



Chapter 33

The Impact of Artificial Intelligence and Automation in Transforming the Hospitality Sector


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ABSTRACT

The hospitality industry is experiencing a significant transformation due to the rise of Artificial Intelligence (AI) and automation. This chapter explores the diverse effects these technologies have on the hospitality sector, showcasing both the opportunities they present and the challenges they bring. AI and automation are transforming customer service, operational efficiency, and personalised guest experiences. AI-powered chatbots and virtual assistants enhance client interactions by responding quickly and accurately, as well as supporting easy booking processes. Automation in tasks such as check-in, check-out, and room service improves efficiency, reduces human error, and optimises operations. The chapter looks at how data analytics and AI-driven insights can help hotels predict client preferences and customise services to match individual needs, resulting in increased guest happiness and loyalty. This Chapter emphasizes the need for a strategic approach to integrating AI and automation, ensuring they enhance rather than replace the human touch that is fundamental to hospitality.

DOI: 10.4018/979-8-3693-7447-4.ch033

1. INTRODUCTION

By making guest experiences better and operations more efficient, automation and artificial intelligence (AI) have revolutionised the hospitality industry. Hoteliers may save a tonne of money and enjoy better service thanks to artificial intelligence. Bots powered by artificial intelligence that can handle guests' inquiries and perhaps even book rooms could alleviate some of the burden on hotel employees, leading to better service in the long run (Sachan et al., 2024).

1.1. Background and Importance of the Study

The hospitality sector, encompassing a wide range of services from lodging to food and beverage to event planning, plays a critical role in the global economy. This industry is highly customer-centric, relying heavily on personalized service and high operational efficiency to ensure customer satisfaction and loyalty. As technology continues to evolve at a rapid pace, Artificial Intelligence (AI) and automation have emerged as transformative forces within this sector.

AI's strengths in data processing, natural language processing, and machine learning allow for unparalleled levels of personalisation and efficiency (Ivanov, 2018). Automation, using robotics and modern software solutions, streamlines operations, reduces human error, and improves service delivery. These innovations are not just changing client experiences, but also the way hospitality firms function.

The importance of studying the impact of AI and automation in the hospitality sector lies in understanding both the potential benefits and the challenges these technologies bring. As businesses increasingly adopt these innovations, it is crucial to analyze their effects on various aspects of the industry, from customer service to operational management, and to consider the broader implications for the workforce and business strategies.

1.2. Definitions and Concepts

Artificial Intelligence (AI): Artificial intelligence (AI) is the process of teaching computers to mimic human intellect in areas such as reasoning and memory. These systems are capable of a wide range of activities, including language translation, decision-making, and speech recognition. Key subsets of AI include machine learning, where systems improve through experience, and deep learning, which involves neural networks with many layers (Chinnaraj.T, 2023).

Automation: Automation refers to the use of technology to complete jobs with minimal human participation. In the hospitality industry, this might range from simple chores like automatic billing to more intricate operations such as room service delivery via robots. Automation seeks to improve efficiency, decrease errors, and ensure consistency in service delivery.

AI in Hospitality: AI applications in hospitality include chatbots for customer service, recommendation engines for personalized experiences, and predictive analytics for understanding customer preferences and behaviors (Bulchand-Gidumal, 2022). AI enhances the ability of businesses to provide customized services, improve operational efficiency, and analyze vast amounts of data for strategic decision-making.

Automation in Hospitality: Automation in the hospitality industry encompasses a wide range of activities, including check-in and check-out procedures, room allocation, inventory management, and maintenance planning. Robots and automated systems are increasingly being employed for duties like as cleaning, luggage handling, and, in some sophisticated cases, cooking and serving food.

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