

AUTOMATION IN ACCOUNTING: EVALUATING AI-BASED INVOICE PROCESSING SYSTEMS IN JALGAON SMES

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Abstract

The rapid advancement of Artificial Intelligence (AI) has significantly transformed accounting practices, particularly in invoice processing systems. This study, titled “Automation in Accounting: Evaluating AI-Based Invoice Processing Systems in Jalgaon SMEs”, examines the adoption and effectiveness of AI-driven invoice automation among small and medium enterprises in Jalgaon. The primary objective of the research is to evaluate the extent to which AI-based invoice processing systems enhance efficiency, accuracy, cost reduction, and financial record management within SMEs. The study adopts a descriptive and analytical research design, using primary data collected through structured questionnaires distributed to SME owners, accountants, and finance managers, along with secondary data from reports and academic sources. The findings aim to assess whether automation reduces manual errors, accelerates invoice approval cycles, and improves transparency and audit readiness. Additionally, the research identifies key challenges faced by SMEs, including high implementation costs, lack of technical expertise, and data security concerns. The study further provides practical recommendations to support SMEs in effectively integrating AI technologies into their accounting systems. Overall, this research contributes to understanding the role of AI-driven automation in strengthening financial management practices and enhancing operational performance among SMEs in Jalgaon.

Keywords: Artificial Intelligence, Invoice Processing Automation, SMEs, Accounting Efficiency, Financial Accuracy.

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Introduction

The rapid growth of digital technologies has significantly transformed traditional accounting practices across the globe. Among these advancements, Artificial Intelligence (AI) has emerged as a powerful tool in automating routine financial tasks and improving overall efficiency. One of the most impactful applications of AI in accounting is invoice processing automation. Traditionally, invoice management in small and medium enterprises (SMEs) has relied heavily on manual data entry, paper-based documentation, and repetitive verification procedures. These conventional methods are time-consuming, prone to human error, and often lead to delays in payment processing and financial reporting.

AI-based invoice processing systems use technologies such as machine learning, optical character recognition (OCR), and data analytics to automatically extract, verify, and record invoice information with minimal human intervention. This automation enhances speed, accuracy, and transparency in accounting operations. For SMEs, which often operate with limited financial and

human resources, adopting AI-driven systems can significantly reduce operational costs and improve financial control.

In the context of Jalgaon, SMEs play a vital role in regional economic development by contributing to employment generation and local industrial growth. However, many SMEs still depend on semi-manual accounting processes, which may limit their operational efficiency and competitiveness. Evaluating the adoption and effectiveness of AI-based invoice processing systems in Jalgaon SMEs is therefore essential to understand the level of digital transformation in the region.

This study aims to examine the extent of automation in accounting practices, assess its impact on efficiency and accuracy, and identify the challenges faced by SMEs in implementing AI-driven invoice processing systems. By doing so, the research contributes to understanding how technological innovation can strengthen financial management and support sustainable business growth.

Objectives of the Study

- To evaluate the impact of AI-driven invoice automation on accounting efficiency, including time savings and cost reduction.
- To assess the effectiveness of AI systems in reducing manual errors in invoice processing.
- To analyze the influence of automated invoice processing on financial accuracy and record management in SMEs.
- To identify the challenges and barriers faced by SMEs in implementing AI-based accounting automation.
- To provide practical recommendations for improving the implementation and utilization of AI-driven invoice processing systems in Jalgaon SMEs.

Review of Literature

- Mishra's (2025) investigation into AI-based financial tools for Indian MSMEs found that automated accounting solutions help reduce operational costs, improve reporting accuracy, and accelerate decision-making, although adoption barriers like skill shortages and high implementation costs persist in small businesses.
- Studies focusing on AI adoption in accounting broadly also provide useful insights. Research on automated accounting systems using AI highlights how technologies such as Optical Character Recognition (OCR) and machine learning can extract invoice data, integrate it into ERP systems, and reduce manual workload while improving reliability.
- Indian research also points out that AI is reshaping the accounting profession by automating bookkeeping, invoice processing, and reconciliation tasks, enabling accountants to focus more on analysis and strategic functions rather than repetitive entry work. For example, Mishra et al. (2025) argue that AI tools such as predictive analytics and cloud-based platforms are increasingly helping small firms achieve real-time insights and improved compliance.

Research Methodology

1. Research Design

The study adopts a **descriptive research design**, aimed at understanding the adoption, effectiveness, and challenges of AI-based invoice processing systems among SMEs in Jalgaon. Descriptive research is appropriate as it provides a detailed understanding of practices, perceptions, and operational outcomes related to automation in accounting.

2. Method of Data Collection

Data for this study will be collected using a **primary data collection approach**, supported by secondary sources.

- **Primary Data:** A structured **questionnaire** with MCQs and Likert-scale statements will be administered to respondents. The questionnaire focuses on AI adoption, efficiency, accuracy, challenges, and future scope of invoice automation.
 - **Secondary Data:** Includes books, journals, research papers, SME reports, and online publications relevant to AI in accounting and invoice processing systems.
- The questionnaire will be distributed in person and online (Google Forms/Email/WhatsApp) to ensure maximum participation.

3. Sample Design

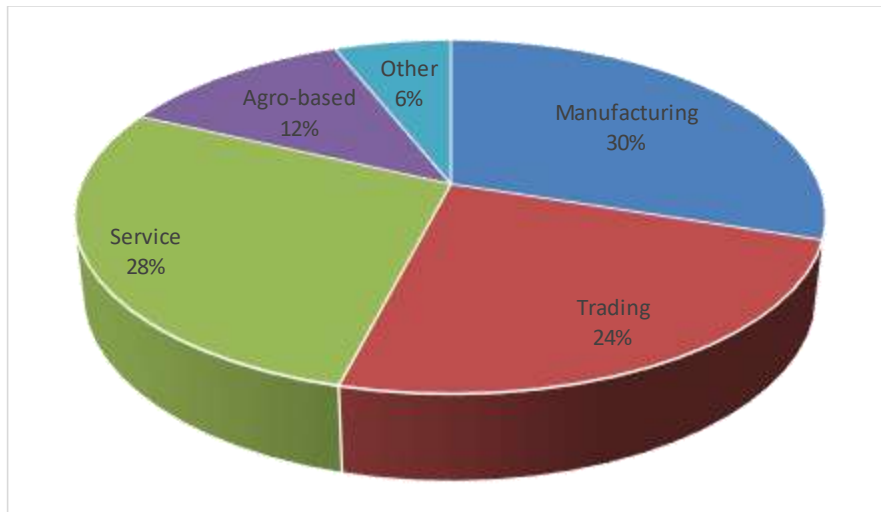
- **Population:** SMEs operating in Jalgaon District.
- **Sample Size:** 50 respondents.
- **Sampling Technique:** **Convenience sampling** is used.
- **Respondents:** Owners, accountants, finance managers, and staff involved in invoice processing and financial operations.

4. Method of Data Analysis

The collected data will be analyzed using the **percentage method**. This involves:

Data Analysis and Interpretations

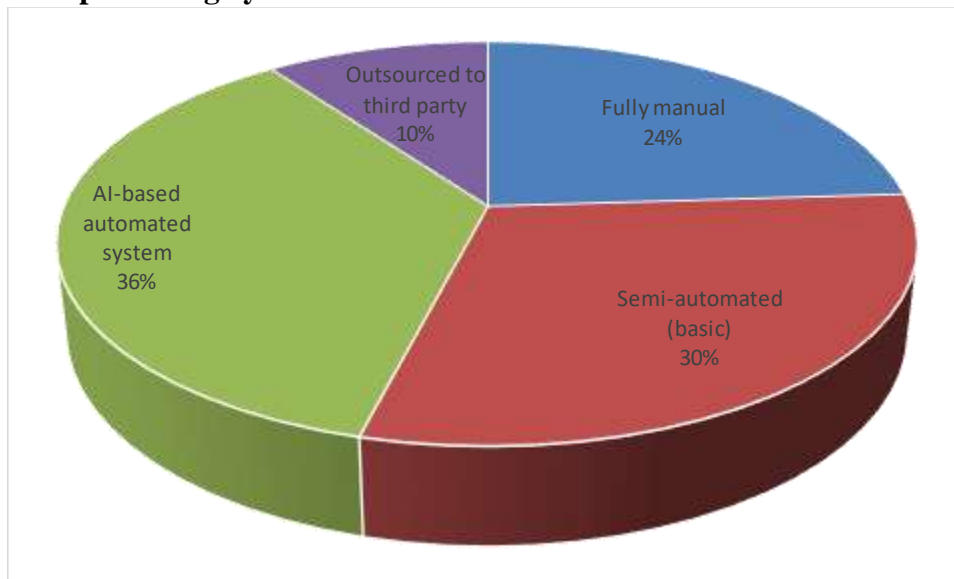
Type of SME



Interpretation:

The majority of SMEs in Jalgaon are **Manufacturing (30%) and Service (28%)**, suggesting that the region has a strong industrial and service base. Trading SMEs (24%) also form a significant part of the population, while Agro-based (12%) and Other categories (6%) are limited. This indicates that AI-based invoice automation could have wider applicability in manufacturing and service SMEs.

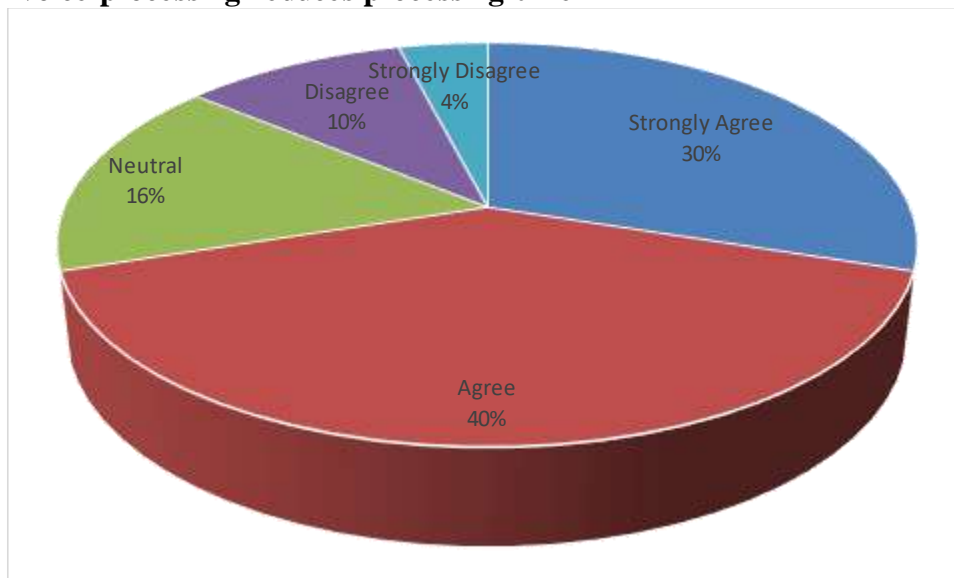
Type of invoice processing system used



Interpretation:

36% of SMEs use **AI-based automation**, which is the largest single group, showing adoption of technology. Semi-automated systems account for 30%, while fully manual processes still exist in 24% of SMEs. Outsourced invoice processing is the least common (10%).

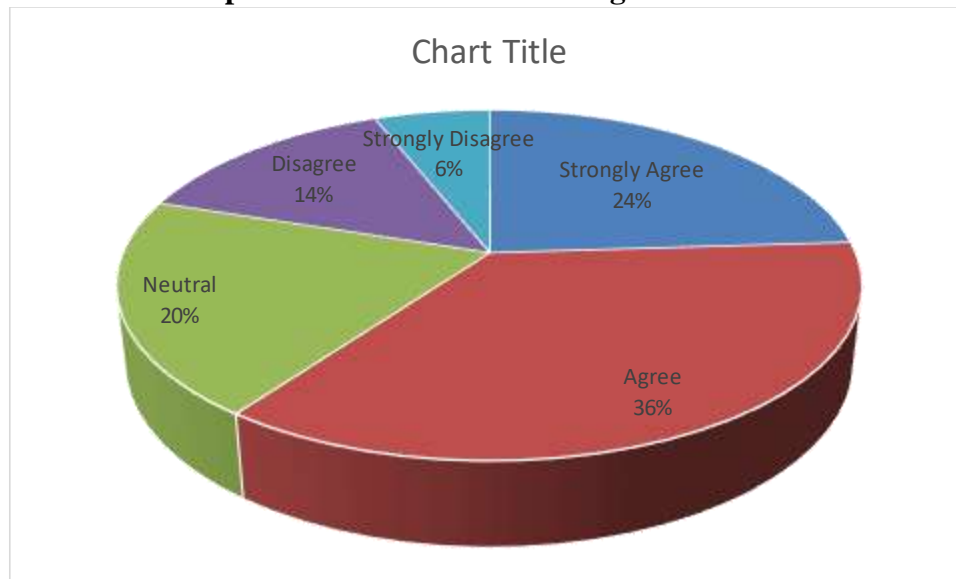
AI-based invoice processing reduces processing time



Interpretation:

70% of SMEs agree or strongly agree that AI reduces processing time. This demonstrates that automation positively impacts efficiency, while 14% remain neutral or disagree, indicating potential challenges in software adoption or training.

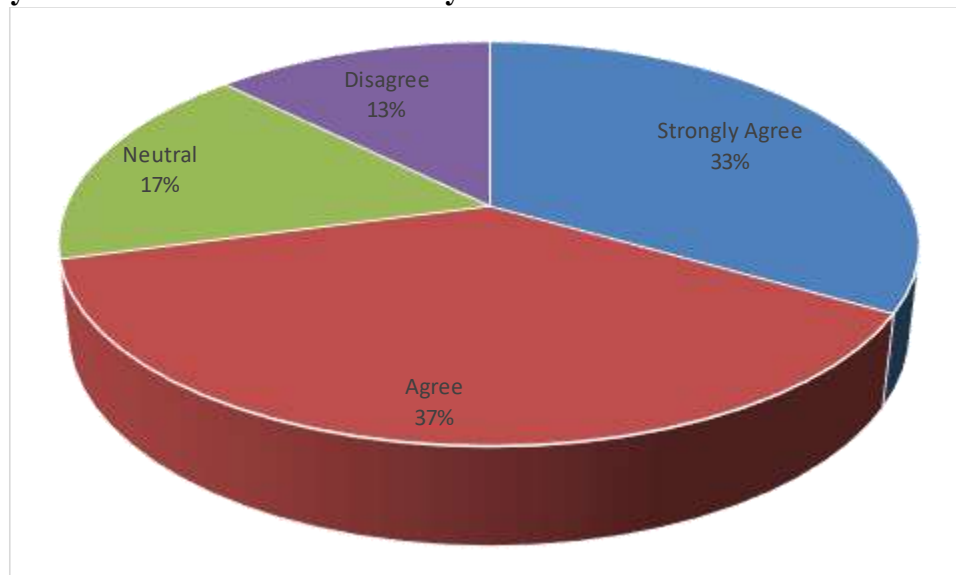
Automation has reduced operational costs in accounting



Interpretation:

60% of respondents report that automation reduces operational costs, confirming financial benefits of AI. About 20% remain neutral, possibly due to initial software investment costs.

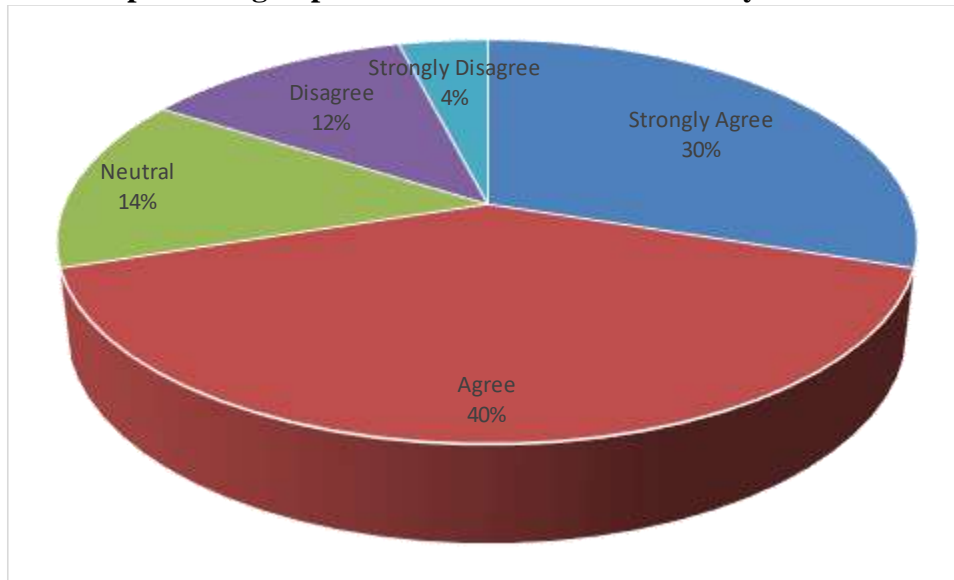
AI-based systems reduce manual data entry errors



Interpretation:

68% of SMEs report a reduction in manual errors, showing that AI increases accuracy in invoice processing. About 16% are neutral or disagree, likely due to partial automation or training gaps.

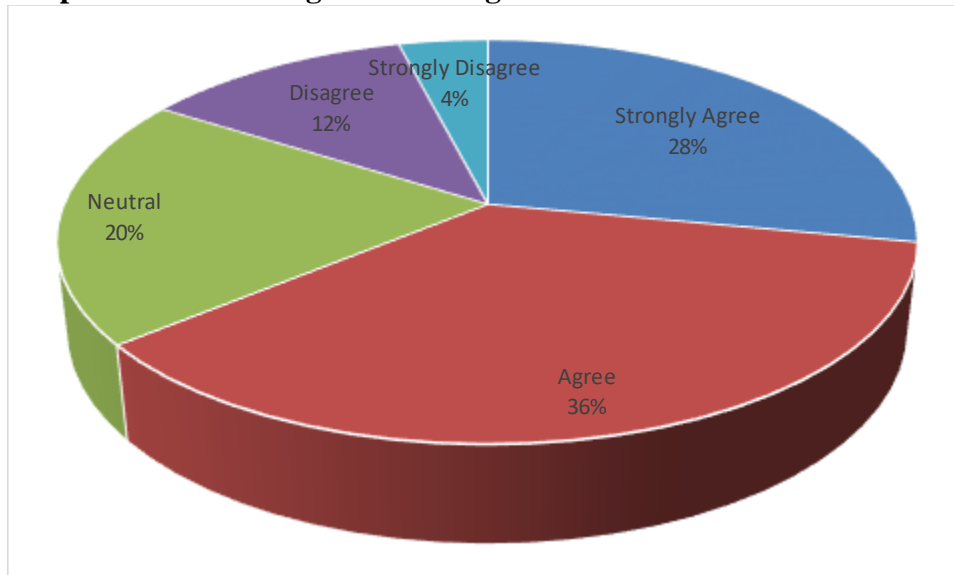
Automated invoice processing improves financial record accuracy



Interpretation:

70% of respondents confirm improved accuracy in records. This indicates AI's effectiveness in enhancing bookkeeping and accounting reliability.

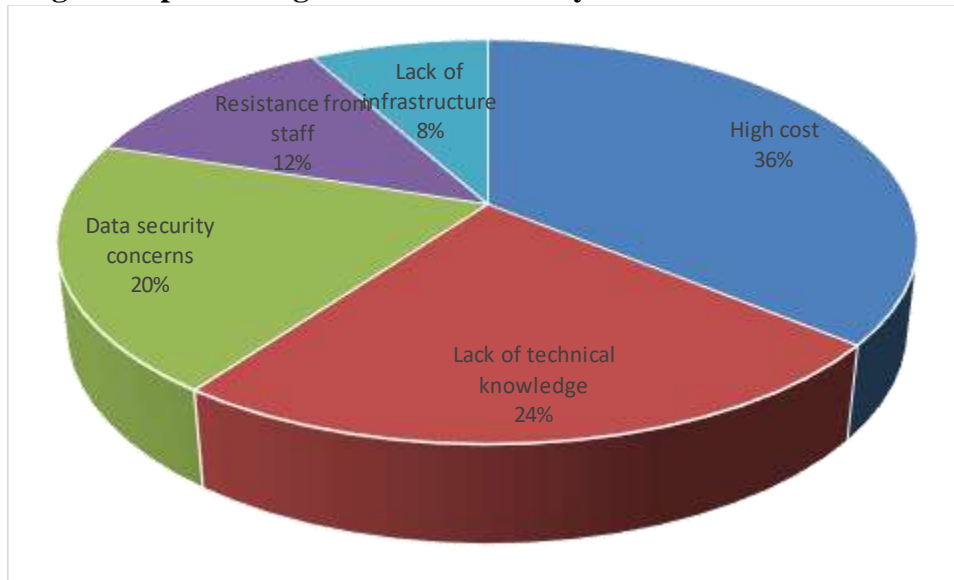
AI systems help in better tracking and auditing of invoices



Interpretation:

64% agree that AI improves tracking and audit readiness. However, 16% disagree, indicating that some SMEs may not have fully integrated reporting features.

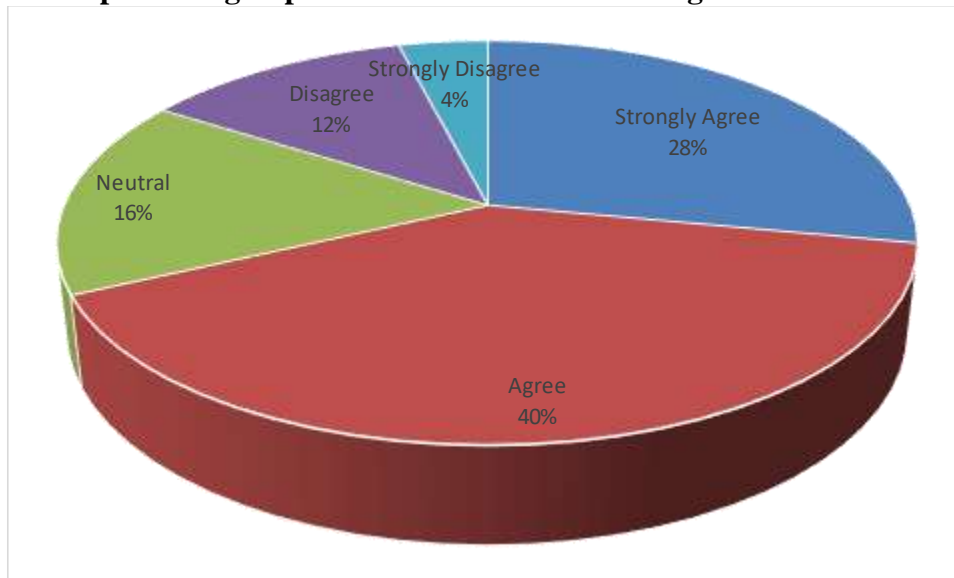
Major challenge in implementing AI-based invoice systems



Interpretation:

The **high cost (36%)** is the primary barrier, followed by technical knowledge gaps (24%) and data security concerns (20%). Resistance from staff and infrastructure issues are lesser but still present, highlighting practical challenges in AI adoption.

AI-based invoice processing improves overall financial management



Interpretation:

68% of SMEs agree that AI enhances financial management, confirming that invoice automation has a **positive overall impact** on accounting efficiency, accuracy, and decision-making.

Limitations of the Study

1. Only 50 respondents are considered, which may not fully represent all SMEs in Jalgaon.
2. The study focuses solely on Jalgaon District; results may not be generalizable to other regions.
3. Respondents may provide socially desirable answers rather than fully accurate information.

4. The study is conducted within a limited timeframe, restricting the depth of data collection.
5. The study focuses only on AI-based invoice processing and does not cover other accounting automation areas in detail.

Findings

- The majority of SMEs in Jalgaon are Manufacturing (30%) and Service (28%), followed by Trading (24%).
- 36% of SMEs use AI-based automated systems, 30% use semi-automated systems, and 24% still rely on manual processes.
- Most SMEs report moderate to high levels of automation (66%).
- 70% of respondents agree that AI reduces invoice processing time.
- 60% observe reduced operational costs due to automation.
- Invoice approval processes have become faster for 66% of SMEs, confirming time efficiency gains.
- 68% of SMEs report that AI reduces manual data entry errors.
- 70% confirm improved accuracy in financial records.
- 64% state that AI helps in better tracking and auditing, highlighting improvements in transparency and financial control.
- The high cost (36%) of AI systems is the primary barrier, followed by lack of technical knowledge (24%) and data security concerns (20%).

Suggestions

- SMEs should adopt AI-based invoice processing gradually, starting with semi-automated systems before moving to fully automated solutions. This approach reduces initial costs and allows staff to adjust to new technology without disrupting operations.
- Regular training programs should be provided to accountants, finance staff, and IT personnel. Training ensures proper usage of the AI system, minimizes errors, and increases overall efficiency.
- SMEs should consider affordable AI solutions, such as cloud-based or subscription models, to reduce upfront investment. Cost-effective systems help small businesses adopt technology without straining financial resources.
- Strong data security policies and safe data handling practices should be implemented. Protecting financial information ensures compliance and reduces the risk of cyber threats.
- The performance of AI systems should be regularly monitored through audits and key metrics. This helps identify inefficiencies and allows timely upgrades or optimizations to maintain reliability.
- Owners and staff should be made aware of the benefits of AI and encouraged to embrace digital practices. A positive mindset toward technology increases the chances of successful adoption and long-term use.
- SMEs can collaborate with IT consultants, software vendors, or local institutes for guidance. Expert support ensures proper implementation, reduces errors, and improves system effectiveness.
- AI systems should be integrated with other accounting or ERP software for future scalability. SMEs should also explore AI analytics tools to enhance financial reporting, forecasting, and overall management.

Conclusion

The study on AI-based invoice processing in SMEs of Jalgaon indicates that automation is increasingly recognized as a valuable tool for improving accounting efficiency. A significant number of SMEs have adopted AI or plan to implement it, particularly in manufacturing and service sectors. The findings reveal that AI systems help reduce manual errors, accelerate invoice processing, lower operational costs, and improve financial record accuracy. However, challenges such as high implementation costs, lack of technical knowledge, limited staff training, and data security concerns remain barriers for full-scale adoption. Despite these challenges, SMEs that adopt a phased approach, invest in training, and select cost-effective AI solutions experience notable improvements in operational efficiency and financial management. Overall, AI-based invoice processing demonstrates strong potential to transform accounting practices in Jalgaon SMEs, enabling better decision-making, transparency, and long-term growth.

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