
**Working Paper 2026.1.2.9**

**- Vol. 1, No. 2**

# DARK STORES – GIẢI PHÁP CHO GIAO HÀNG CHẶNG CUỐI ĐÔ THỊ: NGHIÊN CỨU TRƯỜNG HỢP CỦA ZEPTO VÀ NHỮNG HÀM Ý ĐỐI VỚI CÁC CÔNG TY LOGISTICS TẠI VIỆT NAM

**Nguyễn Thị Ngọc Linh[1], Đoàn Phương Linh, Nguyễn Phương Hà Linh, Đỗ Phương Trang**

Sinh viên K62 ĐHNNQT Logistics và Quản lí chuỗi cung ứng – Viện Kinh tế & Kinh doanh quốc tế

*Trường Đại học Ngoại thương, Hà Nội, Việt Nam*

**Nguyễn Thị Yến**

Giảng viên Viện Kinh tế & Kinh doanh quốc tế

*Trường Đại học Ngoại thương, Hà Nội, Việt Nam*

---

**DARK STORES – GIẢI PHÁP CHO GIAO HÀNG CHẶNG CUỐI ĐÔ THỊ: NGHIÊN CỨU TRƯỜNG HỢP CỦA ZEPTO VÀ NHỮNG HÀM Ý ĐỐI VỚI CÁC CÔNG TY LOGISTICS TẠI VIỆT NAM**

## Tóm tắt

Sự phát triển mạnh mẽ của thương mại điện tử đã làm gia tăng những thách thức trong giao hàng chặng cuối tại đô thị, đồng thời bộc lộ sự kém hiệu quả của các mô hình hoàn tất đơn hàng tập trung truyền thống. Hệ thống dark store đã nổi lên như một giải pháp hoàn tất đơn hàng siêu nhỏ nhằm cải thiện tốc độ giao hàng và hiệu quả vận hành tại các khu vực đô thị đông đúc. Nghiên cứu này xem xét mô hình dark store của Zepto thông qua phương pháp nghiên cứu trường hợp định tính, từ đó phân tích các hàm ý đối với những công ty logistics tại

[1] Tác giả liên hệ, Email: k62.2313530025@ftu.edu.vn

Việt Nam. Kết quả nghiên cứu cho thấy mạng lưới dark store siêu cục bộ có thể nâng cao hiệu suất giao hàng chặng cuối bằng cách rút ngắn khoảng cách vận chuyển và đẩy nhanh quá trình xử lý đơn hàng; tuy nhiên, mô hình này cũng đối mặt với chi phí vận hành cao và những hạn chế về khả năng mở rộng. Nghiên cứu đề xuất rằng dark store có thể vận hành hiệu quả tại Việt Nam nếu được triển khai một cách chọn lọc, tích hợp nền tảng số và kết hợp trong các hệ thống hoàn tất đơn hàng hỗn hợp.

**Từ khóa:** dark store, giao hàng chặng cuối, logistics đô thị, Zepto

**DARK STORES AS A SOLUTION TO URBAN LAST-MILE DELIVERY: A CASE STUDY OF ZEPTO AND IMPLICATIONS FOR LOGISTICS COMPANIES IN VIETNAM**

**Abstract**

The rapid growth of e-commerce has intensified urban last-mile delivery challenges, exposing the inefficiencies of traditional centralized fulfillment models. Dark stores have emerged as a micro-fulfillment solution to improve delivery speed and operational efficiency in dense urban areas. This study examines Zepto's dark store model through a qualitative case study and analyzes its implications for logistics companies in Vietnam. The findings show that hyperlocal dark store networks can enhance last-mile performance by reducing delivery distance and accelerating order fulfillment, but they also face high operating costs and scalability constraints. The study suggests that dark stores can be effective in Vietnam if selectively deployed, digitally integrated, and embedded within hybrid fulfillment systems.

**Keywords:** dark store, last-mile delivery, urban logistics, Zepto

## 1. Introduction

### *1.1. Rationale of the study*

The rapid growth of e-commerce and online grocery retailing has fundamentally transformed urban logistics systems, particularly intensifying pressures on last-mile delivery operations, which account for 40-55% of total logistics costs despite covering the shortest distance (Wang et al., 2016; Everbest Logistics, 2025). Facing higher order volumes, customer expectations for fast and reliable delivery and congestion levels, traditional centralized warehousing and store-based fulfillment models have revealed significant inefficiencies. These challenges have been further amplified in the post-COVID-19 period when online consumption habits have been deeply embedded in daily life.

In response, dark stores have emerged as an innovative fulfillment solution designed specifically to address last-mile delivery challenges in dense urban environments, converting street-level retail into micro-warehouses that enable 10-15 minute delivery (Schorung, 2024;

Agarwal & Singh, 2024). By optimizing picking efficiency and hyperlocal inventory for 1,200 - 2,000 SKUs dedicated solely to online order fulfillment, dark stores reduce last-mile distances by up to 70% compared to centralized models and support omni-channel strategies, especially in densely populated markets (Phartiyal et al., 2025; Anderson & Balasinorwala, 2025).

Vietnam represents a rapidly growing e-commerce market with unique urban logistics characteristics, including fragmented infrastructure, high dependence on motorcycle-based delivery and evolving regulatory conditions. Despite the 1.6 billion US dollar last-mile market (Ken Research, 2025; VLR.vn, 2026), empirical research examining the applicability and effectiveness of dark store models within the Vietnamese context remains limited. This gap highlights the need for a context-sensitive investigation into how dark stores can function as a last-mile delivery solution in Vietnam's urban logistics landscape. Accordingly, this study is conducted to bridge the gap between existing theoretical insights on dark stores and their practical implications for emerging urban logistics systems. By examining Zepto's dark store model as a representative case, the research seeks to provide valuable lessons and policy-relevant insights for improving last-mile delivery efficiency in Vietnam.

### *1.2. Research significance*

This study contributes to both academic literature and practical decision-making in the field of urban logistics and last-mile delivery. From an academic perspective, the research extends existing studies on dark stores by applying the concept to the context of an emerging economy, thereby addressing a notable geographical and contextual gap in the literature. By integrating insights from omni-channel retailing, last-mile delivery theory and urban logistics, the study enhances understanding of how dark stores function beyond developed-market settings.

From a practical standpoint, as Vietnam continues to urbanize and its e-commerce sector expands, the research provides timely, relevant guidance and valuable implications for logistics service providers, retailers and policymakers for developing more resilient last-mile delivery systems in Vietnam. Moreover, the analysis of Zepto's dark store model offers actionable insights that can inform strategic decisions related to urban warehouse placement, delivery network design and policy formulation aimed at improving city logistics performance and promoting more efficient last-mile delivery in dense urban areas as well as broader discussions on sustainable urban logistics.

## 2. Background and theoretical framework

### *2.1. Literature review*

#### *2.1.1. Previous research on dark stores and last-mile delivery*

Da Costa (2022) examines the role of dark stores within omni-channel retailing using configuration analysis and simulated data. The study finds that dark stores, when combined with proximity to customers and efficient picking systems, significantly improve last-mile performance and service levels. However, the reliance on assumed and simulated data limits the empirical validity of the findings and reduces their applicability to specific market contexts.

Rao (2025) investigates micro-fulfillment centers and dark stores in the post-COVID retail environment, emphasizing their impact on last-mile delivery efficiency. Using a conceptual and simulation-based approach, the study confirms that dark stores reduce delivery time and logistics costs while enhancing responsiveness to online demand. Nevertheless, the lack of real-world empirical data and quantitative validation constrains the generalizability of the results.

Bittermann & Hess (2024) explore the persistence and expansion of dark stores beyond the COVID-19 pandemic through qualitative analysis. The study highlights that dark stores have evolved from temporary crisis solutions into strategic assets for urban logistics and quick commerce. Despite these insights, the largely descriptive approach and limited quantitative analysis restrict deeper evaluation of operational performance and long-term financial sustainability.

Agarwal and Singh (2024) analyze dark stores in the Indian retail context using the Resource-Based View (RBV). Their findings suggest that dark stores possess strong VRIN (valuable, rare, inimitable, and non-substitutable) characteristics, enabling retailers to gain competitive advantage in e-grocery markets. However, the study relies heavily on secondary data and does not fully capture dynamic operational challenges or consumer behavior changes.

Shakyawar and Shakya (2024) focus on optimizing dark store operations in India, particularly within the BigBasket case, using operational efficiency and sustainability frameworks. The study concludes that dark stores contribute to cost optimization, faster fulfillment, and sustainable urban logistics. Nonetheless, its single-case focus limits cross-market comparison and broader applicability to other regions or retail formats.

#### *2.1.2. Justification of research gap*

Although an increasing body of literature has examined dark stores and micro-fulfillment centers in markets such as Europe and India, the Vietnamese context remains largely underexplored. Most existing studies focus on developed or large-scale e-commerce environments characterized by mature logistics infrastructure, strong financial capacity, and advanced digital systems. Consequently, their findings are often generalized and may not fully reflect the conditions of emerging economies.

In contrast, Vietnam's urban logistics system is marked by fragmented infrastructure, high dependence on motorcycles for last-mile delivery, regulatory uncertainty, and uneven technological adoption. Current research related to dark stores in Vietnam is limited and primarily descriptive, offering insufficient empirical insights into how this model can function effectively within local urban constraints. This gap highlights the need for context-specific analysis of dark stores as a last-mile delivery solution in Vietnam's rapidly evolving urban logistics landscape.

### ***2.2. Last-mile delivery in urban logistics***

#### *2.2.1. Concept of last-mile delivery*

Last-mile delivery (LMD) commonly refers to the final stage of the distribution process, which encompasses all logistics activities required to distribute shipments to private households (Boysen et al., 2021). Accordingly, the LMD process starts when a shipment arrives at an urban entry point, such as an urban consolidation centre after long-haul transportation, and concludes when the goods are delivered to the final customer (Mantecchini et al., 2025).

Despite covering a relatively short physical distance, the last-mile segment exerts a system-wide impact on logistics performance. The LMD process is characterized by dispersed customer locations, low vehicle utilization, short routes, and frequent start-stop movements (Mantecchini et al., 2025), which reduce operational efficiency and increase labor intensity. These structural characteristics result in a significantly higher cost per kilometer compared to upstream logistics activities, as argued by Wang et al. (2016), who estimate that last-mile delivery can account for up to 28% of total delivery costs. Consequently, the last mile functions as a critical bottleneck and a decisive leverage point for improving cost efficiency, service quality, and overall logistics performance.

#### *2.2.2. Last-mile delivery within urban logistics context*

The urban context further differentiates last-mile delivery from other logistics stages. From a theoretical perspective, last-mile delivery in urban logistics is increasingly framed as a multi-objective optimization problem (Chen et al., 2025). Traditional logistics optimization focuses on minimizing a single metric (such as distance or cost), but recent research argues that urban last-mile delivery should account for several competing objectives, which cannot be resolved by optimizing a single criterion without adversely affecting others (Chen et al., 2025). Current research emphasizes that modern urban last-mile systems must balance at least three principal goals: (i) cost efficiency, (ii) service quality, and (iii) environmental sustainability.

(i) Cost efficiency

Cost efficiency remains central in last-mile delivery due to the relatively high share of total logistics costs attributed to this segment (Wang et al., 2016). The dispersed nature of delivery points and frequent stop-and-start travel patterns inherent in urban streets (Mantecchini et al., 2025) increase operational costs relative to long-haul transport. Therefore, cost efficiency in urban last-mile delivery must be addressed through integrated planning approaches that account for both operational constraints and dynamic urban conditions.

(ii) Service quality

In urban last-mile delivery, service quality primarily concerns delivery reliability, timeliness, and convenience from the customer's perspective. Prior studies indicate that service quality dimensions such as reliability and responsiveness significantly influence customer satisfaction and competitive advantage in e-commerce logistics (Klein et al., 2022). Consequently, improving service quality in urban LMD requires not only route optimization but also adaptive scheduling and customer-centric delivery solutions.

(iii) Environmental problems

Demand for last-mile delivery is projected to rise by 78% by 2030, leading to a 36% increase in delivery vehicles across 100 cities worldwide (World Economic Forum, 2020). As a result, environmental sustainability has become a central objective in urban last-mile delivery due to rising regulatory pressure and public concerns over emissions, congestion, and noise. This has driven research and practice toward sustainable delivery methods to mitigate environmental impacts while maintaining performance.

Overall, the multi-objective nature of urban last-mile delivery exposes the limitations of traditional, centralized distribution models in dense urban environments. In response, logistics researchers and practitioners have increasingly turned to innovative urban fulfillment approaches, including innovations in warehouse-based distribution, to address the specific constraints of city logistics and to balance competing objectives effectively.

### *2.3. Concept and characteristics of dark stores*

The concept of a dark store represents a fundamental pivot in retail logistics, defined as a brick-and-mortar location that is closed to the public and converted into a micro-fulfilment centre dedicated solely to processing online orders (Agarwal & Singh, 2024; Schorung, 2024; Rao, 2025). While an early prototype emerged in the 2000s (Sainsbury Archive, n.d.), the term was popularized by Tesco in 2009 (The Brainy Insights, 2023) and the model saw rapid and widespread growth during and after the COVID-19 pandemic, fueled by the surge in contactless delivery and the "phygital" (physical-digital) economy (Friedman, 2023; Kelly, 2024). Operating on a principle similar to cloud kitchens, it severs the traditional link between physical shopping and customer interaction, relying entirely on digital interfaces like apps or websites for transactions (Khare, 2022).

The characteristics of dark stores are multifaceted, encompassing logistical, operational, and locational dimensions. Logistically, their core function is fulfilment: they are more a logistics facility than commercial space, responsible for storing, packing, and shipping goods with an entirely functional internal layout optimized for speed (Shapiro, 2022; Schorung, 2024). Operationally, they offer compelling business advantages by drastically reducing the high operating costs of traditional retail, such as expenses for prime customer-facing spaces and in-store staff, while enhancing inventory control and order accuracy (Agarwal & Singh, 2024; Shakyawar & Shakya, 2024). This efficiency, combined with their ability to promise rapid delivery and reach a wider digital audience (Khare, 2022; Schorung, 2024), grants them strong, VRIN (Valuable, Rare, Inimitable, Non-substitutable) characteristics in competitive urban markets like India (Agarwal & Singh, 2024). While initially proliferating during the COVID-19 pandemic to meet the surge in contactless demand, this value proposition has proven resilient (Shapiro, 2022; Khare, 2022; Buldeo Rai, 2022). Locationally, their most defining trait is strategic urban placement. They are typically situated within or near high-density residential areas, often occupying any accessible street-level premises like former shops or garages, to minimize last-mile delivery costs and times (Shakyawar & Shakya, 2024; Schorung, 2024; Bittermann & Hess, 2024). This network is often supported by a hub-and-spoke supply chain, with suburban central warehouses supplying multiple urban dark stores via third-party carriers (Schorung, 2024).

However, these very characteristics generate significant urban impacts. By decoupling commerce from foot traffic and consumer experience, dark stores reshape retail geographies and contribute to "platform urbanism” (Shapiro, 2022). This operational model leads to direct and compound urban impacts. Most notably, the conversion of active storefronts into closed fulfilment centres directly erodes street vitality and diminishes the informal surveillance and social interaction known as the "eyes on the street," undermining a key element of neighborhood safety and vibrancy. Furthermore, their logistics-centric function increases localized vehicular and delivery traffic, exacerbating issues of congestion, parking, and noise pollution (Bittermann & Hess, 2024). Collectively, these physical and social transformations negatively impact the quality and character of public life in affected neighbourhoods and shopping districts (Shapiro, 2022). Therefore, the dark store is more than a warehouse; it represents a hybrid urban-logistical entity, functioning at the critical nexus of e-commerce efficiency, adaptive real estate use, and the ongoing evolution of urban living.

## 3. Case study: Zepto's dark store model

### *3.1. Overview of Zepto*

#### *3.1.1. Background and market position*

Zepto is an Indian quick-commerce startup founded in 2021 by Aadit Palicha and Kaivalya Vohra with the mission of redefining grocery and essentials delivery through ultra-fast service (Zepto, n.d.). Despite its recent establishment, Zepto has rapidly emerged as a prominent hyperlocal convenience retailer in India's urban markets. One of the factors behind this rapid rise has been the COVID-19 pandemic, which shifted consumer behaviour toward safer, contactless and ultra-fast delivery options, thereby creating fertile ground for quick-commerce models like Zepto to scale faster than traditional retail channels (Ghosh & Bhatia, 2022). In 2025, Zepto ranks among the top three leading players in India's quick commerce market, alongside Blinkit and Swiggy Instamart (Sharma, 2025).

#### *3.1.2. Core service offerings*

Zepto operates as a quick commerce platform focused on the ultra-fast delivery of daily essentials. The platform offers over 45,000 SKUs, including groceries, fresh produce, beverages, personal care items, small electronics, pharmaceuticals, and household goods (Anderson & Balasinorwala, 2025), positioning Zepto as a high-frequency, one-stop convenience retailer.

According to Anderson and Balasinorwala (2025), Zepto's business model is built around four interconnected core services. The Zepto mobile app serves as the main customer interface for browsing, ordering, and tracking deliveries. The dark store network forms the backbone of fulfilment, enabling rapid order picking and delivery through neighbourhood-based micro-warehouses. Zepto Café extends the model into prepared food by operating in-store kitchens within selected dark stores, while Zepto Atom, launched in 2025, provides brand partners with subscription-based analytics on sales and demand patterns.

Together, these services link demand generation, order processing, and value-added extensions into a unified quick commerce platform. However, the effectiveness of this service portfolio ultimately depends on Zepto's ability to execute rapid and reliable order fulfilment at scale. As such, understanding Zepto's fulfilment and delivery model becomes essential.

#### *3.1.3. Fulfillment and delivery model*

Zepto's fulfilment and delivery model is centered on the promise of "10-minute delivery", with an operational target of completing orders within approximately 10 minutes after placement. Although regulatory and industry scrutiny has led the company to moderate explicit marketing claims around guaranteed delivery times (Financial Times, 2026), speed remains a defining element of Zepto's value proposition.

The dense, city-wide network of neighbourhood-based dark stores has been central to making this promise achievable. In 2025, Zepto operated in ten major Indian urban centres, including Mumbai, Pune, Delhi, Noida, Gurgaon, Ghaziabad, Kolkata, Hyderabad, Chennai, and Bangalore, covering seven of the country's ten largest cities (Anderson & Balasinorwala, 2025). To support this footprint, the company has established over 1,000 dark stores (Phartiyal et al., 2025), which are replenished as required by larger upstream mother-warehouses.

The principle underlying this ultra-fast fulfilment model is straightforward: Once an order is placed, Zepto's technology instantly assigns it to the nearest dark store, where products are readily available due to hyperlocal inventory assortments. Each store is stocked based on local consumption patterns, ensuring that frequently ordered items are located close to end consumers and can be dispatched without delay (Anderson & Balasinorwala, 2025).

Overall, this fulfilment and delivery model provides the physical and geographic foundation for Zepto's quick commerce platform. The strategic design and operational execution of the dark store network, which underpin this model, are examined in greater detail in the following section.

### *3.2. Analysis of Zepto's dark stores operational model*

Zepto's dark store model is shaped by the specific operational requirements of quick commerce in dense urban environments, where speed, reliability, and predictability are critical to maintaining competitiveness. Rather than functioning as conventional warehouses, Zepto's dark stores operate as localized micro-fulfillment nodes that integrate spatial design, inventory configuration, technological systems, and delivery coordination within a tightly coupled operational structure. These interrelated elements collectively define how the dark store network is organized and how it supports Zepto's last-mile delivery performance.

#### *3.2.1. Hyperlocal network and facility design*

Zepto's dark store network is built on a hyperlocal fulfillment architecture that prioritizes proximity to customers over centralized scale. The company operates a dense network of small facilities located within high-demand urban neighborhoods, with each dark store serving a restricted catchment area of approximately 2 to 3 kilometers (Mishra, 2025). This geographic configuration significantly reduces delivery distance and enables consistently short lead times.

Each dark store functions as a non-customer-facing facility, designed solely for order fulfillment rather than retail interaction. According to Badola (2025), Zepto's dark stores typically occupy between 2,000 and 3,000 square feet, a size that balances sufficient inventory capacity with operational efficiency. The absence of walk-in customers eliminates interruptions to picking activities and allows labor to be fully dedicated to order processing.

The lack of customer-facing requirements also reduces fixed operational costs. As noted by Medeiros et al. (2022), dark stores do not incur expenses related to store decoration or merchandising, as there are no in-person visits. In Zepto's case, this cost structure supports scalability in urban markets by allowing rapid deployment of additional facilities without the overhead associated with traditional retail formats.

*3.2.2. Inventory configuration and store layout*

Zepto's inventory strategy is intentionally designed to support speed rather than assortment breadth. Instead of replicating a full supermarket range, the company maintains a curated selection of approximately 2,500 fast-moving SKUs that represent a small proportion of traditional grocery assortments but account for a large share of routine consumer purchases (Badola, 2025). This approach helps improve inventory turnover and reduces demand uncertainty.

Limiting the SKU count also simplifies operational complexity within the dark store. With fewer items to manage, replenishment cycles can be faster and more precise, supporting product freshness and availability. Pocketful Team (2025) emphasizes that this localized and curated inventory enables dark stores to operate as micro-fulfillment hubs rather than conventional warehouses.

Store layout further reinforces operational speed. Zepto applies a frequency-based layout in which products are organized according to purchase frequency rather than traditional product categories, with high-demand items positioned near packing stations (Badola, 2025). This layout design enables faster picking processes and contributes to the overall efficiency of dark store operations by reducing travel distance and handling time during order fulfillment (Badola, 2025; Pocketful Team, 2025).

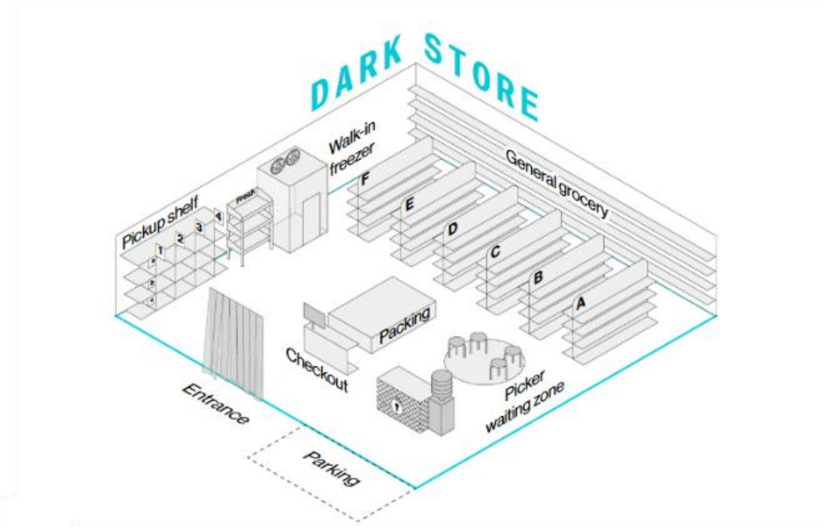


**Figure 1. Typical dark store layout in quick commerce operations**

***Source:*** *Phartiyal et al. (2025)*

As a result of standardized layouts and repetitive workflows, staff are able to memorize product locations and complete order picking in approximately 3 minutes (Badola, 2025). This combination of curated inventory and optimized layout is a critical enabler of Zepto's rapid fulfillment capability and directly supports its ten-minute delivery promise.

*3.2.3. Technology-driven operations and inventory control*

Beyond physical proximity and layout optimization, Zepto's dark store model relies extensively on technology to coordinate inventory flows and sustain high operational velocity. Inventory decisions are supported by AI driven hyperlocal demand forecasting systems that analyze neighborhood level consumption patterns to determine optimal stock levels for individual SKUs, thereby reducing demand uncertainty and improving availability (Badola, 2025; Pocket Team, 2025; Mishra, 2025).

Real time inventory tracking enables continuous monitoring of stock levels across SKUs and supports automated replenishment triggers when predefined thresholds are reached (Badola, 2025). This technology enabled visibility allows replenishment decisions to be executed with minimal manual intervention and ensures timely restocking throughout the day. Multiple daily replenishment cycles further contribute to high inventory turnover and help maintain product freshness in fast moving categories (Mishra, 2025).

In addition to replenishment automation, Zepto's inventory control system facilitates inter store inventory redistribution, allowing excess stock from one dark store to be dynamically reallocated to another experiencing higher localized demand. This capability helps prevent stockouts and excess inventory across the network while enhancing overall operational resilience (Badola, 2025). Collectively, these technology-driven inventory control mechanisms enable Zepto to sustain consistent service levels under extreme time constraints, reinforcing the scalability and reliability of its dark store-based fulfillment strategy.

*3.2.4. Last-mile delivery integration*

The operational model of Zepto’s dark stores reaches its full potential only through seamless integration with the last-mile delivery stage. This integration transforms the dark store from an efficient fulfillment node into a synchronized dispatch hub, ensuring the speed optimized internally is preserved externally. The handoff process is engineered for zero latency: delivery riders are stationed on-site, often visible as a swarm outside the unmarked facilities, allowing for immediate order deployment the moment packing is complete (Phartiyal et al., 2025).

To ensure accuracy at this critical junction, a two-step verification protocol is implemented. Each order is checked first by the picker and then again by the delivery driver, who scans barcodes and confirms item counts before departure (Phartiyal et al., 2025). This embedded quality control minimizes errors before the time-sensitive delivery sprint begins.

The last-mile execution itself is enabled by the hyperlocal network design (Section 3.2.1). The restricted service radius of 2-3 km allows riders to utilize agile two-wheelers, navigating urban alleyways to bypass traffic and achieve drop-off times often under eight minutes (Phartiyal et al., 2025; Medeiros et al., 2022). Furthermore, the operational design incorporates strong performance incentives, as riders are typically compensated per delivery, directly aligning their motivation with the company's speed targets (Mishra, 2025; Pocketful Team, 2025; Badola, 2025).

In conclusion, last-mile delivery is not a separate logistics function but the capstone of the dark store's operational design. It is the essential mechanism that translates internal efficiencies including proximity, rapid picking, and technological control into the realized customer promise of ten minute delivery. This deep operational integration constitutes the definitive source of Zepto's competitive advantage in the quick commerce sector.

*3.2.5. Synthesis: Drivers of operational success*

The performance outcomes presented in Section 3.3 are the logical result of the tightly integrated operational model described above. Zepto's success is driven by a mutually reinforcing system: the hyperlocal network provides the geographical foundation for speed; the inventory and layout strategies provide the operational efficiency; the technology provides the control and scalability; and the last-mile integration ensures that all these internal gains are translated into superior customer experience. None of these elements alone would be sufficient; their combination is the key to Zepto's competitive advantage.

### *3.3. Key outcomes of Zepto's dark store network operations*

Zepto's dark store model internalizes time as the primary competitive variable and reorganizes retail logistics around proximity-based micro-fulfillment rather than scale-based centralization. Therefore, the success of Zepto's dark store network should be understood not merely as rapid growth, but as the operational institutionalization of speed as a structural advantage within urban quick commerce.

The realized effects of Zepto's integrated dark store model can be categorized into three interrelated dimensions: (1) operational efficiency gains reflected in delivery speed and order density; (2) financial sustainability demonstrated by accelerated revenue growth and market share expansion; and (3) strengthened competitive positioning evidenced by sustained customer loyalty.

#### *3.3.1. Effective delivery performance*

Zepto's dense dark store network enables ultra-fast delivery, with an average fulfillment time of around 13 minutes per order (Sriram, 2023). This average delivery time is not merely a performance metric but the cumulative operational outcome of the tightly integrated model described in Section 3.2. The hyperlocal network design minimizes geographic distance; the frequency-based layout reduces picking time to approximately three minutes; AI-driven inventory control ensures product availability; and on-site rider dispatch eliminates idle transition time.

Moreover, this delivery speed results in operational efficiency at the store level. High order density enables each dark store to process about 2,500 orders per day on average, helping keep operating costs below 10% of total company revenue as of April 2023 (Anderson & Balasinorwala, 2025). This cost-to-revenue ratio suggests that speed has been achieved without proportionate cost inflation, demonstrating that Zepto's operational model balances responsiveness with cost discipline.

Collectively, these indicators demonstrate that Zepto's delivery performance is both fast and operationally sustainable, supporting scalable expansion across dense urban markets.

#### *3.3.2. Financial efficiency and market growth*

Zepto's dark store model demonstrates strong financial efficiency, which is demonstrated by an outstanding positive pattern in revenues. At the store level, approximately 70% of dark stores achieve EBITDA positivity after a relatively short operating period (Gupta & Shinde, 2024). This indicates that most stores are able to cover their operating costs and generate earnings fairly quickly as order volumes increase, thanks to improved cost efficiency and lower initial investment compared to earlier expansion phases.

At the corporate level, Zepto revenue rose to $1.3 billion in FY25, up sharply from $500 million in FY24 and more than five times higher than the $230 million recorded in FY23, underscoring the scalability of its network-driven model (Anderson & Balasinorwala, 2025). The fivefold increase in store count within two years underscores the operational reproducibility of the dark store model, suggesting that performance is not dependent on isolated flagship locations but embedded in systemic design.

In terms of market expansion, although Zepto was founded relatively recently in 2021, its scale has grown rapidly over a short period. In 2023, the company operated approximately 200 dark stores across major Indian metropolitan areas (Lambiwala, 2023). By 2025, this number had increased fivefold to around 1,000 dark stores spanning more than 10 key metro cities, including Mumbai, Delhi NCR, and Bengaluru. Alongside this expansion, Zepto employs over 5,600 staff and has articulated plans to further extend its operations into smaller cities (Anderson & Balasinorwala, 2025). By 2025, its estimated market shares in India's quick-commerce sector (valued at roughly USD 7 billion) is approximately 25%, positioning Zepto among the top three industry players (Anderson & Balasinorwala, 2025; Sharma, 2025). This market positioning indicates that the dark store network has translated operational efficiency into competitive advantage within a capital-intensive and highly contested industry environment.

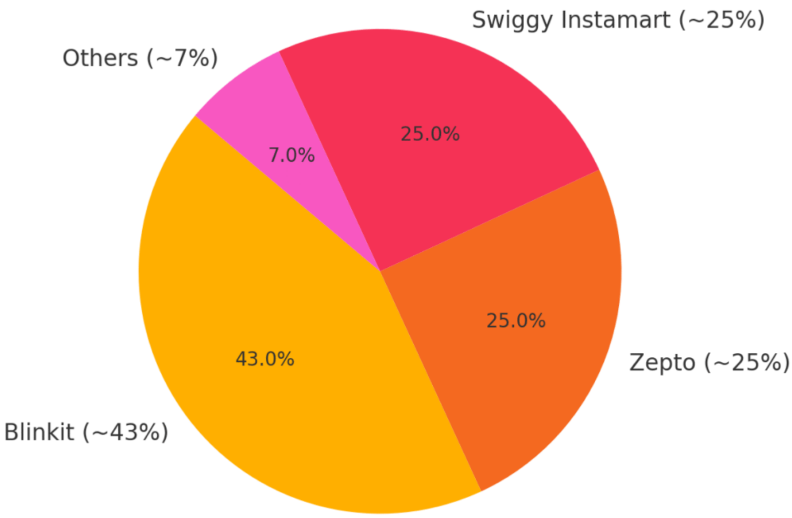


**Figure 2.** Quick commerce market share in India (2025)

***Source:*** *Sharma (2025)*

*3.3.3. Customer experience and brand reputation*

Reliable ultra-fast delivery has significantly enhanced customer satisfaction and brand positioning around the "10-minute delivery" promise. As of August 2025, Zepto served approximately 16 million monthly transacting users and fulfilled roughly 1.5 million daily orders as of June 2025 (Anderson & Balasinorwala, 2025). The scale of active users suggests that ultra-fast delivery has evolved from a novelty-based value proposition into a routine consumption behavior embedded in urban lifestyles.

Zepto's Net Promoter Score (NPS) peaked at around 85 and has remained consistently high, while its week-on-week user retention rate exceeds 50% (Anderson & Balasinorwala, 2025). Sustained high NPS levels indicate service reliability rather than sporadic peak performance. In quick commerce, where switching costs are minimal and price competition is intense, retention above 50% suggests that operational speed and fulfillment accuracy have translated into durable customer loyalty.

From a strategic perspective, these customer-level outcomes reinforce demand predictability, which in turn stabilizes order density at the store level. This creates a reinforcing feedback loop: reliable speed drives repeat usage; repeat usage sustains high order volumes; and high order volumes improve asset utilization and cost efficiency.

## 4. Implications for logistics companies in Vietnam

### *4.1. Urban last-mile delivery in Vietnam: Current landscape and key characteristics*

Defined as the final stage of goods movement from fulfillment facilities to end consumers, urban last-mile delivery has emerged as a critical component of Vietnam's logistics system. In Vietnam, the performance of urban last-mile delivery is shaped by a combination of accelerating e-commerce demand, infrastructure limitations, market fragmentation and increasingly demanding consumer expectations, creating both efficiency challenges and opportunities for innovation in urban logistics and making last-mile delivery a focal point for evaluating emerging fulfillment models such as dark stores (Everbest Logistics, 2025).

#### *4.1.1. Rapid growth of e-commerce and rising last-mile demand*

Vietnam's e-commerce sector achieved 36 billion US dollar gross merchandise value (GMV) in 2024, with major platforms like Shopee and Lazada accounting for 16 billion US dollars, driving explosive last-mile demand concentrated in Ho Chi Minh City, Hanoi, Da Nang, and Can Tho (ITS Global, 2025). High population density and large transaction volumes create scale advantages yet intensify pressure for quick delivery. Dark stores can address this by enabling hyperlocal fulfillment within dense urban catchments, reducing system-wide last-mile strain.

#### *4.1.2. Cost intensity and operational complexity of the last mile*

Last-mile delivery accounts for 40-55% of total logistics costs in Vietnam due to fragmented routes, small order sizes, frequent stops and flexible scheduling, with labor comprising 60-70% of expenses and failed delivery rates of 5-15 percent further exacerbating costs (Everbest Logistics, 2025). Dark stores mitigate these through consolidated neighborhood inventory, shortening routes and improving pick efficiency (Khan, 2025).

*4.1.3. Urban traffic congestion and infrastructure constraints*

Urban last-mile delivery in Vietnam is significantly affected by traffic congestion, limited parking, road capacity and complex inner-city layouts. Although Vietnam has made progress in developing transport infrastructure, uneven road quality and limited logistics-friendly urban planning continue to constrain last-mile performance in major cities, while ad-hoc facilities like dark stores lack integration with transport networks (VLR.vn, 2026).

*4.1.4. Market fragmentation and competitive delivery ecosystem*

The Vietnamese last-mile delivery market is highly fragmented, valued at USD 1.6 billion for e-commerce platforms, led by 3PL providers like GHN, GHTK, Viettel Post with extensive delivery networks across urban areas and large e-commerce platforms such as Shopee, Lazada and Tiki increasingly investing in automated sorting centers and data-driven route optimization (Ken Research, 2025). This competitive environment, though offering faster delivery times, improved tracking and enhanced customer communication, may also lead to fragmentation. As to address this issue, dark stores enable end-to-end control over fulfillment-delivery integration, reducing 3PL dependency (Adsule, 2025).

*4.1.5. Evolving consumer expectations and service standards*

Urban consumers in Vietnam have become increasingly sensitive to delivery speed, reliability and convenience. They demand same-day delivery, real-time tracking, flexible windows, and easy returns, reflecting both global e-commerce trends, advanced system requirements and intensified platform competition (Ken Research, 2025). Dark stores support these through rapid 10-15 minute fulfillment capacity, meeting rising speed expectations seen in India's quick commerce evolution (Badola, 2025).

***4.2. Overview of logistics companies in Vietnam***

Vietnam’s last-mile delivery ecosystem is characterized by a dual structure comprising third-party logistics (3PL) providers and platform-owned fulfillment arms, with 3PL firms currently handling approximately 70% of e-commerce parcels nationwide, reflecting their dominant role in scale-driven parcel distribution (Ken Research, 2025). Leading providers include Giao Hàng Nhanh (GHN, established in 2013), which commands roughly 30% of the urban market through the deployment of AI-based route optimization and same-day delivery services; Giao Hàng Tiết Kiệm (GHTK), recognized for its cost-competitive standard delivery solutions; and Viettel Post, which leverages an extensive infrastructure network of 1,300 post offices and 20,000 riders to enable six-hour inter-city delivery (Vietstock, 2025; Uyen et al., 2023).

Parallel to the 3PL segment, major e-commerce platforms have increasingly invested in proprietary logistics capabilities. Shopee, which records approximately 172 million monthly visits and operates through ShopeeExpress, alongside Lazada Logistics and TikiNOW, has expanded sorting center capacity in response to the rapid growth of Vietnam's quick commerce market, valued at approximately $819 million in 2025 (TMO Group, 2025; Mordor Intelligence, 2025). However, despite these investments, platform-owned fulfillment networks remain less extensive than established 3PL coverage. Emerging actors such as Bach Hoa Xanh Now and GrabExpress are also experimenting with hyperlocal delivery models (Brandsvietnam.com, 2022).

This dual configuration reflects an ongoing transition toward more localized and technology-enabled fulfillment strategies. While 3PL firms contribute extensive operational reach and delivery capacity, platform-based actors continue to expand their proprietary logistics capabilities in response to growing quick commerce demand. Within this context, consolidated, neighborhood-based models such as dark stores may represent a logical extension of current market dynamics, particularly in enabling shorter delivery windows comparable to the 10-15 minute benchmarks observed in quick-commerce systems like Zepto's.

### *4.3. Applicability of the dark store model to Vietnam's context*

Based on section 4.1, Vietnam's urban last mile delivery is shaped by rapid e-commerce growth in major cities, high delivery cost intensity, fragmented delivery networks and increasing consumer expectations for fast and reliable service under constraints of congestion labor intensive operations and limited logistics oriented urban infrastructure. These conditions indicate a clear need for fulfillment models that can shorten delivery distances and improve last mile efficiency.

Compared with India, Vietnam shares key demand side similarities including high urban density, frequent small order volumes and strong demand for same day delivery which underpin the success of quick commerce platforms such as Zepto in Indian metropolitan areas (Khan, 2025; Berrywise, 2025). However important differences emerge in execution maturity.

In India, dark stores are deployed as a strategic component of an integrated quick commerce system supported by advanced demand forecasting, real time inventory visibility and tightly coordinated last mile routing. By FY2025, leading platforms such as Blinkit, Swiggy Instamart, and Zepto collectively operated several thousand dark stores across major metro and Tier-II cities, with individual networks exceeding or approaching 1,000 locations.

These micro-fulfillment centers typically span 600-1,200 square feet, stock approximately 1,200-2,000 high-velocity SKUs, and handle several hundred orders per day, enabled by AI-driven demand forecasting and real-time inventory management systems. Industry estimates further indicate that India's hyperlocal delivery market expanded at an annual rate exceeding 50 percent between FY2021 and FY2025, driven by rising consumer expectations and large-scale investment in technology-enabled fulfillment infrastructure (Adsule, 2025).

This integrated model has enabled consistent sub-15-minute delivery performance across dense urban catchments, while improving inventory turnover and last mile productivity.

In contrast, dark store adoption in Vietnam tends to remain implementation driven rather than systemically integrated, as it operates within an urban last mile environment characterized by infrastructure constraints and market fragmentation, which limit coordination with delivery partners and create challenges for consistent service performance.

Within this context Zepto is selected as the focal case not because of network scale but because it represents a leading pure play quick commerce model in which dark stores constitute the core operational backbone rather than a supplementary channel. Therefore, studying Zepto is relevant not for direct replication but for understanding how dark stores can evolve from ad hoc facilities into strategically integrated micro fulfillment networks adapted to Vietnam's urban logistics constraints.

### *4.4. Strategic lessons & recommendations for logistics companies in Vietnam*

#### *4.4.1. Strategic lessons from Zepto's dark store model*

a. Network design and proximity as primary drivers of last-mile efficiency

A key lesson from Zepto's experience is that last-mile performance is fundamentally shaped by spatial network design rather than solely by delivery speed or labor intensity. Zepto's hyperlocal dark store network significantly reduces delivery distance and time by embedding micro-fulfillment facilities within high-demand urban neighborhoods. This demonstrates that proximity-based fulfillment infrastructure can be more effective than centralized warehousing in dense urban environments.

For Vietnam, where last-mile delivery costs account for a disproportionately high share of total logistics expenses and urban congestion constrains delivery efficiency, the strategic deployment of micro-fulfillment facilities could substantially improve delivery speed and reduce operational costs. However, the optimal density and scale of dark store networks must be calibrated to local demand patterns, real estate costs, and order volumes rather than pursuing aggressive expansion.

b. Integration of technology and operations as a critical success factor

Zepto's operational effectiveness is not derived solely from physical infrastructure but from the tight integration of technology with inventory management, demand forecasting, and delivery coordination. AI-driven demand forecasting, real-time inventory visibility, and automated replenishment systems enable Zepto to sustain high service levels under extreme time constraints.

This highlights a crucial lesson for logistics companies in Vietnam: dark stores cannot function effectively as isolated facilities without advanced digital capabilities. Investments in data analytics, real-time inventory systems, and integrated order management platforms are prerequisites for achieving the operational benefits associated with dark store models.

c. Curated assortment and operational simplicity over breadth of selection

Another strategic insight from Zepto's model is the deliberate limitation of SKU assortments to high-velocity products. By prioritizing operational simplicity and inventory turnover over product variety, Zepto reduces complexity and enhances fulfillment speed.

For Vietnam's logistics and retail sectors, this suggests that dark stores should not attempt to replicate traditional supermarket assortments. Instead, they should focus on high-demand categories aligned with urban consumption patterns, thereby improving inventory efficiency and reducing spoilage risk.

d. Economic viability dependent on order density and urban demand concentration

Zepto's financial performance illustrates that the dark store model is economically viable only under conditions of high order density and concentrated urban demand. Despite operational efficiencies, the model remains capital-intensive and vulnerable to thin margins.

This implies that in Vietnam, dark stores are more suitable for major metropolitan areas such as Hanoi and Ho Chi Minh City, where population density and e-commerce demand can support sufficient order volumes. Expansion into smaller cities should be approached cautiously and supported by hybrid fulfillment models rather than full-scale dark store networks.

*4.4.2. Recommendations for logistics companies in Vietnam*

a. Strengthening digital infrastructure and data-driven capabilities

The effectiveness of dark store networks is fundamentally dependent on digital infrastructure and advanced data analytics. Therefore, logistics companies in Vietnam should prioritize investments in integrated information systems that connect demand forecasting, inventory management, order processing, and last-mile delivery operations.

In particular, firms should enhance predictive analytics capabilities to anticipate demand fluctuations at the micro-geographical level, thereby reducing stockouts and overstocking risks.

Real-time inventory visibility across decentralized facilities is equally critical to ensuring synchronization between supply and demand. Furthermore, integrated order orchestration platforms can improve coordination between dark stores and delivery fleets, enabling dynamic routing and workload optimization.

Without such digital foundations, dark stores may exacerbate operational fragmentation and inefficiency rather than generating the intended improvements in last-mile performance.

b. Organizational transformation and capability development

The implementation of dark store models requires not only technological and infrastructural changes but also organizational transformation. Logistics companies in Vietnam should develop new capabilities in micro-fulfillment operations, data analytics, and cross-functional coordination.

This involves redesigning internal processes to support decentralized decision-making, training personnel to operate data-driven systems, and strengthening collaboration between logistics, IT, and commercial departments. Furthermore, enhanced coordination with delivery partners and gig-economy platforms is essential to maintaining service reliability in Vietnam’s labor-intensive last-mile environment.

c. Selective and data-driven deployment of dark stores

Another key recommendation is the selective deployment of dark stores based on rigorous spatial and demand analysis. Instead of maximizing network size, logistics companies should focus on identifying urban zones where population density, purchasing power, and order frequency justify the economic viability of micro-fulfillment facilities.

In Vietnam, major metropolitan areas such as Hanoi and Ho Chi Minh City represent the most suitable initial markets for dark store implementation. Within these cities, firms should adopt a micro-zoning approach that accounts for traffic conditions, real estate constraints, and consumer behavior patterns. By aligning facility location decisions with empirical data, logistics companies can avoid the pitfalls of overexpansion and ensure that dark stores generate measurable improvements in service performance and cost efficiency.

d. Development of hybrid fulfillment architectures

A primary recommendation is the adoption of hybrid fulfillment architectures that integrate centralized warehouses, traditional retail networks, and micro-fulfillment facilities. Instead of replacing existing logistics structures, dark stores should be embedded within broader distribution systems to complement rather than disrupt traditional supply chains.

Such hybrid models enable logistics companies to exploit the advantages of proximity-based fulfillment in high-density urban areas while retaining the economies of scale offered by centralized warehousing. In the Vietnamese context, where demand intensity varies significantly across urban zones, hybrid architectures provide a flexible mechanism to balance speed, cost efficiency, and scalability. Moreover, this approach allows firms to gradually experiment with dark store deployment without exposing themselves to excessive financial and operational risks.

e. Optimization of inventory strategy and product assortment

Logistics companies in Vietnam should also reconsider traditional inventory strategies when implementing dark store models. Rather than replicating broad retail assortments, dark stores should prioritize high-velocity and high-demand product categories that reflect urban consumption patterns.

This curated assortment strategy not only reduces operational complexity but also enhances inventory turnover and picking efficiency. Additionally, demand-driven assortment planning can minimize spoilage risks, particularly for perishable goods, and improve overall profitability. Over time, logistics companies can refine their assortment strategies through continuous data analysis and customer behavior insights.

f. Phased implementation and risk management

Finally, logistics companies should adopt a phased implementation strategy that allows for continuous learning and risk mitigation. Pilot projects in selected urban zones can serve as testing grounds for evaluating the operational and financial viability of dark store models. Based on performance metrics such as delivery time, cost per order, and customer satisfaction, firms can gradually scale up their networks while adjusting their strategies.

This incremental approach reduces exposure to capital-intensive investments and enables logistics companies to adapt dark store models to Vietnam's evolving urban logistics landscape. Ultimately, the successful adoption of dark stores depends on the alignment of physical infrastructure, digital systems, and organizational capabilities within a coherent long-term strategy.

## 5. Conclusion

This study examined dark stores as a solution to urban last-mile delivery challenges through the case of Zepto and assessed their implications for logistics companies in Vietnam. The findings show that dark stores can significantly improve delivery speed, operational efficiency, and service reliability by reducing delivery distance and integrating technology-driven inventory and fulfillment systems. However, the Zepto case also highlights structural limitations, including high operating costs, thin profit margins, and restricted scalability beyond dense urban areas, indicating that dark stores are not a universally applicable model.

In Vietnam, dark stores have potential to address key last-mile inefficiencies such as congestion, fragmented networks, and rising consumer expectations. Nevertheless, their adoption should be strategic and adaptive rather than replicative, emphasizing hybrid fulfillment models, selective deployment in high-demand urban zones, and strong digital capabilities. The study suggests that the effectiveness of dark stores depends not only on firm-level strategies but also on supportive regulatory frameworks and urban planning.

Overall, dark stores represent a transformative but context-dependent innovation in urban logistics. Their successful integration into Vietnam's logistics ecosystem requires coordinated efforts among businesses and policymakers, as well as further empirical research to evaluate their long-term economic and urban impacts.

## TÀI LIỆU THAM KHẢO


Adsule, S. (2025). *India's hyperlocal delivery boom: How 10-minute commerce is reshaping retail and driving over 50% market growth*. Makreo. Retrieved January 26, 2026, from https://www.makreo.com/blog/india-s-hyperlocal-delivery-revolution-how-10-minute-commerce-is-reshaping-retail-and-driving-50-market-growth

Agarwal, A., & Singh, P. D. (2024). Dark stores case study through resource based view. *SSRN*. https://doi.org/10.2139/ssrn.4953059

Anderson, C., & Balasinorwala, M. (2025). *Zepto business breakdown & founding story*. Contrary Research. Retrieved January 26, 2026, from https://research.contrary.com/company/zepto

Badola, A. (2025). *How Zepto's dark store model disrupted Indian quick commerce. Arthnova*. Retrieved January 16, 2026, from https://arthnova.com/zepto-dark-store-model-disrupted-indian-quick-commerce/

Berrywise. (2025). *India's quick commerce revolution: Speed, strategy, and the battle for urban consumers*. TheFreg. Retrieved January 26, 2026, from https://thefreg.com/indias-quick-commerce-revolution-speed-strategy-and-the-battle-for-urban-consumers/

Bittermann, A., & Hess, D. B. (2024). Illuminating dark stores: The continued evolution of the post COVID 19 pandemic retail landscape of cities. *Town Planning Review, 95*(5). https://doi.org/10.3828/tpr.2024.24

Boysen, N., Fedtke, S., & Schwerdfeger, S. (2021). Last-mile delivery concepts: A survey from an operational research perspective. *OR Spectrum, 43*, 1–58. https://doi.org/10.1007/s00291-020-00607-8

Brandsvietnam.com. (2022). *Quick commerce - Cuộc chiến tiếp theo của Tiki, Shopee, Lazada, Grab*. Retrieved March 1, 2026, from https://www.brandsvietnam.com/22597-quick-commerce-cuoc-chien-tiep-theo-cua-tiki-shopee-lazada-grab-tren-thi-truong-tmdt-viet-nam

Buldeo Rai, H. (2022). Dark stores as post pandemic omnichannel strategy: Implications for urban logistics. In *The Routledge handbook of urban logistics (forthcoming)*. Routledge.

Chen, Y., Sheng, W., & Yi, W. (2025). Balancing efficiency and sustainability in last-mile logistics: A novel multi-truck multi-drone collaborative framework with bi-objective optimization. *Applied Sciences*, *15*, 12619. https://doi.org/10.3390/app152312619

Da Costa, M. B. (2022). On the use of dark stores in omnichannel last-mile distribution.

Everbest Logistics. (2025). *Optimizing last-mile delivery in Vietnam: Strategies for speed and cost efficiency*. Retrieved January 28, 2026, from https://everbest.com.vn/optimizing-last-mile-delivery-in-vietnam-strategies-for-speed-and-cost-efficiency

Financial Times. (2026). *India tells delivery companies to stop promising 10-minute service*. Retrieved January 26, 2026, from https://www.ft.com/content/8ac7c6e9-ce7d-4d6c-b186-e832935e7c49

Friedman, A. (2023). Digital economy and place making. In *The sustainable digital city* (pp. 159-168). Springer. https://doi.org/10.1007/978-3-031-25488-8_10

Ghosh, P., & Bhatia, A. (2022). Impact of COVID-19 on adoption of quick commerce. In *Futuristic trends in management* (IIP Proceedings, Vol. 2, Book 5, Part 4, Chapter 2). IIP Proceedings.

Gupta, A., & Shinde, S. (2024). *Dark stores turning profitable rapidly, says Zepto CEO Aadit Palicha*. Business Standard. Retrieved January 26, 2026, from https://www.business-standard.com/companies/interviews/dark-stores-turning-profitable-rapidly-says-zepto-ceo-aadit-palicha-124112400552_1.html

IIDE. (n.d.). *Zepto business model: How Zepto makes money*. IIDE. Retrieved January 28, 2026, from https://iide.co/blog/zepto-business-model/

ITS Global. (2025). *Vietnam e-commerce last-mile delivery platforms market report*. Research and Markets. Retrieved January 29, 2026, from https://www.researchandmarkets.com/reports/6210927/vietnam-e-commerce-last-mile-delivery-platforms

Kelly, L. (2024). Supermarket 'dark jobs' and rapid grocery delivery: Transformations in labour, technology and logistics. *New Media & Society*, *26*(3), 1227-1248. https://doi.org/10.1177/14614448231201641

Ken Research. (2025). *Vietnam e-commerce last-mile delivery platforms market*. Retrieved January 28, 2026, from https://www.kenresearch.com/vietnam-e-commerce-last-mile-delivery-platforms-market

Khan, S. (2025). *10-minute delivery boom fuels hyperlocal warehousing surge in urban and tier-2 India*. The Economic Times. Retrieved January 26, 2026, from https://economictimes.indiatimes.com/industry/services/property-/-cstruction/10-minute-delivery-boom-fuels-hyperlocal-warehousing-surge-in-urban-and-tier-2-india/articleshow/121753683.cms

Khare, A. S. (2022). Dark store: A fresh mushrooming concept of delivery at doorstep. *Multi Disciplinary Journal*, *1*(2), 1-12. https://doi.org/10.4337/9781800373594

Klein, P., & Popp, B. (2022). Last-mile delivery methods in e-commerce: Does perceived sustainability matter for consumer acceptance and usage? *Sustainability*, *14*(24), 16437. https://doi.org/10.3390/su142416437

Lambiwala, S. (2023). From startup to unicorn: A look back at Zepto's journey. ETRetail (Economic Times). Retrieved January 20, 2026, from https://retail.economictimes.indiatimes.com/news/e-commerce/e-tailing/from-startup-to-unicorn-a-look-back-at-zeptos-journey/103123801

Mantecchini, L., Nanni Costa, F. P., & Rizzello, V. (2025). Last-mile urban freight distribution: A modelling framework to estimate e-cargo bike freight attraction demand share. Future Transportation, 5(1), 31. https://doi.org/10.3390/futuretransp5010031

MarkHub24. (2024). *Zepto quick commerce: Transformation and IPO journey*. MarkHub24. Retrieved January 28, 2026, from https://www.markhub24.com/post/zepto-quick-commerce-transformation-and-ipo-journey

Medeiros, A. G., Cavalcane, D. L. F., Lima, L. M., & Silva, U. J. (2022). Dark store: The implementation of the operational model as a method for last mile optimization. In *Proceedings of the XIII FATECLOG Conference: The impacts of new post pandemic demands on organizational logistics systems*. FATEC Maua, Brazil.

Mishra, A. (2025). *Zepto's 10-minute delivery model explained: Strategy, revenue & growth. Synarion Solutions*. Retrieved January 16, 2026, from https://blog.synarionit.com/zepto-business-model-explained/

Mordor Intelligence. (2025). *Vietnam quick commerce market size, share, 2025-2030*. Retrieved March 1, 2026, from https://www.mordorintelligence.com/industry-reports/vietnam-quick-commerce-market

Phartiyal, S., Simon, A. G., Sanjay, S., & Purnell, N. (2025). *World's fastest deliveries ignite an investment frenzy in India*. Bloomberg. Retrieved January 21, 2026, from https://www.bloomberg.com/features/2025-India-instant-shopping/

Pocketful Team. (2025). *Zepto case study: Business model, SWOT analysis, marketing strategy, and future growth*. Pocketful.in. Retrieved January 16, 2026, from https://www.pocketful.in/blog/zepto-case-study/

Rao, V. V. (2025). Micro Fulfillment And Dark Stores: Revolutionizing Supply Chain Agility In Urban Retail. *International Journal of Environmental Sciences*, *11*(16s), 443-449. https://doi.org/10.64252/cr0qy213

Sainsbury Archive. (n.d.). *Home delivery by Sainsbury's*. Sainsbury Archive. Retrieved January 15, 2026, from https://www.sainsburyarchive.org.uk/story/stories/home-delivery

Schorung, M. (2024). Quick commerce and the evolving business models of the food retail industry: Investigating the quick commerce supply chain and the urban impacts of dark stores. *Transportation Research Procedia*, *79*, 305-312. https://doi.org/10.1016/j.trpro.2024.03.041

Shakyawar, M., & Shakya, K. (2024). Optimizing last mile delivery: A case study analysis of the dark store model. *International Journal for Research in Applied Science and Engineering Technology*, *12*(3), 1715-1718. https://doi.org/10.22214/ijraset.2024.59167

Shapiro, A. (2022). Platform urbanism in a pandemic: Dark stores, ghost kitchens, and the logistical urban frontier. *Journal of Consumer Culture*, *23*, 168-187. https://doi.org/10.1177/14695405211069983

Sharma, D. D. (2025). *Quick commerce in India 2025*. WebVerbal. Retrieved January 21, 2026, from https://www.webverbal.com/quick-commerce-in-india-2025/

Sriram, M. (2023). Grocery startup Zepto becomes India's first 2023 unicorn with $200 million fresh funding. Yahoo Finance. Retrieved January 20, 2026, from https://sg.finance.yahoo.com/news/grocery-startup-zepto-becomes-indias-083314039.html

The Brainy Insights. (2023). Dark store market to grow at CAGR of 37.80% through 2032: Business model, e commerce marketplaces, top players, expansion challenge and forecast [Press release]. GlobeNewswire. Retrieved January 14, 2026. https://www.globenewswire.com/news-release/2023/03/02/2619212/0/en/Dark-Store-Market-to-Grow-at-CAGR-of-37-80-through-2032-Business-Model-E-commerce-Marketplaces-Top-Players-Expansion-Challenge-Forecast-by-The-Brainy-Insights.html

TMO Group. (2025). *9 marketplaces in Vietnam for businesses selling online*. Retrieved March 1, 2026, from https://www.tmogroup.asia/insights/vietnams-top-b2c-ecommerce-marketplaces/

Uyen, B. T., D'agostini, E., Quan, T. M., & Tuong, V. H. (2023). Evaluating the Selection Factors for Vietnamese Last-Mile Delivery Service Providers using Best Worst Method. *International Journal of Supply Chain Management, 12*(2), 23-32. https://doi.org/10.59160/ijscm.v12i2.6166

Vietstock. (2025). *VTP báo cáo cập nhật kết quả kinh doanh 2025 [PDF]*. https://static1.vietstock.vn/edocs/18784/VTP_BAO_CAO_CAP_NHAT_KQKD_2025_d448ecf4f5.pdf

VLR.vn. (2026). *Urban logistics and the last-mile challenge: How can cities deliver faster, cheaper, and greener?* Retrieved January 28, 2026, from https://vlr.vn/urban-logistics-and-the-last-mile-challenge-how-can-cities-deliver-faster-cheaper-and-greener-26311.html

Wang, Y., Zhang, D., Liu, Q., Shen, F., & Lee, L. H. (2016). Towards enhancing the last-mile delivery: An effective crowd-tasking model with scalable solutions. *Transportation Research Part E: Logistics and Transportation Review, 93*, 279–293. https://doi.org/10.1016/j.tre.2016.06.002

World Economic Forum. (2020). *The future of the last-mile ecosystem*. World Economic Forum.

Zepto (n.d.). Zepto company profile. LinkedIn. Retrieved January 18, 2026, from https://in.linkedin.com/company/zeptonow