


Chapter 1

Application of AI Technology in the Electronic Commerce Industry for Sustainable Business Growth in India

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ABSTRACT

This chapter aims to evaluate the application of AI technology in the e-commerce industry and its impact on business growth and sustainability. The application of AI technology in e-commerce for convenient shopping, mapping of products, add-on product suggestions, delivery of the product, and promotion will help business growth and sustainability. Many major online sellers are integrating AI into their businesses to provide the best services, a wide range of products, and more accessibility to remote and rural areas. It will help to reach the unreachable and needy

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people in the country. It analyzes it to conclude that AI intervention positively impacts the business sustainability and growth of electronic commerce in India. This review-based research work followed a descriptive approach to articulate the paper with the support of existing literature. Based on the analysis, the present chapter provides appropriate suggestions for future development in the research area.

INTRODUCTION

Artificial intelligence (AI) is an integral part of all businesses worldwide. The integration of AI technology in business has a range of positive impacts on the online business world, including e-stores and e-commerce (Aditi et al., 2021). The application of AI enabled technology in e-commerce business enhances the sustainability for producers, sellers, buyers, and the environment. There are various applications of AI in e-commerce that significantly contribute to business and sustainability. Recommendation engines driven by AI examine past purchases, preferences, and customer behaviour to offer tailored product recommendations. E-commerce companies may boost the average value of orders and client retention by making relevant product recommendations. For instance, 35 percent of Amazon's revenue comes from its recommendation engine. Chatbots and virtual assistants driven by AI offer immediate customer service by responding to questions, assisting clients with the buying process, and making tailored suggestions. A large number of client encounters may be handled by chatbots, which speeds up response times and raises customer satisfaction. For example, H&M's chatbot offers styling tips and product discovery assistance to clients (Jatmika et al., 2024). Large volumes of data can be analysed by AI systems to find trends and abnormalities suggestive of fraud. E-commerce companies may safeguard their earnings and uphold client confidence by promptly identifying and stopping fraud. AI is used by businesses like *PayPal* and *Stripe* to stop fraudulent transactions. By anticipating demand, estimating stock levels, and automating replenishment procedures, artificial intelligence (AI) can improve inventory management. Businesses can cut expenses and boost operational effectiveness by reducing stockouts and overstocking. Walmart has reduced the number of out-of-stock items by 15 percent as a result of using AI to improve its inventory management (Farhat et al. 2025). Artificial intelligence (AI)-driven dynamic pricing algorithms dynamically modify product prices in real time by analyzing consumer demand, competition prices, and market trends. Businesses can increase profitability and maintain their competitiveness by basing price optimization on market conditions. Amazon makes price adjustments millions of times every day using dynamic pricing. AI systems can identify which clients are likely to leave by examining engagement metrics and behavioral trends. Businesses

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