



Review Paper

Transformation of Auditing through Robotic Process Automation^{1,2}

Effat Akrami Moghadam^{*3} and Kaveh Parandin⁴

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1. Introduction

Recent digital developments have brought about the emergence of robotic process automation technology in the field of auditing and accounting, marking a transition from traditional methods to a new era of efficiency and competitive advantage. Robotic process automation functions similarly to a virtual workforce, capable of simulating human actions and executing business processes, particularly in performing repetitive and high-volume tasks that constitute a significant portion of the workload. This technology not only streamlines operations but also transforms the nature of auditors' roles, shifting their focus from routine activities to strategic roles. In this context, robotic process automation has emerged as a critical tool for maintaining the robustness of auditing systems in the face of upcoming challenges. The successful application of this technology in unstable environments showcases its adaptable and resilient capabilities, demonstrating its ability to maintain the stability of auditing processes even during economic crises. By

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³ Department of Accounting, Payame Noor University, Tehran, Iran. (Corresponding Author). Email: e.akramim@pnu.ac.ir

⁴ Department of Accounting, Payame Noor University, Tehran, Iran. Email: kparandin@pnu.ac.ir

automating repetitive tasks, this technology not only increases efficiency but also provides auditors with the opportunity to concentrate on more strategic aspects such as consulting and high-level decision-making. The implementation of robotic process automation in small and medium-sized auditing firms presents both unique challenges and advantages. A comprehensive overview of the process of implementing robotic process automation in auditing, from initiation to full integration, highlights the various stages of adopting robotic process automation in auditing tasks and examines the challenges and benefits encountered along the way. Transitioning to robotic process automation involves not only the adoption of new technologies but also necessitates a cultural shift within organizations that requires changes in workforce dynamics, IT governance, and system sustainability. The acceptance of robotic process automation in the auditing profession is influenced by various factors, such as training, age, and perceptions regarding the impact of robotic process automation on the quality of financial information, which play a crucial role in the adoption of robotic process automation software by auditing professionals. This acceptance is essential for the successful integration of robotic process automation into auditing practices, as it directly affects how these tools are used and the extent of improvements in efficiency and accuracy. The history of auditing has consistently demonstrated the profession's ability to adapt to technological advancements. The transition from manual auditing to computerized systems has paved the way for the adoption of more advanced technologies, including robotic process automation. This historical transformation has directed auditing processes toward greater efficiency, accuracy, and scalability while simultaneously redefining the role of auditors. By embracing this technology, auditors have moved away from repetitive and time-consuming tasks to engage in analytical and strategic roles. While robotic process automation has improved operational efficiency and data analysis accuracy, it has also presented challenges such as the need to reassess professional skills and restructure organizational frameworks. This trend signifies a



fundamental shift in how auditing is conducted and the professional standing of auditors in the digital age. Therefore, the key question that arises is how robotic process automation can enhance the efficiency, accuracy, and strategic role of auditors in auditing processes.

The primary objective of this research is to examine the impacts of robotic process automation technology on auditing. The data required for this study has been collected from sources such as scholarly articles published in journals and conference papers. These sources were identified and extracted through academic databases like Science Direct and Google Scholar. The search method for sources was based on the application of relevant keywords and specialized phrases related to robotic process automation and auditing, including “robotic process automation,” “application of robotic process automation in auditing,” “digital transformations in auditing,” and “automation in auditing methods.” The time frame for the search was limited to English-language documents published between 2013 and 2025 to ensure the currency of the information. The criteria for selecting sources included studies that specifically addressed the implementation, effects, challenges, and future of robotic process automation in the field of auditing. This encompassed empirical research, case studies, and theoretical papers. In contrast, studies that did not have a direct connection to auditing or solely focused on the application of robotic process automation in other business areas were excluded from the research scope. The process of selecting sources involved initially reviewing the abstracts of the articles, and if they aligned with the research title, the full text was then examined.

2. MATERIALS AND METHODS

Process The primary objective of this research is to examine the impacts of robotic process automation technology on auditing. The data required for this study has been collected from sources such as scholarly articles published in journals and conference papers. These sources were identified and extracted through academic databases



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Table 1. Stages of Search and Frequency of Source Results in the Research Screening Process

Screening Stage	Criteria/Actions	Number of Sources
Initial Search	Search using relevant keywords in databases: Science Direct, Google Scholar	125
Removal of Irrelevant Studies	Removal of sources unrelated to auditing or lacking focus on robotic process automation technology	76
Abstract Screening	Review of abstracts for alignment with research objectives and prioritization of comprehensive and applied studies	42



Screening Stage	Criteria/Actions	Number of Sources
Full Text Evaluation	Full text analysis of selected sources to ensure direct relevance to the research topic	24
Final Selected Sources	Empirical, theoretical, and case studies related to the application of robotic process automation in auditing (2013–2025)	18

3. RESULTS AND DISCUSSION

The research findings indicate that Robotic Process Automation has fundamentally transformed modern accounting practices. By automating repetitive tasks such as data entry, invoice processing, and financial reporting, robotic process automation has significantly enhanced operational efficiency, accuracy, and regulatory compliance. A key impact of robotic process automation is the shift in accountants' roles from routine tasks to analytical and strategic activities, allowing them to become strategic advisors focused on high-level decision-making. However, implementing robotic process automation presents challenges, including the need for substantial infrastructure investments, workforce resistance to change, and data security concerns. The integration of robotic process automation with advanced technologies like artificial intelligence and machine learning enhances its capabilities, enabling complex tasks such as predictive analysis and fraud detection, thereby achieving "intelligent automation" in accounting. The future of robotic process automation in accounting is promising, with its scalability making it suitable for organizations of all sizes. Further developments and integration with emerging technologies, such as block chain, are expected to improve transparency, data security, and efficiency in financial processes. Success in leveraging robotic process automation will depend on addressing human and organizational factors, including workforce training and change management, as well as establishing regulatory frameworks for ethical use.



4. CONCLUSION

This research provides a comprehensive analysis of the transformative impact of Robotic Process Automation on modern accounting practices. Robotic process automation has emerged as a crucial technology that enhances operational efficiency by automating routine tasks, enabling accountants to concentrate on strategic and analytical functions. The integration of robotic process automation with accounting systems has significantly improved accuracy, efficiency, and compliance within processes, marking a shift not only in technology but also in strategic focus towards value-added activities and decision-making. The future of robotic process automation in accounting presents both challenges and opportunities. The rapid evolution of robotic process automation technologies, particularly their integration with artificial intelligence and machine learning, promises further advancements in accounting automation, including the development of complex applications like predictive analytics and enhanced decision support. However, challenges such as seamless integration with existing systems, managing workforce transitions, and addressing privacy and security concerns remain critical issues. To navigate these challenges, practitioners are encouraged to engage in continuous learning and skill development to keep pace with robotic process automation advancements. Organizations should implement effective strategies for robotic process automation integration that encompass workforce training, change management, and process optimization. Policymakers are urged to establish standards and regulatory frameworks that guide the ethical and responsible use of robotic process automation in accounting, addressing data security, privacy, and compliance to align with professional and legal standards. Future research should focus on the long-term effects of automation on the accounting profession, including shifts in job roles and skill requirements. Investigating the integration of robotic process automation with emerging technologies like block chain and its implications for accounting is also recommended. Additionally, developing educational programs and training courses to prepare future accountants for a digital work environment will be invaluable.



Keywords: Robotic Process Automation, Digital Transformation, Modern Accounting

JEL classification: M42

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