Automation of Accounting Processes Using RPA (Robotic Process Automation) and AI (Artificial Intelligence)

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Abstract

The digital transformation of the accounting function has accelerated the adoption of emerging technologies such as Robotic Process Automation (RPA) and Artificial Intelligence (AI), aiming to enhance operational efficiency and improve the quality of accounting information. This paper examines the role of RPA-based automation and AI applications in optimizing accounting processes, with particular emphasis on their relevance to forensic accounting and fraud examination. RPA enables the automation of repetitive, rule-based tasks, including data entry, account reconciliation, and accounting reporting, thereby reducing human error and increasing process transparency. Simultaneously, AI algorithms support advanced analysis of large volumes of accounting data, facilitating anomaly detection, identification of fraudulent behavior patterns, and informed decision-making.

The study highlights the benefits of integrating RPA and AI within accounting systems, especially in strengthening fraud prevention and detection mechanisms, while also addressing key challenges such as data security, implementation costs, and the need for continuous professional skill development. The findings emphasize that these technologies do not replace professional judgment but rather enhance the role of the accountant toward analytical and investigative responsibilities in combating accounting fraud.

Keywords

Robotic Process Automation (RPA), Artificial Intelligence (AI), forensic accounting, accounting automation, fraud examination.