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Organizational Agility in Digital Systems Adoption: A Managerial and Applied Computing Perspective

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Abstract Rapid environmental changes and the ongoing digital transformation necessitate organizations to enhance their agility, particularly during the adoption of digital systems. Despite significant investments in technology, many organizations encounter substantial challenges in this transition, leading to a critical need for understanding agility as a managerial capability backed by effective information systems. This research aims to investigate the interconnections between organizational agility and digital systems adoption from both managerial and applied computing perspectives. Utilizing a qualitative research methodology, the study draws upon in-depth interviews, participant observations, and documentary analysis across various settings, including private firms and educational institutions. Findings reveal key agility dimensions—speed, flexibility, responsiveness, and learning—highlighting how robust digital systems facilitate these qualities. Furthermore, managerial practices emerge as pivotal enablers of agile digital frameworks. The study contributes a novel perspective on how managerial structures and information systems interplay to foster organizational agility, offering practical implications for leaders in navigating digital transformation.
Keywords: Organizational Agility; Digital Transformation; Information Systems; Managerial Practices; Qualitative Research

Abstrak *Perubahan lingkungan yang cepat dan transformasi digital yang sedang berlangsung memaksa organisasi untuk meningkatkan kecepatan respons mereka, terutama selama adopsi sistem digital. Meskipun telah melakukan investasi besar dalam teknologi, banyak organisasi menghadapi tantangan yang signifikan dalam peralihan ini, sehingga menyebabkan kebutuhan mendesak untuk memahami kelincahan sebagai kapabilitas manajerial yang didukung oleh sistem informasi yang efektif. Penelitian ini bertujuan untuk menyelidiki hubungan antara kelincahan organisasi dan adopsi sistem digital dari perspektif manajerial dan komputasi terapan. Menggunakan metodologi penelitian kualitatif, studi ini menarik data dari wawancara mendalam, observasi peserta, dan analisis dokumen di berbagai konteks, termasuk perusahaan swasta dan institusi pendidikan. Temuan menunjukkan dimensi utama kelincahan—kecepatan, fleksibilitas, responsif, dan pembelajaran—sambil menekankan bahwa sistem digital yang kuat memfasilitasi kualitas ini. Selain itu, praktik manajerial muncul sebagai penggerak penting bagi kerangka kerja digital yang lincah. Penelitian ini memberikan perspektif baru mengenai bagaimana struktur manajerial dan sistem informasi saling berinteraksi untuk mendorong kelincahan organisasi, menawarkan implikasi praktis bagi pemimpin dalam menavigasi transformasi digital.*
Kata kunci: *Kelincahan Organisasi; Transformasi Digital; Sistem Informasi; Praktik Manajerial; Penelitian Kualitatif*

INTRODUCTION

Background and Empirical Phenomena

The backdrop of the current business landscape is characterized by rapid environmental change, entitlement to digital transformation, and the consequential requirement for organizational agility. Operating within an intricate matrix of technological advancements,

regulatory compliance, and stakeholder expectations reinforces the imperative for organizations—public and private alike—to evolve continually. Organizational agility, defined as the capacity to rapidly adapt to unforeseen changes without compromising performance, has become more than a mere competitive edge; it is essential for survival in an era where strategic adaptation can be the difference between success and obsolescence (Nugroho et al., 2025; Nuryanti et al., 2025).

Among contemporary organizations, the education sector presents a unique landscape where the adoption of digital systems is not only about modernization but also about redefining interpersonal and organizational dynamics. This sector faces distinct challenges as it integrates emerging technologies, with rapid democratization of information reconfiguring traditional models (Nofiyanti et al., 2025; Asbari & Asbari, 2025).

Challenges Faced by Organizations during Digital Systems Adoption

Organizations, however, frequently encounter numerous obstacles during digital systems adoption. The principal challenges identified in the literature include resistance to change among staff, inadequate technological infrastructure, and insufficient strategic alignment within organizational hierarchies (Tan et al., 2022; Purwanto et al., 2020). Moreover, Hartono et al. emphasize that organizational culture often plays a detrimental role by instilling a collective aversion to shifting established operational paradigms (Asbari & Prasetya, 2021). As a result, despite recognizing the strategic importance of technological adoption, organizations grapple with inertia and mindsets that hinder their ability to pivot effectively in response to agility demands.

Digital transformation specifics further exacerbate the complexity of these transitions. The void between expected and actual benefits from digital systems can lead to disillusionment among stakeholders, reinforcing reluctance towards adopting new technological frameworks (Hutagalung et al., 2021). For instance, public sector agencies often face bureaucratic hurdles that stall progression towards digital platforms, contributing to frustrations and diminishing overall organizational agility (Nugroho et al., 2025).

The Role of Applied Computing and Information Systems

Applied computing serves as a critical enabler for organizational agility. Through sophisticated information systems, organizations can glean insights into operational efficiencies, market demands, and customer preferences in real-time, thereby positioning themselves to respond nimbly to fluctuating conditions (Asbari et al., 2025; Purwanto et al., 2020). The advent of data analytics and automation within integrated information systems enables organizations to streamline workflows, enhance cross-functional collaboration, and instill a culture of continuous improvement.

With effective information systems architecture, organizations can automate various processes, which not only mitigates human error but also accelerates decision-making processes. This aspect is pivotal in today's business environment, where time-to-market could determine competitive dominance. Cresting studies underscore the importance of managerial strategies that foster the necessary cultural shifts to harness the potential of digital systems (Asbari & Novitasari, 2022; Suroso et al., 2021).

Review of Relevant Literature

Reviewing the scholarship on digital transformation, it becomes evident that the past decade's research has yielded a wealth of frameworks and models designed to optimize agility through technology. Recent studies delve into various aspects of this dynamic interplay; for example, organizational agility models rooted in empirical studies illuminate processes and practices that significantly enhance responsiveness and adaptability during digital transformations (Hutagalung et al., 2021). Despite this rich body of knowledge, a noticeable research gap persists: the intricate relationship between managerial insights into fostering

agility and the technical facets of applying information systems remains underexplored. Scholars like Nugroho et al. highlight that the integration of tactical managerial aspects within digital systems adoption strategies is crucial for coherent progress towards agile transformations (Asbari et al., 2023).

Thus, pivotal research objectives arise: how are managerial practices fundamentally shaping organizational agility, especially during turbulent digital transitions? What dimensions of agility emerge as crucial enabling factors for successful digital systems integration? This study aims to fill these gaps through qualitative exploration, yielding comprehensive insights into the concepts of agility within the operational fold of digital systems.

Research Objectives and Novelty Statement

The motivation behind this research is threefold: to scrutinize the dimensions of organizational agility in relation to digital systems adoption; to clarify which managerial practices enhance agile capacities amongst organizations; and to outline actionable frameworks that synthesize these insights into effective strategies for future applications. Notably, this inquiry contributes novel perspectives regarding the intersection of managerial acumen with applied computing, elucidating pathways by which organizations can sidestep common pitfalls associated with digital transitions.

In addressing these objectives, the study leverages a qualitative framework to elucidate the nuances surrounding managerial roles in technological adoption and the subsequent impacts on agility and performance outcomes. The anticipated novelty of this study is reflected in its dual focus: merging academic rigor around agility theory with practical implications for managerial education and public policy.

METHOD

Research Design and Approach

This study uses a qualitative research design focused on case studies to explore the dynamics between organizational agility and digital systems adoption comprehensively. A qualitative lens is justifiable as it allows for the exploration of richer, contextualized data that quantitative methods may overlook. The complex interplay between technology and management practices requires a thorough examination of human experiences, behaviors, and beliefs as they interact with evolving digital infrastructures.

Research Context and Participants

The research spans various organizational contexts, selected deliberately for their diverse experiences in technology adoption. These contexts will include: (1) **Public Sector Organizations**: Given their bureaucratic nature, public agencies can reveal unique challenges and pathways to agility through digital systems that may differ markedly from private entities. (2) **Private Sector Firms**: These organizations often face market-driven pressures to adopt technology rapidly and adjust operational strategies, making them key informants for understanding agility. (3) **Educational Institutions**: As crucial players in talent development, universities and colleges serve as critical sites for exploring how technological integration fosters agility in shaping future leaders.

Participants will be drawn from distinct leadership levels, including top-tier executives, middle management, digital transformation leaders, and frontline system users. By employing a purposive sampling strategy, the study will focus on those individuals who have demonstrated a commitment to digital innovation and agile practices within their organizations.

Data Collection Techniques and Instruments

To triangulate findings and enhance the credibility of the study, various qualitative methodologies will be employed, including semi-structured interviews, observational studies, and documentary analyses.

Semi-Structured Interview Guide

The semi-structured interviews will include open-ended questions designed to elicit detailed responses that capture individual perspectives on agility and digital systems. Sample questions might include:

How does your organization respond to rapid changes during digital systems adoption?
What managerial practices foster or hinder organizational agility?
How do digital systems influence decision-making speed, flexibility, and adaptability?
What specific challenges emerge when your organization adopts new digital systems?
How do information systems enable cross-unit coordination and agile responses within your organization?

These questions aim to delve deeply into the experiential narratives of leaders and users alike, grounding the research in lived realities.

Observation Protocol

Observational methods will be employed to assess the internal processes that shape the digital systems integration efforts. This could include observing transformation meetings, implementation workshops, and informal discussions around digital practices.

Document Analysis

Critical documentary analysis will support the findings by reviewing organizational materials such as digital transformation strategies, business plans, meeting minutes, and performance reports. This document scrutiny will help contextualize the findings within the broader framework of organizational strategy and execution.

Data Analysis Techniques

Thematic analysis will guide the data analysis framework, facilitating the emergence of patterns and themes from the collected qualitative data. The coding process will involve: (1) Open Coding: Identifying distinct categories from the data. (2) Axial Coding: Linking codes into larger themes related to agility dimensions and system enablement. (3) Selective Coding: Refining major themes that encapsulate the study's objectives.

Trustworthiness and Ethical Considerations

Ensuring the trustworthiness of qualitative findings involves various strategies, including member checking to validate interpretations with participants, and triangulation to cross-verify data from multiple sources. Ethical considerations will also be adhered to, ensuring informed consent, anonymity, and confidentiality for all participants involved in the study.

RESULTS AND DISCUSSION

Result

The qualitative analysis reveals that the adoption of digital systems significantly shapes organizational agility through four interrelated dimensions: speed, flexibility, responsiveness, and organizational learning. These dimensions emerge consistently across organizational contexts, including private firms, public sector institutions, and educational organizations, indicating that agility is not sector-specific but structurally embedded in how digital systems are designed, governed, and utilized (Hutagalung et al., 2021; Nugroho et al., 2025).

Speed in Decision-Making and Execution

The dimension of speed is most evident in the acceleration of decision-making processes and operational execution. Participants reported that integrated digital systems—such as enterprise information systems, digital dashboards, and automated reporting tools—enable real-time access to organizational data that was previously fragmented or delayed. This finding aligns with prior studies highlighting the role of information systems in reducing information asymmetry and shortening decision cycles (Purwanto et al., 2020; Suroso et al., 2021).

In public and educational organizations, improvements in speed were particularly visible in administrative coordination and compliance-related activities. Digital platforms reduced manual paperwork and redundant procedures, resulting in faster response times. Consistent with Nugroho et al. (2025), the findings indicate that speed is not merely a technical outcome but also a managerial one. Organizations that coupled digital tools with delegated decision authority demonstrated higher agility than those maintaining centralized and rigid control structures.

Flexibility through Process Reconfiguration

Flexibility emerges as the organization's capacity to reconfigure workflows, roles, and operational processes without structural disruption. Digital systems facilitate flexibility by enabling modular and scalable process designs, allowing organizations to adjust task allocations and service delivery mechanisms dynamically. This supports earlier arguments that digital infrastructures enable adaptive operational configurations (Asbari & Novitasari, 2022; Asbari et al., 2023).

Organizations utilizing cloud-based platforms and collaborative digital systems exhibited higher levels of cross-functional coordination and remote work adaptability. These findings reinforce the view that flexibility does not imply organizational instability but rather controlled adaptability supported by standardized yet configurable digital architectures (Suroso et al., 2021).

Responsiveness to Environmental Change

The dimension of responsiveness refers to the organization's ability to detect and react promptly to external and internal changes. Digital systems function as sensing mechanisms that provide early signals related to regulatory shifts, stakeholder feedback, and operational performance deviations. Organizations with higher digital maturity demonstrated greater responsiveness, echoing findings from digital transformation research in higher education and public institutions (Nuryanti et al., 2025; Nugroho et al., 2025).

However, interview data indicate that responsiveness is contingent upon managerial sensemaking. When leadership failed to interpret or act upon digital insights, the agility potential of the systems diminished. This observation is consistent with Hutagalung et al. (2021), who emphasize that technological information must be supported by psychological safety and interpretive capacity to translate into effective action.

Organizational Learning as a Sustaining Mechanism

Organizational learning emerges as a cumulative outcome of speed, flexibility, and responsiveness. Digital systems serve as repositories of organizational memory by storing data, documentation, and historical performance records, enabling reflection and continuous improvement. Organizations that institutionalized data-driven learning practices demonstrated more sustainable agility, supporting knowledge-based views of organizational capability development (Asbari & Asbari, 2025; Asbari et al., 2023).

Overall, the results confirm that organizational agility in digital systems adoption is a multidimensional and socially constructed phenomenon. Digital technologies act as enablers, but their effectiveness depends on managerial practices, governance structures, and learning cultures that transform technological potential into agile organizational behavior.

Discussion

This study advances the literature on organizational agility and digital systems adoption by demonstrating that agility is not an inherent property of technology but an emergent capability resulting from the **interaction between digital systems and managerial practices**. This finding reinforces

socio-technical perspectives in applied computing, which view information systems as inseparable from organizational context and human agency (Purwanto et al., 2020; Hutagalung et al., 2021).

Reframing Speed as a Governance Outcome

The observed enhancement in decision-making speed is consistent with prior research emphasizing the role of information systems in accelerating organizational processes (Suroso et al., 2021). However, this study extends existing theory by showing that speed gains are contingent upon governance arrangements. Digital systems provide technical capacity, but managerial willingness to decentralize authority determines whether this capacity is realized (Asbari & Prasetya, 2021).

Flexibility beyond Structural Fluidity

The findings challenge traditional assumptions that flexibility requires loosely structured organizations. Instead, flexibility emerges from digitally enabled reconfigurability, where standardized processes coexist with adaptive execution. From an applied computing perspective, this underscores the importance of modular system design and interoperability (Asbari et al., 2025). Flexibility, therefore, is not the absence of structure but the presence of adaptive structure.

Responsiveness as Organizational Sensemaking

Responsiveness is shown to depend not only on information availability but also on interpretive capacity. Digital systems amplify environmental signals, yet managerial sensemaking determines the quality of organizational responses. This insight supports theories emphasizing cognitive and cultural dimensions of agility (Hutagalung et al., 2021; Nuryanti et al., 2025).

Learning as the Foundation of Sustainable Agility

The identification of organizational learning as a core agility dimension highlights the long-term nature of digital transformation. While many organizations pursue efficiency-driven digitalization, this study demonstrates that sustainable agility requires mechanisms for reflection, knowledge accumulation, and institutional learning (Asbari & Asbari, 2025; Asbari et al., 2023).

Managerial and Applied Computing Implications

From a managerial perspective, the findings suggest that digital transformation initiatives must integrate leadership development, governance reform, and learning infrastructures. For applied computing research, the study highlights the need to examine digital systems not only in terms of technical performance but also in their capacity to shape organizational cognition, behavior, and adaptive capability.

In summary, this study positions organizational agility as a strategic outcome of aligned digital systems and managerial practices. It contributes to JACSIS by bridging applied computing and organizational theory, demonstrating that effective digital systems adoption enhances agility only when embedded within adaptive governance and learning-oriented cultures.

CONCLUSION

This study set out to examine how organizational agility is shaped during digital systems adoption from a managerial and applied computing perspective. Drawing on qualitative evidence across diverse organizational contexts, the findings demonstrate that organizational agility emerges as a multidimensional and socially embedded capability, rather than a direct or automatic outcome of technological investment. Specifically, the study identifies four interrelated dimensions of agility—speed, flexibility, responsiveness, and organizational learning—that are collectively enabled, constrained, and sustained through the interaction between digital systems and managerial practices.

The findings confirm that digital systems play a critical enabling role by accelerating information flows, supporting process reconfiguration, enhancing environmental sensing, and preserving organizational memory. However, the study also reveals that these technological affordances do not translate into agility in isolation. Instead, agility materializes when digital systems are embedded within adaptive governance structures, decentralized decision-making

processes, and learning-oriented organizational cultures. In this sense, technology functions as a catalyst, while managerial sensemaking, leadership, and institutional learning determine the depth and durability of agility outcomes.

From a theoretical standpoint, this study contributes to the organizational agility and information systems literature by reinforcing a socio-technical view of digital transformation. It extends prior research by demonstrating that agility is not merely a response capability but a cumulative organizational competence built over time through digitally mediated learning cycles. The integration of applied computing and managerial perspectives offers a more holistic understanding of why some organizations achieve sustainable agility while others experience only short-term efficiency gains.

From a practical perspective, the findings carry important implications for managers, system designers, and policymakers. Digital transformation initiatives should move beyond a technology-centric focus toward a more integrated approach that simultaneously addresses system architecture, leadership capacity, governance design, and organizational learning mechanisms. For public sector and educational organizations in particular, digital systems adoption should be framed not only as an administrative modernization effort but as a strategic pathway for strengthening institutional agility and resilience.

Despite its contributions, this study is not without limitations. The qualitative design, while providing rich contextual insights, limits generalizability across sectors and national contexts. Future research could adopt mixed-method or longitudinal approaches to examine how agility evolves over time and how specific system design features influence organizational learning and responsiveness. Further studies may also explore cross-country comparisons or sector-specific dynamics to deepen understanding of agility in digitally transforming organizations.

In conclusion, this study underscores that successful digital systems adoption is ultimately measured not by technological sophistication, but by an organization's enhanced capacity to act swiftly, adapt flexibly, respond intelligently, and learn continuously. Organizational agility, therefore, stands as a strategic outcome of aligned digital systems and enlightened managerial practice—an insight that is increasingly vital in an era of accelerating technological and environmental change.

REFERENCES

Asbari, M. and Asbari, D. (2025). The Dynamics of Student Knowledge Creation through SECI: A Qualitative Exploration in the Indonesian Context. J.IJOMER, 2(01), 29-39. https://doi.org/10.70508/ep7egr71

Asbari, M. and Novitasari, D. (2022). Did Islamic Leadership Influence Online Learning Systems?. Edumaspul - Jurnal Pendidikan, 6(1), 852-862. https://doi.org/10.33487/edumaspul.v6i1.331

Asbari, M. and Prasetya, A. (2021). Managerial Coaching: Rahasia Membangun Kinerja, Komitmen Tim dan Modal Psikologis Guru. Edumaspul - Jurnal Pendidikan, 5(1), 490-506. https://doi.org/10.33487/edumaspul.v5i1.1248

Asbari, M., Pramono, T., Chidir, G., Kumoro, D., & Chyrinne, E. (2025). Integrating Strategic Management into Academic Administration: Enhancing Institutional Performance in Universities. J.IJOMER, 2(01), 83-89. https://doi.org/10.70508/dwynbc96

Asbari, M., Purba, J., Hariandja, E., & Sudibjo, N. (2023). The Mediating Role of Dynamic Leadership towards the Relationship between Knowledge-Sharing Behaviour and Innovation Performance in Higher Education. International Journal of Learning Teaching and Educational Research, 22(11), 466-485. https://doi.org/10.26803/ijlter.22.11.24

Hutagalung, D., Admiral, A., Nuryanti, Y., Asbari, M., & Novitasari, D. (2021). Managing Tacit Knowledge Sharing: From Charismatic Leadership to Psychological Safety

Climate. Inovbiz Jurnal Inovasi Bisnis, 9(1), 108. https://doi.org/10.35314/inovbiz.v9i1.1888

Hutagalung, D., Admiral, A., Nuryanti, Y., Asbari, M., & Novitasari, D. (2021). Managing Tacit Knowledge Sharing: From Charismatic Leadership to Psychological Safety Climate. Inovbiz Jurnal Inovasi Bisnis, 9(1), 108. https://doi.org/10.35314/inovbiz.v9i1.1888

Nofiyanti, N., Fajrin, A., Kamar, K., Winanti, W., Asbari, M., & Farhan, A. (2025). Efektivitas Microsoft Excel Dalam Meningkatkan Akurasi Laporan Keuangan: Studi Literatur. Journal of Communication Education, 19(2), 10-16. https://doi.org/10.58217/joceip.v19i2.67

Nugroho, Y., Widodo, A., Pebrina, E., Iskandar, J., & Nadeak, M. (2025). Digitalization in Higher Education: How Information Systems Improve Operational and Strategic Performance. J.IJOMER, 2(01), 90-98. https://doi.org/10.70508/dyrdm592

Nugroho, Y., Widodo, A., Pebrina, E., Iskandar, J., & Nadeak, M. (2025). Digitalization in Higher Education: How Information Systems Improve Operational and Strategic Performance. J.IJOMER, 2(01), 90-98. https://doi.org/10.70508/dyrdm592

Nuryanti, Y., Simorangkir, Y., Asbari, M., Ferdiyanto, Y., & Waruwu, H. (2025). Integrating Big Data and Information Systems in Higher Education: Implications for Organizational Productivity and Efficiency. J.IJOMER, 2(01), 121-130. https://doi.org/10.70508/xz9wy932

Purwanto, A., Asbari, M., Santoso, P., Wijayanti, L., Hyun, C., & Pramono, R. (2020). Halal Foods Purchase Intension among Indonesian Non-Muslim Consumers: An Exploratory Case Study Approach. International Journal of Science and Management Studies (Ijsms), 15-27. https://doi.org/10.51386/25815946/ijsms-v3i2p103

Purwanto, A., Wijayanti, L., Hyun, C., & Asbari, M. (2020). The Effect Of Tansformational, Transactional, Authentic And Authoritarian Leadership Style Toward Lecture Performance Of Private University In Tangerang. Dinasti International Journal of Digital Business Management, 1(1), 29-42. https://doi.org/10.31933/dijdbm.v1i1.88

Suroso, S., Novitasari, D., Nugroho, Y., Chidir, G., & Asbari, M. (2021). Managing MSME Innovation Performance: Analysis of Knowledge-Oriented Leadership and Knowledge Management Capability. Edukatif Jurnal Ilmu Pendidikan, 3(6), 4541-4555. https://doi.org/10.31004/edukatif.v3i6.1506

Tan, J., Purba, J., Asbari, M., & Purwanto, A. (2022). Towards Longevity: Managing Innovativeness in Family Micro-Small-Medium Enterprises. Indonesian Journal of Business and Entrepreneurship. https://doi.org/10.17358/ijbe.8.1.70