

## Business Process Automation as a Strategic Enabler for Entrepreneurial Digital Transformation: A Systematic Literature Review

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**Abstract:** Business Process Automation (BPA) has emerged as a strategic enabler of digital transformation, especially for organizations seeking operational efficiency and innovation in a digital economy. In Indonesia, where entrepreneurial ventures and MSMEs dominate the business landscape, BPA offers significant potential to streamline processes and enhance scalability. This study conducts a systematic literature review (SLR) of 22 peer-reviewed articles published between 2020 and 2024, to investigate how BPA is conceptualized and implemented, what technologies are utilized, and what organizational implications arise. The review follows the PRISMA protocol and analyzes publications across sectors such as finance, education, logistics, and public administration. Findings reveal a growing shift in BPA from a technical tool to a strategic capability supported by technologies like Robotic Process Automation, Artificial Intelligence, and blockchain. However, theoretical grounding and empirical generalization remain limited, with many studies underexploring human-centered and contextual challenges – issues particularly relevant to Indonesian entrepreneurs. The review identifies conceptual gaps and proposes future research directions that integrate technology, organizational change, and strategic alignment. The study highlights the importance of examining the sociotechnical implications of BPA, particularly for small and medium enterprises (SMEs) in emerging economies like Indonesia. Overall, this study contributes to a more holistic understanding of BPA and its role in supporting digital transformation, including within the entrepreneurial ecosystem of emerging economies such as Indonesia.

**Keywords:** Business Process Automation (BPA), Digital Transformation, Entrepreneurial Ventures, Robotic Process Automation (RPA), Artificial Intelligence (AI), Organizational Change, Small and Medium Enterprises (SMEs), Technological Innovation

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## **A. Introduction**

Digital transformation has become a critical strategic imperative across industries, compelling organizations to rethink how they create, deliver, and capture value in an increasingly data-driven and hyperconnected environment (Fitzgerald et al., 2014). For emerging economies like Indonesia, where entrepreneurship and micro, small, and medium enterprises (MSMEs) represent a significant portion of the economy, digital transformation presents both opportunities and challenges. Many MSMEs, which make up over 99% of Indonesia's business units, face obstacles such as limited access to capital, resources, and skills. However, Business Process Automation (BPA)—through technologies like Robotic Process Automation (RPA), Artificial Intelligence (AI), and blockchain—offers a pathway to improve operational efficiency and scalability, enabling these businesses to compete in the digital economy (Vial, 2019).

BPA has evolved significantly, transitioning from a purely operational tool designed to automate routine tasks to a strategic capability that underpins organizational transformation. It supports organizations by enabling real-time decision-making, adaptive learning, and innovation, especially in resource-constrained settings (Aguirre & Rodriguez, 2017; Dumas et al., 2018). For entrepreneurs in Indonesia, BPA can unlock efficiencies by automating back-office functions, allowing them to focus on more strategic and creative aspects of their businesses.

While BPA's role in improving operational efficiency is well-documented, there is ongoing debate about its broader organizational impact. Some studies emphasize BPA's potential to drive process innovation, while others caution that its focus on automation may limit employee creativity and organizational flexibility. Additionally, concerns around workforce

reskilling and organizational culture are often discussed but not fully explored (Vial, 2019). These issues are particularly relevant in developing economies like Indonesia, where digital literacy gaps and resistance to change can hinder the successful adoption of BPA in entrepreneurial ventures.

This study aims to bridge these gaps by conducting a Systematic Literature Review (SLR) of 22 peer-reviewed articles published between 2020 and 2024, with a specific focus on the intersection of BPA and digital transformation in emerging markets like Indonesia. By synthesizing the literature, the study addresses the following research questions:

1. How has BPA been conceptualized and applied in digital transformation initiatives across sectors?
2. What technologies and methods have been employed to support BPA, particularly in entrepreneurial contexts?
3. What are the organizational implications of implementing BPA, especially for MSMEs and entrepreneurial ventures in Indonesia?

This review identifies that BPA is no longer just a technical tool but has emerged as a strategic enabler of organizational agility and innovative processes. The findings confirm that BPA plays a key role in digital transformation, not just by enhancing efficiency but by enabling organizations—especially in emerging economies—to reconfigure their business models for greater agility, resilience, and customer-centricity (Teece et al., 1997; Dumas et al., 2018).

The study also highlights several theoretical gaps in the literature, particularly around the integration of BPA with frameworks like Dynamic Capabilities Theory (Teece et al., 1997) and Sociotechnical Systems Theory (Trist & Bamforth, 1951). Furthermore, the sociotechnical implications of BPA, such as workforce reskilling, employee engagement, and

organizational culture, are underexplored in many of the studies reviewed. These findings underscore the need for future research that better integrates technology adoption with organizational change theories to provide a more holistic understanding of BPA's role in organizational transformation.

This study contributes to the growing body of research on BPA by providing a clearer conceptual framework for understanding its role in digital transformation, particularly for entrepreneurial ventures and MSMEs in Indonesia. It underscores the strategic importance of BPA in enabling organizations to become more adaptive and innovative in response to changing market dynamics and digital opportunities.

## **B. Materials and Methods**

This study employs a Systematic Literature Review (SLR) to synthesize existing research on Business Process Automation (BPA) in the context of digital transformation. The review follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol to ensure transparency and replicability in the selection and analysis of peer-reviewed literature. This section details the methods used to collect, analyze, and synthesize the data, including the search strategy, inclusion and exclusion criteria, and data extraction process.

### **1. Search Strategy**

A comprehensive search was conducted in Scopus, selected for its extensive coverage of peer-reviewed literature in information systems, business, and technology. The search was performed in May 2025 using the Boolean query: "digital transformation" AND "business process automation" AND ("strategy" OR "technology" OR "organizational impact")

The search was limited to articles published between 2015 and 2025 in English and related directly to BPA and its role in digital

transformation. The inclusion of literature from various disciplines, such as business administration, computer science, and industrial engineering, ensures a multidisciplinary perspective on BPA. The results were filtered to include only peer-reviewed journal articles, conference proceedings, and book chapters that discussed BPA in the context of digital transformation.

### **2. Inclusion and Exclusion Criteria**

The following criteria were used to select studies for review:

Inclusion Criteria:

- a. Studies explicitly discussing BPA in the context of digital transformation.
- b. Empirical studies with qualitative, quantitative, or mixed-method approaches.
- c. Peer-reviewed journal articles, conference papers, and book chapters.
- d. Publications that highlight the organizational, technological, and strategic implications of BPA implementation.

Exclusion Criteria:

- a. Non-English publications.
- b. Editorials, opinion pieces, or grey literature (e.g., blogs, non-peer-reviewed reports).
- c. Studies not related to BPA or digital transformation.
- d. Duplicate entries and incomplete records.

After initial screening of titles and abstracts, 120 records remained. Full-text assessments were conducted on 50 articles, resulting in the exclusion of 28 articles due to lack of relevance or access restrictions. A final total of 22 articles was selected for detailed analysis (please refer to appendix B).

### **3. Data Extraction and Analysis**

A data extraction template was used to standardize the collection of relevant information from each selected article. Key data elements captured included:

- a. Title, authors, and publication year.

- b. Research objectives and methodological approach.
- c. Technologies discussed (e.g., Robotic Process Automation, Artificial Intelligence, Blockchain).
- d. Organizational domain (e.g., education, healthcare, finance, logistics).
- e. Theoretical frameworks (if specified).
- f. Key findings and implications.

Thematic analysis was employed to categorize and synthesize the findings. Using the approach outlined by Braun and Clarke (2006), inductive themes were identified that relate to BPA implementation, strategic alignment, and organizational transformation. This thematic organization allowed for the extraction of patterns and insights across the studies, which were subsequently analyzed in relation to the research questions.

#### 4. Data Availability and Limitations

As a Systematic Literature Review (SLR), all data utilized in this analysis are publicly available from the Scopus database. Full citation information for the 22 articles included in the review is available in Appendix A of this manuscript. The search strategy was limited to English-language publications, and the use of only the Scopus database may have excluded studies indexed in other databases, such as IEEE Xplore or Web of Science. Additionally, many of the studies reviewed are cross-sectional, limiting the generalizability of the findings related to the long-term impacts of BPA. These limitations suggest areas for future research, particularly using longitudinal data and multiple database sources to expand the scope and depth of BPA research.

### C. Result and Discussion

This section presents the findings from the Systematic Literature Review (SLR) and discusses their implications in the context of Business Process Automation (BPA) and its

integration into digital transformation strategies. The results are discussed in relation to the research questions: the conceptualization and application of BPA, the technologies employed, and the organizational implications of its implementation, particularly in the context of entrepreneurship and MSMEs in Indonesia.

#### 1. Conceptualization and Application of BPA.

The review revealed that Business Process Automation (BPA) is increasingly conceptualized not only as a technical tool but also as a strategic enabler of organizational transformation. Previous studies, such as Dumas et al. (2018), emphasized BPA's role in improving process efficiency. However, more recent findings indicate that BPA is now recognized as a driver of adaptive learning and organizational innovation, enabling companies to respond to changing market conditions with greater agility (Aguirre & Rodriguez, 2017). This shift from a technical to a strategic perspective aligns with Dynamic Capabilities Theory (Teece et al., 1997), which emphasizes an organization's ability to sense, seize, and reconfigure resources in response to external opportunities. For entrepreneurial ventures in Indonesia, BPA can provide critical operational efficiencies, which are essential for scalability and competitiveness in a rapidly digitalizing economy.

The application of BPA has been particularly transformative for small and medium enterprises (SMEs) in Indonesia, where resource constraints are prevalent. By automating routine processes, these SMEs can free up valuable human resources to focus on more strategic and creative tasks, driving both innovation and competitiveness. This is especially relevant for entrepreneurs in emerging markets, where limited access to capital and skilled labor makes the adoption of scalable automation technologies a key factor for survival and growth (Vial, 2019). However, theoretical grounding for BPA in emerging economies, particularly in Indonesia,

remains underexplored. Further integration of organizational theories like Sociotechnical Systems Theory (Trist & Bamforth, 1951) can enhance our understanding of the sociotechnical challenges faced by SMEs during BPA adoption, such as workforce reskilling, cultural resistance, and organizational inertia.

A study published in *Innovatsioon: Journal of Innovation and Technology* by Pong et al. (2025) explored the impact of Information Technology (IT) implementation on the efficiency and effectiveness of business processes in Indonesian SMEs. This study revealed that SMEs that integrated IT solutions saw significant improvements in process efficiency, reduced operational costs, and enhanced decision-making capabilities. Over 70% of the surveyed businesses reported better inventory management and quicker response times to customer needs (Pong et al., 2025). This aligns with the growing recognition of BPA not merely as a tool for automating tasks but as a strategic enabler for business transformation, especially in resource-constrained settings like SMEs in Indonesia.

The findings from Pong et al. (2025) further reinforce the idea that, for SMEs in Indonesia, the challenge is not only about adopting BPA technologies but also about ensuring that the workforce is equipped with the necessary skills and that the organizational culture is conducive to digital transformation. While the operational benefits of IT adoption are clear, organizational readiness and workforce training remain critical factors that need more attention in the Indonesian context.

## 2. Technologies and Methods Employed

The review found that the primary technologies supporting BPA are Robotic Process Automation (RPA), Artificial Intelligence (AI), and blockchain. These technologies enable the automation of routine tasks, reducing the need for human intervention and enhancing process efficiency (Aguirre & Rodriguez, 2017). In sectors

like finance, education, and healthcare, AI-driven automation is particularly prominent, where real-time data analysis and decision-making play a critical role (Papageorgiou & Karagiannis, 2024).

However, while much of the research emphasizes technical automation, fewer studies have applied organizational change theories to understand the sociotechnical implications of these technologies. The Technology Acceptance Model (TAM) and Technology-Organization-Environment (TOE) framework are often referenced in relation to adoption drivers but are rarely integrated into empirical studies (Tornatzky & Fleischer, 1990; Davis, 1989). This gap suggests that, while technical capabilities are critical for BPA's success, organizational culture, leadership, and employee readiness also play crucial roles. For instance, studies on Indonesian SMEs revealed that while the adoption of technologies like RPA is increasing, many small enterprises still struggle with workforce readiness, especially with respect to digital literacy and the skill gaps that exist (Garafonova et al., 2025).

In the Indonesian entrepreneurial context, the integration of these technologies could enable SMEs to gain a competitive advantage. However, challenges such as digital skills gaps, the reluctance to adopt new technologies, and insufficient infrastructure remain substantial barriers. Therefore, future studies should explore strategies for overcoming these barriers, particularly in the small enterprise sector, through targeted government initiatives, upskilling programs, and tailored solutions to address the specific needs of Indonesian entrepreneurs.

## 3. Organizational Implications and Challenges

BPA's implementation carries significant organizational implications, particularly regarding changes in workforce roles, skills requirements, and decision-making authority.

Previous research has shown that BPA can lead to the centralization of decision-making or the creation of new roles responsible for overseeing automation systems. However, this review found that the human implications of BPA—such as workforce reskilling, employee resistance, and organizational inertia—are often underexplored (Vial, 2019). These issues are particularly pertinent to Indonesian SMEs, where resistance to change and lack of digital readiness hinder the adoption of BPA.

A sociotechnical perspective, as discussed in the work of Trist & Bamforth (1951), suggests that successful BPA implementation requires not only technological alignment but also social alignment within the organization. In Indonesia, the resistance to technological change is often tied to cultural factors, such as fear of job displacement or unfamiliarity with new technologies. Therefore, it is crucial to integrate change management frameworks that address both the technical and human factors of BPA adoption. This should include comprehensive training programs, leadership support, and employee engagement strategies to ensure the smooth integration of automation technologies into existing workflows.

Moreover, BPA can create shifts in organizational structures, requiring new roles for managing automated systems and addressing challenges related to job displacement (Henderson & Venkatraman, 1993). This shift often leads to tensions within organizations, especially in traditional industries or those with limited experience in adopting digital technologies. In Indonesia, where family-run businesses dominate the SME landscape, these shifts may be more challenging due to ingrained traditional practices and familial leadership structures.

#### 4. Comparative Analysis with Previous Studies

The results of this review are consistent with previous studies, such as Dumas et al. (2018) and

Davenport & Kirby (2016), which emphasized BPA's role in enhancing operational efficiency and supporting process reengineering. However, this study extends the discussion by framing BPA as a strategic capability that enables entrepreneurial innovation, particularly for SMEs in emerging economies like Indonesia. The review also underscores the need for a more integrated theoretical approach, linking BPA with frameworks like Dynamic Capabilities, Sociotechnical Systems, and Strategic Alignment (Teece et al., 1997; Trist & Bamforth, 1951; Henderson & Venkatraman, 1993).

In terms of methodology, this review finds that most studies focused on case-specific implementations, often without considering the broader organizational and contextual dynamics. This highlights the importance of future research that combines longitudinal studies and cross-sector comparisons to understand the long-term impacts of BPA on organizational culture, workforce development, and overall business performance. Research that evaluates the adoption and impact of BPA across various sectors in Indonesia could provide valuable insights into how different industries overcome common barriers and capitalize on automation technologies.

#### 5. Implications for Future Research

Several avenues for future research emerge from this review. First, more work is needed to integrate BPA with established organizational theories, such as Dynamic Capabilities, Sociotechnical Systems, and Strategic Alignment. This will help provide a more theoretically grounded understanding of how BPA influences not only operational outcomes but also strategic positioning and long-term agility in organizations. Future research should also explore how BPA can be aligned with the broader strategic objectives of Indonesian SMEs, particularly in terms of improving competitive

advantage and resilience in a rapidly evolving market.

Second, there is a need for studies that investigate the sociotechnical implications of BPA, particularly in relation to workforce reskilling and organizational change. This is especially relevant for entrepreneurial ventures in Indonesia, where digital skills gaps pose significant barriers to adoption. Longitudinal studies that track the long-term impact of BPA on organizational culture and employee roles would provide crucial insights into how businesses can better prepare their workforce for digital transformation.

Finally, future studies should explore the comparative impact of BPA across different sectors and organization sizes, particularly in emerging economies like Indonesia. Research on the adoption challenges faced by small enterprises and MSMEs, as well as the role of government initiatives in facilitating automation, could provide valuable insights for practitioners and policymakers aiming to promote digital transformation in Indonesia.

#### **D. Conclusion**

This study presents a Systematic Literature Review (SLR) of 22 peer-reviewed articles on Business Process Automation (BPA) in the context of digital transformation. The findings confirm that BPA has evolved from a mere operational tool to a strategic enabler of organizational agility, innovation, and process reengineering. Technologies such as Robotic Process Automation (RPA), Artificial Intelligence (AI), and blockchain are at the forefront of this transformation, offering substantial improvements in operational efficiency and decision-making across industries.

For entrepreneurial ventures and micro, small, and medium enterprises (MSMEs) in Indonesia, BPA presents a significant opportunity to streamline operations, reduce costs, and enhance competitiveness in the digital

economy. However, barriers such as digital skills gaps, resistance to change, and challenges in aligning BPA initiatives with strategic goals remain critical obstacles. The organizational implications of BPA are substantial, affecting workforce roles, decision-making structures, and requiring effective change management strategies.

Despite these advancements, the study identifies several limitations, including the use of a single database (Scopus) and the predominance of cross-sectional studies, which limits the generalizability of findings, especially concerning the long-term impact of BPA. Future research should address these gaps by exploring longitudinal data and expanding the literature search to include other databases. Moreover, there is a need for research that integrates sociotechnical factors and organizational change frameworks to better understand the full scope of BPA's impact on both technology and people.

BPA is a key enabler of digital transformation, especially for MSMEs in emerging economies like Indonesia. However, for successful implementation, organizations must address not only the technological aspects of BPA but also the human and organizational factors that drive successful adoption and transformation. Further studies should focus on bridging the gap between technology adoption and workforce readiness, emphasizing the sociotechnical implications that are often overlooked in current literature.

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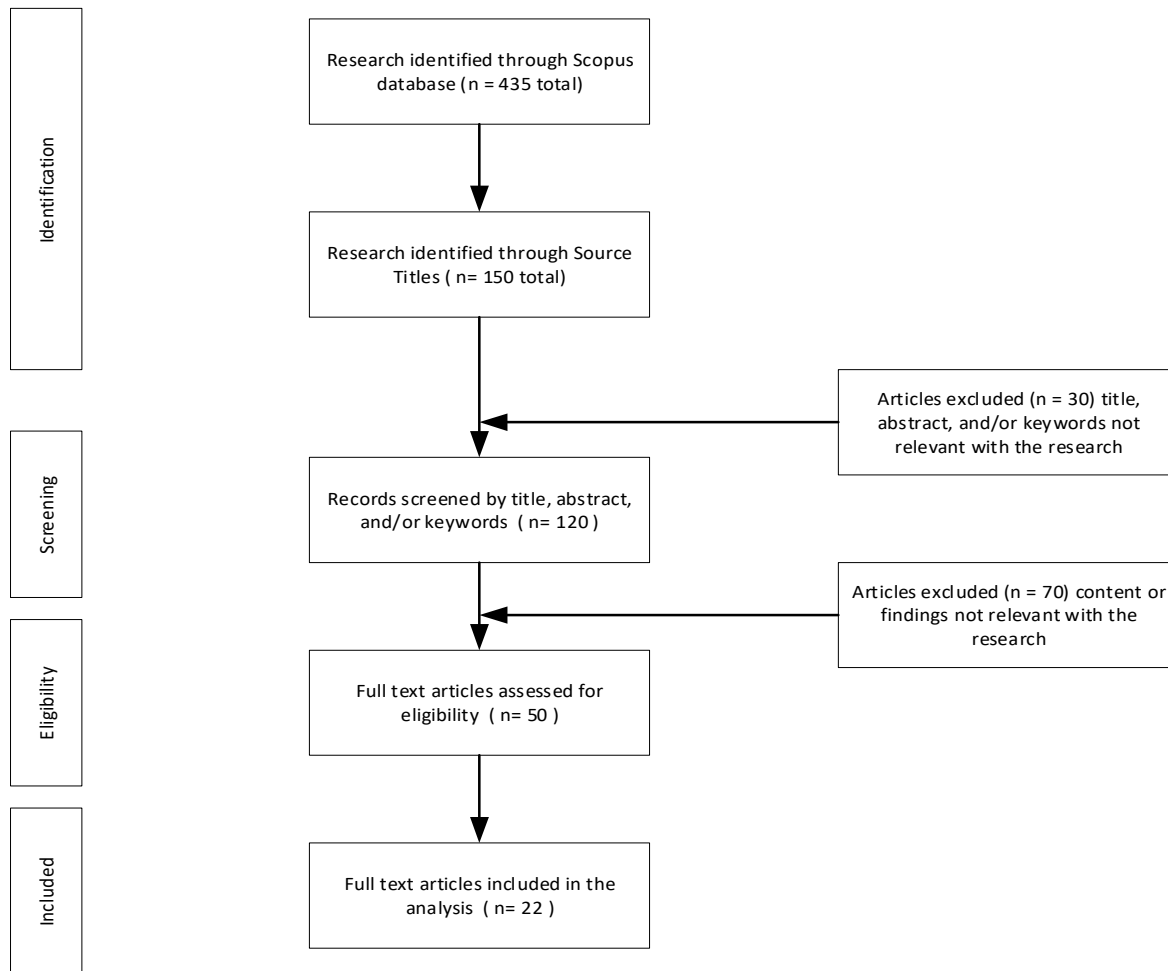
## Appendix A.

### Result of SLR.

Year	Author	Title	Question or Research Objective
2024	Ye X.; Zeng N.; Tao X.; Han D.; König M.	Smart Contract Generation and Visualization for Construction Business Process Collaboration and Automation: Upgraded Workflow Engine	With the digital transformation of the construction industry, the need to improve construction business process collaboration and automation is increasing.
2021	Adhikari S.	Integrating deep reinforced learning and robotic process automation in blockchain digital transformation for autonomous cybersecurity	The term Blockchain Technology (BT) refers to information technology (IT) where data is stored in numerous blocks using multiple distributed servers.
2024	Putnoki A.M.; Orosz T.	Artificial Intelligence and Cognitive Information Systems: Revolutionizing Business with Generative Artificial Intelligence and Robotic Process Automation	The article delves into the integration of Artificial Intelligence (AI), Generative Artificial Intelligence (GAI), and Robotic Process Automation (RPA) within Cognitive Information System (CIS), exploring their profound impact on corporate decision-making (DM) processes.
2020	Petana G.; Rosa C.A.	Digital transformation and the impact in knowledge management	Nowadays, digital transformation is forcing companies to reach a new level of productivity and digital evolution.
2022	Yaeli A.; Shlomov S.; Oved A.; Zeltyn S.; Mashkif N.	Recommending Next Best Skill in Conversational Robotic Process Automation	In recent years, Robotic Process Automation (RPA) has been widely adopted across the industry as an important enabler for business process automation and digital transformation.
2022	Lazareva N.; Karasevskis K.; Girjatovcs A.; Kuznecova O.	Business Process Automation in Retail	Digital transformation nowadays is stated as a driving force for competitive business.
2025	Radi C.; Ababou M.; Rabiai S.	Unraveling the AI Revolution in Management Control Through Comprehensive Bibliometric Analysis	Nowadays, artificial intelligence has become one of the pillars of companies' business efficiency.
2021	Dwivedi A.; Vijayan P.; Gupta R.; Ramdasi P.	Enhancing Enterprise Business Processes Through AI Based Approach for Entity Extraction – An Overview of an Application	While Industries are growing strong with their digital transformation, advanced analytics are making them stronger through data driven decisions.
2021	Rizk Y.; Chakraborti T.; Isahagian V.; Khazaeni Y.	Towards end-to-end business process automation: RPA composition and orchestration	In recent years, robotic process automation (RPA) emerged as a vehicle to digital transformation in enterprises.
2023	Moreira S.; Mamede H.S.; Santos A.	Business Process Automation in SMEs	Business Process Automation has been gaining increasing importance in the management of companies and organizations since it reduces the time needed to carry out routine tasks, freeing employees for other more creative and exciting things.
2019	Kovynyov I.; Mikut R.	Digital technologies in airport ground operations	How have digital technologies changed airport ground operations? Although the relevant peer-reviewed literature emphasizes the role of cost savings as a key driver behind digitalization of airport ground operations, the focus is on data-driven, customer-centric innovations.
2021	Haleem A.; Javaid M.; Singh R.P.; Rab S.; Suman R.	Hyperautomation for the enhancement of automation in industries	Hyperautomation is a true digital transformation with the help of advanced techniques such as Robotic Process Automation (RPA), Machine Learning (ML), and Artificial Intelligence (AI).

Year	Author	Title	Question or Research Objective
2024	Moreira S.; Mamede H.S.; Santos A.	Business Process Automation in SMEs: A Systematic Literature Review	Business Process Automation has been gaining increasing importance in the management of companies and organizations since it reduces the time needed to carry out routine tasks, freeing employees for other, more creative and exciting things.
2023	Moreira S.; Mamede H.S.; Santos A.	Process automation using RPA- A literature review	Business process automation has been gaining more and more space in the management of organizations, since it translates into a reduction in the execution time of routine tasks in an organization, freeing up employees for other more creative and interesting tasks.
2025	Kedziora D.; Jurczuk A.; Siderska J.	Strengthening Digital Skills for Industry 4.0 and Society 5.0 among Students by Learning Low-code Tools for Intelligent Automation	In the era of intensive digital transformations, dynamic technological development, virtual work dissemination, and business process automation are becoming increasingly common.
2025	Garafonova O.; Dvornyk O.; Sharov V.; Zhosan H.; Yankovoi R.; Lomachynska I.	Digitization Process in a Changing Global Environment	This article aims to analyze modern technologies' impact on business process management approaches in the context of digitization and innovative management.
2020	Siderska J.	Robotic Process Automation-a driver of digital transformation?	The paper introduces Robotic Process Automation (RPA), which is an emerging and cutting-edge conception of business processes automation, based on the notion of software robots or artificial intelligence workers.
2023	Moya A.; Hein M.; Reimann J.	Business Process Automation for Data Teams - A Practical Approach at Handelsblatt Media Group	This paper discusses the increasing importance of automating business processes, with a particular focus on data integration challenges required for data analytics at a larger organization.
2024	Juhás G.; Juhásová A.; Mladoniczky M.; Petrovič L.; Lacko J.	Can Low-Code Languages be Used for Core Enterprise Applications?	Low-code platforms become still more popular in Digital Transformation, mainly in the area of business process automation.
2024	Yermekova Z.; Romanenko S.; Zhanibekova G.; Aitzhanova B.; Apakhayev N.	Integration of digital technologies to improve the efficiency of small and medium-sized agricultural enterprises; [Інтеграція цифрових технологій для підвищення ефективності малих та середніх аграрних підприємств]	The purpose of the study was to assess the impact of the introduction of digital technologies on improving the efficiency of small and medium-sized agricultural enterprises in Kazakhstan.
2020	Hofmann P.; Samp C.; Urbach N.	Robotic process automation	Within digital transformation, which is continuously progressing, robotic process automation (RPA) is drawing much corporate attention.
2022	Lazana C.S.; Versoza E.B.; Salvador G.T.; Publico A.L.R.; Andres G.L.; Bandala A.A.	Effect of Process Automation to the HRD Management in Telecommunications/ICT Industry	This study aims to check and assess how the current set up of Human Resource Department in the Telecommunications/ Information and Communications Technology Industry were able to accommodate their employee requests and how do this department perform the proceedings.

Appendix B.



PRISMA flowchart of SLR