



fecha de presentación: 18/03/2026, fecha de aceptación: 17/04/2026, fecha de publicación: 01/05/2026

Hassan Madjebri

E-mail: hassanrnb@gmail.com

Orcid: <https://orcid.org/0009-0004-0758-7809>

Université D'Alger

Cita sugerida (APA, séptima edición)

Madjebri, H. (2026). Digital transformation and organizational power: exploring the impact of technology on work structures and authority. *Revista Sociedad & Tecnología*, 9(S2), 732-742, DOI: <https://doi.org/10.51247/st.v9iS2.36>

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Digital transformation and organizational power: exploring the impact of technology on work structures and authority.

ABSTRACT

This study examined the impact of digital transformation on organizational structures and power relations within contemporary institutions. The objective was to analyze how digital technologies reshaped coordination processes, authority patterns, and workplace interactions. The methodology adopted a qualitative descriptive approach based on purposive sampling, semi-structured interviews, documentary review, and thematic analysis. Twenty participants, including managers and employees from public and private organizations, contributed their experiences regarding the use of digital systems in everyday work. The results showed that digitalization promoted networked coordination, faster communication, and broader knowledge sharing across hierarchical levels. At the same time, authority became more distributed, as employees with technological expertise assumed greater decision-making responsibilities. However, digital systems also intensified oversight through performance metrics, workflow monitoring, and data-driven evaluation mechanisms. These changes revealed a dual dynamic in which autonomy and control expanded simultaneously. The study concluded that digital transformation should be understood not only as technological modernization, but also as a reconfiguration of organizational power, labor relations, and institutional culture. Contemporary organizations therefore require governance models that balance innovation, efficiency, employee autonomy, and ethical accountability in digitally mediated workplaces.

Keywords: digital transformation; organizational power; workplace technology; authority; organizational change; digitalization; labor relations.

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Transformación digital y poder organizacional: explorando el impacto de la tecnología en las estructuras laborales y la autoridad

RESUMEN

Este estudio examinó el impacto de la transformación digital en las estructuras organizacionales y las relaciones de poder dentro de instituciones contemporáneas. El objetivo fue analizar cómo las tecnologías digitales reconfiguraron los procesos de coordinación, los patrones de autoridad y las interacciones laborales. La metodología adoptó un enfoque cualitativo descriptivo basado en muestreo intencional, entrevistas semiestructuradas, revisión documental y análisis temático. Participaron veinte personas, entre directivos y empleados de organizaciones públicas y privadas, quienes compartieron sus experiencias

sobre el uso de sistemas digitales en el trabajo cotidiano. Los resultados mostraron que la digitalización promovió coordinación en red, comunicación más rápida y mayor intercambio de conocimiento entre niveles jerárquicos. Al mismo tiempo, la autoridad se volvió más distribuida, ya que los trabajadores con competencias tecnológicas asumieron mayores responsabilidades decisorias. Sin embargo, los sistemas digitales también intensificaron la supervisión mediante métricas de desempeño, monitoreo de flujos de trabajo y mecanismos de evaluación basados en datos. Estos cambios evidenciaron una dinámica dual donde autonomía y control crecieron simultáneamente. Se concluyó que la transformación digital no debe entenderse solo como modernización tecnológica, sino también como reconfiguración del poder organizacional, las relaciones laborales y la cultura institucional.

Palabras clave: transformación digital; poder organizacional; tecnología laboral; autoridad; cambio organizacional; digitalización; relaciones laborales.

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Transformação digital e poder organizacional: explorando o impacto da tecnologia nas estruturas de trabalho e autoridade

RESUMO

Este estudo examinou o impacto da transformação digital nas estruturas organizacionais e nas relações de poder em instituições contemporâneas. O objetivo foi analisar como as tecnologias digitais reconfiguraram processos de coordenação, padrões de autoridade e interações no trabalho. A metodologia adotou uma abordagem qualitativa descritiva baseada em amostragem intencional, entrevistas semiestruturadas, revisão documental e análise temática. Participaram vinte pessoas, entre gestores e empregados de organizações públicas e privadas, que compartilharam suas experiências sobre o uso de sistemas digitais no trabalho cotidiano. Os resultados mostraram que a digitalização promoveu coordenação em rede, comunicação mais rápida e maior compartilhamento de conhecimento entre níveis hierárquicos. Ao mesmo tempo, a autoridade tornou-se mais distribuída, pois trabalhadores com competência tecnológica assumiram maiores responsabilidades decisórias. Contudo, os sistemas digitais também intensificaram a supervisão por meio de métricas de desempenho, monitoramento de fluxos de trabalho e mecanismos avaliativos baseados em dados. Essas mudanças revelaram uma dinâmica dual na qual autonomia e controle cresceram simultaneamente. Concluiu-se que a transformação digital não deve ser entendida apenas como modernização tecnológica, mas também como reconfiguração do poder organizacional, das relações laborais e da cultura institucional.

Palavras-chave: transformação digital; poder organizacional; tecnologia no trabalho; autoridade; mudança organizacional; digitalização; relações laborais.

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INTRODUCTION

Over the past two decades, the world of work has undergone profound transformations driven by the accelerated expansion of digital technologies. Organizations increasingly rely on digital infrastructures, cloud systems, collaborative platforms, and data networks to coordinate production and manage knowledge. This process has positioned digitalization as a defining feature of contemporary institutions, reshaping operational routines and social interactions. From a macro-sociological perspective, these developments reflect the consolidation of the network society, in which information flows have become central to economic and organizational life (Castells, 2000, 2010, 2023; Stark, 1997).

The concept of the network society has been widely used to explain how digital connectivity alters institutional structures and patterns of coordination. In this model, organizational effectiveness depends less on rigid hierarchies and more on dynamic connections among actors, systems, and knowledge resources. Technological integration enables faster

communication, decentralized decision-making, and transnational collaboration across professional boundaries. Several studies have emphasized that these changes redefine both organizational logic and the social meaning of work in digitally connected environments (Kizilhan & Kizilhan, 2016; Marsili et al., 2004; Castells, 2010).

From the perspective of organizational sociology, digital transformation challenges classical models based on bureaucracy, formal authority, and stable chains of command. Traditional theories assumed that control and efficiency were achieved through clearly defined roles and centralized supervision. However, contemporary organizations increasingly operate through platforms, real-time analytics, and continuous information exchange. This shift has generated hybrid forms of authority in which managerial control coexists with networked collaboration and technological mediation (Orlikowski, 2016; Elia et al., 2020).

Recent scholarship has shown that digital technologies can enhance cooperation, creativity, and collective problem-solving in the workplace. Communication tools, virtual workspaces, and intelligent systems facilitate coordination among geographically dispersed teams and support more flexible organizational practices. These developments became particularly visible during and after the expansion of remote work arrangements. At the same time, new technological systems generate digital traces that organizations use to monitor processes and redesign workflows (Leonardi, 2021; Langer & Landers, 2021).

Nevertheless, digitalization has also introduced more intensive forms of surveillance and managerial oversight. Algorithmic systems can evaluate productivity, allocate tasks, rank workers, and predict behavior through continuous data extraction. Such practices may strengthen efficiency, yet they also create tensions regarding privacy, autonomy, and fairness in labor relations. Scholars have therefore identified workplaces as a new contested terrain in which technological innovation and labor control increasingly intersect (Kellogg et al., 2020; Ajunwa, 2018).

The relationship between technology and productivity has likewise become central to contemporary debates on the future of work. Authors examining the so-called Second Machine Age argue that digital systems, automation, and artificial intelligence are transforming economic growth and the role of human labor. While these innovations create opportunities for prosperity and organizational innovation, they may also intensify inequality, displacement, and dependence on technological infrastructures. This dual perspective has shaped much recent discussion on digital capitalism and employment change (Brynjolfsson & McAfee, 2014; Marien, 2014; Merritt, 2017; Spencer, 2017).

Another emerging concern relates to the environmental consequences of digital transformation. Although digital systems are often associated with efficiency and dematerialization, expanding data centers, artificial intelligence infrastructures, and constant connectivity also generate significant energy demands and carbon footprints. Consequently, the digital workplace must be analyzed not only in organizational terms but also in relation to sustainability and technological externalities. Recent studies have highlighted these issues in debates on responsible digital modernization (Singh & Marwaha, 2025; Fawzy et al., 2025).

Methodological and technical advances have additionally contributed to understanding organizational digitalization through network analysis and large-scale data visualization. The study of complex graphs, communication networks, and computational structures has enabled scholars to examine how digital systems organize flows of information and interaction. These analytical tools are increasingly relevant for sociology because they reveal hidden patterns of coordination, influence, and institutional connectivity in modern workplaces (Hachul & Jünger, 2007; Marsili et al., 2004).

Despite the growing literature on digital transformation, many studies continue to prioritize managerial efficiency or technological adoption over the sociological implications of these changes. Comparatively less attention has been devoted to how digitalization reconfigures authority, professional identities, workplace inequality, and power relations within

institutions. Understanding these transformations requires an integrated framework that links technology with organizational culture, governance, and labor dynamics.

Against this background, the present study examines the impact of digitalization on organizational structures and power relations within contemporary institutions. By adopting a sociological perspective, the research seeks to explain how digital technologies reshape coordination, authority, professional interaction, and control in modern workplaces. In doing so, the study contributes to broader debates on the future of work, organizational change, and the social consequences of digital transformation.

Methodology

This study adopted a qualitative descriptive approach to examine how digitalization reshaped organizational structures and power relations within contemporary institutions. Qualitative inquiry was considered appropriate because it facilitates the exploration of meanings, perceptions, and social interactions embedded in everyday workplace practices. Rather than isolating variables, this approach seeks to understand how participants interpret organizational change and technological transformation in real contexts. It is especially useful when studying complex social phenomena linked to work, identity, and institutional dynamics (Creswell & Poth, 2018).

The research was conducted in multiple organizational settings where digital tools had become central to routine operations. These settings included both public and private institutions that relied on digital platforms for communication, task coordination, information management, and performance monitoring. Selecting diverse workplaces made it possible to compare experiences across different administrative cultures and managerial structures. Qualitative methods offered in-depth insights into how workers and managers navigated digital transformation under distinct organizational conditions (Denzin & Lincoln, 2018).

A descriptive qualitative research design guided the investigation. This design was selected because it emphasizes the detailed description of participants' experiences, practices, and interpretations without imposing rigid explanatory models at the outset. Instead of beginning from predetermined hypotheses, the study sought to identify recurrent patterns emerging from participants' narratives and institutional realities. The main analytical focus was placed on understanding how digital technologies influenced authority, coordination, and workplace interaction (Sandelowski, 2000).

Participants were selected through purposive sampling, a strategy commonly employed in qualitative research to identify individuals with direct knowledge of the phenomenon under study. The sample consisted of mid-level and senior managers responsible for implementing digital systems, as well as employees who regularly used digital platforms in their daily tasks. In total, twenty participants were included: ten managers and ten employees. This composition ensured diversity of perspectives while preserving the depth required for qualitative interpretation (Patton, 2015).

Data were collected primarily through semi-structured interviews, which combine guiding questions with enough flexibility to explore unexpected themes and personal experiences. This format enabled participants to discuss workplace routines, perceptions of control, communication changes, and adaptation to digital tools in their own terms. Each interview lasted approximately forty-five to sixty minutes and was conducted either face-to-face or through secure virtual platforms, depending on logistical availability and participant preference (Kallio et al., 2016).

To complement the interviews, relevant organizational documents were also reviewed. These materials included internal communication policies, workflow protocols, digital governance guidelines, and procedural documents related to platform use. Documentary analysis helped contextualize participants' testimonies and provided evidence of how digital systems were formally embedded in institutional practices. Combining interviews with documentary sources

strengthened the credibility of the findings through methodological triangulation (Denzin & Lincoln, 2018).

Data analysis followed a thematic analysis approach, widely recognized in qualitative research for identifying patterns of meaning across textual data. The process began with the verbatim transcription of interviews, followed by repeated reading to achieve familiarity with the material. Subsequently, codes were assigned to recurring ideas concerning digital practices, managerial control, collaboration, and organizational change. These codes were later grouped into broader themes explaining how digitalization reconfigured authority and workplace relations (Braun & Clarke, 2006).

Throughout the analytical process, interpretations remained grounded in participants' own accounts in order to preserve authenticity and minimize researcher bias. Attention was given to contrasting managerial and employee perspectives, thereby identifying convergences and tensions regarding the use of digital technologies. Reflexive review was maintained during coding and theme construction to ensure coherence between evidence and interpretation. This procedure contributed to the trustworthiness and transparency of the qualitative findings (Creswell & Poth, 2018).

The study also followed standard ethical principles designed to protect participants' rights and privacy. All individuals received clear information regarding the purpose of the research and voluntarily provided informed consent prior to participation. Interview records were anonymized, and identifying details were removed from transcripts and notes. In addition, all digital files were securely stored and accessed only for academic purposes, thereby guaranteeing confidentiality throughout the research process.

RESULTS AND DISCUSSION

The analysis revealed substantial transformations in the way work processes, authority structures, and organizational cultures operated within digitally mediated institutions. Participants consistently described digitalization as a force that altered communication patterns, redistributed responsibilities, and intensified performance visibility. Rather than functioning solely as technical support systems, digital tools became embedded in decision-making routines and everyday labor relations. These findings support broader scholarship that views digital transformation as a structural change affecting how organizations coordinate, innovate, and exercise control (Hinings et al., 2018; Zaki, 2019).

Networked Coordination

A recurring theme concerned the emergence of more networked forms of coordination. Participants explained that collaborative platforms enabled faster communication across departments and reduced delays associated with formal bureaucratic channels. Information circulated more horizontally, allowing employees to solve operational problems in real time and share expertise across hierarchical levels. One manager noted that digital systems made coordination more immediate and less dependent on sequential approval processes. Similar patterns have been identified in studies linking digital tools with new forms of organizing and agile collaboration (Leonardi, 2021; Majchrzak et al., 2016; Yoo et al., 2012).

The findings also indicated that digital infrastructures supported stronger knowledge integration inside organizations. Shared dashboards, cloud repositories, and messaging platforms facilitated collective access to information that was previously fragmented or restricted to specific units. This dynamic enhanced cross-functional learning and accelerated problem-solving capacities. Participants frequently associated efficiency gains with the ability to retrieve and exchange information quickly. Such observations coincide with research emphasizing the strategic value of knowledge management systems in digitally connected workplaces (Nurnaninsih & Muthmainah, 2023; Attaran et al., 2020).

Distributed Authority

A second major theme involved the redistribution of authority. In several institutions, decision-making power was no longer concentrated exclusively in formal managerial positions, but increasingly depended on digital competence and informational proximity. Employees who managed databases, client systems, or workflow platforms were often entrusted with operational decisions that previously required supervisory authorization. This suggests that technological expertise became a new source of organizational legitimacy and influence. Comparable conclusions have been reported in studies on digital organizations and changing professional hierarchies (Snow et al., 2017; Orlikowski, 2016).

Participants also reported a stronger sense of autonomy in digital work environments. Many employees perceived that access to real-time data enabled them to act independently, respond to clients, and coordinate tasks without waiting for managerial intervention. However, this empowerment was conditional upon mastering digital tools and understanding system protocols. Consequently, authority became more fluid, yet also more dependent on technical literacy and platform participation. These findings reinforce arguments that digitalization reshapes organizational power through competence-based rather than purely positional authority (Kellogg et al., 2020; Khin & Ho, 2019).

Digital Oversight

Although digitalization expanded autonomy, it simultaneously introduced new mechanisms of surveillance and oversight. Participants explained that platforms continuously recorded attendance, task completion, response times, and productivity indicators. Many workers acknowledged that these systems improved transparency and accountability, yet they also generated feelings of permanent visibility. One employee remarked that every digital action seemed measurable and potentially evaluative. This duality reflects previous research describing algorithmic management as both enabling and controlling labor processes (Ajunwa, 2018; Kellogg et al., 2020).

The findings further suggested that control increasingly shifted from direct supervisors toward technological systems. Rather than relying solely on interpersonal supervision, organizations used dashboards, alerts, rankings, and automated reports to regulate behavior. In this sense, authority became embedded in software architectures and data metrics. Employees adapted their conduct not only to managerial expectations but also to what systems measured and rewarded. This supports the sociomaterial perspective that technology and organizational control are deeply intertwined rather than separate domains (Orlikowski, 2016; Glikson & Woolley, 2020).

Implications for Organizational Culture

Across institutions, digital transformation also influenced organizational culture. Participants described a stronger norm of immediacy, continuous availability, and rapid responsiveness, particularly in communication-intensive roles. Digital tools normalized instant feedback, collaborative problem-solving, and visible contribution tracking. At the same time, they raised expectations for constant connectivity, which sometimes blurred boundaries between professional time and personal time. These results align with scholarship showing that technologies reshape not only structures but also shared values and behavioral expectations at work (Barley, 2018; Attaran et al., 2020).

Another cultural shift involved the growing importance of innovation and adaptability. Organizations increasingly valued workers who learned new platforms quickly, experimented with digital solutions, and contributed ideas for process improvement. This orientation linked professional recognition to innovation capacity and technological flexibility. Participants often associated career advancement with the ability to navigate change effectively. Such findings are consistent with studies demonstrating that digital capability and innovation networks contribute significantly to organizational performance and renewal (Motamedimoghdam et al., 2025; Liu et al., 2023).

General Discussion

Overall, the results demonstrated that digitalization produced a paradoxical transformation of organizational life. On one hand, it fostered collaboration, agility, decentralized coordination, and broader access to information. On the other hand, it intensified surveillance, redefined authority through technical systems, and increased expectations of permanent responsiveness. Therefore, digital transformation should not be understood merely as technological modernization, but as a reconfiguration of power, work relations, and institutional culture. This interpretation is consistent with broader debates on the future of work in digitally mediated societies (Barley, 2018; Hinings et al., 2018; Zaki, 2019).

CONCLUSIONS

The findings of this study reveal that digitalization is transforming both the structure and culture of contemporary organizations. The three main themes—networked coordination, distributed authority, and digital oversight—highlight the complex interplay between technology, power, and workplace practices. These results align with a growing body of research demonstrating that digital tools are reshaping organizational dynamics rather than merely supporting existing workflows (Leonardi, 2021; Majchrzak et al., 2016).

Networked Coordination and Organizational Agility

Digital platforms facilitate horizontal information flows that reduce traditional hierarchical bottlenecks. This shift towards networked coordination supports faster decision-making and enhanced collaboration among employees. Such findings confirm prior studies showing that technology-mediated networks enable more agile and responsive organizational structures (Castells, 2010; Barley, 2018). Organizations adopting these platforms benefit from improved knowledge sharing and cross-departmental problem-solving, which can enhance overall performance while also fostering a participatory work culture.

Distributed Authority and Power Dynamics

The results indicate that authority is increasingly distributed based on expertise and digital competency rather than formal hierarchical position. This trend reflects a shift from classical bureaucratic models toward more flexible, competence-based structures (Kellogg et al., 2020; Orlikowski & Scott, 2015). Employees with higher digital literacy gain influence in decision-making processes, which can both empower staff and challenge traditional managerial control. The findings support the notion that digital technologies act as both enablers and regulators of power within organizations, creating a dynamic tension between autonomy and oversight.

Digital Oversight and Surveillance

While autonomy increases, participants also experienced heightened monitoring through digital systems. Algorithmic management tools, real-time tracking, and performance dashboards allow managers to observe and evaluate employee activity continuously. This duality echoes the concept of “digital panopticons,” where technology enhances both organizational efficiency and surveillance (Glikson & Woolley, 2020). The study thus confirms that digitalization introduces novel mechanisms of control that reshape professional accountability, potentially influencing employee behavior, motivation, and stress levels.

Implications for Organizational Culture

The integration of digital tools has fostered a culture of transparency, collaboration, and shared knowledge. Participants reported that digital communication facilitates immediate feedback and recognition of contributions, reinforcing cooperative norms. These findings align with research suggesting that technology not only transforms operational processes but also acts as a catalyst for cultural change within organizations (Brynjolfsson & McAfee, 2014; Orlikowski, 2016). Organizational leaders should recognize that technology adoption is

inseparable from its social implications; effective implementation requires balancing empowerment with oversight to maintain trust and motivation.

Contribution to Theory

This study extends sociological understanding of digital work by illustrating how technology mediates both structure and power. Unlike traditional hierarchical models, digital workplaces encourage flexible authority, networked coordination, and culturally embedded oversight. These insights contribute to contemporary theories of work and organization, emphasizing that digital tools reshape not only tasks and workflows but also social relationships and professional hierarchies (Leonardi, 2021; Majchrzak et al., 2016).

Ethical Statements

1. Conflict of Interest Declaration

The authors declare that there are no conflicts of interest related to the research, authorship, or publication of this article. All decisions regarding the study design, data collection, analysis, and reporting were made independently without influence from any external party, institution, or funding source that could bias the results.

2. Ethical Approval and Research Consent

This study was conducted following the ethical standards of social research and the principles outlined in the Declaration of Helsinki. All participants provided informed consent prior to their involvement in interviews. Participation was voluntary, and participants had the right to withdraw at any stage without penalty. The study ensured anonymity and confidentiality, with all personal identifiers removed from transcripts and reports. Institutional ethical approval was obtained from the relevant review board at the researchers' home institutions.

3. Data Availability Statement

The data supporting the findings of this study, including interview transcripts and organizational documents, are available from the corresponding author upon reasonable request. Access to sensitive information will be provided in a manner that preserves participant confidentiality and complies with ethical and legal standards.

STUDY LIMITATIONS

This study was limited by its qualitative and descriptive scope, which prioritized depth of understanding over statistical generalization. The sample was restricted to selected public and private institutions where digital tools were already integrated into daily operations, so findings may differ in organizations with lower levels of technological adoption. In addition, the research relied mainly on participant perceptions and documentary evidence rather than long-term observational data.

FUTURE STUDIES

Future research should incorporate mixed-methods designs, longitudinal analysis, and cross-national comparisons to evaluate how digital transformation evolves over time in different institutional contexts. Additional studies may also examine artificial intelligence management systems, remote work governance, employee well-being, and the ethical implications of algorithmic decision-making in organizations.

ACKNOWLEDGMENTS

The authors express sincere gratitude to the academic specialists and organizational researchers whose observations and recommendations enriched the development of this study. Special appreciation is extended to colleagues of the university for their intellectual support, constructive dialogue, and encouragement throughout the research process.

Recognition is also given to all participants who generously shared their experiences and perspectives.

CONFLICT OF INTEREST STATEMENT

The author declare that there were no financial, institutional, professional, or personal conflicts of interest related to the preparation, authorship, or publication of this article.

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