

The Evolution of Management Control Systems in Digital Organizations: A Systematic Literature Review

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Abstract

This study aimed to explain how management control systems evolve in digital organizations and to develop a qualitative framework of the main control capabilities required for data-driven, platform-based, and digitally transforming firms. The study adopted a qualitative, review-informed design based on semi-structured interviews with 22 participants selected through purposive sampling from digital organizations in Tehran. Participants included senior financial managers, controllers, digital transformation managers, data analytics managers, operations managers, and management consultants with direct experience in designing or using management control systems in digitally enabled organizational settings. Data collection continued until theoretical saturation was reached; saturation was achieved after the nineteenth interview, and three additional interviews were conducted to confirm category stability. Interviews were transcribed verbatim and analyzed using thematic analysis supported by NVivo software. Coding proceeded through open coding, axial categorization, and selective integration of the main themes. The findings revealed five main categories explaining the evolution of management control systems in digital organizations: real-time and data-driven control, integration of control architecture across digital platforms, hybridization of formal and informal controls, transformation of the controller role, and ethical-behavioral challenges of algorithmic control. Participants emphasized that digital control is no longer limited to budgeting, variance analysis, and periodic reporting; instead, it increasingly depends on dashboards, predictive analytics, automated alerts, cross-functional data flows, and continuous monitoring. However, they also stressed that digital control creates new tensions related to transparency, employee autonomy, privacy, data quality, and overreliance on algorithmic indicators. The study concludes that management control systems in digital organizations are evolving from retrospective, finance-centered, and hierarchical mechanisms toward real-time, predictive, integrated, and learning-oriented systems. Effective digital control requires technological capability, data governance, strategic alignment, human judgment, and ethical safeguards. The proposed framework contributes to management control literature by explaining how digital transformation changes not only control tools but also the meaning, timing, actors, and behavioral consequences of organizational control.

Keywords: Management control systems; digital organizations; digital transformation; management accounting; algorithmic control; qualitative research; NVivo

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1. Introduction

Management control systems have historically been central mechanisms through which organizations translate strategy into action, coordinate managerial behavior, evaluate performance, allocate resources, and maintain goal congruence. Classical control theory emphasized planning, budgeting, responsibility accounting, performance measurement, and variance analysis as the principal instruments through which managers could monitor organizational activities and correct deviations from expected outcomes (Anthony, 1965; Merchant & Van der Stede, 2017; Otley, 1999). Within this tradition, management control systems were primarily understood as formal systems designed to ensure that organizational members acted in accordance with strategic objectives. However, as organizations have become more complex, knowledge-intensive, decentralized, and digitally mediated, the



meaning of control has gradually expanded from narrow financial monitoring to broader systems of strategic communication, learning, cultural alignment, risk management, and adaptive coordination.

The contemporary management control literature increasingly recognizes that control systems do not operate as isolated techniques but as interdependent packages or configurations of mechanisms. Malmi and Brown (2008) argued that management control systems should be understood as packages consisting of planning controls, cybernetic controls, reward and compensation controls, administrative controls, and cultural controls. This perspective is particularly important in digital organizations because digital transformation rarely changes only one control instrument. Instead, it changes the entire control architecture: how data are produced, how performance is visualized, how decisions are made, how employees are monitored, how accountability is distributed, and how strategic priorities are communicated. Similarly, Simons' (1995) levers of control framework highlights the importance of balancing belief systems, boundary systems, diagnostic control systems, and interactive control systems. This balance becomes more complex in digital organizations, where managers must simultaneously encourage innovation, experimentation, data sharing, and agility while also maintaining compliance, risk discipline, cybersecurity, and strategic focus.

Digital transformation has intensified the need to reconsider the conceptual foundations of management control. Digital transformation refers not only to the adoption of digital technologies but also to deeper changes in business models, organizational structures, value creation processes, and strategic responses to technological disruption (Vial, 2019; Verhoef et al., 2021). Technologies such as enterprise resource planning systems, business intelligence platforms, big data analytics, artificial intelligence, cloud computing, process automation, digital dashboards, and platform infrastructures have altered the informational basis of control. In traditional organizations, control was often retrospective, periodic, and accounting-centered; managers reviewed monthly reports, compared actual results with budgets, and initiated corrective action after deviations had already occurred. In digital organizations, however, control increasingly becomes real-time, predictive, interactive, and embedded in operational systems. Performance indicators can be updated continuously, deviations can trigger automated alerts, and algorithms can identify patterns that are invisible to human decision-makers.

Recent studies on digitalization in management accounting and control suggest that digital technologies affect not only the technical tools of control but also the organization of management control work, the role of controllers, and the behavioral implications of performance measurement (Fähndrich, 2023; Möller et al., 2020). Möller et al. (2020) emphasize that digitalization may disrupt management accounting and control practices as well as the role of the controller. Rikhardsson and Yigitbasioglu (2018) similarly argue that business intelligence and analytics open important research questions regarding the relationship between digital data systems and management accounting. These developments indicate that control in digital organizations is no longer restricted to formal accounting routines. It increasingly depends on the capacity to transform fragmented data into actionable intelligence, integrate financial and nonfinancial indicators, support rapid decision-making, and create feedback loops between strategy, operations, and learning.

The evolution of management control systems in digital organizations is also connected to broader changes in organizational structure. Digital organizations are often less hierarchical, more networked, more project-based, and more dependent on cross-functional collaboration than traditional bureaucratic firms. Their value creation processes are frequently mediated by platforms, algorithms, customer data, digital ecosystems, and remote or hybrid work arrangements. These conditions challenge conventional assumptions about authority, supervision,

accountability, and performance evaluation. Control can no longer depend exclusively on direct managerial observation or annual planning cycles. Instead, organizations must design systems that allow managers and employees to coordinate through shared data, transparent objectives, agile routines, and digital performance indicators. At the same time, excessive digital monitoring can create distrust, reduce autonomy, and intensify employee resistance if control is perceived as surveillance rather than support.

This tension between empowerment and constraint has long been discussed in management control research. Mundy (2010) showed that organizations must balance controlling and enabling uses of management control systems in order to create dynamic tensions that support both discipline and innovation. In digital organizations, this balance becomes even more critical. On one hand, digital tools can enable employees by providing timely information, clarifying priorities, improving coordination, and supporting evidence-based decisions. On the other hand, the same tools can constrain employees through constant monitoring, algorithmic evaluation, rigid key performance indicators, and automated decision rules. Therefore, the evolution of digital management control systems cannot be understood only as a technical process. It must also be examined as a social, behavioral, and organizational phenomenon involving trust, professional judgment, accountability, autonomy, and ethical responsibility.

Another important issue concerns the transformation of the controller role. In traditional settings, controllers were often associated with reporting, budgeting, cost analysis, and financial compliance. In digital organizations, the controller is increasingly expected to act as a business partner, data interpreter, analytics translator, strategic advisor, and governance actor. This transformation requires new competencies in data analytics, digital literacy, systems thinking, communication, and cross-functional coordination. However, digitalization does not eliminate the need for human judgment. Rather, it changes the nature of judgment. Managers and controllers must interpret algorithmic outputs, assess data quality, identify biases, contextualize performance indicators, and ensure that automated control systems remain aligned with strategic and ethical objectives. Thus, digital control is not simply about replacing human control with technological control; it is about reconfiguring the relationship between human expertise and digital intelligence.

Despite increasing scholarly interest, several gaps remain in the literature. First, much of the existing research examines specific technologies, such as business intelligence, dashboards, or analytics, rather than explaining how the broader control system evolves as an integrated package. Second, many studies focus on quantitative associations between digitalization and performance, while fewer studies explore how managers experience and interpret the transformation of control in practice. Third, the behavioral and ethical dimensions of digital control remain underdeveloped, particularly in relation to algorithmic transparency, privacy, employee autonomy, and trust. Fourth, there is limited qualitative evidence from emerging economy contexts, including Iran, where digital organizations may face distinctive institutional, infrastructural, regulatory, and cultural conditions. These gaps justify the need for a qualitative study that investigates how experienced managers and professionals understand the evolution of management control systems in digital organizations.

Accordingly, this study investigates the evolution of management control systems in digital organizations through semi-structured interviews with experts and managers in Tehran-based digital organizations. By adopting a qualitative approach, the study aims to capture the lived experiences, interpretations, and practical challenges associated with digital control transformation. The study contributes to management control literature by identifying the main categories through which digitalization reshapes control systems and by proposing an

integrated framework that links technological capability, control architecture, human judgment, and ethical governance. The aim of this study is to explain how management control systems evolve in digital organizations and to identify the main categories that characterize the transition from traditional, retrospective, and finance-centered control toward real-time, integrated, predictive, and ethically governed digital control systems.

2. Methods and Materials

This study employed a qualitative, review-informed research design to explore the evolution of management control systems in digital organizations. A qualitative design was considered appropriate because the research objective required an in-depth understanding of managerial interpretations, organizational experiences, and emerging control practices rather than statistical hypothesis testing. The study focused on digital organizations located in Tehran, including firms active in financial technology, e-commerce, software development, digital retail, telecommunications, logistics platforms, and data-based business services. Participants were selected through purposive sampling because the study required individuals with direct experience in designing, implementing, using, or evaluating management control systems in digitally enabled organizational contexts.

The final sample consisted of 22 participants. The inclusion criteria were: at least five years of professional experience in management, finance, control, digital transformation, data analytics, operations, or consulting; direct involvement with digital reporting systems, dashboards, budgeting systems, performance management systems, or analytics-based decision-making; and willingness to participate in a semi-structured interview. Participants included financial managers, management accountants, controllers, digital transformation managers, business intelligence managers, operations managers, senior project managers, and management consultants. Theoretical saturation was reached after the nineteenth interview, when no substantially new codes or categories emerged from the data. Three additional interviews were conducted to confirm the stability of the emerging categories and improve analytical confidence. This approach is consistent with qualitative saturation logic, according to which sample size is guided by information richness and category development rather than statistical representativeness (Guest et al., 2006; Hennink & Kaiser, 2022).

Data were collected through semi-structured interviews. The interview guide was developed based on the management control and digital transformation literature and was refined after two pilot interviews. The guide included open-ended questions about participants' experiences with digital control systems, changes in budgeting and performance measurement, dashboard use, data-driven decision-making, automation, controller roles, accountability mechanisms, employee behavior, privacy concerns, and challenges of digital control implementation. Examples of interview questions included: "How has digital transformation changed the way your organization monitors performance?", "What role do dashboards and analytics play in managerial control?", "How has the role of the controller or financial manager changed?", "What new risks or ethical concerns have emerged from digital monitoring?", and "What capabilities are necessary for effective control in digital organizations?"

Each interview lasted between 45 and 75 minutes. Interviews were conducted in person or through secure online platforms depending on participant availability. With participants' consent, interviews were audio-recorded and transcribed verbatim. Field notes were written after each interview to record contextual observations, emerging ideas, and preliminary analytical reflections. Ethical principles were observed throughout the research

process. Participants were informed about the purpose of the study, voluntary participation, confidentiality, and their right to withdraw at any stage. To protect anonymity, participants were identified using codes such as P01, P02, and P03.

Data were analyzed using thematic analysis supported by NVivo software. The analysis followed a systematic coding process involving familiarization with the data, initial coding, category development, theme refinement, and final interpretation (Braun & Clarke, 2006). First, interview transcripts were read several times to gain an overall understanding of participants' experiences. Second, open coding was conducted line by line to identify meaningful units related to digital control practices, control tools, behavioral responses, organizational changes, and implementation challenges. Third, similar codes were grouped into broader categories through axial analysis. Fourth, the main categories were refined by comparing coded data across participants and examining relationships among categories.

NVivo was used to organize transcripts, store codes, retrieve coded segments, compare participant groups, and support transparency in the analytical process. The software facilitated systematic management of qualitative data but did not replace interpretive judgment. Trustworthiness was enhanced through several strategies, including prolonged engagement with the data, peer review of coding decisions, comparison of codes across cases, use of direct interview quotations, maintenance of an audit trail, and review of emerging categories against the original transcripts. The final analysis produced five main categories: real-time and data-driven control, integrated digital control architecture, hybridization of formal and informal controls, transformation of the controller role, and ethical-behavioral challenges of algorithmic control.

3. Findings and Results

The study included 22 participants from Tehran-based digital organizations. Fourteen participants were male and eight were female. In terms of age, five participants were between 30 and 35 years old, nine were between 36 and 45 years old, six were between 46 and 55 years old, and two were older than 55. Regarding educational background, seven participants held a bachelor's degree, eleven held a master's degree, and four held a doctoral degree. In terms of organizational role, five participants were financial managers or controllers, four were digital transformation managers, four were business intelligence or data analytics managers, three were operations managers, three were senior project or product managers, and three were management consultants or academic experts working with digital organizations. Regarding professional experience, six participants had 5–10 years of experience, ten had 11–15 years, and six had more than 15 years. Participants represented several sectors, including financial technology, e-commerce, telecommunications, logistics platforms, software services, digital retail, and technology consulting.

The first category showed that digital organizations are moving from delayed, periodic, and report-based control toward real-time and data-driven control. Participants repeatedly stated that traditional monthly reports are no longer sufficient for organizations operating in fast-changing digital markets. Instead, control now depends on dashboards, automated alerts, live operational indicators, customer analytics, conversion metrics, cash-flow monitoring, and predictive performance signals. In this new control logic, managers do not wait until the end of the month to identify deviations; they observe performance continuously and intervene more rapidly. One participant explained, "In the past, we understood the problem after the monthly report, but now the dashboard

shows the deviation on the same day. Control has become immediate, not historical” (P04). Another participant stated, “The main change is speed. The control system is not only telling us what happened; it is helping us estimate what will happen next week” (P11). This category indicates that digital control systems are increasingly predictive rather than merely diagnostic. Participants emphasized that real-time control improves responsiveness, but it also creates pressure for constant reaction. Some managers warned that excessive attention to live metrics may lead to short-termism if strategic indicators are not balanced with operational indicators. Therefore, real-time control is useful only when data are reliable, strategically meaningful, and interpreted within a broader managerial context.

The second category concerned the integration of control architecture across digital platforms. Participants emphasized that management control in digital organizations depends on the integration of multiple systems, including accounting software, enterprise resource planning systems, customer relationship management platforms, human resource systems, project management tools, business intelligence dashboards, and data warehouses. In traditional organizations, control information was often fragmented across departments, and managers had to manually reconcile data from different sources. In digital organizations, however, the effectiveness of control depends on whether these systems are connected and whether managers can access a unified version of organizational performance. One participant noted, “Our biggest control problem was not lack of data; it was that every department had its own data. When the systems became integrated, disagreements about numbers decreased” (P08). Another participant observed, “Digital control means that finance, operations, sales, and customer data speak to each other. Without integration, dashboards only create confusion” (P17). The findings suggest that digital control architecture is not merely a technical infrastructure but a governance mechanism that shapes organizational accountability. Integrated systems make performance more visible, reduce information asymmetry, and enable cross-functional coordination. However, participants also identified challenges such as inconsistent data definitions, lack of data ownership, poor system interoperability, and resistance from departments that previously controlled their own information. Thus, integration requires not only software but also data governance, standardized definitions, and managerial commitment.

The third category revealed that digital organizations do not simply replace traditional controls with digital tools; rather, they combine formal, informal, diagnostic, and interactive controls in hybrid ways. Formal controls such as budgets, key performance indicators, approval rules, and compliance procedures continue to exist, but they are increasingly supported by informal controls such as digital culture, agile routines, peer visibility, shared dashboards, and cross-functional meetings. Participants explained that digital organizations need flexibility and innovation, but they also need boundaries to prevent uncontrolled experimentation, cybersecurity risks, and financial inefficiency. One participant stated, “We cannot control a digital team only with budgets. We need shared objectives, daily communication, and trust. But without boundaries, innovation becomes chaos” (P02). Another participant said, “The dashboard is formal, but the conversation around the dashboard is informal. The real control happens when teams discuss why the numbers changed” (P14). This finding shows that digital control is interactive and socially constructed. Data do not control behavior automatically; rather, managers and teams interpret data, negotiate priorities, and decide corrective actions. The hybridization of controls helps organizations balance autonomy and accountability. However, participants also noted that the balance is difficult. If formal controls dominate, employees may feel constrained and avoid experimentation. If informal controls dominate,

performance may become inconsistent and accountability may weaken. Effective digital control therefore requires a dynamic balance between enabling and constraining mechanisms.

The fourth category related to the transformation of the controller role from report producer to strategic data partner. Participants consistently argued that digitalization has changed expectations from controllers and management accountants. In the past, controllers were primarily responsible for preparing reports, checking budgets, and explaining variances. In digital organizations, many of these tasks are automated or supported by software. As a result, controllers are increasingly expected to interpret data, design performance indicators, advise managers, evaluate business models, and participate in strategic decision-making. One participant stated, “A controller who only prepares reports will not survive in a digital company. The system prepares the report; the controller must explain what the numbers mean” (P06). Another participant explained, “Our finance team now works with the data team. We need people who understand accounting logic and also understand data structure” (P19). This finding indicates that digital control requires hybrid competencies. Controllers must combine financial expertise with analytical thinking, technological literacy, communication skills, and strategic understanding. However, participants also noted capability gaps. Some controllers lack data analytics skills, while some data specialists lack understanding of financial logic and organizational control. Therefore, digital organizations need boundary-spanning professionals who can translate between finance, technology, and strategy. The controller role is not disappearing; it is becoming more interpretive, advisory, and integrative.

The fifth category concerned the ethical and behavioral challenges associated with algorithmic and digital control. Participants acknowledged that digital systems increase transparency and accountability, but they also warned that constant monitoring can create stress, distrust, and resistance. Algorithmic control may be perceived as objective because it relies on data, but participants emphasized that indicators, algorithms, and dashboards reflect managerial choices and may contain bias. One participant observed, “People think the algorithm is neutral, but someone designed the indicator, selected the data, and defined the target. Control is still a human decision” (P12). Another participant stated, “When employees feel every click is monitored, they do not become more creative; they become more defensive” (P21). This category suggests that digital management control must be governed ethically. Participants emphasized the importance of transparency about what is measured, why it is measured, who can access the data, and how the data will be used. They also stressed that digital control should support learning and improvement rather than punishment. The findings show that algorithmic control can improve consistency, speed, and visibility, but it can also reduce trust if employees experience it as surveillance. Therefore, digital organizations need ethical safeguards, privacy rules, human review, and participatory design of performance indicators.

4. Discussion and Conclusion

The purpose of this study was to explain how management control systems evolve in digital organizations and to identify the main categories that characterize this transformation. The findings revealed five main categories: real-time and data-driven control, integrated digital control architecture, hybridization of formal and informal controls, transformation of the controller role, and ethical–behavioral challenges of algorithmic control. Together, these categories show that the evolution of management control systems is not limited to the adoption of new technologies. Rather, it represents a deeper transformation in the logic, timing, actors, instruments, and

consequences of organizational control. Digital organizations move away from purely retrospective and finance-centered control toward systems that are more immediate, predictive, integrated, interactive, and ethically complex.

The first finding showed that digital organizations increasingly rely on real-time and data-driven control. This result is consistent with Möller et al. (2020), who argued that digitalization has the potential to disrupt management accounting and control practices by changing the digital landscape, business models, and controller roles. It also aligns with Fährndrich's (2023) review, which concluded that digitalization affects how management control activities are organized, performed, and analyzed. In this study, participants emphasized that dashboards, automated alerts, and predictive indicators allow managers to identify deviations more quickly than traditional monthly reporting systems. This supports the argument that digital control changes the temporal structure of management control. In traditional systems, control often occurred after action; in digital systems, control increasingly occurs during action or even before action through predictive analytics. However, the findings also show that real-time control may create short-termism if managers focus excessively on immediate indicators. This reinforces the importance of balanced performance measurement and strategic interpretation, as emphasized in performance management frameworks (Ferreira & Otley, 2009; Otley, 1999).

The second finding concerned the integration of digital control architecture. Participants stated that effective control depends on connecting accounting, operations, sales, customer, and human resource data into a coherent system. This finding aligns with the MCS package perspective developed by Malmi and Brown (2008), which emphasizes that control mechanisms should be understood as interconnected components rather than separate tools. In digital organizations, integration becomes even more important because fragmented data can produce fragmented control. The finding also supports Rikhardsson and Yigitbasioglu's (2018) argument that business intelligence and analytics create new relationships between management accounting and information systems. When digital systems are integrated, management control becomes more cross-functional and less confined to the finance department. However, participants also emphasized that integration requires data governance, standardized definitions, and organizational agreement about data ownership. This suggests that digital integration is not only a technical challenge but also a political and organizational challenge.

The third finding showed that digital organizations use hybrid forms of formal and informal control. Formal controls such as budgets, key performance indicators, authorization rules, and compliance procedures remain important, but they are increasingly combined with informal mechanisms such as agile communication, shared dashboards, team-based interpretation, and cultural norms of transparency. This finding is strongly aligned with Simons' (1995) levers of control framework, especially the need to balance diagnostic and interactive uses of control systems. Diagnostic controls help organizations monitor performance against targets, while interactive controls stimulate dialogue, learning, and strategic adaptation. The findings also support Mundy's (2010) argument that organizations must balance controlling and enabling uses of management control systems to generate dynamic tension. In digital organizations, the same dashboard can function diagnostically when it monitors target achievement and interactively when it becomes the basis for team discussion and strategic learning. Therefore, digital tools do not determine the nature of control by themselves; their effect depends on how managers use them.

The fourth finding revealed that digitalization transforms the role of the controller. Participants explained that controllers are no longer expected merely to prepare reports or monitor budgets; they are expected to interpret

data, advise managers, design indicators, collaborate with data teams, and contribute to strategic decision-making. This finding is consistent with the literature suggesting that digitalization changes the role of management accountants and controllers (Bhimani, 2020; Möller et al., 2020). It also supports the idea that management control work increasingly requires hybrid capabilities that combine accounting knowledge, analytical literacy, business understanding, and communication skills. Digital systems may automate routine reporting, but they increase the need for human interpretation. Algorithms and dashboards can produce information, but managers still need professionals who can evaluate data quality, explain causal patterns, challenge misleading indicators, and connect numbers to strategic priorities. Thus, the controller role is not eliminated by digitalization; it becomes more strategic and interpretive.

The fifth finding concerned ethical and behavioral challenges of algorithmic control. Participants emphasized that digital monitoring can increase transparency and accountability, but it can also generate stress, defensive behavior, privacy concerns, and distrust. This finding extends traditional management control literature by showing that digital control intensifies the behavioral consequences of measurement. Performance measurement has always influenced behavior, but digital systems increase the frequency, visibility, and granularity of measurement. Employees may feel that they are constantly observed, especially when systems track clicks, response times, location, productivity, or customer interactions. This finding is consistent with broader digital transformation literature, which emphasizes that digital technologies create organizational disruption and require strategic and structural responses (Vial, 2019; Verhoef et al., 2021). It also suggests that algorithmic control requires ethical governance. Digital control systems should be transparent, explainable, proportionate, and subject to human review. Without these safeguards, control systems may undermine trust and reduce the very learning and innovation that digital organizations need.

Overall, the findings indicate that the evolution of management control systems in digital organizations involves a shift from static control to dynamic control. Static control is based on periodic reporting, fixed budgets, hierarchical supervision, and retrospective evaluation. Dynamic control is based on real-time data, predictive analytics, integrated platforms, interactive interpretation, and continuous learning. However, the study also shows that dynamic control is not automatically superior. Its effectiveness depends on the quality of data, strategic relevance of indicators, integration of systems, managerial competence, ethical safeguards, and organizational culture. Digital tools can make control faster, but speed without interpretation may produce poor decisions. Digital dashboards can make performance visible, but visibility without trust may create resistance. Algorithms can standardize evaluation, but standardization without human judgment may produce unfair outcomes. Therefore, digital control must be designed as a socio-technical system rather than a purely technological system.

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

- Asatiani, A., Malo, P., Penttinen, E., Rinta-Kahila, T., & Salovaara, A. (2021). Sociotechnical envelopment of artificial intelligence: An approach to organizational deployment of inscrutable artificial intelligence systems. *Journal of the Association for Information Systems*, 22(2), 325–352.
- Benlian, A., Wiener, M., Cram, W. A., Krasnova, H., Maedche, A., Möhlmann, M., Recker, J., & Remus, U. (2022). Algorithmic management: Bright and dark sides, practical implications, and research opportunities. *Business & Information Systems Engineering*, 64, 825–839.
- Berente, N., Gu, B., Recker, J., & Santhanam, R. (2021). Managing artificial intelligence. *MIS Quarterly*, 45(3), 1433–1450. <https://doi.org/10.25300/MISQ/2021/16274>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W. W. Norton.
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE.
- Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard Business Review*, 96(1), 108–116.
- Faraj, S., Pachidi, S., & Sayegh, K. (2018). Working and organizing in the age of the learning algorithm. *Information and Organization*, 28(1), 62–70. <https://doi.org/10.1016/j.infoandorg.2018.02.005>
- 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>
- Hennink, M., & Kaiser, B. N. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Social Science & Medicine*, 292, 114523. <https://doi.org/10.1016/j.socscimed.2021.114523>
- Jarrahi, M. H. (2018). Artificial intelligence and the future of work: Human–AI symbiosis in organizational decision making. *Business Horizons*, 61(4), 577–586. <https://doi.org/10.1016/j.bushor.2018.03.007>
- Keegan, A., & Meijerink, J. (2025). Algorithmic management in organizations? From edge case to center stage. *Annual Review of Organizational Psychology and Organizational Behavior*, 12, 395–422. <https://doi.org/10.1146/annurev-orgpsych-110622-070928>
- Kellogg, K. C., Valentine, M. A., & Christin, A. (2020). Algorithms at work: The new contested terrain of control. *Academy of Management Annals*, 14(1), 366–410. <https://doi.org/10.5465/annals.2018.0174>
- Krakowski, S. (2025). Human–AI agency in the age of generative AI. *Information and Organization*, 35(1), 100560. <https://doi.org/10.1016/j.infoandorg.2025.100560>
- Lee, M. K., Kusbit, D., Metsky, E., & Dabbish, L. (2015). Working with machines: The impact of algorithmic and data-driven management on human workers. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (pp. 1603–1612). Association for Computing Machinery. <https://doi.org/10.1145/2702123.2702548>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE.
- Möhlmann, M., Zalmanson, L., Henfridsson, O., & Gregory, R. W. (2021). Algorithmic management of work on online labor platforms: When matching meets control. *MIS Quarterly*, 45(4), 1999–2022. <https://doi.org/10.25300/MISQ/2021/15333>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1), 1–13. <https://doi.org/10.1177/1609406917733847>
- Parent-Rochelleau, X., & Parker, S. K. (2022). Algorithms as work designers: How algorithmic management influences the design of jobs. *Human Resource Management Review*, 32(3), 100838. <https://doi.org/10.1016/j.hrmr.2021.100838>
- Raisch, S., & Krakowski, S. (2021). Artificial intelligence and management: The automation–augmentation paradox. *Academy of Management Review*, 46(1), 192–210. <https://doi.org/10.5465/amr.2018.0072>
- Siemon, D. (2022). Elaborating team roles for artificial intelligence-based teammates in human–AI collaboration. *Group Decision and Negotiation*, 31, 871–912. <https://doi.org/10.1007/s10726-022-09792-z>
- Wilson, H. J., & Daugherty, P. R. (2018). Collaborative intelligence: Humans and AI are joining forces. *Harvard Business Review*, 96(4), 114–123.