



# Assessing The Acceptance of Drone Technology for Last-Mile Delivery: A UTAUT Based Study in Kolkata's Q-Commerce Sector

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## ABSTRACT

The q-commerce industry in India is experiencing remarkable growth, fueled by increasing consumer demand for rapid delivery services. While this expansion boosts economic activity, it also intensifies urban challenges such as traffic congestion, air pollution, and the overextension of road infrastructure. Addressing these issues requires innovative and sustainable strategies that balance the need for fleet expansion with timely deliveries. Drone technology presents a promising alternative for last-mile delivery, offering the potential to enhance both sustainability and efficiency in urban logistics. This research examines the viability of integrating drones into Indian q-commerce logistics by employing the Unified Theory of Acceptance and Use of Technology (UTAUT) framework. The study evaluates user perceptions, technological readiness, and societal acceptance to determine operational feasibility. By focusing on the environmental benefits and technological adaptability of drones, this study highlights their role in addressing urban challenges. Additionally, the research explores how drone integration aligns with the United Nations' Sustainable Development Goals (SDGs) and India's Net Zero emissions commitments, emphasizing the critical importance of sustainable urban planning and innovative transportation solutions for the future of logistics.

**Keywords:** Q-commerce, Last-mile delivery, Drone technology, Sustainability, Unified Theory of Acceptance and Use of Technology (UTAUT)