

Chapter 4


Revolutionizing Hospitality Through Smart Logistics: Innovations in Supply Chain and Inventory Control in Hospitality Industry

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ABSTRACT

The hospitality industry is embracing smart logistics, integrating AI, IoT, blockchain, and big data analytics, to address challenges like demand volatility, labor shortages, and sustainability pressures, transforming supply chain and inventory management. This chapter explores smart logistics innovations' impact on hospitality industry supply chain and inventory management, identifying key technological enablers, assessing impacts and challenges, and providing actionable insights. The study found that smart logistics are utilized as a key strategy for enhancing hospitality supply chain dynamics, promoting competitiveness, operational excellence, and stakeholder

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value. The study highlights the benefits of smart logistics in optimizing inventory accuracy, supply chain visibility, waste reduction, as well as improved customer service. However, challenges related to technological interoperability and workforce skill gaps persist. The study suggests investing in scalable technology, developing hybrid supply chain models, employee upskilling, and strategic partnerships.

INTRODUCTION

The hospitality sector, a key contributor to the global economy, has supply chain and inventory management issues owing to changing customer expectations and worldwide supply chains (Zhang & Huang, 2020). Traditional approaches include manual procedures, centralized systems, failed operational results, and customer satisfaction (Lee et al., 2018). Variable demand, labor constraints, and sustainability concerns hamper supply chains. AI, IoT, blockchain, and big data analytics can alter these issues with smart logistics, boosting operational efficiency, supply chain insight, inventory accuracy, and sustainable growth (Chen et al., 2020). However, data security, personnel upskilling, and technology interoperability are persistent issues in the hospitality industry. For hospitality firms to successfully integrate smart logistics, these challenges and obstacles must be rigorously explored (Bowersox et al., 2019). With rising customer expectations, environmental concerns, and global crises, the hotel sector struggles to manage supply chains and stocks (Bowersox et al., 2019; Talukder, 2025b). Perishable items, raw resources, and inventory management using traditional systems frequently lack real-time data and market reactivity. Artificial intelligence, IoT, blockchain, and big data analytics can improve logistical efficiency and flexibility. Intelligent logistics is changing the hotel supply chain and inventory management, according to this research (Wang et al., 2021). Due to global supply chain complexity and the need for sustainability and efficiency, the hotel industry's supply chain and inventory management systems must be transformed (Bowersox et al., 2019; Zhang & Huang, 2020). This chapter examines the utilization of smart logistics in the hospitality industry, employing AI, IoT, blockchain, and big data analytics in its operational management and beyond. It also aims to identify the key dynamics, assess the impact, evaluate the implementation challenges, and offer evidence-based, actionable insights for businesses to drive sustainability and efficiency through optimized utilization of smart logistics in the hospitality industry.

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