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Study On The Benefits And Challenges Faced Of Ai Adoption In Small Business With Special Reference To Coimbatore District

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ABSTRACT

In today's digital era, Artificial Intelligence (AI) has emerged as a powerful tool transforming how businesses operate. While large corporations are rapidly embracing AI to optimize operations and enhance customer experiences, small businesses still face several challenges in adopting such advanced technologies. This study focuses on analyzing the benefits and challenges of AI adoption among small businesses in Coimbatore District. It explores the level of awareness, industry-specific usage, key influencing factors, and the barriers faced by small business owners. The findings reveal a growing interest in AI, but highlight obstacles such as high costs, lack of skilled personnel, and data privacy concerns. The study also provides suggestions to increase AI adoption through training, cost-effective tools, and government support. **Key Words:** Artificial Intelligence, Small Business, AI Adoption, Digital Transformation.

INTRODUCTION

Artificial Intelligence (AI) is transforming how small businesses operate by offering innovative solutions to automate processes, improve customer experiences, and enhance decision-making. Although widely adopted by large enterprises, small businesses often face limitations such as lack of resources, technical of resources,

technical skills, and capital investment, making AI integration is challenging. This study focuses on understanding the benefits and challenges of AI adoption specifically in the context of small businesses in Coimbatore. The study explores how AI tools such as chatbots, predictive analytics, and process automation can help small businesses increase efficiency, cut costs, and stay competitive in a digital economy.

STATEMENT OF THE PROBLEM

Small businesses in Coimbatore face hurdles like limited financial resources, inadequate technical expertise, and high setup costs when it comes to adopting AI. Despite these challenges, AI has the potential to drive significant improvements in business operations. This study investigates:

1. What are the key benefits of AI adoption for small businesses in Coimbatore?
2. What are the major challenges preventing small businesses in Coimbatore from implementing AI?

SCOPE OF THE STUDY

This study focuses on small enterprises in Coimbatore, analyzing both the benefits and challenges of AI adoption. It aims to provide insights into the practical implementation and potential of AI in this sector.

OBJECTIVES OF THE STUDY

- To identify the factors affecting the adoption of AI in small businesses.
- To explore the benefits of adopting AI.
- To examine the challenges faced in adopting AI.

RESEARCH METHODOLOGY

Research Design:

- Sampling Size: 92 respondents
- Sampling Technique: Convenience Sampling

Data Collection:

- **Primary Data:** Collected using structured questionnaires.
- **Secondary Data:** Journals, articles, and online sources.
- **Area of Study:** Coimbatore

Study Period: December 2024 – April 2025

LIMITATIONS OF THE STUDY

- The study is confined to small businesses in Coimbatore city.
- Emphasis may be limited to specific AI technologies.
- Possibility of biased responses due to unfamiliarity or fear of AI.

FINDINGS AND INTERPRETATION RANKING ANALYSIS

Factors	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Total Score	Rank
Cost	280	44	24	14	10	372	1st
Ease of Use	35	192	45	34	5	311	2nd
Security	70	36	174	14	4	298	3rd
Potential Benefits	45	80	57	76	6	264	4th
Customer Demand	100	56	54	28	27	265	5th

INTERPRETATION

The ranking analysis of challenges in AI adoption reveals that **high initial cost** is the most significant barrier for small businesses, receiving the highest score of **400**, indicating strong concern over affordability. This is followed by the **lack of skilled staff** (346), highlighting a major gap in technical expertise necessary for implementing AI effectively. **Data privacy concerns** rank third (319), reflecting businesses' apprehension about securing sensitive information when using AI tools. **Maintenance cost** (309) is the fourth challenge, pointing to ongoing financial burdens beyond initial investments. Lastly, **lack of technical expertise** (261) ranks lowest but remains a notable concern, especially for businesses without in-house tech capabilities. Overall, financial and human resource limitations are the primary obstacles hindering AI adoption among small businesses.

LIKERT SCALE ANALYSIS

Parameter	Very Satisfied (5)	Satisfied (4)	Neutral (3)	Dis - satisfied (2)	Very Dissatisfied (1)	Total Score	Likert Value
Business Accuracy	5	15	14	1	57	186	2.03
Usefulness	5	17	13	41	16	290	3.15
Relevance	5	19	43	12	13	267	2.54
Speed	13	37	10	7	18	275	3.05

Customer Understanding	20	37	10	7	18	310	3.36
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INTERPRETATION

The Likert Scale Analysis shows that respondents are generally satisfied with AI's **usefulness**, **speed**, and **customer understanding**, with customer understanding scoring the highest (3.36).

However, there is **dissatisfaction with business accuracy (2.03)** and **relevance (2.54)**, indicating concerns about the precision and contextual applicability of AI. Overall, while AI is seen as helpful, improvements are needed in making it more accurate and relevant for small business needs.

SUGGESTIONS

To encourage AI implementation in small businesses, awareness by education, training, and digital resources is key. Exorbitant costs continue to be the biggest hindrance, necessitating low-cost AI solutions, subsidies from the government, and collaboration with technology companies. Small and medium enterprises can utilize AI-powered automation, chatbots, and mass customization to enhance customer interaction and productivity. Sector-specific AI offerings, particularly for the service sector, need to concentrate on customer relationship management, workflow automation, and predictive analysis. Secondly, real case studies and practical experience can enable companies to grasp the benefits of AI, dispelling scepticism and driving broader adoption.

CONCLUSION

AI has promising potential for small businesses in Coimbatore, especially in customer service, marketing, and decision-making. However, cost, lack of expertise, and fear of change remain key challenges. Bridging this gap through education, affordable tools, and policy support can drive AI adoption and improve business performance in the long run.

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