, people, technology, and ethical accountability. The proposed model contributes to management theory by explaining how bureaucratic stability and digital intelligence can be reconciled through adaptive governance.

Keywords: bureaucratic management; intelligent organizational systems; grounded theory; digital transformation; adaptive governance; organizational intelligence.

✉ *CORRESPONDING AUTHOR'S EMAIL

ardavan.bayat.mgt@gmail.com

❝ HOW TO CITE

Mansouri, Y., Bayat, A., & Ansari, F. (2025). The Transition from Bureaucratic Management to Intelligent Organizational Systems: A Grounded Theory Approach. *Management Systems Evolution and Leadership Studies,* 2(3), 53-62.

1. Introduction

Bureaucratic management has long been one of the most influential organizing logics in modern institutions. Its classical promise was based on formal authority, hierarchical coordination, specialization, impersonal rules, written documentation, and predictable procedures. In Weber's formulation, bureaucracy provided a rational-legal alternative to charismatic or traditional authority by creating organizational order through codified roles and rule-based administration (Weber, 1978). For industrial-era organizations, this logic offered important advantages: continuity, standardization, accountability, scalability, and protection against arbitrary managerial discretion. As organizations expanded in size and complexity, bureaucratic structures enabled coordination across large workforces and geographically dispersed activities. However, the same features that once created stability have increasingly become sources of rigidity in volatile, uncertain, complex, and digitally mediated environments.

The contemporary organizational environment is shaped by rapid technological change, data abundance, platform-based interaction, artificial intelligence, automation, and increasingly fluid boundaries between organizations, customers, suppliers, and institutional stakeholders. Digital transformation is not limited to the digitization of existing procedures; it involves strategic and organizational change enabled by combinations of information, computing, communication, and connectivity technologies (Vial, 2019). This transformation challenges the assumption that decision-making can remain primarily hierarchical, sequential, and rule-driven. Organizations now face problems that require real-time sensing, cross-functional collaboration, continuous learning, and the capacity to reconfigure resources rapidly. Consequently, bureaucratic systems that rely heavily on vertical approval chains and predefined procedures may struggle to respond to dynamic environments.

The transition toward intelligent organizational systems can be understood as part of a broader shift from mechanical models of management to adaptive, knowledge-based, and digitally enabled forms of organizing. Burns and Stalker (1961) distinguished between mechanistic systems, which are suitable for stable environments, and organic systems, which are more appropriate for changing conditions. Similarly, Thompson (1967) argued that organizations must manage uncertainty by designing structures and processes that buffer, adapt to, or absorb environmental complexity. These classical insights remain relevant because intelligent systems do not eliminate the need for structure; rather, they require more flexible, information-rich, and learning-oriented structures. In this sense, intelligent organizational systems are not simply technology-intensive organizations. They are organizations capable of using digital technologies, data analytics, knowledge integration, and human judgment to improve sensing, decision-making, coordination, and adaptation.

The limitations of bureaucracy have become especially visible in organizations where digital tools are implemented without corresponding changes in managerial logic. When technologies are added to existing bureaucratic structures, they may accelerate paperwork rather than reduce it, strengthen surveillance rather than learning, and reproduce hierarchical control in digital form. Newman et al. (2022) argue that artificial intelligence and advanced digital technologies can reinforce bureaucratic tendencies rather than automatically replacing them. This point is theoretically important because it prevents a technologically deterministic view of organizational intelligence. Intelligent systems do not emerge from technology alone. They require changes in organizational routines, authority structures, interpretive capabilities, ethical norms, and managerial practices.

Organizational intelligence is closely connected to knowledge creation and knowledge mobilization. Nonaka's (1994) theory of organizational knowledge creation emphasizes the dynamic conversion between tacit and explicit knowledge through socialization, externalization, combination, and internalization. Bureaucratic systems often privilege explicit rules and formal documentation, whereas intelligent systems must integrate both codified data and tacit experiential knowledge. This is particularly important in contexts where employees possess practical knowledge about customers, operations, risks, and organizational bottlenecks that may not be visible in formal information systems. Intelligent organizing therefore requires mechanisms that transform dispersed knowledge into actionable insight without reducing human judgment to algorithmic output.

The dynamic capabilities perspective also provides a useful theoretical lens for understanding the transition from bureaucracy to intelligent systems. Teece et al. (1997) defined dynamic capabilities as the ability to integrate, build, and reconfigure internal and external competences in response to rapidly changing environments. Later studies emphasized that dynamic capabilities involve patterned processes such as sensing opportunities and threats, seizing strategic possibilities, and transforming organizational resources (Teece, 2007; Eisenhardt &

Martin, 2000). From this perspective, intelligent organizational systems can be interpreted as sociotechnical infrastructures that strengthen dynamic capabilities. They allow organizations to detect environmental signals, interpret data, coordinate responses, and redesign routines more quickly than traditional bureaucratic systems.

Digital transformation studies also suggest that organizations need to align technology adoption with strategy, culture, and organizational design. Bharadwaj et al. (2013) argued that digital business strategy increasingly integrates information technology strategy and business strategy, making digital resources central to organizational direction. Yoo et al. (2010) described digital innovation as generative, modular, and distributed, which means that innovation no longer occurs only within fixed departmental boundaries. Hanelt et al. (2021) showed that digital transformation is associated with changes in strategy, structure, value creation, and organizational change. These insights imply that intelligent organizational systems require a shift from departmental silos toward interconnected processes and from command-based coordination toward data-informed collaboration.

However, the transition from bureaucratic management to intelligent organizational systems remains theoretically underdeveloped. Existing research has examined bureaucracy, digital transformation, knowledge management, dynamic capabilities, and artificial intelligence separately, but fewer studies explain how organizational actors experience and interpret the transition between these logics. This gap is particularly important in contexts such as Tehran, where organizations often operate under strong formal procedures, regulatory pressures, hierarchical authority patterns, and uneven levels of digital maturity. In such settings, the shift toward intelligent systems is not merely a technological modernization project; it is also a cultural, structural, and political transformation.

A grounded theory approach is appropriate for this study because the phenomenon involves complex processes, social meanings, and emergent organizational patterns. Grounded theory enables the development of theory from systematically collected and analyzed qualitative data rather than imposing a predefined explanatory model (Glaser & Strauss, 1967; Charmaz, 2014; Corbin & Strauss, 2015). By interviewing managers, senior experts, and digital transformation professionals, this study seeks to understand how organizational actors make sense of bureaucratic constraints, intelligent technologies, changing decision routines, and new forms of coordination. Therefore, the aim of this study was to develop a grounded theoretical model explaining the transition from bureaucratic management to intelligent organizational systems.

2. Methods and Materials

This study adopted a qualitative research design based on grounded theory methodology. Grounded theory was selected because the purpose of the study was not to test a predefined hypothesis but to generate an explanatory model of how organizations move from bureaucratic management toward intelligent organizational systems. The research focused on the experiences, interpretations, and practical insights of organizational actors who had direct involvement in digital transformation, administrative reform, process redesign, knowledge management, artificial intelligence implementation, or organizational development. The study was conducted in Tehran, Iran, because Tehran contains a concentration of public, semi-public, and private organizations experiencing different levels of bureaucratic complexity and digital transformation.

Participants were selected using purposive and theoretical sampling. The initial sampling strategy targeted managers and experts with at least five years of organizational experience and direct familiarity with bureaucratic processes, digital systems, or organizational change initiatives. As analysis progressed, theoretical sampling was used to include participants who could clarify emerging categories such as algorithmic decision-making, platform-based coordination, resistance to intelligent systems, and ethical governance. The final sample included 24 participants. Of these, 14 were male and 10 were female. Participants included 8 senior managers, 6 middle managers, 5 digital transformation or information technology specialists, 3 organizational development consultants, and 2 human resource professionals. Their work experience ranged from 6 to 28 years, with an average of approximately 14.7 years. Participants were drawn from public administration, banking and finance, telecommunications, health services, manufacturing, and knowledge-based companies in Tehran. Theoretical saturation was reached after the twenty-first interview, and three additional interviews were conducted to confirm the stability of the emerging categories.

Data were collected through semi-structured interviews. The interview guide included broad questions about participants' experiences with bureaucratic management, administrative procedures, digital systems, intelligent technologies, decision-making processes, organizational learning, interdepartmental coordination, and managerial challenges during transformation. Sample interview questions included: "How do bureaucratic procedures influence organizational responsiveness?" "What changes occurred after introducing digital or intelligent systems?" "How did decision-making authority change during transformation?" "What capabilities were required from managers and employees?" and "What ethical or governance concerns emerged during the transition?" Interviews lasted between 45 and 80 minutes. All interviews were conducted in a confidential setting, recorded with participant consent, and transcribed verbatim. Participants were informed about the purpose of the study, the voluntary nature of participation, and their right to withdraw at any stage. Codes were assigned to participants to protect anonymity.

Data analysis was conducted using open, axial, and selective coding with the support of NVivo software. In the open coding stage, interview transcripts were read repeatedly and meaningful units were identified. Initial codes included concepts such as "approval delays," "rule dependency," "data visibility," "fear of algorithmic control," "cross-unit dashboards," "loss of managerial monopoly," "employee reskilling," "hybrid decision-making," and "ethical ambiguity." In the axial coding stage, related codes were grouped into categories and subcategories by examining conditions, actions/interactions, and consequences. In the selective coding stage, the core category was identified and connected to the other categories to construct an integrated theoretical model. Constant comparative analysis was used throughout the process to compare incidents, codes, categories, and emerging theoretical relationships. Analytical memos were written to document conceptual decisions, category development, and relationships between empirical patterns and theoretical interpretation.

Several strategies were used to enhance trustworthiness. Credibility was supported through prolonged engagement with the data, member checking with selected participants, and peer review of coding decisions. Dependability was strengthened by maintaining an audit trail of interview protocols, coding stages, memos, and category revisions. Confirmability was enhanced through reflexive memo writing and comparison of interpretations with raw interview evidence. Transferability was addressed by providing detailed contextual descriptions of participants, organizational settings, and the transition process. Although the study was conducted

in Tehran, the proposed model may be analytically transferable to other organizational contexts characterized by bureaucratic structures and digital transformation pressures.

3. Findings and Results

The demographic profile of participants indicated a diverse sample of organizational actors involved in administrative transformation and intelligent system implementation in Tehran. Of the 24 participants, 14 participants were male and 10 were female. In terms of age, 5 participants were between 30 and 39 years old, 11 were between 40 and 49 years old, and 8 were 50 years old or above. Regarding organizational position, 8 participants were senior managers, 6 were middle managers, 5 were digital transformation or IT specialists, 3 were organizational development consultants, and 2 were human resource professionals. In terms of sector, 6 participants worked in public administration, 5 in banking and finance, 4 in telecommunications, 3 in health services, 3 in manufacturing, and 3 in knowledge-based companies. Their work experience ranged from 6 to 28 years. This composition enabled the study to capture multiple perspectives on bureaucratic constraints, digital modernization, intelligent decision-making, and organizational adaptation.

The grounded theory analysis produced five main categories and one core category. The five main categories were procedural rigidity and bureaucratic overload, data-driven sensemaking and intelligent decision architecture, capability reconfiguration, platform-based coordination, and ethical-adaptive governance. The core category was "intelligence-mediated organizational adaptability," which refers to the organizational capacity to integrate data, human expertise, digital technologies, learning routines, and governance mechanisms in order to move beyond rigid procedural control and toward adaptive, intelligent, and responsive organizing.

Procedural rigidity and bureaucratic overload emerged as the first main category. Participants described bureaucratic management as a system that originally created order but gradually produced excessive dependence on approvals, documentation, hierarchical reporting, and rule compliance. Many participants argued that the main problem was not the existence of rules but the inability of rules to respond to complex and fast-changing conditions. A senior manager in a public organization stated, "The process was designed for control, not for learning. Every decision had to pass through several signatures, but nobody asked whether the decision still made sense after two weeks" (P03). Another participant from the banking sector explained, "Our systems were digital, but our thinking was still paper-based. We had online forms, but the same old approvals continued behind the screen" (P11). This category included subcategories such as approval chain dependency, fear of discretionary decision-making, documentation overload, duplicated control mechanisms, and slow response to environmental change.

Data-driven sensemaking and intelligent decision architecture was the second main category. Participants emphasized that intelligent organizational systems became meaningful when data were transformed into interpretation, prediction, and decision support. They distinguished between simple digitization and intelligence. Digitization meant converting existing procedures into electronic formats, whereas intelligence meant using data analytics, dashboards, artificial intelligence, and integrated information flows to improve organizational judgment. One digital transformation specialist said, "At first, managers thought intelligence meant buying software. Later they realized that intelligence means seeing patterns before the crisis becomes visible" (P07). Another participant noted, "When we connected customer data, operational data, and performance data, the

discussion in management meetings changed. People could no longer hide behind personal opinions" (P19). This category included real-time visibility, predictive analysis, evidence-based decision-making, integrated dashboards, and human interpretation of algorithmic outputs.

Capability reconfiguration emerged as the third main category. Participants repeatedly stated that intelligent systems require new capabilities from both managers and employees. In bureaucratic systems, employees were often evaluated according to compliance, formal expertise, and respect for hierarchy. In intelligent systems, participants emphasized analytical thinking, digital literacy, cross-functional problem-solving, learning agility, and ethical judgment. A human resource professional stated, "The transition failed wherever we trained people only on software. The real training was about how to think with data, how to question routines, and how to collaborate beyond one's department" (P22). A middle manager explained, "Some managers felt they were losing power because the system made information visible to everyone. They had to learn that leadership is no longer controlling information but creating meaning from it" (P15). This category included managerial reskilling, employee digital literacy, learning routines, resistance reduction, and the reconstruction of authority.

Platform-based coordination and boundary permeability was the fourth main category. Participants described the transition toward intelligent systems as a movement from vertical coordination to platform-based coordination. Digital platforms, shared databases, workflow systems, and collaborative dashboards allowed different departments to coordinate around processes rather than formal boundaries. Participants argued that bureaucratic silos were weakened when information became visible across units. One organizational development consultant said, "The platform forced departments to see each other. Before that, each unit could blame another unit because nobody had a shared picture of the process" (P16). Another participant from telecommunications observed, "When workflow became transparent, informal delays became visible. The system did not solve everything, but it removed many excuses" (P05). This category included cross-functional workflows, shared process ownership, reduced departmental opacity, faster feedback loops, and interorganizational connectivity.

Ethical-adaptive governance was the fifth main category. Participants emphasized that intelligent organizational systems require new governance mechanisms to balance flexibility, accountability, privacy, transparency, and human responsibility. They warned that intelligent systems could create new forms of control if organizations used data only for monitoring employees rather than improving processes. One senior manager stated, "If intelligence becomes surveillance, people will resist it. They must know why data are collected and how decisions are made" (P01). Another participant added, "The algorithm may recommend, but someone must remain accountable. We cannot hide behind the system when a decision harms people" (P20). This category included algorithmic transparency, data privacy, human oversight, accountability for automated decisions, trust-building, and adaptive rule revision. Participants concluded that intelligent systems require governance structures that are more flexible than bureaucracy but not less responsible.

The relationships among the categories suggested a process model. The transition begins when organizations experience tension between bureaucratic rigidity and environmental complexity. This tension creates pressure for data visibility and intelligent decision architecture. However, data systems alone do not produce transformation unless organizations reconfigure human capabilities and managerial roles. As capabilities develop, platform-based coordination becomes possible and organizational boundaries become more permeable. Finally, ethical-adaptive governance stabilizes the transition by ensuring that intelligent systems remain transparent, accountable, and trusted. The core category, intelligence-mediated organizational adaptability, integrates these elements and

explains how organizations move from rule-based control toward intelligent, learning-oriented, and adaptive organizing.

4. Discussion and Conclusion

The first major finding of this study was that bureaucratic overload operates as the initial condition that stimulates organizational transition. Participants did not reject bureaucracy entirely; rather, they distinguished between necessary formalization and excessive procedural rigidity. This finding is consistent with Weber's view that bureaucracy provides predictability, rule-based authority, and administrative continuity (Weber, 1978), but it also aligns with later organizational theory showing that mechanistic systems become problematic under unstable environmental conditions (Burns & Stalker, 1961). The findings suggest that the transition to intelligent organizational systems begins when procedures designed for control become obstacles to responsiveness. Participants' descriptions of multiple approvals, duplicated controls, and delayed decisions indicate that bureaucratic structures may preserve accountability while simultaneously weakening adaptability. This result is also compatible with Thompson's (1967) argument that organizations must manage uncertainty through appropriate structural arrangements. In the present study, uncertainty was not effectively managed by adding more procedures; instead, participants emphasized the need to redesign procedures around data visibility, learning, and timely decision-making. Therefore, bureaucratic overload should be interpreted not simply as inefficiency but as a structural signal that existing coordination mechanisms no longer match environmental complexity.

The second finding was that intelligent decision architecture transforms organizational sensemaking by shifting decisions from opinion-based and hierarchy-based judgment toward evidence-informed interpretation. Participants repeatedly stated that intelligent systems were valuable when they generated visibility, pattern recognition, prediction, and integrated understanding. This finding supports digital transformation literature, which argues that digital transformation involves strategic and organizational change rather than mere technical digitization (Vial, 2019; Hanelt et al., 2021). It also extends the distinction between digitization and transformation. In the organizations studied, some digital tools merely reproduced old bureaucratic processes in electronic form, whereas intelligent architectures changed how managers interpreted reality. This finding aligns with Bharadwaj et al. (2013), who argued that digital business strategy integrates digital technologies into the core logic of organizational direction. However, the findings also warn against technological determinism. As Newman et al. (2022) argue, digital technologies and artificial intelligence may reinforce bureaucratic tendencies when they are implemented within unchanged control logics. The present study confirms this concern by showing that intelligent systems require interpretive and organizational redesign, not only software acquisition.

The third finding was that the transition from bureaucratic management to intelligent systems depends on capability reconfiguration. Participants emphasized that employees and managers need digital literacy, analytical thinking, learning agility, collaborative problem-solving, and ethical judgment. This finding is strongly aligned with the dynamic capabilities perspective. Teece et al. (1997) argued that organizations must integrate, build, and reconfigure competences to respond to changing environments, and Teece (2007) later emphasized sensing, seizing, and transforming as key microfoundations of dynamic capabilities. The present study shows that intelligent organizational systems function as a context in which such capabilities must be enacted by people. Technology may provide data, but employees and managers must interpret, question, contextualize, and act on

that data. The finding also resonates with Nonaka's (1994) knowledge creation theory because participants described the need to combine explicit digital data with tacit professional knowledge. Intelligent systems were most effective when they supported knowledge conversion rather than replacing human expertise. Thus, organizational intelligence should be understood as a sociotechnical capability, not a purely technological asset.

The fourth finding was that platform-based coordination weakens bureaucratic silos and enables process-based collaboration. Participants reported that shared platforms, dashboards, and workflow systems made delays, dependencies, and cross-unit responsibilities visible. This finding is consistent with research on digital innovation, which emphasizes distributed, modular, and generative forms of organizing (Yoo et al., 2010). It also aligns with sociomaterial perspectives suggesting that technology and organization are mutually constitutive rather than separate domains (Orlikowski, 1992; Orlikowski & Scott, 2008). In the present study, platforms were not neutral technical tools; they reshaped coordination, accountability, and interdepartmental relationships. However, participants also indicated that transparency could create tension because it exposed hidden delays and reduced the ability of units to protect their boundaries. This finding suggests that platform-based coordination has both integrative and political consequences. It enables faster feedback and shared process ownership, but it also redistributes visibility and power. Therefore, managers must treat platform implementation as an organizational change process rather than a technical installation.

The fifth finding concerned ethical-adaptive governance. Participants emphasized that intelligent systems require accountability, transparency, privacy protection, human oversight, and adaptive rule revision. This finding is important because it challenges the assumption that intelligent systems are inherently more flexible and therefore less bureaucratic. The results suggest that organizations need governance mechanisms that preserve accountability without reproducing excessive rigidity. This finding supports recent concerns that AI and digital technologies may strengthen bureaucratic control if used primarily for surveillance, monitoring, and standardization (Newman et al., 2022). It also corresponds with broader digital transformation literature showing that cultural, organizational, and governance changes are central to successful transformation (Mergel et al., 2019; Vial, 2019). The present study contributes to this literature by identifying ethical-adaptive governance as the stabilizing mechanism of transition. Without such governance, intelligent systems may produce distrust, resistance, and new forms of opacity. With ethical-adaptive governance, however, organizations can combine intelligent automation with human responsibility, rule revision, and trust-building.

Overall, the grounded theoretical model developed in this study suggests that the transition from bureaucratic management to intelligent organizational systems is not a linear technological upgrade. It is an evolutionary sociotechnical process that begins with the perceived inadequacy of bureaucratic routines and develops through data-driven sensemaking, capability reconfiguration, platform-based coordination, and ethical-adaptive governance. The core category of intelligence-mediated organizational adaptability explains how organizations can move beyond rigid procedural control while preserving accountability and legitimacy. This model contributes to management theory by integrating bureaucracy theory, digital transformation, dynamic capabilities, knowledge creation, and sociomaterial perspectives. It also contributes practically by showing that intelligent organizing requires simultaneous attention to structure, technology, people, culture, and governance.

One limitation of this study is that the research was conducted with participants from organizations located in Tehran, which may limit the direct transferability of the findings to other geographic, institutional, or cultural contexts. Organizational bureaucracy and digital transformation are influenced by legal frameworks,

administrative traditions, economic conditions, technological infrastructure, and sector-specific pressures. In addition, the study relied on semi-structured interviews, which means that the findings reflect participants' interpretations of organizational transition rather than direct observation of transformation practices. Although member checking, peer review, and constant comparison were used to strengthen credibility, future studies could combine interviews with document analysis, process observation, or longitudinal case studies.

Future research should examine the proposed grounded theory model in different organizational and national contexts. Comparative studies could explore whether the same categories appear in public organizations, private firms, start-ups, universities, hospitals, banks, and manufacturing companies. Quantitative studies could also develop and validate measurement instruments for intelligence-mediated organizational adaptability, bureaucratic overload, intelligent decision architecture, and ethical-adaptive governance. Longitudinal research would be especially valuable because the transition from bureaucracy to intelligent systems unfolds over time and may involve cycles of resistance, experimentation, learning, and institutionalization. Future studies may also examine the role of artificial intelligence maturity, data governance quality, and leadership style in accelerating or constraining this transition.

From a practical perspective, managers should avoid treating intelligent organizational systems as purely technological projects. The findings suggest that successful transition requires redesigning decision rights, reducing unnecessary approval layers, developing data literacy, strengthening cross-functional collaboration, and creating transparent governance mechanisms. Organizations should first identify bureaucratic routines that create delay without adding accountability. They should then build integrated data systems that support decision-making rather than merely digitizing old forms. Training should focus not only on software use but also on analytical thinking, ethical judgment, and collaborative problem-solving. Finally, leaders should communicate clearly how data and intelligent systems will be used, who remains accountable for decisions, and how rules will be revised as organizational learning occurs.

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

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

References

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital business strategy: Toward a next generation of insights. *MIS Quarterly, 37*(2), 471–482.

Burns, T., & Stalker, G. M. (1961). *The management of innovation*. Tavistock.

Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). SAGE.

Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). SAGE.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal, 21*(10–11), 1105–1121.

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Aldine.

Hanelt, A., Bohnsack, R., Marz, D., & Antunes Marante, C. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies, 58*(5), 1159–1197.

March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science, 2*(1), 71–87.

Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly, 36*(4), Article 101385.

Mintzberg, H. (1979). *The structuring of organizations: A synthesis of the research*. Prentice-Hall.

Newman, J., Mintrom, M., & O'Neill, D. (2022). Digital technologies, artificial intelligence, and bureaucratic transformation. *Futures, 136*, Article 102886.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science, 5*(1), 14–37.

Orlikowski, W. J. (1992). The duality of technology: Rethinking the concept of technology in organizations. *Organization Science, 3*(3), 398–427.

Orlikowski, W. J., & Scott, S. V. (2008). Sociomateriality: Challenging the separation of technology, work and organization. *Academy of Management Annals, 2*(1), 433–474.

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of sustainable enterprise performance. *Strategic Management Journal, 28*(13), 1319–1350.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*(7), 509–533.

Thompson, J. D. (1967). *Organizations in action: Social science bases of administrative theory*. McGraw-Hill.

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems, 28*(2), 118–144.

Weber, M. (1978). *Economy and society: An outline of interpretive sociology* (G. Roth & C. Wittich, Eds.). University of California Press.

Yoo, Y., Henfridsson, O., & Lyytinen, K. (2010). Research commentary: The new organizing logic of digital innovation: An agenda for information systems research. *Information Systems Research, 21*(4), 724–735.