

The Human Side of Digital Management Evolution: A Qualitative Study of Leadership Challenges in Smart Organizations

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Abstract

This study aimed to explore the human-centered leadership challenges that emerge during the evolution of digital management systems in smart organizations. This qualitative study was conducted using an interpretive design based on semi-structured interviews with 22 senior managers, middle managers, digital transformation specialists, and human resource executives working in smart organizations in Tehran. Participants were selected through purposive sampling, and recruitment continued until theoretical saturation was reached. The interviews focused on leadership experiences, employee reactions to digital management systems, algorithmic decision-making, digital communication, trust, organizational learning, and ethical concerns in smart organizational environments. Interviews lasted between 45 and 75 minutes, were transcribed verbatim, and were analyzed using thematic analysis. NVivo software was used to organize transcripts, generate initial codes, compare categories, and develop final themes. To enhance trustworthiness, member checking, peer debriefing, maximum variation sampling, and an audit trail were applied. The analysis produced four main categories: humanizing data-driven authority, managing digital anxiety and capability gaps, rebuilding trust and psychological safety in digitally mediated work, and balancing agility with ethical responsibility. Participants described digital management evolution as a deeply human process rather than a purely technological transition. They emphasized that smart systems improved visibility, speed, and coordination, but also created emotional pressure, surveillance concerns, role ambiguity, and resistance when leaders failed to communicate meaningfully. Successful leadership was associated with transparent decision-making, participatory implementation, continuous digital learning, and ethical sensitivity. The findings suggest that leadership in smart organizations requires more than technical competence or strategic digital investment. Leaders must translate digital change into human meaning, protect trust, support psychological safety, and balance algorithmic efficiency with dignity, autonomy, and organizational learning. Digital management evolution is therefore best understood as a sociotechnical transformation in which human interpretation, emotional adaptation, and ethical leadership determine whether smart systems generate sustainable organizational value.

Keywords: digital management; smart organizations; leadership challenges; qualitative study; digital transformation; psychological safety; Tehran

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1. Introduction

Digital transformation has moved from being a technological modernization agenda to becoming a fundamental shift in the logic of organizing, managing, and leading. Contemporary organizations increasingly rely on smart technologies, data analytics, platform-based coordination, artificial intelligence, cloud systems, algorithmic monitoring, and digitally mediated communication to improve speed, responsiveness, and decision quality. In this context, the term “smart organization” refers not merely to an organization that adopts advanced



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technologies, but to one that embeds digital intelligence into managerial routines, operational processes, decision systems, customer interactions, and organizational learning mechanisms. Digital transformation is therefore not a simple substitution of analog tools with digital ones; it is a strategic, structural, cultural, and human transformation that reshapes how organizations create value, exercise authority, and coordinate collective action (Bharadwaj et al., 2013; Vial, 2019; Verhoef et al., 2021).

The literature on digital transformation has repeatedly emphasized that technology alone does not produce transformation. Vial (2019) conceptualized digital transformation as a process in which digital technologies trigger disruptions that require strategic organizational responses, changes in value creation paths, and management of structural barriers. Similarly, Verhoef et al. (2021) distinguished among digitization, digitalization, and digital transformation, arguing that the deepest stage of transformation requires new capabilities, structures, business models, and organizational logics. This distinction is important because many organizations mistake technological adoption for genuine transformation. They invest in dashboards, enterprise systems, artificial intelligence tools, automation platforms, and digital communication channels while underestimating the human side of implementation: the meanings employees attach to new systems, the anxieties created by algorithmic visibility, the reconfiguration of managerial authority, and the need for new forms of trust.

The human side of digital management evolution is especially important because digital systems alter the relationship between leaders, employees, information, and control. In traditional management systems, leaders often relied on hierarchical authority, face-to-face supervision, experiential judgment, and informal relational knowledge. In smart organizations, many managerial functions are increasingly mediated by data streams, digital performance indicators, automated reporting systems, predictive analytics, and algorithmic recommendations. This shift changes how leaders know, decide, intervene, and evaluate. It also changes how employees experience autonomy, accountability, recognition, and fairness. Although smart systems may increase transparency and reduce managerial subjectivity, they can also intensify surveillance, reduce discretion, and produce perceptions of depersonalization when employees feel that they are being managed by metrics rather than understood by leaders (Cascio & Montealegre, 2016; Leonardi, 2011; Orlikowski & Scott, 2008).

A sociotechnical perspective is particularly useful for understanding these dynamics. Orlikowski and Scott (2008) argued against separating technology, work, and organization as independent domains, emphasizing instead their sociomaterial entanglement. From this perspective, digital management systems are not neutral instruments that leaders simply use; they participate in shaping organizational practices, communication patterns, power relations, and identities. Leonardi (2011) similarly showed that technologies create both affordances and constraints, and that organizational routines emerge through the interaction of human and material agencies. In smart organizations, leadership challenges therefore arise not only from the technical complexity of digital tools but also from the changing relationship between human agency and technological infrastructure. Leaders must manage the interpretive, emotional, and ethical consequences of technologies that reorganize work while also depending on human acceptance, learning, and adaptation.

Prior studies have shown that digital transformation requires dynamic capabilities, strategic renewal, and organizational agility. Warner and Wäger (2019) explained digital transformation as an ongoing process through which organizations build capabilities for sensing, seizing, and transforming in response to digital disruption. Bharadwaj et al. (2013) argued that digital business strategy represents a fusion of IT strategy and business strategy rather than a subordinate technological function. These studies highlight an important shift: digital

transformation is no longer located in the IT department alone. It penetrates the entire organization and requires leaders across levels to reinterpret strategy, redesign processes, coordinate cross-functional work, and cultivate digital mindsets. However, the development of digital capabilities is not purely procedural. It depends on how leaders mobilize people, reduce resistance, create shared purpose, and maintain organizational coherence amid continuous change.

Leadership theory provides an important foundation for examining this issue. Uhl-Bien and Arena (2018) argued that leadership for organizational adaptability requires enabling networks, learning, experimentation, and emergence rather than relying only on top-down control. This view is highly relevant to smart organizations, where complexity, speed, and uncertainty require leaders to facilitate distributed intelligence and adaptive coordination. Similarly, complexity leadership theory suggests that leadership should enable the learning and creative capacities of complex adaptive systems rather than merely direct compliance (Uhl-Bien et al., 2007). In digitally evolving organizations, leaders must create conditions in which employees can experiment with new technologies, question existing routines, share knowledge across boundaries, and participate in redesigning work. The leader's role shifts from command-giver to sensemaker, integrator, coach, ethical guardian, and architect of adaptive conditions.

One of the central human challenges in digital management evolution is psychological safety. Edmondson (1999) defined team psychological safety as a shared belief that a team is safe for interpersonal risk-taking. Digital transformation often requires employees to disclose skill gaps, ask basic questions, experiment with unfamiliar tools, report system errors, and challenge automated outputs. Without psychological safety, employees may hide uncertainty, avoid experimentation, or comply superficially with digital systems while maintaining old workarounds. In smart organizations, psychological safety becomes even more critical because the visibility created by digital platforms can amplify fear of judgment. When employees know that their performance, communication, response time, and workflow are continuously traceable, they may experience digital systems as mechanisms of exposure rather than support. Leaders must therefore ensure that data visibility is framed as a basis for learning and improvement, not merely control and punishment.

Another challenge concerns digital anxiety and capability gaps. Technology changes the content of work, the pace of decision-making, and the skills required for participation. Cascio and Montealegre (2016) noted that advances in technology reshape work and organizational life in ways that carry implications for employment, skills, collaboration, and leadership. Employees may perceive smart systems as threats to job security, professional identity, or accumulated expertise. Senior employees may fear that digital tools devalue experiential knowledge, while younger employees may struggle with the pressure of constant connectivity and accelerated responsiveness. Leaders are therefore required to manage not only technical training but also emotional adaptation. Digital capability development must be understood as an organizational learning process involving confidence, identity reconstruction, and collective sensemaking.

Ethical responsibility represents another crucial dimension of leadership in smart organizations. Digital management systems increasingly produce decisions or recommendations about performance, resource allocation, risk assessment, scheduling, customer prioritization, and employee evaluation. These systems may improve efficiency, but they also raise concerns about bias, privacy, transparency, accountability, and fairness. When algorithmic outputs influence managerial decisions, leaders cannot transfer responsibility to technology. They must understand the assumptions embedded in data systems, question the fairness of indicators, and communicate

how digital information is used. The human side of digital management evolution therefore includes moral judgment: leaders must decide when to trust data, when to question it, and how to protect human dignity in environments where quantification becomes dominant.

Despite growing interest in digital transformation, there remains a need for qualitative research that examines how leaders experience the human challenges of smart organizational evolution in specific institutional contexts. Much of the literature has focused on strategy, technology adoption, business model innovation, or capability development, while less attention has been paid to the lived managerial experience of leading people through smart-system implementation. This gap is particularly relevant in Tehran, where organizations face pressures to modernize management systems, adopt digital platforms, improve efficiency, and compete in increasingly uncertain environments. Understanding the leadership challenges experienced in these organizations can contribute to both theory and practice by clarifying how digital management evolution unfolds as a human, relational, and ethical process.

Accordingly, this study explores the human side of digital management evolution by examining leadership challenges in smart organizations in Tehran. The study focuses on how managers and digital transformation professionals interpret the effects of smart systems on authority, trust, employee adaptation, communication, learning, and ethical responsibility. By using semi-structured interviews and thematic analysis, the study aims to generate a qualitative understanding of the leadership conditions required for sustainable digital transformation. The aim of this study was to identify and explain the main human-centered leadership challenges that emerge during digital management evolution in smart organizations.

2. Methods and Materials

This study used a qualitative interpretive design to explore leadership challenges associated with digital management evolution in smart organizations. A qualitative design was appropriate because the purpose of the study was not to measure predetermined variables but to understand how leaders, managers, and transformation professionals interpret and experience the human side of digital change. The study was conducted among smart and digitally transforming organizations located in Tehran. These organizations had implemented at least one major digital management system, such as enterprise resource planning, customer relationship management, digital performance dashboards, artificial intelligence-supported analytics, automation platforms, human resource information systems, or integrated workflow management systems.

The participants consisted of 22 individuals, including senior managers, middle managers, digital transformation managers, human resource executives, IT managers, and organizational development specialists. Purposive sampling was used to select participants who had direct experience with leading, implementing, or managing digital transformation initiatives. Maximum variation was considered in terms of organizational sector, managerial level, gender, age, and professional background. Recruitment continued until theoretical saturation was achieved. Saturation was considered reached when the final interviews no longer produced substantially new codes or conceptual categories. In this study, saturation was reached after the twentieth interview, and two additional interviews were conducted to confirm the stability of the categories.

The inclusion criteria were having at least five years of managerial or professional experience, direct involvement in digital management or smart-organization initiatives, employment in an organization located in

Tehran, and willingness to participate in a recorded interview. Participants who had only technical implementation experience without managerial or organizational involvement were excluded. Ethical considerations were observed by obtaining informed consent, explaining the purpose of the study, assuring confidentiality, and assigning participant codes instead of names.

Data were collected only through semi-structured interviews. The interview guide was developed based on the literature on digital transformation, leadership adaptability, sociotechnical change, psychological safety, and organizational learning. The questions were open-ended and allowed participants to describe their experiences in their own words. The interviews explored several areas, including the meaning of digital management evolution, changes in leadership roles, employee reactions to smart systems, digital anxiety, trust, data-driven decision-making, communication, resistance, ethical concerns, and leadership practices that facilitated or obstructed transformation.

Sample interview questions included: “How has the adoption of smart management systems changed leadership practices in your organization?” “What human or emotional challenges have you observed during digital transformation?” “How do employees respond to data-driven monitoring and algorithmic decision-making?” “What leadership behaviors help employees trust digital systems?” and “What ethical challenges do leaders face in smart organizations?” Follow-up questions were used to clarify meanings, obtain examples, and deepen participants’ reflections.

The interviews were conducted individually and lasted between 45 and 75 minutes. All interviews were audio-recorded with participant consent and then transcribed verbatim. Field notes were written after each interview to record contextual impressions, emerging ideas, and analytic reflections. Data collection and analysis were conducted concurrently so that emerging codes could inform subsequent interviews.

The interview data were analyzed using thematic analysis. The analysis followed an iterative process involving familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report, consistent with the approach proposed by Braun and Clarke (2006). NVivo software was used to organize transcripts, assign codes, compare coded segments, retrieve relevant quotations, and develop hierarchical categories. The analysis began with repeated reading of the transcripts to gain an overall understanding of the data. Initial codes were then assigned to meaningful units related to leadership challenges, employee experiences, digital systems, trust, learning, and ethical tensions.

After initial coding, similar codes were grouped into subcategories. These subcategories were compared across participants to identify patterns, contradictions, and conceptual relationships. Through constant comparison, four main categories were developed: humanizing data-driven authority, managing digital anxiety and capability gaps, rebuilding trust and psychological safety in digitally mediated work, and balancing agility with ethical responsibility. To enhance trustworthiness, member checking was conducted with selected participants, and peer review was used to examine the coding process. An audit trail was maintained to document coding decisions, category development, and theme refinement. Credibility was strengthened through prolonged engagement with the data, while dependability and confirmability were supported through systematic documentation.

3. Findings and Results

The demographic characteristics of the participants showed that 22 individuals took part in the study. Of these participants, 14 were male and 8 were female. In terms of age, 4 participants were between 30 and 35 years old, 7 were between 36 and 40 years old, 6 were between 41 and 45 years old, and 5 were older than 45 years. Regarding organizational role, 6 participants were senior managers, 7 were middle managers, 4 were digital transformation or IT managers, 3 were human resource managers, and 2 were organizational development specialists. In terms of work experience, 5 participants had 5–10 years of experience, 9 had 11–15 years, and 8 had more than 15 years of professional experience. Participants came from technology, banking, telecommunications, insurance, healthcare, retail, and knowledge-based service organizations in Tehran.

The first main category was **humanizing data-driven authority**. Participants explained that digital management systems had changed the basis of managerial authority by increasing reliance on dashboards, indicators, automated reports, and predictive analytics. While these systems improved visibility and enabled faster decisions, they also created the risk of reducing leadership to numerical control. Participants emphasized that employees resisted smart systems when leaders used data only to evaluate, compare, or pressure them. One senior manager stated, “The dashboard shows numbers, but it does not show the story behind the numbers. A leader who only sees the red indicator may lose the person behind it.” Another participant explained, “When employees feel that the system has replaced managerial understanding, they become defensive. They say, ‘The software has judged me before my manager has listened to me.’” This category included subthemes such as interpretation beyond metrics, preserving human judgment, explaining data use, and preventing digital depersonalization.

The second main category was **managing digital anxiety and capability gaps**. Participants described digital transformation as an emotionally demanding process for employees and managers. Smart systems required new skills, faster responses, continuous learning, and adaptation to unfamiliar workflows. Some employees experienced fear of incompetence, loss of status, or possible job replacement. This anxiety was especially visible among employees whose professional identity had been built around experience-based expertise rather than digital fluency. A human resource manager noted, “Resistance was not always against technology. In many cases, it was fear. People were afraid that the system would reveal what they did not know.” Another participant said, “Some experienced employees felt that twenty years of knowledge had suddenly become less valuable than knowing how to work with a platform.” Participants argued that leaders needed to normalize learning, provide practical training, and communicate that digital tools were intended to augment rather than eliminate human contribution. This category included digital fear, skill inequality, identity threat, training fatigue, and leadership support for learning.

The third main category was **rebuilding trust and psychological safety in digitally mediated work**. Participants reported that digital communication tools, remote coordination platforms, automated monitoring, and performance-tracking systems changed the nature of workplace trust. On one hand, smart systems increased transparency and reduced ambiguity. On the other hand, they produced concerns about surveillance, misuse of information, and constant visibility. Participants emphasized that trust depended on whether leaders clearly explained what data were collected, how they were interpreted, and how they would affect decisions. One middle manager stated, “The problem was not data collection itself. The problem was silence. When people did not know how data would be used, they imagined the worst.” Another participant explained, “Psychological safety decreased when every mistake became visible in the system. People stopped experimenting because they feared that every error would remain as evidence against them.” Leaders who encouraged questions, treated mistakes as learning opportunities, and avoided punitive use of digital data were seen as more successful in maintaining trust.

This category included transparency, psychological safety, digital surveillance concerns, communication quality, and learning-oriented feedback.

The fourth main category was **balancing agility with ethical responsibility**. Participants explained that smart organizations often pursued speed, flexibility, and real-time decision-making, but these advantages also created ethical challenges. Leaders had to decide how much authority should be delegated to algorithms, how to prevent bias in data-based decisions, how to protect employee privacy, and how to balance efficiency with human dignity. A digital transformation manager stated, “The system can recommend a decision, but responsibility cannot be automated. At the end, a human leader must answer for the consequences.” Another participant said, “Sometimes the fastest decision is not the fairest decision. Smart organizations need ethical brakes, not only digital accelerators.” Participants emphasized that leaders should establish clear governance mechanisms for algorithmic decision-making, involve employees in system design, and create channels for appealing or questioning digital outputs. This category included algorithmic accountability, privacy protection, ethical judgment, participatory governance, and responsible agility.

Overall, the findings showed that digital management evolution was experienced as a sociotechnical transformation. Participants did not reject smart technologies; rather, they emphasized that the success of smart systems depended on leadership behaviors that preserved meaning, trust, fairness, and human agency. The findings suggest that smart organizations require leaders who can interpret data without becoming dominated by it, develop digital capabilities without humiliating employees, use visibility without creating fear, and pursue agility without neglecting ethics.

4. Discussion and Conclusion

The first major finding of this study was that leadership in smart organizations requires **humanizing data-driven authority**. Participants consistently explained that digital dashboards, automated indicators, and analytics platforms had changed how leaders monitored work and made decisions. However, they also emphasized that data-driven management becomes problematic when leaders treat numerical indicators as complete representations of organizational reality. This finding is consistent with sociotechnical and sociomaterial perspectives, which argue that technology, work, and organization are deeply interrelated rather than separate domains (Orlikowski & Scott, 2008). In smart organizations, data do not merely describe work; they shape what becomes visible, what is prioritized, and how employees are evaluated. The finding also aligns with Leonardi’s (2011) argument that technologies create both affordances and constraints. Digital systems afford faster visibility and coordination, but they may constrain managerial understanding if leaders rely on system outputs without contextual interpretation. The results support Vial’s (2019) view that digital transformation involves not only technological change but also organizational responses to disruption, structural change, and barriers. In this study, one of the most important barriers was the risk of depersonalized management. Leaders were expected to interpret data humanely, explain the meaning of metrics, and integrate quantitative insight with relational knowledge. Thus, digital leadership requires judgment, not only technical literacy.

The second finding concerned **digital anxiety and capability gaps**. Participants reported that digital management evolution created fear, uncertainty, and identity tension among employees. This finding supports the argument that digital transformation is fundamentally about people and organizational dynamics, not only

technology implementation (Kane et al., 2019). The introduction of smart systems can challenge employees' established competencies and professional self-image. Experienced employees may feel that their tacit knowledge is being displaced by digital tools, while less experienced employees may feel pressured by the constant demand for rapid learning. Cascio and Montealegre (2016) similarly argued that technology changes work, skills, and organizational behavior in profound ways. The findings also support Warner and Wäger's (2019) view that digital transformation requires dynamic capabilities and ongoing strategic renewal. However, this study extends that argument by showing that capability development is emotional and identity-based as well as strategic. Leaders must not assume that training alone solves capability gaps. Employees need reassurance, time, peer support, and psychologically safe opportunities to practice. Digital capability should therefore be understood as a human development process that combines skill acquisition, confidence building, and identity reconstruction.

The third finding showed that leaders must **rebuild trust and psychological safety in digitally mediated work**. Participants described digital systems as producing both transparency and surveillance concerns. This result is strongly aligned with Edmondson's (1999) concept of psychological safety as a condition for learning behavior in teams. In smart organizations, psychological safety becomes especially important because digital systems make work more visible and traceable. When employees believe that mistakes will be permanently recorded or used against them, they may avoid experimentation, conceal problems, or comply superficially with digital transformation initiatives. This undermines learning and adaptation. Uhl-Bien and Arena (2018) argued that organizational adaptability depends on leadership that enables learning, experimentation, and networked innovation. The findings of the present study support this view by showing that adaptability in smart organizations depends not only on digital infrastructure but also on trust conditions that allow people to use that infrastructure creatively. Leaders must clarify how data are used, avoid punitive responses to early mistakes, and frame digital visibility as a learning mechanism rather than a disciplinary tool. Without such leadership, smart systems may create defensive behavior rather than intelligent collaboration.

The fourth finding concerned **balancing agility with ethical responsibility**. Participants emphasized that smart organizations often pursue speed, automation, and real-time responsiveness, but these goals may conflict with fairness, privacy, dignity, and accountability. This finding is consistent with the broader digital transformation literature, which suggests that digital transformation reshapes value creation, organizational structures, and decision mechanisms (Bharadwaj et al., 2013; Verhoef et al., 2021). As decision-making becomes more data-driven, leaders must address the ethical implications of algorithmic recommendations and automated control. The findings also extend complexity leadership perspectives by showing that adaptive leadership in smart organizations requires ethical restraint as well as innovation. Uhl-Bien et al. (2007) emphasized enabling learning and adaptive capacity in complex systems, but the present findings suggest that adaptive capacity must be governed by responsibility. Leaders cannot simply accelerate digital decision-making; they must create procedures for questioning algorithmic outputs, protecting privacy, and ensuring that efficiency does not override human dignity. Therefore, ethical leadership becomes a core element of digital management evolution.

Taken together, the results indicate that the human side of digital management evolution is not peripheral but central to the success of smart organizations. The findings show that smart organizations face a paradox: the more they rely on intelligent systems, the more they need human-centered leadership. Data-driven systems increase visibility, but leaders must provide meaning. Automation increases speed, but leaders must preserve accountability. Digital platforms increase coordination, but leaders must maintain trust. Smart systems increase

analytical capacity, but leaders must cultivate judgment and ethical reflection. This interpretation is consistent with the argument that digital transformation is an organizational and cultural transformation rather than a purely technological project (Kane et al., 2019; Vial, 2019). The study contributes to the literature by identifying four interrelated leadership challenges that explain why some digital management initiatives generate engagement and learning while others produce resistance and anxiety.

Ethical Considerations

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

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Conflict of Interest

The authors report no conflict of interest.

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References

- Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. V. (2013). Digital business strategy: Toward a next generation of insights. *MIS Quarterly*, 37(2), 471–482. <https://doi.org/10.25300/MISQ/2013/37.2.03>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Cascio, W. F., & Montealegre, R. (2016). How technology is changing work and organizations. *Annual Review of Organizational Psychology and Organizational Behavior*, 3, 349–375. <https://doi.org/10.1146/annurev-orgpsych-041015-062352>
- Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). SAGE Publications.
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350–383. <https://doi.org/10.2307/2666999>
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015). *Strategy, not technology, drives digital transformation*. MIT Sloan Management Review and Deloitte University Press.
- Kane, G. C., Phillips, A. N., Copulsky, J. R., & Andrus, G. R. (2019). *The technology fallacy: How people are the real key to digital transformation*. MIT Press.
- Leonardi, P. M. (2011). When flexible routines meet flexible technologies: Affordance, constraint, and the imbrication of human and material agencies. *MIS Quarterly*, 35(1), 147–167. <https://doi.org/10.2307/23043493>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications.
- Orlikowski, W. J., & Scott, S. V. (2008). Sociomateriality: Challenging the separation of technology, work and organization. *The Academy of Management Annals*, 2(1), 433–474. <https://doi.org/10.1080/19416520802211644>
- Uhl-Bien, M., & Arena, M. (2018). Leadership for organizational adaptability: A theoretical synthesis and integrative framework. *The Leadership Quarterly*, 29(1), 89–104. <https://doi.org/10.1016/j.leaqua.2017.12.009>
- Uhl-Bien, M., Marion, R., & McKelvey, B. (2007). Complexity leadership theory: Shifting leadership from the industrial age to the knowledge era. *The Leadership Quarterly*, 18(4), 298–318. <https://doi.org/10.1016/j.leaqua.2007.04.002>
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi, J., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122, 889–901. <https://doi.org/10.1016/j.jbusres.2019.09.022>
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28(2), 118–144. <https://doi.org/10.1016/j.jsis.2019.01.003>
- Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326–349. <https://doi.org/10.1016/j.lrp.2018.12.0>