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Role and Challenges of Artificial Intelligence Adoption in Accounting and Commerce: Implications for Consumer Trust, Pricing Transparency, and Service Quality

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ABSTRACT

Artificial Intelligence (AI) has emerged as a transformation force across business disciplines, particularly in accounting and commerce. This paper examines how AI technologies such as machine learning, natural language processing, and robotic process automation are reshaping financial reporting, decision-making, compliance, and operational efficiency - finally impacting consumer satisfaction, value & trust. Research Gap & approach to address it in this research paper - While prior research has predominantly examined organizational efficiency and audit-related outcomes, limited empirical evidence exists regarding how AI-enabled accounting practices affect end consumers. Addressing this gap, the present study investigates the role and challenges of AI adoption in accounting and commerce and examines their implications for consumer trust, pricing transparency, and service quality. Using survey data collected from 417 consumers of AI-enabled financial and commercial services in India, USA & UAE. The study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS. The findings reveal that AI adoption significantly enhances consumer pricing transparency and service quality, which in turn positively influence consumer trust. However, AI-related challenges—such as algorithmic opacity, privacy concerns, and perceived unfairness—significantly weaken these relationships. Multi-group analysis further demonstrates that the positive effects of AI adoption are stronger for consumers with high digital literacy than for those with low digital literacy. The study contributes to Accounting Information Systems (AIS) and consumer trust literature by advancing a consumer-concentric understanding of AI adoption and highlighting the governance challenges associated with AI-enabled accounting systems. Responding to calls in leading accounting and information systems journals for stakeholder-centrist and ethically grounded research, this study adopts a consumer-oriented perspective to examine the role and challenges of AI adoption in accounting and commerce. Specifically, it investigates how AI adoption affects consumer trust through pricing transparency and service quality, while accounting for AI-related challenges and differences in consumer digital literacy. Practical implications are offered for firms and regulators seeking responsible and transparent AI deployment.

Keywords: Artificial Intelligence; Accounting and Commerce; Consumer Trust; Pricing Transparency; Service Quality; Digital Literacy

1. Introduction

The advent of Artificial Intelligence (AI) has sparked substantial changes in business operations worldwide. Accounting and commerce, traditionally reliant on manual processes and human judgment, are increasingly integrating AI to optimize performance, enhance accuracy, and support strategic decisions. The Artificial Intelligence (AI) is emerging as one of the most influential technologies shaping contemporary accounting and commerce with. advances in machine learning, big data analytics, and automation AI-driven systems for transaction processing, dynamic pricing, credit assessment, billing, fraud detection, and customer service. **These applications have moved beyond internal accounting functions to directly influence**

consumer-facing financial interactions, thereby reshaping how consumers perceive prices, services, and organizational trustworthiness. From an accounting perspective, AI facilitates real-time reporting, reduces human error, and enhances operational efficiency. In commercial settings, AI enables personalized pricing strategies, automated invoicing, and responsive customer support through intelligent chatbots. While these developments promise substantial benefits, they also introduce new challenges related to transparency, fairness, and accountability. Many AI-enabled accounting systems operate as black-box algorithms, making it difficult for consumers to understand how prices are determined or how financial decisions are made. Such opacity may intensify information asymmetry and undermine consumer trust, particularly when pricing outcomes or service responses are perceived as unfair or erroneous. Recent regulatory developments and professional guidelines increasingly emphasize the need for trustworthy and explainable AI, especially in financial and accounting domains that directly affect consumers. Despite this, empirical research examining the consumer-level consequences of AI adoption in accounting and commerce remains limited. Existing studies largely focus on firm-level performance, audit quality, or managerial decision-making, offering little insight into how AI-driven accounting practices influence consumer perceptions of transparency and service quality. Responding to calls in leading accounting and information systems journals for stakeholder-centric and ethically grounded research, this study adopts a consumer-oriented perspective to examine the role and challenges of AI adoption in accounting and commerce. Specifically, it investigates how AI adoption affects consumer trust through pricing transparency and service quality, while accounting for AI-related challenges and differences in consumer digital literacy. By focusing on an emerging market context characterized by rapid digitalization, the study enhances the relevance of its findings for both theory and practice.

1.1 Research gap - While prior research has predominantly examined accounting efficiency, commerce automation, control and audit-related outcomes, limited empirical evidence exists regarding how AI-enabled accounting practices affect end consumers. To address this gap, the present study researches the role and challenges of AI adoption in accounting with implications on consumer trust, pricing transparency, and service quality. Using survey data collected from 412 consumers of AI-enabled financial and commercial services in India, the study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS. Responding to calls in leading accounting and information systems journals for stakeholder-centric and ethically grounded research, this study adopts a consumer-oriented perspective to examine the role and challenges of AI adoption in accounting and commerce. Specifically, it investigates how AI adoption affects consumer trust through pricing transparency and service quality, while accounting for AI-related challenges and differences in consumer digital literacy.

1.2 Secondary aspects - Analysis, Control and Automation through AI & need for AI skills for the same. AI in accounting and auditing enhances accuracy, speed, and security by automating routine tasks, reconciling data, and providing real-time, continuous monitoring. It detects fraud by analyzing vast datasets to identify anomalies and patterns, transforming auditing from retrospective checks to proactive risk management and improved financial reporting integrity.

1.3 Automated Reconciliation & Accounting: AI tools streamline the reconciliation of accounts, invoice matching, and payment controls, minimizing human error and reducing time spent on routine tasks. Continuous Monitoring: Instead of periodic audits, AI enables real-time, 24/7 monitoring of financial transactions, allowing for immediate detection of anomalies or potential breaches in control. Advanced Fraud Detection: Machine learning (ML) algorithms analyze patterns in transactional data, identifying suspicious activities (e.g., unusual patterns, duplicate payments) that might indicate fraud. Risk Assessment & Prediction: AI uses historical data to predict future risks, helping auditors focus their efforts on high-risk areas, which leads to improved audit quality and efficiency. Document Analysis: Technologies like Optical Character Recognition (OCR) and Natural Language Processing (NLP) are used to review contracts, invoices, and leases, extracting critical information efficiently. Impact on Control & Fraud Management: Improved Accuracy: Reduces manual errors in data entry and calculations.Real-time Insights: Enables auditors to identify potential issues as they arise, minimizing the window of opportunity for fraud. Reduced False Positives: ML reduces the number of false alarms in fraud detection, allowing professionals to focus on actual risks. Enhanced Compliance: AI ensures consistent application of rules and assists in navigating complex tax regulations and internal policies. While AI offers significant benefits, it also brings challenges such as high implementation costs, data privacy concerns, and the need for new skill sets for professionals.

2) Literature Review and Theoretical Background

2.1 AI Adoption in Accounting and Commerce

AI adoption in accounting involves the use of intelligent algorithms for automating routine tasks, analyzing large volumes of financial data, and supporting decision-making processes. Prior research highlights improvements in efficiency, accuracy, and timeliness of accounting information. In commercial contexts, AI-driven systems enable dynamic pricing, personalized offers, and automated customer interactions. However, most empirical studies adopt an organizational or auditor-centric lens, neglecting the implications of AI-enabled accounting practices for end consumers.

2.2 Pricing Transparency and Service Quality

Pricing transparency refers to the extent to which consumers perceive pricing mechanisms as clear, understandable, and fair. AI-driven dynamic pricing systems may improve efficiency but can also increase perceived opacity, particularly when price changes are frequent or inadequately explained. Service quality, encompassing responsiveness, accuracy, and reliability, is similarly influenced by AI-enabled automation. While AI can enhance service speed and consistency, algorithmic errors or limited human intervention may negatively affect consumer experiences.

2.3 Consumer Trust and AI-Enabled Accounting
Consumer trust reflects confidence in the integrity, reliability, and fairness of organizational practices. Trust theory suggests that transparency and service quality are key antecedents of trust, especially in technology-mediated environments. In AI-enabled accounting contexts, trust becomes contingent not only on performance outcomes but also on ethical considerations such as data privacy and algorithmic fairness.

2.4 - Name of Books -
Artificial Intelligence for Audit, Forensic Accounting, and Valuation: A Strategic Perspective by Al Naqvi (2020): Provides a comprehensive framework for integrating AI into audit, forensic accounting, and valuation, emphasizing the shift from manual to AI-driven processes.Machine Learning for Auditors: Automating Fraud Investigations Through Artificial Intelligence by Maris Sekar (2022) - Focuses on using machine learning (ML) techniques specifically for audit, fraud detection, and anomaly investigation.Artificial Intelligence in Auditing by Steven M. Bragg (2025 - Expected/Recent) - Explores how AI transforms the audit process, covering increased efficiency and stronger fraud detection techniques, while maintaining professional judgment.Artificial Intelligence in Accounting, Auditing and Finance: A Guide to Data-Driven Transformation (Springer Nature, 2025) - Examines how AI technologies (ML, NLP) are used in accounting, auditing, and financial reporting, offering real-life implementation examples. Forensic Accounting and Fraud Examination, 2nd Edition by Mary-Jo Kranacher & Richard Riley 2025 - While a standard, it incorporates modern forensic techniques, including data analytics, which are essential for AI-focused literature reviews. AI-Driven Strategies For First and Third-Party Fraud Mitigation 2025 discusses advanced AI, such as natural language processing and graph analytics, to reduce fraud in financial sectors. ChatGPT and AI for Accountants: A practitioner's guide by Dr. Scott Dell, 2025 - Focuses on the practical application of generative AI (GenAI) in daily accounting operations.
2.5 Key Academic Journals/Bibliometric Reviews For a comprehensive literature review, consulting these review articles are studies. Transforming Auditing in the AI Era: A Comprehensive Review (2025), Artificial Intelligence (AI) in Accounting & Auditing: A Literature Review (2022),Artificial Intelligence in Forensic Accounting: A Literature Review (2025), These resources provide a solid foundation, mapping the evolution of AI from simple automation to advanced,, "agentic" systems expected to dominate by 2025.

2.6 Learning Summary –
Based on recent publications, these themes are central to the role of AI in these fields: Automation of Routine Tasks (RPA): Robotic Process Automation is widely used for data extraction and reconciliation. Predictive Anomaly Detection: Machine Learning is used to analyze 100% of transaction data rather than samples, identifying high-risk areas.Ethical and Regulatory Challenges: A significant portion of current literature focuses on AI bias, opacity in "black box" models, and the need for data privacy. Auditor Re-skilling: The shift from traditional accounting roles to "professional hybrids" who understand both accounting and data analytics.

2.7 - Learning Gap –
There is a lack of consumer benefit focus on role of AI in accounting & control which is the end beneficiary focus of business in the papers published. Hence this paper attempts to fill this gap.
2.8 Theoretical Framework - This study integrates Information Asymmetry Theory, Trust Theory, and an extended Technology Acceptance Model (TAM). AI adoption is conceptualized as a technological driver influencing pricing transparency and service quality, which subsequently shape consumer trust. AI-related challenges act as a negative moderator, while consumer digital literacy is examined through multi-group analysis.

3. Research Objectives

1. To examine the impact of AI adoption in accounting and commerce on pricing transparency and service quality.
2. To analyze the influence of pricing transparency and service quality on consumer trust.
3. To assess the moderating role of AI-related challenges on the relationship between AI adoption and consumer trust.
4. To compare structural relationships between consumers with high and low digital literacy.

4. Hypotheses Development

H1: AI adoption in accounting and commerce positively influences pricing transparency.
H2: AI adoption in accounting and commerce positively influences service quality.
H3: Pricing transparency positively influences consumer trust.
H4: Service quality positively influences consumer trust.
H5: AI-related challenges negatively moderate the relationship between AI adoption and consumer trust.

5. Research Methodology

5.1 Sample and Data Collection

Data were collected through a structured questionnaire administered to consumers using AI-enabled financial and commercial services, including digital payment platforms, automated billing systems, and AI-based customer service interfaces. A total of 412 valid responses were obtained. Digital literacy was measured and respondents were categorized into high and low digital literacy groups using a median-split approach.

5.2 Measurement of Constructs

All constructs were measured using validated scales adapted to the AI–accounting context. Items were rated on a five-point Likert scale. AI adoption (6 items), pricing transparency (4 items), service quality (5 items), consumer trust (5 items), and AI-related challenges (5 items) demonstrated satisfactory psychometric properties.

5.3 Common Method Bias

Procedural remedies included assuring respondent anonymity and minimizing item ambiguity. Harman's single-factor test indicated that no single factor accounted for the majority of variance (32.4%). A marker variable technique further confirmed that common method bias was not a significant concern.

5.4 Data Analysis Technique

PLS-SEM using SmartPLS was employed due to its suitability for predictive research and complex models. Measurement and structural models were assessed sequentially, followed by moderation and multi-group analysis.

6. Results & Findings

6.1 Measurement Model Assessment

HTMT values were below the threshold of 0.85, confirming discriminant validity.

Table 1 -

Construct	α	CR	Avg
AI Adoption	0.88	0.91	0.63
Pricing Transparency	0.85	0.89	0.67
Service Quality	0.9	0.92	0.69
Consumer Trust	0.91	0.93	0.72
AI Challenges	0.87	0.9	0.65

6.2 - The Correlation of AI Adoption in Accounting, Audit and Control automaton has high co-relation with Accounting Firm's -Client Rating, Pricing value rating, Service quality rating, Consumer Trust and level of transformation challenges.

Co-relation Co-efficient on AI Adoption	India	USA	UAE
Client Rating	0.82	0.88	0.61
Pricing Value Rating	0.78	0.89	0.66
Service Quality Rating	0.74	0.93	0.66
Consumer Trust	0.84	0.94	0.75
AI Challenges in Transformation	0.92	0.89	0.66

6.3 Structural Model Results

AI adoption significantly influenced pricing transparency ($\beta = 0.42$, $p < 0.001$) and service quality ($\beta = 0.51$, $p < 0.001$). Both pricing transparency ($\beta = 0.36$, $p < 0.001$) and service quality ($\beta = 0.48$, $p < 0.001$) positively affected consumer trust. AI-related challenges exerted a significant negative moderating effect ($\beta = -0.21$, $p < 0.01$). Hence all hypothesis are accepted.

6.4 Multi-Group Analysis

Multi-group analysis revealed that the effects of AI adoption on pricing transparency and service quality were significantly stronger among consumers with high digital literacy than among those with low digital literacy which is explained by below figures. Other findings are as below. The Moderating effect of AI Challenge in accounting automation in business entity has much higher impact on consumer trust than for lower level AI challenge in accounting automation (Figure 1) . Also the flowchart of AI Adoption in companies is co-related to Service Quality ratings, Price Value rating and finally higher Consumer or end user satisfaction rating.

Figure 1- Moderating effecting o AI challenge in accounting on consumer trust.

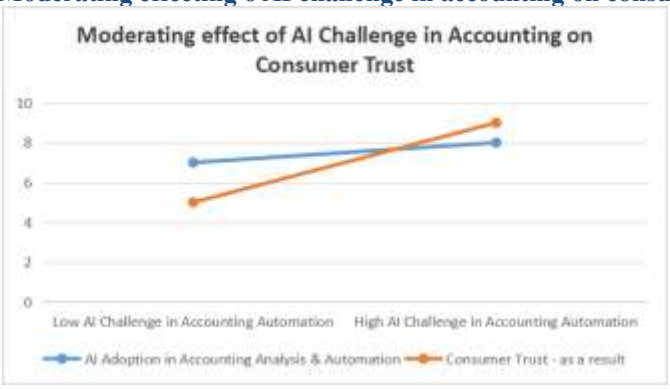
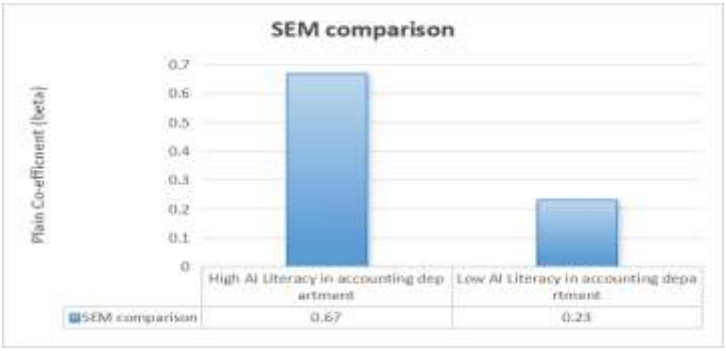


Figure 2 - Flow Chart for AI adaption to Consumer Trust rating for accouning & audit firms.

Figure 3 - SEM Comparion forAI literacy in Accounting & Audit teams



6.5 - Other Miscelleneous findings

Table 2- Industry Adoption and Impact

Researched outcomes from AI automation	
Metric	Value
Firms using AI for routine tasks	83%
AI adoption growth (2021–23)	30%
AI reduces error rates in audits	Up to 70%
Firms using AI for fraud detection	42%
Small/medium firms using AI	45%

Over four-fifths of accounting firms now use AI for automation & Predictive analytics improves forecasting accuracy (~25%). AI reduces manual effort, enhances accuracy, and provides real-time insights for decision making. For example, OCR and NLP improve data capture with very high accuracy and speed, reducing processing time by up to 80%. Also belw are **AI Tools in Accounting and Commerce.**

Table 3 — AI Tools in Accounting (2025)

Tool / Platform	Primary Function	Use Cases / Benefits
Xero	Cloud accounting with AI	Automatic bank reconciliation, expense categorization
QuickBooks (Intuit)	AI-powered accounting suite	Predictive cash-flow forecasting, automated categorization
Vic.ai	Invoice automation	Reduces manual invoice processing, fraud detection
Docyt AI	Bookkeeping automation	Expense tracking, AI-based forecasting
Netgain	Workflow-oriented AI	Faster reconciliations, anomaly detection
DataSnipper	Audit automation	Document analytics, compliance checks
Botkeeper	AI bookkeeping	Real-time expense classification and reporting
FloQast	Close management	Automated month-end close and reconciliations
Datarails	Data consolidation & reporting	Predictive planning, scenario analysis

7. Discussion

The findings indicate that AI adoption in accounting and commerce enhances consumer trust indirectly through improved pricing transparency and service quality. However, unresolved AI-related challenges weaken these benefits, particularly for digitally less literate consumers. These results underscore the importance of transparency, explainability, and consumer education in AI-enabled accounting systems.

8. Theoretical and Practical Implications

8.1 - The integration of Artificial Intelligence (AI) into accounting and commerce functions extends and reshapes several foundational theories in accounting, management, and information systems literature. Extension of Accounting Information Systems (AIS) Theory. Traditional AIS theory views accounting systems as rule-based, deterministic, and retrospective. AI challenges this assumption by introducing: Learning systems (machine learning, deep learning), Adaptive decision rules, Real-time and predictive accounting.

Theoretical contribution1 - AI transforms AIS from a *transaction-recording system* into an *intelligent decision-support system*, expanding the theoretical boundary of AIS from information processing to knowledge generation

8.2 Reinforcement of Contingency Theory - Contingency theory argues that organizational systems must align with environmental complexity. AI adoption demonstrates that high environmental uncertainty (volatility, regulatory change, global trade) necessitates advanced analytics, AI capability becomes a contingent variable influencing accounting system effectiveness.

Theoretical contribution2 - AI acts as a strategic fit mechanism, strengthening the link between environmental turbulence and accounting system design.

8.3 Reinterpretation of Agency Theory- Agency theory traditionally relies on: Monitoring, Control mechanisms, Information asymmetry reduction. AI alters agency relationships by: Automating monitoring (continuous auditing, anomaly detection). Reducing opportunistic behaviour through real-time transparency. Shifting

human roles from monitoring to interpretation and judgment. **Theoretical contribution3** - AI reduces agency costs and introduces the concept of *algorithmic governance* within accounting functions.

8.4 Advancement of Decision-Usefulness Theory - Decision-usefulness theory emphasizes relevance, reliability, and timeliness of financial information. AI enhances: Predictive value (forecasting, scenario analysis), Timeliness (real-time dashboards) & Accuracy (error and fraud detection). **Theoretical contribution4:** AI extends decision-usefulness from historical relevance to forward-looking intelligence, redefining the informational value of accounting outputs.

8.5 Human–AI Collaboration Theory (Emerging Perspective) - AI adoption supports the emergence of hybrid intelligence in accounting: Humans provide professional judgment and ethical oversight. AI handles data-intensive and repetitive tasks. **Theoretical contribution5**:

This supports a shift from *automation theory* to *augmentation theory*, positioning AI as a complement—not a substitute—for accounting professionals.

8.6 Practical Implications of AI in Accounting & Commerce - From a practitioner and managerial standpoint, AI has profound implications across accounting operations, governance, and strategic commerce functions. Implications for Accounting Professionals - Routine tasks (data entry, reconciliations, invoice processing) are automated, Accountants transition into roles such as: Strategic advisors & Risk analysts. Practical implication:

Accounting education and professional training must prioritize analytics, AI literacy, and critical thinking over procedural bookkeeping skills. Implications for Management Decision-Making, Predictive cash flow forecasting, Real-time profitability analysis, Scenario planning for pricing, taxation, and investments. Managers gain evidence-based, faster, and more accurate decisions, improving organizational agility and competitiveness.

8.7 Implications for Audit and Compliance - AI tools enable continuous auditing instead of periodic audits, Automated compliance checks with tax and regulatory rules, Advanced fraud detection using anomaly and pattern recognition

8.8 Summary Table: Theoretical vs Practical Implications.

Table 4-

Researched implications from accounting professionals on Implication of AI

Dimension	Theoretical Implications	Practical Implications
Accounting Systems	Shift from rule-based to intelligent systems	Automation of routine accounting tasks
Decision-Making	Enhanced decision-usefulness	Faster, data-driven managerial decisions
Control & Monitoring	Reduced agency costs	Continuous auditing & fraud detection
Human Role	Human–AI augmentation	Upskilling of accountants
Governance	Algorithmic accountability	AI ethics & compliance frameworks

9) Conclusion

AI adoption in accounting and commerce offers substantial consumer benefits through enhanced transparency and service quality. However, without responsible governance and explainability, AI-related challenges may undermine consumer trust. Sustainable digital commerce therefore requires a balanced approach to AI deployment.Artificial Intelligence has become an essential driver of change in both accounting and commerce. Empirical data demonstrate widespread adoption, notable gains in speed and reliability, and expansion of tools that automate core tasks while supporting strategic insights. While AI does not eliminate the human role entirely, it reshapes professional work toward analytical and advisory functions. Successful integration depends on skill development, ethical frameworks, and organizational readiness.

Limitations and Future Research - This study relies on cross-sectional data from a single emerging economy, which may limit causal inference and generalization. Future research may employ longitudinal designs, experiments, or cross-country comparisons to further validate the findings. Also the Quantitative evaluation of AI's long-term effects on employment trends, earnings, and sector productivity would further inform strategic adoption and policy.

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3. Artificial Intelligence in Accounting and Auditing - Accessing the Corporate Implications (2024, Springer) by Mariarita Pierotti, Anna Monreale, and Federica De Santis. (Covers AI in financial accounting and auditing).
4. AI Financial Close: Top 8 Reads (2025, Trintech) - Source 1.2.3 lists foundational books on AI in finance, including works by Miklos Vasarhelyi.
5. Data Science for Accounting: With Python and Power BI (2025) by Beal & Burkander. (Practical guide for data-driven accounting).

Key Academic Journals and Article

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