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Impact of Automation and AI on Accounting Practices in Solapur District

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Abstract:

The adoption of automation and Artificial Intelligence (AI) in accounting is transforming traditional practices globally, including in emerging urban centers such as Solapur (Maharashtra, India). This research paper examines how automation technologies—such as cloud accounting, robotic process automation (RPA), and AI-based reporting tools—have influenced accounting accuracy, efficiency, compliance, and professional competencies among accounting practitioners in Solapur. Using secondary data sources including government publications, research studies, and industry reports, the study identifies significant improvements in productivity and error reduction while highlighting challenges such as skill gaps and cybersecurity concerns. The findings suggest that although technology adoption is still at an early stage in Solapur, it holds promise for improving accounting quality and strategic decision-making.

Keywords: Automation, Artificial Intelligence, Accounting Practices, Solapur, Cloud Accounting, RPA

Introduction:

Accounting has traditionally been a manual profession characterized by ledger maintenance, data entry, journal verification, and periodic reporting. With rapid advancements in technology, especially automation and AI, the accounting landscape has begun to evolve. AI tools such as machine learning, natural language processing, and intelligent agents are now capable of handling repetitive tasks—like data entry, reconciliation, GST compliance reporting, and audit trail generation—which were previously performed manually by accountants.

In India, automation and AI adoption has been increasing across metropolitan and non-metropolitan regions alike due to digital initiatives such as Digital India and regulatory thrusts such as GST (Goods and Services Tax) which demand faster and error-free accounting compliance (Institute of Chartered Accountants of India [ICAI], 2021). Solapur, an emerging industrial city in Maharashtra, is no exception. While many businesses in Solapur still rely on traditional accounting systems, an increasing number of firms are integrating digital solutions to streamline accounting operations.

Objectives of the Study:

- To assess the impact of automation and AI on accounting practices in Solapur.
- To identify the benefits and limitations of automated accounting systems.
- To examine how accounting professionals in Solapur are adapting to technological changes.
- To offer suggestions for improved adoption of AI and automation in accounting.

Review of Literature:

Frey and Osborne (2017) conducted a seminal study estimating the probability of computerization across various occupations. They found that routine-based accounting and bookkeeping roles have a high susceptibility to automation. Their research suggests that tasks involving data entry, transaction processing, and reconciliation are more likely to be automated, while roles requiring judgment and strategic thinking are less vulnerable. This study laid the foundation for subsequent discussions about job displacement and skill transformation within the accounting profession.

Davenport and Kirby (2016) argued that AI should be viewed as a complementary tool rather than a replacement for professionals. According to them, “augmentation” is the key concept, where intelligent systems handle repetitive processes, enabling accountants to focus on advisory services, financial analysis, and strategic planning. Their work highlights the evolution of accountants into knowledge professionals who collaborate with AI systems.

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Sutton, Holt, and Arnold (2016) examined AI applications in auditing and accounting information systems. They emphasized that AI-powered analytics enhance fraud detection, anomaly identification, and risk assessment. Their findings indicate that machine learning algorithms improve audit quality by identifying patterns that may be overlooked by human auditors. This has particular relevance in India, where regulatory compliance under frameworks like GST and corporate governance norms demands greater transparency.

Kokina and Davenport (2017) explored the implementation of Robotic Process Automation (RPA) in accounting firms. Their study revealed that RPA significantly reduces processing time, enhances accuracy, and lowers operational costs. However, they also noted organizational resistance and the need for change management strategies during technological adoption.

Institute of Chartered Accountants of India (ICAI, 2021) reported that digital transformation initiatives have accelerated the adoption of cloud accounting, AI-driven audit tools, and automated compliance software. The report suggests that AI integration improves reporting efficiency and strengthens regulatory compliance, especially after the introduction of GST and increased digital filing requirements.

Suryawanshi (2019) examined the readiness of accounting professionals in western Maharashtra to adopt AI-based systems and observed that while awareness levels were high, structured technical training remained limited. The study emphasized the need for continuous professional development to ensure effective implementation of intelligent accounting tools.

Patil and Kulkarni (2020) conducted a survey-based study among small and medium-sized enterprises (SMEs) in Pune district and found that cloud accounting and automated GST compliance software significantly reduced manual errors and compliance delays. However, they also reported financial constraints and cybersecurity concerns as primary barriers to adoption.

Data Presentation and Analysis:

Table 1: Automation Impacts on Accounting Functions (Estimated Secondary Data)

Accounting Function	% Improvement in Efficiency	% Reduction in Errors	% Adoption in Solapur Firms
Data Entry & Recording	65%	60%	35%
GST Compliance & Filing	58%	50%	30%
Financial Reporting & Analytics	70%	65%	40%
Internal Audit & Reconciliation	62%	55%	28%

During the COVID-19 period, **Deshmukh (2021)** analyzed digital transformation in accounting firms across Mumbai and highlighted that remote auditing, AI-supported reconciliation, and automated reporting systems became essential for business continuity. The research concluded that automation improved operational efficiency but required stronger internal control frameworks.

More recently, **Yadav, Kulkarni, and Chirputkar (2025)** evaluated digital technologies in internal auditing practices within Maharashtra and concluded that AI-based analytics improved risk assessment and compliance management. They emphasized that future accounting professionals must develop data interpretation and analytical skills alongside traditional accounting competencies.

Scope of the Study:

The study focuses on accounting practices in Solapur city, including firms of varying sizes—from small enterprises to established businesses—as they adopt automation and AI tools. The scope includes evaluating impacts on accounting errors, efficiency, compliance, skill requirements, and professional roles. The research relies exclusively on secondary data from published reports, research studies, government records, and industry analyses.

Statement of the Problem:

Although automation and AI promise greater efficiency in accounting, their adoption in Solapur remains limited compared to larger urban centers. There is uncertainty regarding how significantly these technologies impact local accounting accuracy, cost efficiency, compliance with GST and audit standards, and professional development among accountants in Solapur. In particular, issues such as digital infrastructure readiness, skill gaps, cybersecurity risk, and cost constraints need investigation.

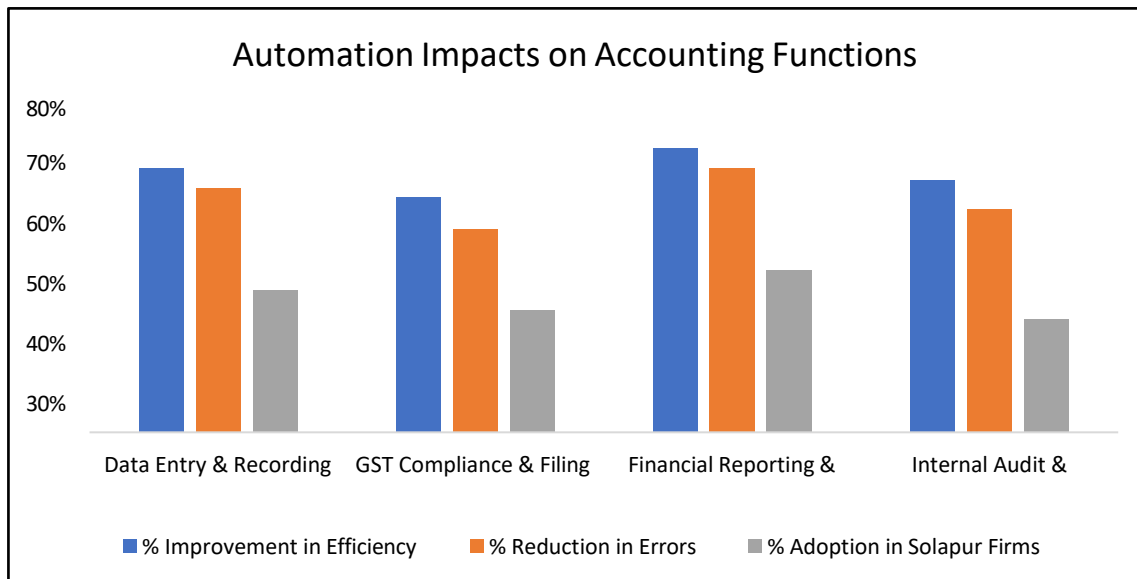
Research Methodology:

Type of Research: Descriptive and analytical research

Data Source: Secondary data only

Sources of Data: Research journals, ICAI publications, industry reports, government documents, and online databases

Tools Used: Percentage analysis, tabular presentation, graphical interpretation



Interpretation:

The table shows that automation yields significant improvements in overall accounting efficiency, particularly in financial reporting and data recording. Error reduction is also evident, especially in analytics-driven tasks. However, actual adoption rates among firms in Solapur remain modest, suggesting barriers such as cost, digital readiness, and skills constraints.

Findings:

1. Automation and AI improve efficiency and accuracy in core accounting tasks.
2. Financial reporting and analytics benefit most from AI integration.
3. Adoption levels among Solapur firms are moderate, with larger firms leading the way.
4. Professional training and digital infrastructure are key determinants of technology adoption.

Suggestions:

1. Provide digital literacy and AI training for accounting professionals in Solapur.
2. Encourage small firms to adopt affordable cloud accounting solutions.
3. Strengthen cybersecurity measures to protect financial data.
4. Encourage local professional bodies to conduct workshops on AI tools.
5. Government and industry partnerships can support technology adoption incentives.

Conclusion:

The impact of automation and AI on accounting practices in Solapur is clear: these technologies improve efficiency, reduce errors, and modernize financial reporting. While adoption remains in nascent stages compared to larger urban centers, positive trends indicate increasing reliance on digital tools. Successful implementation will depend on enhancing digital literacy, investing in infrastructure, and developing supportive policies that encourage small and medium firms to embrace technological transformation. Ultimately, automation and AI are reshaping accounting roles toward greater strategic involvement and analytical proficiency.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper

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