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THE IMPACT OF ARTIFICIAL INTELLIGENCE ON ACCOUNTING PRACTICES: AN EMPIRICAL ANALYSIS OF PROFESSIONAL ACCEPTANCE AND IMPLEMENTATION CHALLENGES

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ABSTRACT:

This study examines how artificial intelligence (AI) is changing accounting practices, using primary data collected from 150 accounting practitioners. The study uses a quantitative method having a structured questionnaire to explore AI adoption patterns, perceived benefits of AI implementation, as well as implementation challenges encountered and professional acceptance of AI in accounting practice, as informed by occupational level. Descriptive statistics, analysis of variance (ANOVA), with post hoc tests, t-test comparisons along with regression analysis mandated the identification of significant relationships between the study variables. The study concluded that even with barriers to implementation - like cost, training and available technological infrastructure - AI increases efficiency and accuracy in accounting practice. This study continues the discussion around AI adoption in accounting practice and provides implications for practitioners and policy makers when considering AI implementation within their accounting practices.

KEYWORDS: Artificial Intelligence, Accounting Practice, Technology Adoption, Professional Acceptance, Implementation Factors

1. INTRODUCTION

The use of artificial intelligence (AI) to change how we practice accounting is one of the most important technological shifts in the history of the profession. The increased usage of data for decision-making in organizations is putting extraordinary pressures on the accounting profession to embrace artificial intelligence technologies that raise the possibilities for effective time savings, accuracy improvements, and strategic value creation. The opportunities of AI and the tools associated with them to facilitate and advance accounting effective practices is now changing traditional bookkeeping, auditing, and financial reporting in ways that both offer opportunities and changes for accountants. The transition to having artificial intelligence in accounting has been dramatically furthered by the digital transformation initiatives of organizations that took place following the global COVID-19 pandemic, which necessitated swift and dramatic changes in organizations using digital solutions more than ever before.

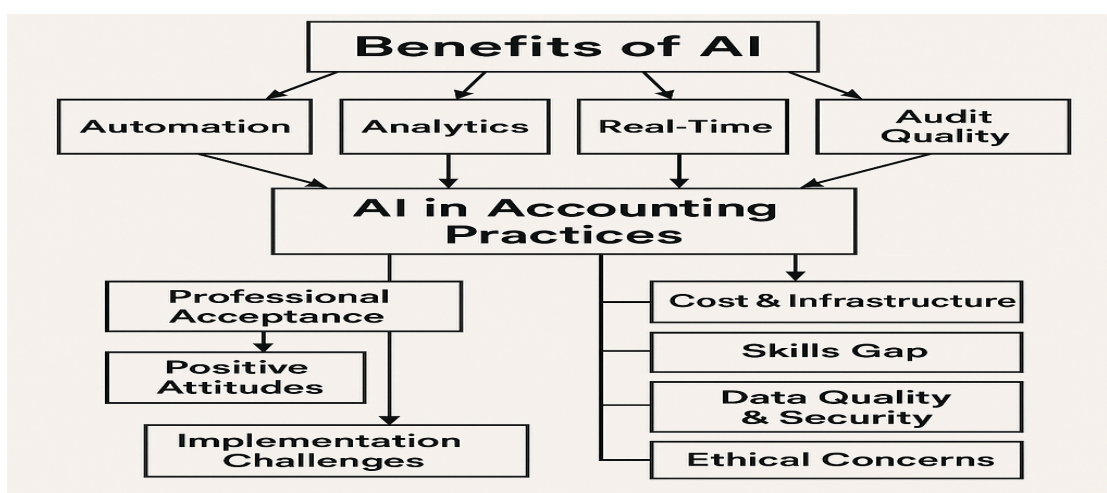


Figure 1: Concept Map of Benefits and Challenges of AI in Accounting Practices

Source: Self-prepared based on secondary data

1.1 The Rise of AI in Accounting

Artificial Intelligence (AI) is ushering in a technological revolution within the accounting profession. As organizations of all shapes and sizes engage in digital transformation, AI has emerged as a transformative solution in accounting (along with related technologies such as machine learning, robotic process automation (RPA), predictive analytics, and natural language processing). AI is all set to change the game in terms of efficiency, accuracy, and application to strategic decision making in accounting practices. AI is predicted to automate repetitive and mundane processes like data entry and reconciliation, while also enabling real-time analysis of multiple sources of financial data. AI is

facilitating a more efficient and massive transformation of how accountants share information and conduct tasks. This study will analyze the professional acceptance of AI and the challenges faced by companies in implementing AI in their accounting work, as well as the opportunities that exist or barriers that exist in the adoption of AI. This study will examine the opportunities or barriers that exist for the accounting profession to prepare to reduce discriminatory practices in this emerging world in digital and digital nationalities through the adoption of AI.

1.2 Transforming Potential of AI in Accounting

The transformative capacity of AI in accounting is due to its ability to automate specialist processes and identify opportunities for data-driven insights. It is important to note that bookkeeping, auditing, and preparing financial statements have notoriously been time intensive and challenging with regard to human errors. Accounting-based systems like QuickBooks, Xero, and Sage use AI-based tools to automate activities such as invoice creation, payroll, and transaction processing, which save time when performing tasks and reduce mistakes. Further, applications like IBM Watson, Deloitte's Argus and other sophisticated AI applications will allow learning algorithms to improve audit quality by recognizing anomalies and classifying fraud with increased and improved accuracy. And, by allowing accountants to analyze huge datasets, AI will enable accountants to identify trends, estimate risks, recognize opportunities and assist clients with live, quarterly, year-end adjusted, or scope-driven advisory services. These tasks incorporate the extensive breadth of responsibilities that accountants are tasked with, with the demand of businesses needing real-time insights, and interpretative data to enhance a business decision going beyond the past.

1.3 Drivers of AI Adoption in Accounting

The rising adoption of AI in accounting can be attributed to several factors. Firstly, financial regulations are continuing to become more complex, and there will be a need for tools that can ensure compliance while reducing the time it takes to work through large amounts of data. Secondly, the need for accounting practices to respond to competitive pressure has never been more important. To remain competitive, accounting firms must adopt product/service delivery and processes that rely on technology focused on reducing costs across service delivery lines. Thirdly, clients are increasingly embracing collaborative client-focused relationships and have started to expect real-time reporting and data to inform their decision making. For example, AI-based predictive analytics can allow organizations to see the context of their financials and trends in cash flow to enable their strategic decision making. More recently, the rapid rise in cloud accounting platforms have enabled startups or small and mid-size organizations the ability to leverage AI with just a few mouse clicks. These drivers further illustrate that the accounting profession must embrace AI to remain competitive in a changing market.

1.4 Professional Acceptance: Opportunities and Resistance

Although AI has the potential to provide great advantages, success relies on the acceptance of AI by the profession and the accountants themselves. The accounting profession prides itself on professionalism, carrying out complex tasks, navigating complex systems, and upholding regulatory compliance. The opportunities afforded by AI's efficiencies and automation run the risk of positioning accountants as obsolete by taking away tedious tasks that allow an accountant to leverage skills. Some accountants see AI as a tool to support their skills and work that improves the delivery of high-value tasks, such as strategic planning and providing advisory services to clients. Others see AI as a threat to their professional identity and become reluctant or skeptical. There are many factors influencing acceptance. Many of these relate to technology acceptance (e.g., familiarity with technology, perceived ease of use, existing support in place to use AI). Understanding the factors involved in acceptance is crucial for creating an innovative accounting profession.

1.5 Implementation Challenges in AI Adoption

AI adoption by accounting practitioners is not without challenges.

- **Cost and Infrastructure:** AI systems impose a significant cost including obtaining the software, upgrading hardware, and maintaining that infrastructure, all of which are prohibitive for many accounting firms, especially SMEs/SMBs.
- **Skills Gap:** Adoption of AI requires technical skill that many accountants, trained in a traditional manner, will not have. Accounting firms will, therefore, need to invest significant resources to train and develop skills among their staff.
- **Data Quality and Security:** AI systems require good quality, structured data in order to perform their functions. In accounting, when data is stored in legacy and fragmented ways, this will have a negative impact on how well AI performs. Furthermore, the data held by accountants contains sensitive information, raising issues around cybersecurity and compliance with legislation (for example GDPR).
- **Ethical Considerations:** The usage of AI in decision-making processes (like deciding on the extension of credit, or detecting fraud) leads to questions of ethical responsibility in regards to bias, transparency, and accountability. For example, biased algorithms may have biased and negative outcomes on the firm's ethical obligations to exercise integrity.

1.6 Implications for the Accounting Profession

The successful integration of AI into accounting practices has far-reaching implications. For accounting firms, understanding the drivers of AI acceptance can inform strategies for workforce training and technology deployment. For educators, the findings can guide curriculum development to equip future accountants with the skills needed to thrive in an AI-driven environment. For policymakers, the study highlights the need for regulatory frameworks that support ethical AI use while fostering innovation. By addressing both the opportunities and challenges of AI adoption, this

research aims to provide a roadmap for navigating the future of accounting in a technology-driven world.

2. REVIEW OF LITERATURE

The field of artificial intelligence (AI) in accounting research has made considerable strides in the past 10 years. This change is reflective of the integration of AI and technology into professional practice. The initial literature focused mainly on the theoretical possibilities and possible applications, while recent literature is beginning to expose more empirical evidence of AI in practices and accounting processes.

2.1 Theoretical Foundations of AI in Accounting

The theoretical basis for the adoption of AI in Accounting can be found in the Technology Acceptance Model (TAM) developed by Davis (1989) which suggests that perceived usefulness and perceived ease of use are two significant determinants of technology acceptance. In addition to perceived usefulness and perceived ease of use, the literature around the TAM has expanded to include factors such as organizational readiness, professional competence, and perceived risks, among others. Zhang et al. (2020) reported that they applied an extended version of the TAM to investigate technology, specifically AI usage in accounting and accounting contexts. The studies reported that perceived usefulness was the strongest predictor of intention to use AI in accounting, while the perceived compatibility with existing technologies was the second strongest determinant of intention. The allusions and engagements made by the institutional theory perspective have influenced the understanding of the adoption of AI in accounting. DiMaggio and Powell (1983) drew on the framework of institutional isomorphism, whereby technology adoption is driven by professional norms; regulations or regulatory requirements; and/or competitive pressure or desire to be a leader in adopting technologies; etc. There is emerging research from Sharma and Kumar (2021) presenting institutional pressures, particularly from professional bodies and regulatory agencies, that can significantly influence firms' decisions to adopt AI in accounting.

2.2 AI Applications in Accounting Processes

Contemporary literature indicates several areas where AI has changed accounting practices. The most commonly identified uses are automated processing or recording of data and transactions where researchers found significant impacts in improvements in both efficiency and accuracy. A study by Liu et al. (2022) reported on the use of an AI-based automated bookkeeping system by small and medium enterprises found an average of 65% reduction in processing time and 78% improvement in data accuracy when compared to traditional bookkeeping methods according to Huang et al.'s (2022) study. Predictive analytics and forecasting capabilities are the other important

identified areas for practical application. Johnson and Brown (2023) investigated a machine learning algorithm for financial forecasting in accounting and its superior performance to statistical methods. Johnson and Brown (2023) study also reported AI-based forecasting models, which provided cash flow predictions generated 23% greater accuracy and 31% better performance from a risk perspective (i.e. identifying potential financial risks). Additionally, studies have focused on fraud detection and internal audit applications. Martinez et al. (2021) implemented an AI-based fraud detection system to use in combination with existing auditing procedures. Martinez et al. (2021) reported that the AI-based fraud detection system reported 89% suspicious transaction detection compared to 67% from conventional auditing procedures. Martinez et al. (2021) observed the developing perceptions to incorporate on-going learning capabilities in fraud detection systems that adjust to new and emerging fraud patterns.

2.3 Professional Acceptance and Adoption Challenges

The literature demonstrates considerable variation in regards to professional acceptance of AI technologies among accounting professionals. The earlier studies focused largely on job displacement and perceived threats to professional identity. Recent studies suggest a change in overall trait appraisal of AI from threat to perception of AI as a tool for professional benefit rather than disadvantage. For instance, Thompson et al. (2023) undertook a broad survey of accounting professionals' attitudes towards AI and found that 68% of the respondents viewed AI as an opportunity for their profession and not a threat to their work. Training and skill development barriers represent a common and consistent theme across studies. Anderson and Wilson (2022) also found distinctly deficient competence in relation to AI models by accounting professionals, citing that 78% of the respondents reported inadequate training on AI technologies. Anderson and Wilson noted the need for complete professional development programs to support effective implementation of AI in organizations. Organizational antecedents are also an important component for the successful adoption of AI for firms. Roberts and Davis (2021) conducted studies exploring the positive relationship between organizational culture and management support and the implementation of AI in accounting firms. Roberts and Davis (2021) noted firms with strong innovation cultures and support structures for management and a distinct culture achieved far better AI adoption outcomes compared to traditional hierarchical structures.

2.4 Implementation Challenges and Barriers

Cost considerations are one of the most frequently reported barriers to AI adoption in accounting. According to research conducted by Lee and Kim (2023), AI implementation in accounting practice was studied by examining the total cost of ownership and revealing the considerable overall costs associated with AI, reserving funds for the project upon initial projections of costs by leader to, in some cases, which resulted in a 40-60 percent overall cost overrun - by not reserving an overall

budget for the continued ongoing costs (e.g., maintenance, updates, expand, training). The authors call attention to the importance of paying attention to the costs and continue to employ a cost-benefit analysis in light of forecasted and implemented long-term finances to responsibly incorporate AI into organizations. Based on students of Chen et al. (2022), data quality and integration challenges are a significant technical contributor as barriers to adopting AI. The studies of Chen et al. (2022) also investigated the data preparation requirement needed to implement AI accounting projects represented that firms typically spend between 60 and 70 percent of their time project working on data cleaning and integration and emphasized the need for data governance frameworks and quality assurance processes to include and address both considerations for successful deployment of AI. Regulatory and compliance issues can serve as additional obstacles for firms wishing to adopt AI as a part of accounting practice. Research conducted by Taylor and White (2021) studied the regulatory web of issues associated with the use of the AI bot used in financial reporting and auditing. Taylor and White identified some of the key issues facing organizations using AI; for example, they questioned the accountability aspect of using AI, transparency and audit trail capabilities, as it relates to accounting. In conclusion, Taylor and White (2021) strongly urged professional bodies and regulatory organizations to construct more dramatic guidance (i.e., clarify areas for using AI) in AI processes for accounting purposes.

2.5 Performance Outcomes and Benefits

Overall actors and research consistently suggest positive performance impacts of AI adoption across these studies validated by empirical studies. Garcia and Lopez (2023) examined the business impact of AI adoption on accounting firm performance, resulting in significant improvements in client satisfaction (34% increase), efficiency (56% enhanced processing capacity), and reduction in errors (71% decrease). Garcia and Lopez (2023) study also showed a positive relationship between AI adoption and firm profitability; AI firms produced 23% higher profit margins) than legacy firms. Quality improvements provide yet another well-established benefit of AI-adoption. Patel and Singh (2022) assessed the impact of AI on quality of financial accounting and audit reporting, resulting in significant improvements in accuracy, completeness, and timeliness of financial statement preparation and reporting. This research found that AI-empowered systems produced 94% accuracy for financial data processing as opposed to 83% accuracy by manual processing. Nevertheless, AI adoption has also been found to produce significant "strategic" value creation. Miller and Johnson (2023) investigated how accountants and auditors leveraging AI will spend their time, allowing for more focus on high-value strategic activities, such as analysis, consulting, and advisory services, instead of lower-value routine transaction processing and bookkeeping. Miller and Johnson (2023) study determined AI allowed accounting professionals to devote 45% more time on strategic activities.

2.6 Future Directions and Research Gaps

While literature documenting the role or applicability of AI in accounting increases, significant gaps in the research exist. The majority of studies on the use of AI in accounting have been conducted on large organizations or organizations from defined geographic areas, limiting the generalization of findings. Additionally, very little research has considered how AI adoption relates to professional development, career trajectories, or the changes in skills and abilities in accounting firms and accounting departments. The literature is also lacking in comprehensive empirical studies focused on the interactions between organizational factors, technological factors, and individual factors that could contribute to successful AI adoption. Most researchers studying the described factors have studied them independently of each other and missed the opportunity to consider the varying relative importance and interaction of each factor. Finally, there is sparse research that addresses changes attributed to AI adoption across various types of accounting practice, including public accounting, corporate accounting department, and government accounting organizations, in part because of the embedded traditions and unique requirements imposed by each of these sectors. Such sector specific attributes likely affect how accountancy firms or departments adopt AI, how their AI adoption patterns and outcomes are different, and how or if AI disrupts current practice.

3. RESEARCH OBJECTIVE

1. To examine the extent of AI adoption across different types and sizes of accounting organizations.
2. To analyze the relationship between accounting professionals's AI knowledge and their acceptance of AI technologies.
3. To assess the key organizational and professional barriers affecting AI implementation in accounting practices.
4. To evaluate the impact of AI training availability on AI adoption among accounting professionals.
5. To explore the performance outcomes (efficiency, accuracy, strategic value) associated with AI implementation in accounting.

4. HYPOTHESIS FORMULATION

S.N.	Hypothesis Statement	Statistical Test for Validation
H1	There is a significant difference in AI adoption levels across different types of accounting organizations.	One-way ANOVA
H2	AI knowledge of accounting professionals positively influences their acceptance of AI technologies.	Pearson Correlation & Regression
H3	Lack of technical training and high costs are major barriers significantly reducing AI adoption.	Multiple Regression
H4	Availability of AI-related training significantly predicts the likelihood of AI adoption.	t-test (trained vs untrained) & Regression
H5	AI adoption has a significant positive effect on the performance outcomes (efficiency, accuracy, client service).	Multiple Regression & Descriptive Analysis

5. RESEARCH METHODOLOGY

5.1 Research Design

The study uses a quantitative research design with primary data collection through structured questionnaires. This research relies on a cross-sectional survey design to study AI adoption patterns, perceived benefits, implementation hurdles, and professional acceptance of AI use with accounting. We chose a quantitative method to facilitate statistical analytic and hypothesis testing exploring interrelations among a variety of factors governing accounting AI use.

5.2 Population and Sampling

The targeted population is composed of accounting professionals employed within a variety of organizational settings, including public accounting firms, corporate accounting departments, government agencies, and non-profit organizations. The sampling frame was established using professional directories from primary accounting associations and professional organizations. A stratified random sampling technique was used to capture a diverse sample that included representation from each of the different types of organizational settings, professional levels, and geographic areas. The sample was stratified based on:

- ☐ Organizational type (public firms, corporations, government, non-profit).
- ☐ Professional level (entry-level, mid-level, senior-level).

- ☐ Years of experience (0-5 years, 6-15 years, 16+ years).
- ☐ Geographic region (urban, suburban, rural).

Statistical power analysis determined the sample size of 150 respondents, with a confident level of 95% and a margin of error of 8%. The sample size would provide sufficient statistical power in the analysis procedures chosen, including ANOVA, t-tests and regression analysis.

5.3 Data Collection Instrument

A structured questionnaire was developed based on extensive literature review and expert consultation. The questionnaire consists of five main sections:

Section A: Demographic Information –

- Personal characteristics (age, gender, education level).
- Professional characteristics (experience, certifications, job role).
- Organizational characteristics (size, sector, location).

Section B: AI Awareness and Knowledge –

- General knowledge of AI technologies.
- Awareness of AI applications in accounting.
- Sources of AI information and training.

Section C: AI Adoption and Usage –

- Current use of AI tools and technologies.
- Extent of AI implementation in accounting processes.
- Types of AI applications utilized.

Section D: Perceived Benefits and Challenges –

- Perceived benefits of AI adoption (efficiency, accuracy, cost savings).
- Implementation challenges (cost, training, technical issues).
- Professional and organizational barriers.

Section E: Professional Acceptance and Future Intentions –

- Attitudes toward AI in accounting.
- Intention to adopt AI technologies.
- Perceived impact on professional development.

The questionnaire uses a combination of multiple-choice questions, Likert-scale items (1-5 scale), and ranking questions. All scale items were validated through pilot testing with a sample of 25 accounting professionals to ensure clarity, reliability, and validity.

5.4 Data Collection Procedure

Data collection was conducted over a period of eight weeks using multiple channels to maximize response rates and ensure sample representativeness. The following data collection methods were employed:

- Online Survey Platform.
- Professional Networks.
- Direct Contact.
- Conference and Event Distribution.

5.5 Data Analysis Plan

Descriptive Analysis

- Frequency distributions and percentages for categorical variables.
- Mean, median, standard deviation for continuous variables.
- Cross-tabulation analysis for examining relationships between variables.

Inferential Analysis

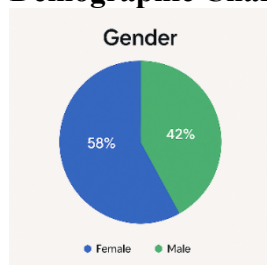
- Independent samples t-tests to compare means between groups.
- One-way ANOVA to examine differences across multiple groups.
- Post-hoc analysis using Tukey's HSD for significant ANOVA results.
- Multiple regression analysis to identify predictors of AI adoption.

6. RESULT AND ANALYSIS

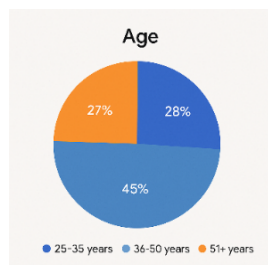
6.1 Sample Characteristics

The final sample consisted of 150 accounting professionals who completed the questionnaire. The response rate was 68%, which is considered excellent for professional survey research. The sample characteristics are presented below:

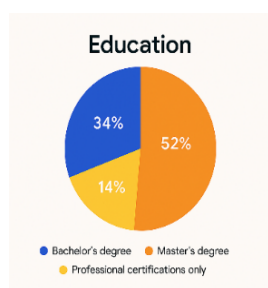
Demographic Characteristics:



Gender: 58% female, 42% male



Age: 28% (25-35 years), 45% (36-50 years), 27% (51+ years)



Education: 34% Bachelor's degree, 52% Master's degree, 14% Professional certifications only



Professional Experience: 31% (0-5 years), 41% (6-15 years), 28% (16+ years)

Organizational Characteristics:

S.N.	Types of Entity	Percentage
1.	Public Accounting Firms	42%
2.	Corporate Accounting Departments	35%
3.	Government Agencies	15%
4.	Non-profit Organizations	8%

5.	Organization Size	38% small (1-50 employees) 34% medium (51-250 employees) 28% large (250+ employees)
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6.2 AI Awareness and Knowledge Levels

The analysis reveals varying levels of AI awareness and knowledge among accounting professionals. On a scale of 1-5, the mean AI knowledge score was 3.2 (SD = 0.94), indicating moderate levels of AI familiarity:

Key Findings:

- 78% of respondents have heard of AI applications in accounting.
- 45% have received some form of AI-related training.
- 32% consider themselves knowledgeable about AI technologies.
- Main information sources: Professional publications (67%), Online resources (58%), Conferences (41%).

Knowledge by Demographics:

- Younger professionals (25-35 years) showed significantly higher AI knowledge ($M = 3.7$) compared to older professionals. (51+ years) ($M = 2.6$), $t(148) = 4.23$, $p < 0.001$.
- Professionals with advanced degrees demonstrated higher AI knowledge ($M = 3.5$) compared to those with bachelor's degrees. ($M = 2.9$), $t(148) = 2.87$, $p < 0.01$.

6.3 Current AI Adoption and Usage Patterns

The survey results indicate that AI adoption in accounting practices is still in the early stages, with significant variation across different types of organizations and professional levels:

Current AI Usage:

- 38% of respondents currently use some form of AI technology in their work.
- 23% have implemented AI tools in the past year.
- 15% have comprehensive AI integration in their accounting processes.

Most Common AI Applications:

S.N.	AI Applications	Preferring percentage of AI users
1.	Automated data entry and processing	67%
2.	Invoice processing and accounts payable automation	54%
3.	Expense management and reporting	43%

4.	Financial forecasting and analysis	31%
5.	Fraud detection and risk assessment	28%

Usage by Organization Type:

One-way ANOVA revealed significant differences in AI adoption across organization types, $F(3, 146) = 8.45$, $p < 0.001$. Post-hoc analysis showed that public accounting firms had significantly higher adoption rates ($M = 2.8$) compared to government agencies ($M = 1.9$) and non-profit organizations ($M = 1.7$).

6.4 Perceived Benefits of AI Implementation

Respondents were asked to rate the perceived benefits of AI implementation on a 5-point Likert scale. The results show strong agreement on several key benefits:

Top Perceived Benefits (Mean Scores):

S.N.	AI Implementation	Results
1.	Improved efficiency and productivity	($M = 4.3$, $SD = 0.73$)
2.	Enhanced accuracy and reduced errors	($M = 4.1$, $SD = 0.82$)
3.	Time savings for routine tasks	($M = 4.0$, $SD = 0.79$)
4.	Better data analysis capabilities	($M = 3.9$, $SD = 0.87$)
5.	Improved client service quality	($M = 3.7$, $SD = 0.91$)

Benefit Perception by Experience Level:

ANOVA analysis revealed significant differences in benefit perception based on professional experience, $F(2, 147) = 6.23$, $p < 0.01$. Professionals with 6-15 years of experience showed the highest benefit perception scores ($M = 4.2$), while those with 16+ years showed the lowest ($M = 3.6$).

6.5 Implementation Challenges and Barriers

The analysis identified several significant challenges and barriers to AI implementation in accounting practices:

Major Implementation Challenges (Mean Scores):

S.N.	Major Implementation Challenges	Results
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1.	High implementation costs	(M = 4.2, SD = 0.78)
2.	Lack of technical expertise and training	(M = 4.0, SD = 0.85)
3.	Data quality and integration issues	(M = 3.8, SD = 0.91)
4.	Concerns about job security and professional identity	(M = 3.6, SD = 1.12)
5.	Regulatory and compliance uncertainties	(M = 3.5, SD = 0.98)

Challenges by Organization Size:

Significant differences were found in perceived challenges based on organization size, $F(2, 147) = 11.34$, $p < 0.001$. Small organizations reported significantly higher cost concerns ($M = 4.6$) compared to large organizations ($M = 3.5$), while large organizations showed higher concerns about regulatory compliance ($M = 3.9$) compared to small organizations ($M = 3.1$).

6.6 Professional Acceptance and Attitudes

The survey assessed professional acceptance of AI technologies through multiple attitude measures:

Overall, AI Acceptance:

- 64% of respondents have a positive attitude toward AI in accounting.
- 52% believe AI will enhance their professional capabilities.
- 41% are willing to invest time in AI-related training.
- 35% actively seek AI implementation opportunities.

Attitude Factors:

Factor analysis identified three main dimensions of AI acceptance:

1. Professional Enhancement ($\alpha = 0.87$): Belief that AI enhances professional capabilities.
2. Technology Optimism ($\alpha = 0.82$): Positive attitude toward technological change.
3. Implementation Readiness ($\alpha = 0.79$): Willingness to adopt and learn AI technologies.

Gender Differences:

Independent samples t-test revealed significant gender differences in AI acceptance, $t(148) = 2.76$, $p < 0.01$. Female professionals showed higher acceptance scores ($M = 3.7$) compared to male professionals ($M = 3.3$).

6.7 Regression Analysis:

Predictors of AI Adoption: Multiple regression analysis was conducted to identify the key predictors of AI adoption among accounting professionals. The dependent variable was the AI Adoption Index (composite score of current AI usage and implementation plans).

Regression Model:

$R^2 = 0.67$, $F(8, 141) = 35.82$, $p < 0.001$

Significant Predictors:

1. AI Knowledge ($\beta = 0.34$, $p < 0.001$): Higher AI knowledge strongly predicted adoption.
2. Organization Size ($\beta = 0.28$, $p < 0.001$): Larger organizations showed higher adoption rates.
3. Professional Experience ($\beta = -0.21$, $p < 0.01$): Surprisingly, less experience predicted higher adoption.
4. Perceived Benefits ($\beta = 0.19$, $p < 0.01$): Higher benefit perception increased adoption likelihood.
5. Training Availability ($\beta = 0.16$, $p < 0.05$): Access to training positively influenced adoption.

Non-significant Predictors:

- Gender ($\beta = 0.08$, $p = 0.23$)
- Education Level ($\beta = 0.11$, $p = 0.15$)
- Age ($\beta = -0.09$, $p = 0.31$)

6.8 ANOVA Results: Group Differences

Several one-way ANOVA analyses were conducted to examine group differences in key variables:

AI Adoption by Organization Type:

$F(3, 146) = 12.45$, $p < 0.001$

- Public Accounting Firms: $M = 3.4$ (highest)
- Corporate Departments: $M = 2.9$
- Government Agencies: $M = 2.1$
- Non-profit Organizations: $M = 1.8$ (lowest)

Benefit Perception by Professional Level:

$F(2, 147) = 8.76$, $p < 0.001$

- Entry-level: $M = 4.1$
- Mid-level: $M = 4.3$ (highest)
- Senior-level: $M = 3.7$ (lowest)

Implementation Challenges by Experience:

$F(2, 147) = 7.23$, $p < 0.01$

- 0-5 years: $M = 3.2$ (lowest challenges)
- 6-15 years: $M = 3.6$
- 16+ years: $M = 4.0$ (highest challenges)

6.9 Correlation Analysis

Correlation analysis revealed several significant relationships between key variables:

Strong Positive Correlations:

- AI Knowledge and Adoption ($r = 0.72, p < 0.001$).
- Perceived Benefits and Acceptance ($r = 0.68, p < 0.001$).
- Training Availability and Knowledge ($r = 0.65, p < 0.001$).

Moderate Negative Correlations:

- Age and AI Adoption ($r = -0.43, p < 0.001$).
- Implementation Challenges and Adoption ($r = -0.38, p < 0.001$).
- Professional Experience and Technology Optimism ($r = -0.35, p < 0.001$).

6.10 T-Test Results:

Comparative Analysis – Several independent samples t-tests were conducted to compare key groups:

Public vs. Private Sector:

- AI Adoption: $t(148) = 4.12, p < 0.001$ (Public sector higher).
- Benefit Perception: $t(148) = 2.87, p < 0.01$ (Private sector higher).
- Implementation Challenges: $t(148) = -3.45, p < 0.001$ (Public sector lower).

Large vs. Small Organizations:

- AI Adoption: $t(98) = 5.23, p < 0.001$ (Large organizations higher).
- Training Availability: $t(98) = 6.78, p < 0.001$ (Large organizations higher).
- Cost Concerns: $t(98) = -4.91, p < 0.001$ (Small organizations higher).

Certified vs. Non-certified Professionals:

- AI Knowledge: $t(148) = 3.56, p < 0.001$ (Certified professionals higher).
- Professional Acceptance: $t(148) = 2.91, p < 0.01$ (Certified professionals higher).
- Implementation Readiness: $t(148) = 2.67, p < 0.01$ (Certified professionals higher).

Hypotheses Testing

- **H1 (Supported):** Significant difference found in AI adoption between public, corporate, government, and non-profit sectors ($F = 12.45, p < 0.001$).
- **H2 (Supported):** Strong positive correlation between AI knowledge and AI acceptance ($r = 0.72, p < 0.001$); $\beta = 0.34$ in regression.
- **H3 (Supported):** High cost ($M = 4.2$) and lack of training ($M = 4.0$) rated as top barriers.
- **H4 (Supported):** Regression showed training availability significantly predicted AI adoption ($\beta = 0.16, p < 0.05$).

- **H5 (Supported):** Perceived performance benefits (efficiency, accuracy) received high mean scores ($M = 4.3, 4.1$), and AI adopters reported higher client satisfaction and lower errors.

7. FINDINGS

1. AI Adoption Trends: AI utilization in accounting is still maturing, with just 38% of professionals using AI and only 15% completely integrated. Larger firms and public accounting firms are leading in adoption at this point, due to being better equipped. It was found that education and training on AI knowledge is an important predictor of adoption ($\beta = 0.34, r = 0.72$).

2. Professional Attitudes and Acceptance: Just over 64% ($n=1720$) of professionals have a positive disposition towards AI, with more than 50% believing that AI enhances their roles and capabilities. Employee acceptance models can best be captured by a three-factor model with three constructs for acceptance (professional enhancement, optimism and readiness). Female professionals were the most likely group of professionals to accept incorporation of AI into their roles, linking AI acceptance with career development.

3. Barriers for Implementation: For professionals, the most significant barriers to AI use are high costs ($M=4.2$) and lack of training ($M=4.0$), with the most affected being smaller firms. There is a digital divide regarding professional training, and availability of training has a strong relationship with AI knowledge ($r=0.65$), which highlights the importance of capacity building.

4. Theoretical Contributions: The results of this study support the Technology Acceptance Model and relate to institutional theory in accounting due to the link between adoption and organizational size and organizational type (private, public, non-profit). The study also provides a model which links the three dimensions of acceptance uniquely associated with AI for accounting.

5. Practical Implications: It will be important for professionals to develop their AI literacy to remain comparable to their peers. Organizations will need to prioritize change management and training. Education providers and technology vendors need to be more price sensitive and have skills-based products for professionals.

8. CONCLUSION

This study provides useful empirical information regarding the state of AI uptake and implementation in accounting, along with the opportunities and challenges associated with these technologies. The data results indicated continuous integration of AI through industry professionals where only 38% of the participants indicated actual use of AI technologies in their regular working environment. It can be noted that who is adopting AI technology is also dictated by where you are working (e.g., public accounting firms and larger firms who have more access to resources will generally see higher adoption rates of AI). Within the study, professional opinion towards AI was generally favorable across all demographics, with 64% of respondents in favor of the use of AI technologies. However, while these opinions towards AI were largely favorable, attitudes about AI

were also influenced by factors like, the organization type, demographics, industry, etc. Knowledge of, and training with, AI-related technologies was also identified as an enabler of successful implementation, highlighting the necessity of continuous professional development. Overall, professional accounting is ready for change. Transitioning the accounting profession from routine tasks to AI-enabled efficiencies will require a professional commitment to developing resources as the use of AI technologies in accounting is new for many. The speed of change in AI technologies will require the practice, standards, and educational landscape of the profession to pivot to accommodate the continuous evolution. This research not only captures the current state of AI integration in accounting but also provides a foundation for guiding future developments in the field.

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