

Chapter 5

Predictive Auditing With AI and ML: A Qualitative Investigation of Emerging Tools in the Accounting Sector

Tarun Sai Raavi

 <https://orcid.org/0009-0005-8947-656X>

Vishwa Vishwani Institute of Systems and Management, India

Radhika Ramanchi

GITAM University, India

ABSTRACT

In today's rapidly evolving financial sector, integrating artificial intelligence and machine learning into auditing practices is not just a trend – it's a game-changer. The limitations of traditional auditing practices are the time-consuming nature of manual sample preparation, the struggle to detect complex fraud schemes, and managing vast amounts of transaction data, which have long plagued the auditor's profession. But now, in a new era of auditing, promises faster, more accurate, and predictive capabilities. Integrating artificial intelligence (AI) and machine learning (ML) into auditing practices reshapes the financial assurance landscape.

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This chapter explores the technological revolution and how AI and ML are reshaping the auditing function, particularly at the Big Four accounting firms – Deloitte, PwC, EY, and KPMG.

1. INTRODUCTION

The modern financial market runs through technology which serves as the essential force for both marked improvements and increased operational effectiveness. The auditing profession has experienced a transformation because of two developing technologies which are Artificial Intelligence (AI) and Machine Learning (ML). Diverse audit approaches in the past were based on manual sampling with retrospective data analysis and standardized checklists. Although these traditional strategies fulfil basic regulatory needs and financial accuracy principles they lack the skill to detect sophisticated fraudulent activities and manage vast transactional data volumes in real-time situations.

AI and ML integration enables the automation of routine work and anomaly detection as well as continuous audit functions (Appelbaum et al., 2017). Academic studies have not fully examined how AI and ML benefit auditing operations specifically within real-life environments of major accounting companies such as Deloitte, PwC, EY, and KPMG.

AI and ML-driven predictive auditing has the potential to perform real-time audits for detecting fraud ahead of major damage occurrences while providing deep valuable insights to clients. Real-time auditing exists already and this technology is currently in operation.

1.1. Scope of the Chapter

This chapter AI and ML in the context of auditing explore how machine learning algorithms can process vast datasets, identify patterns, and flag anomalies with a level of speed and accuracy that was once thought impossible. The practical applications of AI and ML in audit practice,

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