



AI and the Future of Accounting: A Comparative Study of Digital Adoption in Indian Accounting and Non Accounting Firms

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Abstract. The Artificial Intelligence (AI) is transforming the accounting profession globally. In India, rapid digital changes, government support, cloud financial systems, and increased automation are accelerating the acceptance of AI in accounting and finance. AI helps organizations automate routine tasks, make better decisions, reduce errors, and enhance productivity. This research article examines how both accounting and non-accounting firms in India are embracing AI, using secondary data from NASSCOM, ICAI, EY India, RBI, and other reliable sources. The study highlights important AI technologies, current adoption trends, challenges, effects on jobs, and future opportunities. The study found that while large accounting firms are at the lead of AI adoption, non-accounting firms are gradually including AI into their financial operations. The study concludes that AI will assist rather than replace accountants, shifting their roles to focus more on analytical and strategic tasks.

Keywords: AI, Accounting, Automation.

1 Introduction

The accounting profession has historically relied on manual tasks like bookkeeping, auditing, taxation, reconciliation, and financial reporting. These tasks demanded significant time, effort, and skill. However, technology has transformed this traditional model. Artificial Intelligence (AI) has arisen as a critical tool that can change accounting practices. AI refers to systems that can carry out chores typically demanding human intelligence, such as learning, reasoning, predicting, and making decisions. In accounting, AI helps automate repetitive tasks, speeds up data analysis, allows for real-time reporting, and enhances compliance monitoring. India has hastily become one of the leading markets for AI adoption. According to NASSCOM (2024), India's AI market is expected to reach USD 17 billion by 2027, growing at a rate of 25 to 35 percent CAGR. Government creativities like Digital India, the IndiaAI Mission, GST digitization, and the widespread adoption of ERP systems have laid a solid foundation for AI implementation. Recognizing this change, the Institute of Chartered Accountants of India (ICAI) has launched training programs focused on AI, certification courses, and

digital tools like CA GPT. This highlights how relevant AI is becoming in accounting sector.

2. Literature Review

Previous global studies specify that Artificial Intelligence (AI) has significantly affected accounting and financial management. It has increased operational efficiency, decision-making, and accuracy. Davenport and Ronanki (2018), noted that AI mainly creates value by automating processes, giving insights, and improving customer interaction. Their study highlighted that organizations applying AI strategically achieve greater productivity and enhanced business outcomes. Likewise, Kokina and Davenport (2017), observed how AI and robotic process automation impact accounting. They found that AI enables accountants to transfer from routine tasks to more valuable analytical and advisory roles. Their research concluded that adopting AI enhances competitiveness by improving speed and accuracy. Issa, Sun, and Vasarhelyi (2016), examined AI's role in auditing. They found that intelligent systems improve audit quality by supporting continuous auditing, identifying anomalies, and automating risk assessment. The authors claimed that AI can expressively boost auditor effectiveness by reducing human mistake and expanding coverage. A report by PwC (2023) discovered that organizations utilizing AI in finance experienced productivity gains of up to 40%, particularly in forecasting, financial planning, and risk management. The report highlighted that AI-driven automation lowers operational costs and develops decision-making. Deloitte (2024) also stated that over 53% of global finance teams employ automation tools alike Robotic Process Automation (RPA) and Machine Learning. These technologies develop accounting processes, support compliance, and strengthen internal controls. In developing economies, Al-Htaybat and Alberti-Alhtaybat (2017) noted that digital technologies, containing AI, are changing accounting education and the skills professionals need. Future accountants will need strong analytical and technological skills. From an Indian perspective, EY India (2024) recognized that 94% of CFOs and tax leaders consider Generative AI will greatly impact tax and finance operations. Their findings endorsed that Indian companies are increasingly looking at AI tools for automation, compliance, and decision support. The NASSCOM AI Adoption Index (2024) reported that nearly 60% of Indian enterprises have active AI projects, with finance and accounting being key areas of focus. The report also stated that India has the second-largest AI talent pool in the world, which helps with quick technological integration. The Institute of Chartered Accountants of India (ICAI, 2024) has recognized the growing significance of AI by introducing AI certification programs, innovation summits, and professional tools like CA GPT. This specifies strong support for AI in accounting. Though, most existing research mainly emphasises on large accounting firms, multinational corporations, or banking institutions. There is narrow research comparing AI adoption in accounting firms with the internal finance departments of non-accounting

companies in India. This study aims to fill that gap by providing a comparative scrutiny of AI adoption in both sectors.

3. Objectives of the study

The major objectives of this study are:

1. To analyze the integration of AI within Indian accounting firms.
2. To examine the application of AI in non-accounting firms.
3. To identify major AI technologies deployed in accounting functions.
4. To understand the challenges faced during AI adoption.
5. To assess the effect of AI on accounting careers and future opportunities.

4. Research Methodology

The study is quantitative, descriptive and the research design has secondary data and structured survey based responses. The secondary data were collected from NASSCOM, ICAI, EY India, RBI, Deloitte, PwC India and government publications. Additional, primary data was collected from accounting professionals and finance employees working in accounting and non-accounting firms across India through a structured questionnaire.

Data were collected using convenience sampling. Responses were analysed using SPSS software. The study used statistical tools like Cronbach's Alpha, Descriptive Statistics, Independent Sample t-Test, Correlation Analysis and Multiple Regression Analysis to examine AI adoption, technology usage, implementation challenges and career impact in Indian organizations.

5. Conceptual Background and AI Adoption in India

5.1 Current AI Adoption in India

India has quickly become one of the world's hotbeds of AI innovation and adoption. NASSCOM & BCG (2024) mentions that nearly 60% of Indian organizations have already started AI-related projects, while 70% spend more than 20% of their IT budgets on digital transformation.

Here, India emerges as the second-largest AI talent pool in the world and a strategic destination for AI-based innovation. More and more, AI is being used in sectors like banking, insurance, manufacturing, healthcare and accounting.

5.2 AI Technologies Used in Accounting

Robotic Process Automation (RPA)

Robotic Process Automation is software bots that do repetitive and rule-based tasks automatically. RPA is widely used in accounting to process invoices, handle payroll, and file GST, bank reconciliation and journal entries.

Machine Learning (ML)

Machine Learning allows systems to learn from the past data and make better decisions as time goes. In accounting, ML is used for fraud detection, forecasting, predictive budgeting and financial risk analysis.

Generative AI (GAI)

Generative AI is a type of system that can generate reports, summaries, emails and financial documentation. Accounting operations are increasingly turning to tools such as ChatGPT, Microsoft Copilot, Gemini and CA GPT.

5.3 Adoption of AI in the Indian Accounting Firms

India's large accounting firms – Deloitte, EY, PwC and KPMG – have been aggressive in adopting AI technologies for continuous auditing, automated transaction testing, forensic accounting and compliance monitoring.

AI allows these companies to audit large quantities of transactions more efficiently, thereby enhancing audit quality and mitigating operational risks.

5.4 AI Adoption in Companies without Accountants

For non-accounting firms, AI is mostly used within their internal finance departments. AI is being used in manufacturing, retail, banking, and IT organizations for budgeting, ERP automation, financial planning, expense tracking, and reporting.

But adoption of AI is still quite slow due to budget constraints, legacy systems and lack of digital skills.

5.5 Assistance from Government and Regulatory Bodies

The Government backing has been acute in the implementation of AI in India. Digital India initiative has spurred digital transformation across industries. The IndiaAI Mission will boost innovation, infrastructure and talent in AI.

Similarly, RBI and GST Network (GSTN) have advocated use of AI in banking supervision, fraud detection and compliance monitoring.

6. Difficulties in AI Adoption

Rapid growth aside, several challenges affect the successful employment of AI in accounting.

6.1 Skill Gaps

Many accounting professionals do not possess AI-related technical knowledge and digital competencies. Effective implementation demands constant training and upskilling.

6.2 Change Resistance

Many employees panic of losing their jobs and uncertainty over the technological transformation. This resistance is slowing the digital adoption.

6.3 Infrastructure Cost

Implementing AI needs a lot of money for software, hardware, cloud setup and cyber security systems. This makes it hard for small organizations to adopt AI and implement AI solutions.

6.4 Data Privacy and Security

Financial data is very sensitive. AI implementation brings worries about cyber threats, to AI systems, privacy risks and keeping data confidential with AI.

6.5 MSME Limitations

Many small and medium enterprises do not have enough money, technology setup and digital readiness to use AI properly. They face limitations in implementing AI and using AI effectively.

7. Impact of AI on Accounting Jobs

Artificial Intelligence is changing accounting jobs not ending them. Tasks like bookkeeping, reconciliations, data entry and tax filing are being automated. At the time new jobs are being created, such, as:

- AI Auditor
- Financial Data Analyst
- Tax Automation Specialist
- Digital Accountant

This change means accountants are doing less paperwork and more analysis and strategy to help make decisions. Artificial Intelligence is transforming accounting jobs. The focus is shifting from tasks to using Artificial Intelligence for smarter decision-making. Artificial Intelligence helps accountants do their jobs better.

8. Data Analysis and Interpretation

Table 1: Reliability Analysis

Variable Dimension	Number of Items	Cronbach's Alpha
AI Adoption	5	0.871
AI Technology Usage	4	0.842
Challenges in AI Adoption	5	0.816
Impact on Accounting Careers	5	0.889
Overall Reliability	19	0.864

Source: Primary data

The Cronbach's Alpha values for AI Adoption and AI Technology Usage and Challenges in AI Adoption and Impact on Accounting Careers are all very good. Because they are all beyond 0.70. So we can say that the questionnaire is reliable. The numbers show that the questions are consistent. This is what we want for AI Adoption and AI Technology Usage and Challenges in AI Adoption and Impact, on Accounting Careers.

Table 2: Descriptive Statistics

Variable	Mean	Standard Deviation
AI Adoption	4.18	0.72
AI Technology Usage	4.05	0.68
Challenges in AI Adoption	3.89	0.81
Impact on Accounting Careers	4.26	0.64

Source: Primary data

The findings indicate high levels of AI adoption and technology usage among Indian organizations. Respondents strongly believe that AI significantly impacts accounting careers and future professional competencies.

Table 3: Group Statistics

Organization Type	Mean AI Adoption Score	Standard Deviation
Accounting Firms	4.58	0.49
Non-Accounting Firms	3.78	0.63

Source: Primary data

The above results show that accounting firms have a higher AI Adoption Score than -accounting firms. For accounting firms the mean AI Adoption Score is 4.58. For -accounting firms it is 3.78. This means accounting firms are using AI more in auditing and taxation and compliance and financial reporting.

The standard deviation for the accounting firms is 0.49 which is low. This means accounting firms are using AI in a way. For -accounting firms the standard deviation is 0.63 which is higher. This means non-accounting firms are using AI in ways.

Overall accounting firms are doing better with transformation and AI Adoption. They are using AI technologies effectively than non-accounting firms. Accounting firms are leading the way, in using AI.

Table 4 Independent Sample t-Test Results

Test Statistics	Value
t-value	4.862
p-value	0.001

Source: Primary data

The p-value is really small it is than 0.05. This means there is a difference, between accounting firms and non-accounting firms when it comes to AI adoption levels. The difference is statistically significant. This tells us that accounting firms and non-accounting firms are not the same when it comes to AI adoption levels. Accounting firms and non-accounting firms have AI adoption levels.

Table 5: Correlation Analysis

Variables	AI Adoption	Technology Usage	Challenges	Career Impact
AI Adoption	1	0.784**	-0.521**	0.692**
Technology Usage	0.784**	1	-0.463**	0.655**
Challenges	-0.521**	-0.463**	1	-0.417**
Career Impact	0.692**	0.655**	-0.417**	1

Correlation is significant at the 0.01 level Source: Primary data

The manner people use technology has an influence on AI Adoption. This means that Technology Usage is really important for AI Adoption. On the hand Challenges make it harder for companies to adopt AI technology. So Technology Usage is good for AI Adoption. Challenges are bad, for AI Adoption.

Table 6: Multiple Regression (Model Summary)

R	R Square	Adjusted R Square
0.812	0.659	0.641

Source: Primary data

The Multiple Regression Analysis results show that there is a connection between AI adoption and how well an organization performs. The R value is 0.812 which means AI adoption and organizational performance are narrowly related in a way. The R Square value is 0.659. It means that AI adoption and other related factors explain 65.9 percent of the reasons why organizational performance gets better. The Adjusted R Square value is 0.641. This confirms that the model we are using is good and it explains a lot of the reasons why organizational performance varies. Overall the results of the Multiple Regression Analysis show that AI adoption makes a difference, in how efficient and effective an organization is. AI adoption significantly improves efficiency and performance.

Table 7: ANOVA Results

Source	F-value	Significance
Regression Model	18.742	0.000

Source: Primary data

ANOVA results revealed that the regression model is statistically significant ($F = 18.742$, $p < 0.001$). This shows that the independent variables included in the model collectively have a significant effect on AI adoption and its outcomes in accounting and finance functions. The significance of the model confirms that the proposed framework adequately explains the variation in organizational performance associated with AI implementation.

Table 8: Regression Coefficients

Predictor Variable	Beta Coefficient	t-value	Significance
Technology Usage	0.684	5.921	0.000
Challenges	-0.392	-3.115	0.004

Source: Primary data

The Technology Usage has an effect on Artificial Intelligence adoption. It is an effect. This means that Technology Usage helps Artificial Intelligence adoption. On the hand Challenges make it harder to adopt Artificial Intelligence. The Challenges have an effect on Artificial Intelligence adoption. So Technology Usage is good for Artificial Intelligence adoption. Challenges are bad, for it.

Table 9: Hypothesis Testing

Hypothesis	Result
H ₁ : Significant difference exists between accounting and non-accounting firms regarding AI adoption	Accepted
H ₂ : AI technologies improve accounting efficiency and productivity	Accepted
H ₃ : Challenges significantly affect AI adoption	Accepted
H ₄ : AI significantly impacts accounting careers	Accepted

Source: Primary data

9. Major Findings of the Study

- Accounting firms are utilising AI a lot more than firms that're not into accounting
- With respect to Artificial Intelligence technology in accounting Robotic Process Automation is the one that is used the most.
- Artificial Intelligence is really helping to make things work better and to make financial decisions

- d. There are many problems with respect to using Artificial Intelligence. People do not have the right skills and it is very expensive to set everything up.
- e. Artificial Intelligence is changing the kinds of jobs that people have in accounting. Now they have to be good at analyzing things and giving advice.
- f. The government, in India is doing a lot to help companies start using Artificial Intelligence.

10. Recommendations

- **For Educational Institutions**

Institutions should add AI, analytics, automation and financial technologies to commerce and management courses. They need to make sure the students absorb these skills.

- **For Accounting Professionals**

Accountants should keep learning skills through certifications, workshops and online training. This will help them stay informed with the technologies.

- **For Organizations**

Companies should start using AI in a way with pilot projects and then expand it gradually. This will help them know how AI works and make it a part of their business.

- **For Policymakers**

Governments need to create rules for AI set standards, for cybersecurity and help small businesses use AI. They should make sure AI is used in a way that's safe and fair.

11. Future Outlook

The future of India in accounting that uses Artificial Intelligence is looking very good. This is because India has

- Strong support from the government.
- More and more companies are using it.
- The country is getting better at technology.
- It is getting easier to find people who are worthy at Artificial Intelligence.

The accountant of the future will do their job in a way. They will be like a manager who makes decisions, about money. They will be helped by Artificial Intelligence that gives them ideas and makes some tasks automatic. The accountant will work with Artificial Intelligence to do their job better. Accounting that uses Artificial Intelligence is going to change the way accountants work. Artificial Intelligence will help the accountant make decisions.

12. Conclusion

Artificial Intelligence is changing accounting in India in a way. Large accounting firms are leading the way. Other firms are also starting to use AI in their finance work. AI is not taking the place of accountants; it's actually changing what they do. The future is for people who know accounting and technology well.

Companies that start using AI will have an advantage in the long run. They will be more productive, efficient and better at making decisions. They will also be better, at following rules. AI will help these companies make choices.

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