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► **To cite this version:**

Matthieu Schorung. Quick commerce: will the disruption of the food retail industry happen? Investigating the quick commerce supply chain and the impacts of dark stores. Université Gustave Eiffel. 2023. halshs-04098596

HAL Id: halshs-04098596

<https://shs.hal.science/halshs-04098596>

Submitted on 16 May 2023

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Logistics City Chair - University Gustave Eiffel (France)

Research report

Quick commerce: will the disruption of the food retail industry happen? Investigating the quick commerce supply chain and the impacts of dark stores.

Matthieu Schorung

(PhD., Postdoctoral fellow, Logistics City Chair SPLOTT Laboratory)

Contact: matthieu.schorung@gmail.com ; matthieu.schorung@univ-eiffel.fr

1. Introduction: the rise of quick commerce – thoughts on transformation in the food delivery sector and in consumer expectations

The Covid-19 pandemic and the restrictive measures associated with it accelerated pre-existing trends towards a partial transition from traditional shopping to online shopping, as well as the emergence of new e-consumption practices, particularly in markets where online offerings are the most developed (Delberghe et al., 2022). Nevertheless, according to data from e-Marketer for the year 2022, several emerging countries have now embarked on an accelerated catch-up phase, with year-on-year growth levels exceeding 15% (India, Indonesia, Brazil, Argentina, Mexico, etc.).

After more than a decade of e-commerce development, e-commerce pure players and e-marketplaces have experienced spectacular growth, leading to the spread of new methods of organization and new delivery practices, especially for consumers. In addition, conventional physical stores have also changed their practices – a trend greatly amplified by the pandemic – towards greater diversity in sales methods and sales channels and more multi-channeling (combination of an online presence and physical stores in which online purchases and offline purchases are processed separately) or even omnichannel trading (integration of online and offline sales channels within the same process, notably with the possibility of buying online and collecting purchases in-store or ordering items in-store and receiving them at home).

This gradual digitization also applies to the sale of food products (food e-commerce), which increased sharply during the pandemic (46% growth in online sales of food products in 2020, 16% in 2021), accounting for worldwide sales of 197.2 billion dollars according to data from Maximize Markets Research. The annual study published in mid-2022 by Kantar Winning Omnichannel indicates that online sales accounted for 7.2% of global food sales at the end of 2021, compared with 4.8% in 2019. Worldwide, therefore, nearly 40% of consumers made online purchases in 2021, compared with 31.6% in 2019. The transition to food e-commerce has been made possible by the implementation of new technologies (smartphones and smartphone apps have facilitated the development of m-commerce (Cullinane, 2009)), by the arrival of new players who have brought greater complexity and dynamism to the sector, and by the development of new logistics capacities (micro-hubs, small urban warehouses, dark kitchens, dark stores, etc.) (Dannenberg et al., 2010). The development of dedicated B2C platforms has also been facilitated by the use of a flexible workforce made up of often insecure self-employed workers (“uberized deliverers”, “gig workers” (Buldeo Rai, 2019; Dablanc et al., 2017 Krier et al., 2022)).

Nevertheless, this transition still differs greatly from one country to another: online food purchases account for 9.5% of total food sales in the United States, a proportion that is likely to exceed 20% in 2025-2026 according to data from Mercatus/Incisiv. In France, the rate was 8.3% in 2021. According to forecasts by the consulting firm McKinsey, the European online food market should pass the 20% mark by 2030 (Delberghe et al., 2022). As for the proportion of consumers who have used online sites to buy food, the rate in 2021 was 35.2% in Western Europe, compared with 88% in mainland China according to data from Kantar Winning Omnichannel.

The retail sector has therefore had to adapt to this new internet economy, in particular by adopting omnichannel strategies. Omnichannel has driven the development of a multitude of economic models (Gee et al., 2020): adaptation of existing practices (delivery of prepared meals, short supply chains, direct sales from production points) or emergence of new practices (meal kits, fresh produce delivery). Logistics organization has also evolved: 1) the adaptation of physical supermarkets with dedicated order collection points inside the store (counters or shelves) (Colla, Lapoule, 2015) or dedicated on-site “click-and-collect” or “pick-up” points (Wollenburg et al., 2018); 2) the establishment of dedicated home delivery services by traditional mass distribution chains or by new entrants specializing exclusively in e-commerce (Martin et al., 2019; Seidel, 2021).

Food e-commerce is a diverse sector that can currently be divided into five branches (El Hassani, 2021): 1) aggregators (platforms that combine several services on a single instrument and connect consumers with food establishments and secondarily with supermarkets) (UberEats, Deliveroo); 2) meal-kit providers (Hello Fresh, Jow); 3) pure players in online food delivery (Greenweez, Epicery, La Belle Vie); 4) store picking, click-and-collect and delivery services for large retail chains (in France: Monoprix, Carrefour; in the United States: Walmart, Whole food Market); 5) quick commerce (Getir, Flink, Gopuff). A new collaborative delivery branch has been in development since 2021 along the lines of Amazon Flex in the United States, which allows individual deliverers to deliver Amazon orders. In this case, private individuals who provide delivery services are linked with a network of partner stores via a platform (Everli, Shopopop).

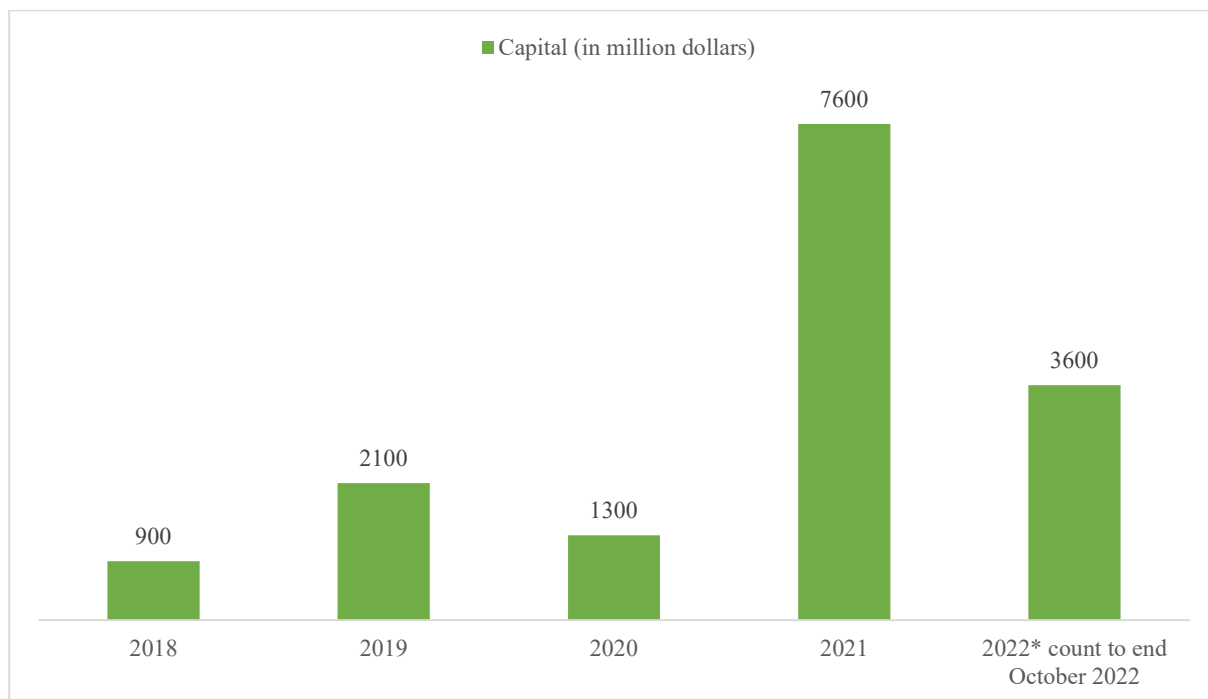
In this food e-commerce sector, in particular online shopping, which experienced strong growth in 2020 and 2021, the year 2022 was both a period of consolidation and a time of slower business growth reflecting difficult global economic conditions. Among multiple news events, the dazzling rise of quick commerce has been one of the most striking developments. This sector marks a further step in the emergence of “instant delivery” (Dablanc et al., 2017) which now extends to the entire food and online shopping market. Dablanc et al. (2017) define instant delivery as a digital platform service that delivers within two hours of an order being placed.

In the same-day delivery segment for food products in Paris, quick retailers are dominant with a market share of 49% compared with 27% for food delivery pure players and 24% for large retailers, according to a survey conducted by Fox Intelligence by NielsenIQ. Across all home food delivery services in Paris, quick commerce increased its market share to 21% in the first quarter of 2022, compared with 17% in the fourth quarter of 2021. Nevertheless, for France as a whole, quick commerce remains a marginal business: 2% channel usage rate per household according to the Kantar Winning Omnichannel study (2022). Quick commerce still has a very low penetration rate: 1.5% of French households, 3% in the Île-de-France region, but 11.5% of Parisian households. It is therefore a growing niche, essentially confined to large urban markets (Schorung et al., 2022). Quick commerce can be defined as follows: “Q-commerce (quick commerce, q-com) is a type of online shopping in which goods are delivered quickly, usually in less than 30 minutes. Fulfillment takes place either via a network of small warehouses or via stores, which may be “dark stores”, and delivery is with micro-mobility bicycles or motorbikes within a small radius of the picking location.”(Roland Berger, 2022, p.4)

Quick commerce companies organize their logistics operations using teams of deliverers and order pickers (either company employees under regular contract or self-employed workers) and a fine network of small urban warehouses located in the heart of centers of population, often in former retail stores, now widely referred to around the world as “dark stores”. The quick commerce sector underwent exceptional growth in 2020 and 2021 with the influx of multiple start-ups alongside a few older pioneering firms (Gopuff (United States) in 2013, Getir (Turkey) in 2015). The consulting firm McKinsey observed that fifteen leading quick commerce companies opened more than 800 dark stores in Europe in 2020 and 2021 (Delberghe et al., 2022). At the end of 2022, France had 220 dark stores (more than a third of them in Paris) after around forty openings in the first half of the year and only four in the second half (Knight Frank, 2023).

This expansion relies on very high capital inputs, in particular venture capital. In just two years, the quick commerce industry raised over \$8.9 billion in capital, \$7.6 billion in 2021 alone. Nonetheless, the favorable winds behind quick commerce turned during 2022, with a sharp reduction in capital invested in the sector, market doubts about the sector’s viability, an accumulation of financial losses in all companies in the sector; and increased resistance from municipalities to dark stores. The financial press has often stressed the unsustainability of quick commerce’s business model and the general press has often reported on opposition by municipalities and people living near dark stores to the disruption, noise and pollution they cause (Hu, 2021).

Figure 1. Capital invested (by venture capital) in quick commerce from 2018 to 2022 (source: Pitchbook Data, 2023; produced by Matthieu Schorung, 2023)



The quick commerce sector has also entered a phase of consolidation marked by bankruptcies (Kol, Dija, Fridge No More, Buyk, Yango Deli), takeovers (e.g. Gorillas by Getir) and internal restructurings entailing mass layoffs (Gopuff: 3% payroll reduction; Getir: layoff of nearly 4500 employees) (Aizicovici, 2022; Bird, 2022; Davalos, Levingston, 2022). This sharp consolidation mirrors the high level of fundraising that enabled the sector to develop through “*blitzscaling*”, a strategy that consists in sinking massive amounts of capital over a short period in order to grow the company as quickly as possible and crush the competition in a “cash-burning elimination race” (Kuratko et al., 2020). Flink’s mass scale marketing campaigns in Paris are one example of this (Delvallée, 2022a). Fundraising enables these companies to invest but also to build up cash reserves: Gorillas raised \$1 billion in October 2021, Flink \$750 million in December 2021, Getir \$800 million in March 2022 (Aizicovici, 2022). They can also use these reserves to cover their losses. Flink presented its 2022 financial results to the Financial Times with a balance sheet still in the red despite revenues of 436 million dollars, with only 20% of its hubs making a profit (El Hassani, 2023). Getir’s 2022 financial results also revealed losses of 553 million dollars on revenues of 438 million dollars (Van Rompaey, 2022). Many economics and retail experts predict several new capital raising campaigns in 2023, while companies that survived the 2022 consolidation (Flink and Getir in particular) promise to show a profit at the end of 2023 or in the course of 2024. The crisis in quick commerce caused by endogenous factors as well as factors linked to economic conditions (inflation, energy crisis, slowdown in economic growth) has also affected the entire food shopping and meal delivery sector – at the end of 2022, the delivery platform DoorDash announced the loss of 1250 jobs in the United States (Delvallée, 2022b).

The objective of this research is to analyze the fundamentals of quick commerce’s business model, by putting the developments of the quick commerce sector since 2019 into perspective. In addition, the research aims to analyze the specificities of quick commerce in terms of transportation services and logistics organization. Finally, the third goal is to obtain an objective picture of the problems generated by quick commerce, particularly with respect to the urban location of dark stores, noise pollution, and the impact of delivery services on congestion in public space and on roads. Reflecting the concerns of many municipalities, the research will discuss the new requirements placed on the sector by local authorities and the operational responses proposed by quick commerce operators. In order to bring a

better understanding of what is a global phenomenon, the approach is deliberately international, focusing on three world cities (Paris (France), London (United Kingdom), New York (United States)). This research also adopts a multidisciplinary approach, analyzing business models, the processes of commercial and logistics organization, and the contribution of urban geography (spatial distribution of warehouses, proximity to commercial entities, empty commercial premises, etc.).

In the second section, we re-situate quick commerce within the literature on food e-commerce, other models of home food delivery, and their economic and spatial implications. The methodology is presented in the third section, explaining the choice of the three case studies and detailing our approach through semi-structured interviews, an analysis of the specialist press, a number of field observations, and a mapping analysis. The fourth section presents our findings about the characteristics of the quick commerce model, changes in the structure of the sector, as well as our findings on quick commerce in London, New York and Paris in terms of logistics organization, the importance of consultation, and the spatial impacts of dark stores in their urban environment. The last section discusses the implications in terms of the regulation of urban logistics through public policies and the planning of urban space. Research on quick commerce is still new, in circumstances of commercial and operational consolidation and uncertainty as to the financial viability of companies in the sector. Nevertheless, it appears to us to be of scientific and public interest to discuss the characteristics and challenges of this new branch of food e-commerce. It is likely that quick commerce will, within a few years, find a place in the landscape of food distribution and home grocery shopping in several mature markets – in the same way as has happened in several large Chinese cities where quick commerce has been around for five or six years. Moreover, the latest forecasts tend to confirm this trajectory towards the establishment of a dynamic but limited commercial niche for quick commerce: the consulting firm Roland Berger estimates that by 2030 quick commerce could account for 2% of the global food shopping market and 15% of online orders, equivalent to spending of 13 billion euros (combined spending for France, Germany and the United Kingdom) (Roland Berger, 2022).

2. Literature review of food e-commerce: the different operational models

Multiple business models have developed in the food e-commerce sector, generally with a focus either on the collection of online orders in stores and at pick-up points, or on home deliveries. Online order collection (click-and-collect) either happens directly from in-store collection points, or at dedicated pickup points (drive-in points often located in periurban areas), or at separate collection points (walk-in collection) for customer pickup (Seidel, 2019, 2021). Supermarket chains are also rolling out innovations such as automated walk-in collection points that reduce labor requirements (Buldeo Rai et al., 2019) although transportation costs remain a significant item. In addition, renting space in downtown areas can increase costs. Most food retailers use quite dissimilar systems for warehousing, order picking, and last-mile delivery management. These differences in organization are attributable to logistics factors (products, customer, and retailer specificities) but also to spatial and socio-demographic aspects (Rao et al., 2009; Wollenburg et al., 2018). Food retailers have adopted omnichannel strategies, first by taking and fulfilling online orders in physical stores (Hays et al., 2005), then by employing separate logistics processes as volumes increase (Wollenburg et al., 2018). The development of omnichannel methods in food e-commerce varies greatly according to market characteristics and regional specificities (population density, economic characteristics of households, etc.) (Colla, Lapoule, 2012; Hübner et al., 2016).

In the last-mile segment, the proliferation of shipping locations (with stores rather than warehouses primarily serving as distribution centers) makes it possible to guarantee customers faster delivery times. However, gains on transportation costs are not completely guaranteed: shipping locations can be

supplied using larger trucks and more consolidated management, but the proliferation of shipping sites can also reduce options for consolidating transportation capacities and therefore limit economies of scale. Beyond transportation, inventory management costs are also negatively affected (multiple picking locations, lower picking volume at each site). To limit costs, some retailers favor collection rather than delivery of online orders (which does not remove the need for investment in pickup locations) (Colla, Lapoule, 2012; Punakivi et al., 2002; Vyt et al., 2016), whereas others focus on optimizing delivery management (for example, better filling of vehicles to limit rounds). However, transportation costs, inventory management, and the efficiency of the last-mile segment (delivery speed, frequency of rounds) depend on the location of fulfillment centers, delivery centers (omnichannel or dedicated e-commerce), and physical stores (Kotzab, Madlberger, 2001; Grant et al., 2014; Hübner et al., 2016). Integrating the different channels into a single unified logistics system is seen as a major objective for retailers (Brynjolfsson et al., 2013; Fisher, 2013; Verhoef et al., 2015). The development of omnichannel services requires adaptations in logistics operations and the construction of processes specific to omnichannel commerce (Ishfaq et al., 2016), but the scientific literature has mainly focused on trends in demand rather than the analysis of logistics and distribution networks (Kembro et al., 2018).

All other things being equal, the quick commerce sector stands at the intersection of these different factors (optimization of delivery rounds and inventory, networking of small urban warehouses which serve as distribution micro-hubs, integration of logistics operations through partnerships with supermarket chains, pooling of logistics hubs and delivery vehicle fleets, etc.).

Home delivery is now the most common practice for online groceries in most major cities (Buldeo Rai et al., 2019; Buldeo Rai et al., 2023; Seidel, 2021; Wollenburg et al., 2018), either by conventional retail chains that offer delivery services (in-house or outsourced to a third-party operator), or by delivery platforms, or through partnerships between delivery platforms and supermarket chains (Seidel, 2021). Logistics organizations are adapting to the increase in delivery volumes and to these new models of online grocery delivery (delivery preparation in dedicated warehouses, order preparation in physical stores, separate or shared warehouses, combination of large distribution hubs and urban warehouses, development of micro-hubs). Alongside the home delivery sector, two other important segments have displayed strong development: recipe boxes or meal kits (O'Shaughnessy, 2021; Wagner et al., 2021) and prepared meals (Allen et al., 2021), including those from 'delivery-only' restaurants (called 'cloud kitchens', 'ghost kitchens', 'dark kitchens') (John, 2021). The ever-growing presence of food e-commerce in all its forms and with its different economic and logistics models therefore demands academic research in order to understand the development of these different models, to identify or measure the impacts (environmental, urban, commercial) of these different activities on the city, and to incorporate them into thinking about urban planning practices (Chiffolleau et al., 2018; John, 2021; Seidel, 2021).

The rise of omnichannel and online retail is having an impact on stores, either by redefining their functions and operations, or by encouraging the emergence of new formats (Alexander, Blazquez, 2019; Alexander, Cano, 2020; Gauri et al., 2021; Hagberg et al., 2017; Hübner et al., 2022). Click-and-collect development strategies reduce a retailer's costs and reinforce its presence in the digital economy (Gauri et al., 2021). Online orders are then either fulfilled from the store or fulfilled from a warehouse (dedicated to online business or pooled for the different channels) and sent to the store (Hübner et al., 2022). In the case of home delivery, the store is used as a fulfillment hub to manage both offline and online purchases (Gauri et al., 2021). Given the spatial coverage of food chains and large non-food chains, the "ship-from-store" approach has considerably boosted the transition from fast delivery to instant delivery (Dablanc et al., 2017). This prompted Gauri et al. (2021) to coin a new term – "warestore" – for cases where part of a physical store is dedicated to the fulfillment of online orders. Unlike "warestores", the dark stores of quick commerce are exclusively dedicated to online orders, requiring adjustments in the whole logistical configuration. Quick commerce therefore appears to be a format that combines two e-commerce developments: on the one hand the promise of under 30-minute

deliveries, on the other the conversion of small commercial units into logistics micro-hubs entirely dedicated to online shopping. Buldeo Rai (2022) describes quick commerce for supplementary food products as “a post-pandemic strategy for retail “as well as a pioneering experiment that could pave the way for other retail sectors (pharmaceuticals for example).

Quick commerce relies on two operational models (based on the interviews): 1) the “pure player” model where a company owns a network of warehouses called dark stores where products are stored and orders prepared and then delivered by couriers; 2) the “3-player” model (partnership between a sharing platform such as UberEats and a quick commerce pure player) where a quick commerce company owns a network of dark stores that prepare orders placed by the marketplace (UberEats by example) and deliveries are made by couriers (gig workers) with service contracts. Another model is in its infancy which links a customer and a marketplace (Everli for example) and where a “personal shopper” then collects the orders in one or more selected places. Finally, there is a last type of collaboration, in this case between a retailer and an e-commerce pure player. In France, for example, Monoprix and Amazon have reached a partnership in five cities, including Greater Paris (Deneux, 2021)), which makes it possible for online Monoprix orders to be delivered in less than 2 hours.

Figure 2. Quick commerce business models (production: M. Schorung, 2023)

Features	Pure Player (Flink, Getir, Gopuff)	3 players (Carrefour Sprint, Monoprix)	Personal shopping (Everli)
Mobile app used by the customer to place the order	Mobile app specific to the pure player	Marketplace app (UberEats)	Aggregator (nodal application of pure player)
Storage and order preparation place (food and consumer products)	Dark stores	Dark stores	Physical stores (chosen by the customer)
Order picking service provider	Order pickers (mostly regular employment contracts)	Order pickers (mostly regular employment contracts)	Personal Shopper (gig worker who does the shopping requested by the customer on behalf of the aggregator)
Last-mile logistics service provider (from the place of order preparation to the customer)	Quick commercer or marketplace (couriers on regular contracts or gig workers)	Quick commercer or marketplace (couriers on regular contracts or gig workers)	Personal Shopper (gig worker)

In order to compete with quick commerce players and position themselves in the ultra-fast delivery segment, traditional mass retail firms are rolling out new business models that could be described as “2-player” models. This model is based on agreements between a large food retail chain (which provides its supermarkets as storage and order picking locations and which manages the order picking service) and a marketplace (which provides the transportation service from the store to the end customer on the “ship-from-store” principle). In France in 2022, there are two main partnerships of this kind: Carrefour and UberEats, Monoprix (Monop’Hop) and Deliveroo (Deliveroo Hop). The characteristics of the business model and the logistical and operational organization of quick commerce will be analyzed in the sections that follow.

3. Methodology

This research focuses on the quick commerce sector *stricto sensu* – i.e. excluding the new partnerships mentioned at the end of the previous section – from an international perspective, in order to understand the emergence of quick commerce as a global phenomenon. It draws on case studies from Paris, New York and London.

Quick commerce is a relatively recent sector that is primarily confined to big cities (Fischer, 2022). The 6t research agency (2022) conducted a study on food e-commerce in Paris, London and Geneva. 69% of respondents who use these services have meals delivered in less than thirty minutes and 56% have groceries delivered in less than an hour (64% in Paris, 50% in London, and 34% in Geneva) (6t, 2022).¹ Most of the dark store operations are in the biggest cities (Paris, London, New York, Los Angeles, etc.): France has around 145 dark stores, more than 90 of them in Greater Paris alone (Desclos, 2022). According to projections by Interact Analysis (2022), there are likely to be 45,000 dark stores worldwide by 2030, the majority of them outside Europe and North America. In 2022, Interact Analysis identified over 6,000 active dark stores – fewer than 1,000 in Europe and North America. Quick commerce is therefore a global phenomenon, present in both developed and emerging countries. Food e-commerce in general, including quick commerce, is now a well-established business. The quick commerce market in Europe is estimated to have been worth \$25 billion in 2021 and is expected to reach \$72 billion by 2025, according to Knowledge Ridge. In France, the market is still relatively small compared with Germany and the United Kingdom, but growing rapidly. According to NielsenIQ, the market would have reached 300 million in 2022 (Desclos, 2022) and should rise to five billion by 2030 (Roland Berger, 2022). By comparison, the market in the United Kingdom reached the \$2.9 billion mark in 2022 according to PWC Analysis (Alland, Curtis, 2022). In the United States, according to Grocery Dive (2021), the quick commerce market passed the \$20 billion mark at the end of 2021 and should have grown to \$38 billion by 2027. The economic outlook for quick commerce makes research on this subject all the more necessary, as the scientific literature (Schorung et al., 2022) or the work of urban planning agencies (APUR, 2022) are still in their infancy or incorporated into analyses on food e-commerce (Seidel, 2021).

We employed a multiple methodology based on interviews with sector experts and professionals, a review of the specialist press, field observations of several sites in Paris and New York, and cartographic analysis. First, we carried out a review of the specialist press on quick commerce in 2022 (January–December 2022) using two databases, Factiva and Europresse. Then, we conducted five semi-structured interviews from April to January 2023, with: a journalist from the French consumer magazine LSA (April 2022); marketing interns at Flink (June and September 2022); an employee in post as an expansion associate at Getir (July 2022); a Gopuff store manager in New York (January, 2023). Thirdly, we ran two observation and counting sessions at three dark stores in Paris (Getir in the 11th arrondissement, Gorillas in the 1st arrondissement, Flink in the 2nd arrondissement). The first was done in February 2022 and the second in June 2022. We also carried out field observations near several dark stores in New York (Manhattan) during two pieces of fieldwork dedicated to urban logistics in New York in February 2022 and January 2023. The observations and counts were used to report and quantify, albeit approximately at a given time, the transportation activity linked with dark stores (number of vehicles and movements, number of parked vehicles, movements linked to supply, type of vehicles, etc.). Field observations, from which photographs will be shown in the next section, can also be used to obtain objective data on a number of street use and sharing conflicts, as well as on the issue of negative impacts at the micro-local scale. Recently, we also undertook a mapping exercise to study and represent the spatial impacts of dark stores in Paris, New York and London. We chose these three case studies because they share similar socio-economic characteristics, they are high spots for innovation in urban

¹ On the other hand, there were no quick commerce services in Geneva in 2022 (6t, 2022).

logistics and food e-commerce, and because they are particularly well endowed with food e-commerce services and in particular quick commerce. The aim is to provide objective elements for the political debate on quick commerce and the regulation of dark stores and to contribute to critical reflection on the purported negative impacts of quick commerce (impact on food retail for example). The findings from this multifaceted approach are presented in the next section, divided into three themes: business model, transportation, and spatial impacts.

4. Findings

4.1. A sector linked to technological developments and in particular to m-commerce

The development of the ultra-fast delivery industry has been driven by both consumer products and technological change. The origins of this sector can be traced back to the *dabbawallas* in 19th-century India (particularly in Mumbai) whose job was to deliver meals to day workers (India Times, 2018). This type of service arrived in the US in the 1960s for ultra-fast pizza delivery (Pizza Hut founded in 1958, Domino's Pizza in 1960), then from the 1980s and 1990s in Europe and South-East Asia, where most homes became equipped with landline telephones. The arrival of the Internet accelerated its development, especially in Europe and North America with the emergence of the first digital order taking platforms (Just Eat, Delivery Hero, AlloResto). Some chains invested in their own delivery services (hiring delivery workers and buying motor scooters) (Papa Johns, Domino's Pizza, Pizza Hut).

Starting in the 2010s, when smartphone ownership became widespread, the model of ultra-fast delivery underwent a shift. This change arose primarily from the emergence of companies specializing in customer delivery, with the creation of mobile app markets and the use of casual labor (self-employed delivery workers). It began in China in 2010. The Meituan company began to specialize in grouped online sales, followed by ultra-fast meal and then grocery deliveries, using a fleet of self-employed couriers. Even before the pandemic, Meituan was used by 700 million Chinese consumers and generated an average of 75 million orders per day (Kr Asia, 2019). At the beginning of the 2010s, more than ten companies in Europe and North America were operating in the ultra-fast delivery segment (Gopuff, GrubHub, DoorDash, PostMates, Uber Eats, Deliveroo, Just Eat, Delivery Hero, Glovo, Foodora, Take Eat Easy), some of which disappeared after a period of consolidation. The primary focus of this sector was catering, but a few pioneering companies laid the foundations for quick commerce (for supplemental shopping): Instacart (2012) and Gopuff (2013) in the United States, Getir (2015) in Turkey. From 2018-2019, Meituan ran a similar service with its network of dark stores.

The COVID-19 pandemic acted as an accelerant in the quick commerce sector. It led to a change in consumption and buying habits in many sectors (Bazi et al., 2022; Dionysiou et al., 2021) and speeded up the spread of e-commerce use (Kawasaki et al., 2022). The now near universal use of mobile apps on smartphones (m-commerce) has underpinned a rise in smartphone-based consumption practices of all kinds (Almeida Lucas et al., 2023). Quick commerce is one of these developments, partly assisted by the Covid-19 pandemic.

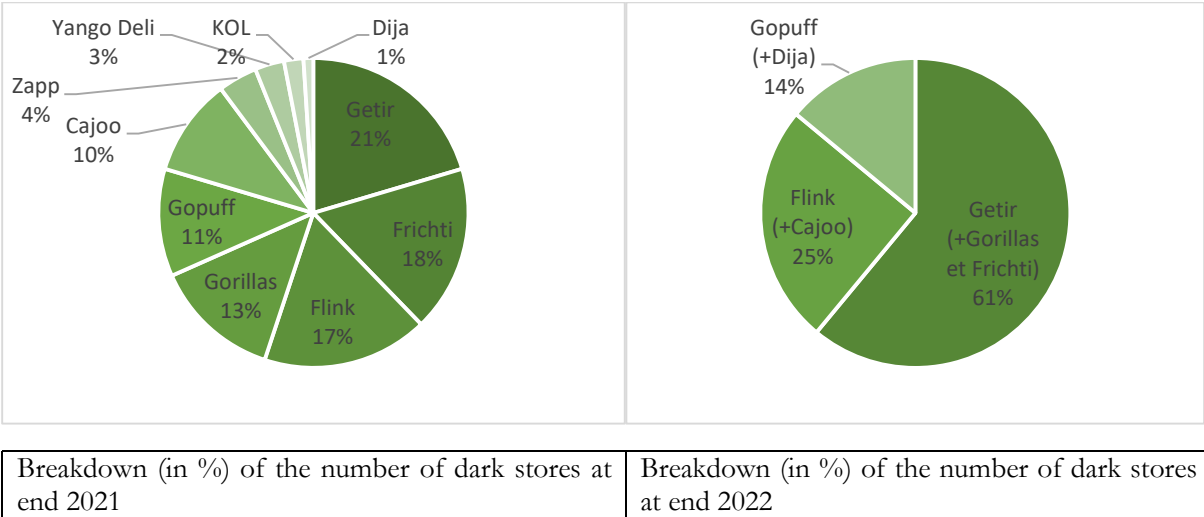
4.2. An unstable business model in pursuit of profitability. The case of Paris.

Quick commerce is a rapidly evolving sector, which is still in the consolidation phase with multiple players: European (Getir-Gorillas, Flink-Cajoo, Glovo, Wolt), North American (Gopuff, JoKr, Instacart), Chinese (Meituan, Miss Fresh, ele.me), Indian (Swiggy, Faasos, Chaayos, Milkbasket), or South American (Rappi, Pedidos Ya, iFood). In some countries, this consolidation phase has already taken place, with two or three players left standing in a relatively stabilized market: the German market

is essentially shared between Flink and Gorillas (acquired in 2022 by Getir). The case of Paris sheds light on the pace of change in the quick commerce sector. In 2021, nearly ten quick commerce companies were operating in Paris (Flink, Getir, Gorillas, Cajoo, Gopuff, Zapp, Dija, Yango Deli, Bam Courses and Mon-marché.fr), alongside fast delivery companies (Deliveroo, Uber Eats), and traditional mass retailers (Monoprix, Carrefour, etc.).

This consolidation process affects all quick commerce companies and all markets. It takes place in different ways: through company takeovers (e.g. the takeover of Cajoo by Flink); through market withdrawals to reduce costs (Gopuff, Zapp withdrew from the Paris market; in 2022 Gorillas withdrew from Denmark, Belgium, Italy and Spain); by sometimes significant layoffs (in 2022, Getir laid off more than 4,000 people in nine countries, while Gopuff announced the elimination of 3% of its payroll); by taking a stake and establishing financial, commercial and logistical partnerships (for example, Doordash’s stake in Flink or Delivery Hero’s in Gorillas); or even by the partial transformation of their business and operating model (for example, the subsidiary Bam Courses, part of the online distributor La Belle Vie, altered its model by expanding its catalog (from 2,500 to 18,000 items) and shifting from a 30-minute to a 60-minute delivery service).

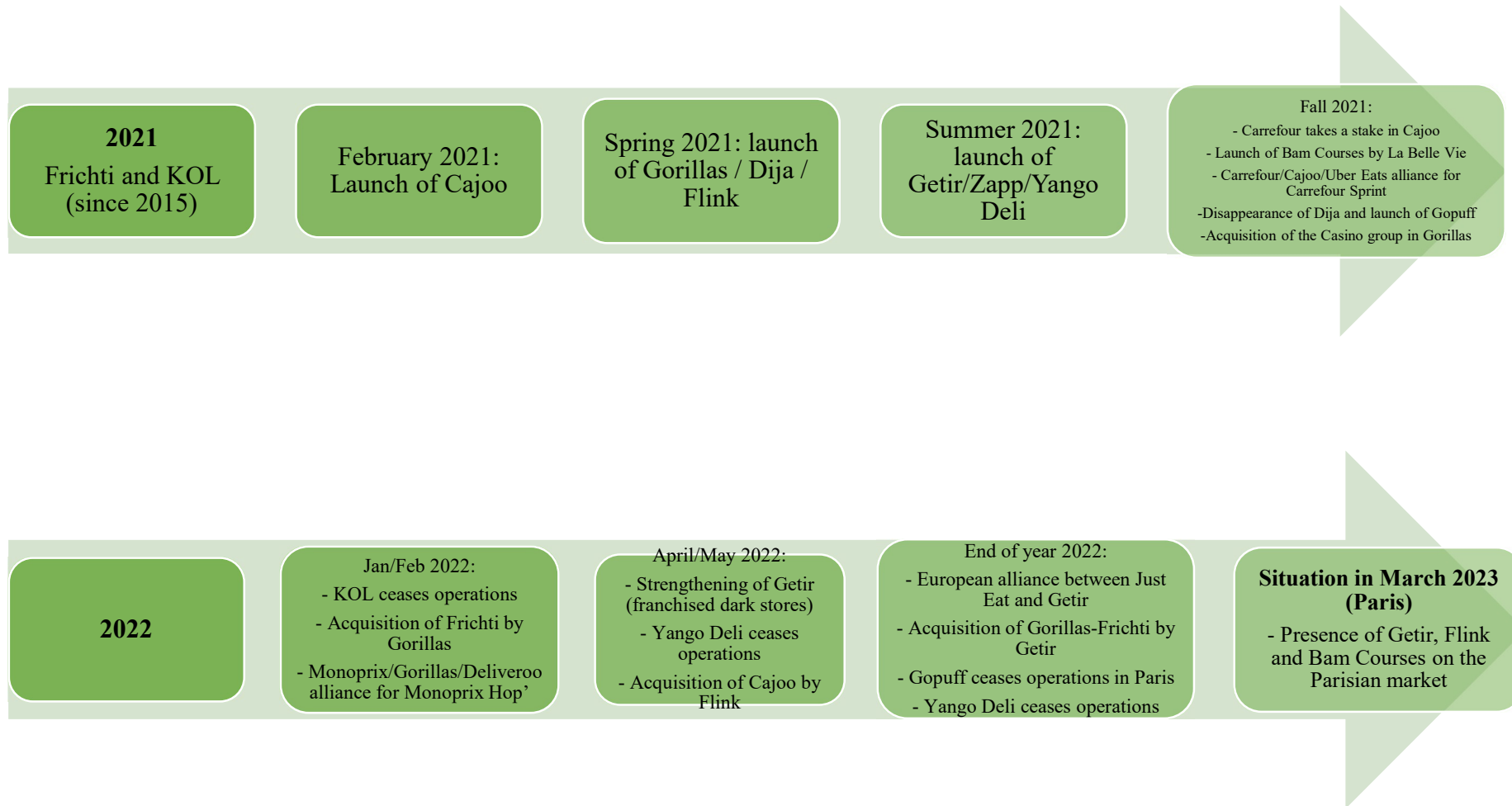
Figure 3. The quick commerce consolidation process in France in 2021 and 2022 (Data source: Knight Frank, 2023; produced by Matthieu Schorung, 2023)



This more uncertain conditions for quick commerce since mid-2022 followed an exceptional period of investment in quick commerce by venture capital in conditions of abundant liquidity and low interest rates in 2021

- Flink organized three funding rounds in 2021 (March 2021: \$52 million; June 2021: \$240 million; December 2021: \$750 million), in which the main investors were Target Global (UK), Mubadala (UAE), and Doordash (USA);
- Gorillas organized three funding rounds in 2020/2021 (November 2020: \$44 million; March 2021: \$290 million; October 2021: \$1 billion), in which the main investors were COATUE (USA), Tencent (China), Delivery Hero (Germany);
- Getir organized three funding rounds in 2021/2022 (March 2021: \$300 million; June 2021: \$555 million; March 2022: \$768 million), in which the main investors were Sequoia (USA), Tigerglobal (USA), Mubadala (UAE).

Figure 4. Quick commerce in Paris: a fast consolidating market (from the Le Web Grande Conso site by Olivier Dauvers, Dec. 2022; produced by Matthieu Schorung, 2023)



These very large funding rounds made it possible to finance the “*blitzscaling*” strategy designed to capture a market as quickly as possible and to stifle competition at all costs (according to the “growth at any cost” or “winner takes all” principle). In 2021 alone, Gorillas opened 230 dark stores in nine different countries, an average of four dark stores per week. This strategy also enables investors to realize rapid capital gains. It is currently being undermined by less favorable lending conditions, a drying up of venture capital, and by general doubt among the financial players as to the robustness and profitability of the sector. 2022 was therefore mainly a year for reducing costs, stopping excessive “cash burn”, and developing new partnerships with the aim of expanding markets.

On the costs side, quick commerce companies have significant structural costs, primarily associated with dark stores. The monthly cost of a dark store is between 10,000 and 20,000 euros in Paris, between 15,000 and 30,000 dollars in Manhattan (New York). Costs on this item are reduced in two ways: 1) relocating some of the dark stores to lower-rent streets adjacent to main shopping streets; 2) selecting premises that require little work (major work on some dark stores in Paris can cost up to 200,000 euros). Logistics costs also include payment to the transportation providers who manage upstream logistics to supply dark stores (e.g. the carrier Ecolotrans) and the last-mile element via service provision (e.g. Uber Direct).

The other major cost items are primarily supplier costs and the cost of supplying central warehouses and dark stores. The quick commerce pure players rely heavily on partnerships with large retailers (Carrefour for Flink in France, Groupe Casino or Tesco for Gorillas) or wholesalers (MiamiLand for Gopuff) for three reasons: 1) to benefit from access to the catalog of powerful purchasing groups; 2) to access a catalog with multiple products and to reduce stockouts; 3) to benefit from logistical support in order to reduce costs. At the same time, they sign distribution contracts with local merchants in order to bring in last-minute catering solutions and exclusive products. A second major cost item is human resources (administrative staff, staff to manage dark stores, in-house pickers and riders). Third, quick commerce players pursuing ultra-rapid growth incur significant marketing and advertising expenses on all channels (subway corridors, construction site facades, bus shelters, distribution campaigns for flyers and promotional codes, social networks) in order to publicize these new services – fewer than 10% of French people in 2022 were familiar with quick commerce.²

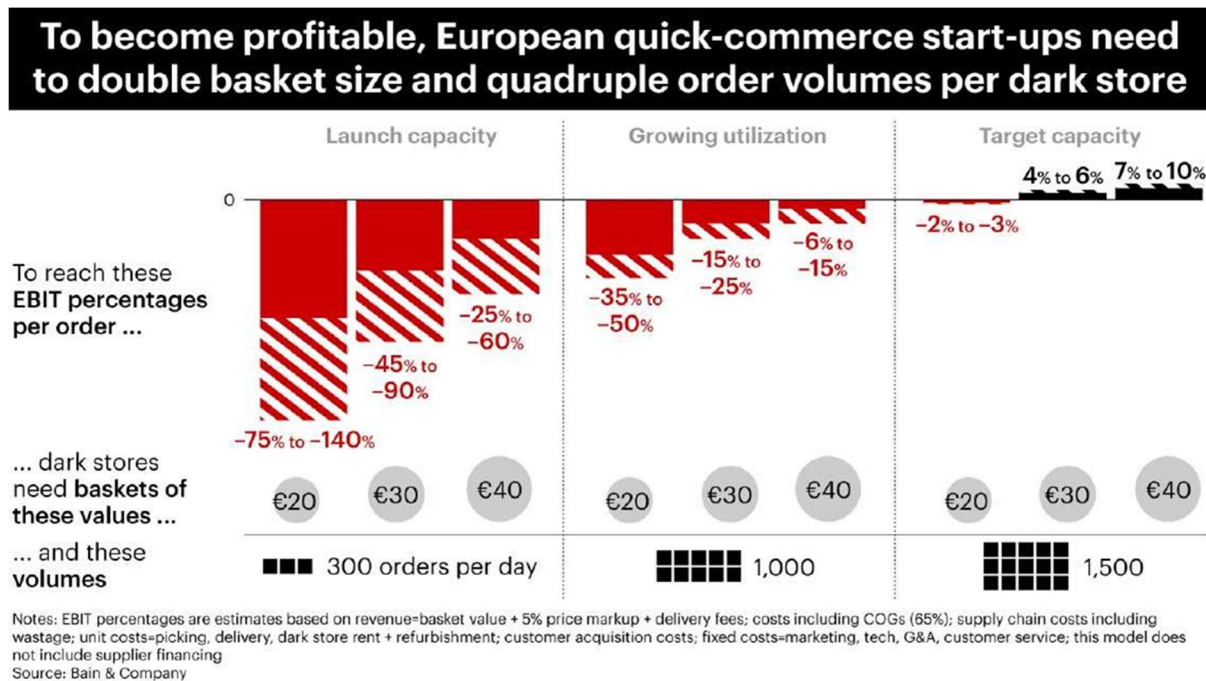
The operational specificities of quick commerce and the still embryonic nature of the activity mean that its business model has so far not been profitable. The consulting firm Bain and Company (2022) analyzed the rollout phases and targets (volumes, average basket price) needed to achieve break-even point. According to their analysis, a quick commerce business would need to achieve 1500 orders per dark store per day with an average basket price greater than or equal to 30 euros. Several Flink and Getir managers we interviewed consider that a dark store can become profitable with 600 to 700 orders per day. At present, some Parisian dark stores manage 150 to 250 orders per day, or approximately 1,200 to 1,400 orders per week per dark store. In Germany, quick commerce companies have already reached the threshold of 5,000 weekly orders per dark store. For a courier to reach break-even point, he or she must complete an average of six runs per hour – the average in Paris is around 2.5 runs. At present, the main source of income for quick commerce comes from GMV (Gross Merchandise Volume), the turnover generated by the sale of consumer products, and secondarily from the delivery costs applied (generally between 2 and 3 euros per order), and from retail media. Two other indicators also need to be taken into account:

- The retention rate. This refers to the percentage of customers who place an order on the app after a certain period. The challenge is to achieve customer loyalty following initial orders fueled by promotional operations. The target would be to maintain a retention rate of 10% two months after the first order and of 5% after six months.

² <https://www.lsa-conso.fr/la-communication-l-autre-champ-de-bataille-du-quick-commerce.402946>

- The average basket. The average basket for each order is less than 30 euros for Flink and less than 20 euros for Getir (survey carried out by Opinion Way, May 2022, *Quick Commerce Customers Study*). This indicator tends to grow slightly over time: FoxIntelligence by NielsenIQ estimates that the average basket for quick commerce brands was 20.20 euros in September 2021 (with seven items per basket on average), and rose to 22.10 euros (with an average of just over eight items per basket) in April 2022 (Delvallée, 2022a).

Figure 5. What are the break-even points for the quick commerce sector? (Bain and Company, 2022)



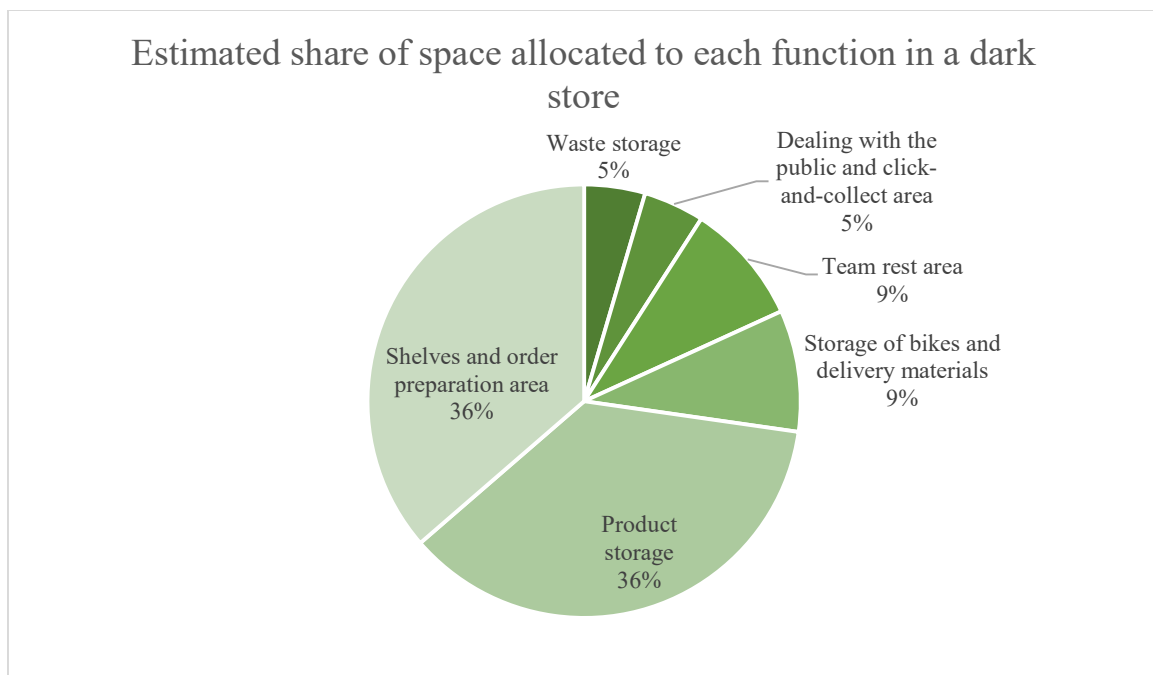
These figures show that quick commerce is becoming a dedicated service for supplemental shopping. It would be of public and scientific interest to obtain more socio-demographic data on customer consumption habits, customer profiles, and customer perceptions of the environmental and social impacts of quick commerce. Our research also identified various strategies employed by quick commerce players to increase turnover and diversify their activities:

- Developing their own private labels (Gopuff has launched its own ‘Basically’ brand for the US market);
- Developing subscription services designed to increase loyalty and to remove the effect of delivery costs as an obstacle to purchase;
- Differential delivery costs (in the United States, Gopuff has supplemented its basic cost of 2.95 dollars per delivery with an additional charge of the same amount for delivering alcohol);
- Taking a position in existing traditional retail (Gopuff in the United States bought BevMo! (an alcohol retail chain) in March 2022, converting more than a hundred stores into hybrid hubs that are both dark stores for Gopuff and physical sales outlets for BevMo! products) (Dean, 2022);
- Developing retail media (solution offered by a marketplace to partners with the aim of highlighting certain products through advertising inserts);
- There is a final diversification solution that is envisaged, but has not yet tested, by quick commerce players, which is to rent out space within dark stores or to develop strategic partnerships in order to convert dark stores into local logistics micro-hubs.

4.3. A partially uniform supply chain from different types of suppliers

The logistics of quick commerce are based primarily on dark stores. These are small premises located in densely populated areas (an estimate of 70,000 inhabitants within a radius of 1.5 km around each dark store is the gauge used by q-commerce operators), which serve as logistics bases for storing products, for preparing orders received via the quick merchant's marketplace (mobile app), and the delivery of those orders. Dark stores are found in all types of ground level locations with access to a street (former non-profit premises, former shops or small supermarkets, disused garages, more rarely underground car parks). Their average surface area is between 200 and 300 m² (between 2,000 and 3,500 sq. ft), with products stored on shelves or in refrigerators. Outside the downtown area, dark stores, often located in the inner suburbs, have a larger surface area, from 300 to 500 m² (3,500 to 5,500 sq. ft), as was the case for Gopuff in the Paris region (Mariquivoi, 2022), and are often located in former production units or small warehouses. Dark stores primarily serve as small logistics bases – to provide their services, an average of nearly 2/3 of the surface area of a dark store is dedicated to product storage, shelving, and order preparation space.

Figure 6. Logistics configuration of a dark store (information from interviews, produced by Matthieu Schorung, 2023)

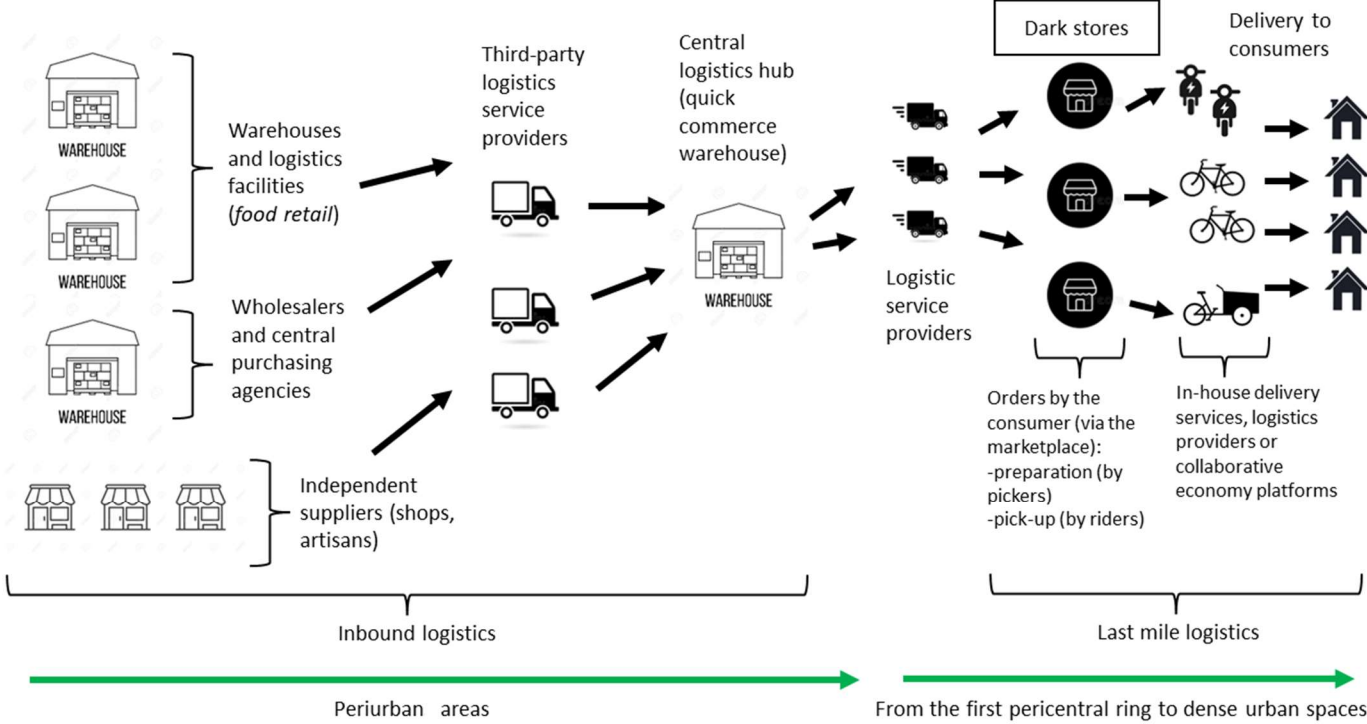


Dark stores, whether located in downtown areas or in the inner suburbs, are generally supplied from a central warehouse located on the city outskirts, either directly owned or subcontracted, which performs the cross-docking role for supply in a given territory and serves as a national hub for dark stores in other cities (case of the Paris region). Deliveries between the central warehouse and the dark stores are usually carried out by a third-party carrier (e.g. Ecolotrans). The supply chain of most q-commerce companies is based on a partially vertically integrated model. The central warehouse is supplied by heavy goods vehicles, every month for non-perishable goods, every week (or even twice a week) for food products. The dark stores are supplied weekly, or even several times a week depending on the level of activity, by small trucks or light commercial vehicles (LCVs), generally gasoline or diesel fueled.

The quick commerce supply chain is also based on partnerships with suppliers, generally large food retailers. In November 2021, Gorillas (in France) signed a partnership with the Casino group (owner of Franprix and Monoprix, among other stores), which gives it access to a very large supplier catalog and

the benefit of this large group’s logistics system, in return for selling items from the Casino group’s own brands into its market. The Gorillas company has applied a similar model in the United Kingdom (agreement with the Tesco supermarket chain) and the Netherlands (agreement with the distributor Jumbo). In May-June 2022, Flink-Cajoo (in France) also signed an agreement with the Carrefour group (which itself had already entered into a partnership with Cajoo in September 2021): most of Flink’s upstream supply chain is fed by Carrefour, which in return has incorporated Carrefour label products into its marketplace and now operates the Carrefour Sprint fast delivery service. A minority share of the central hub is supplied by third-party logistics providers who handle products from independent brands or local merchants. Conversely, other q-commerce companies have adopted a significantly different supply chain model. In France, Getir and Gopuff have not signed an exclusive agreement with a major retailer. They are supplied by several purchasing centers (Gopuff France was 40% supplied by the wholesaler MiamLand based in the east of the Paris region) as well as secondarily by independent traders.

Figure 7. Diagram of the organization of quick commerce logistics (information from interviews; produced by Matthieu Schorung, 2023)

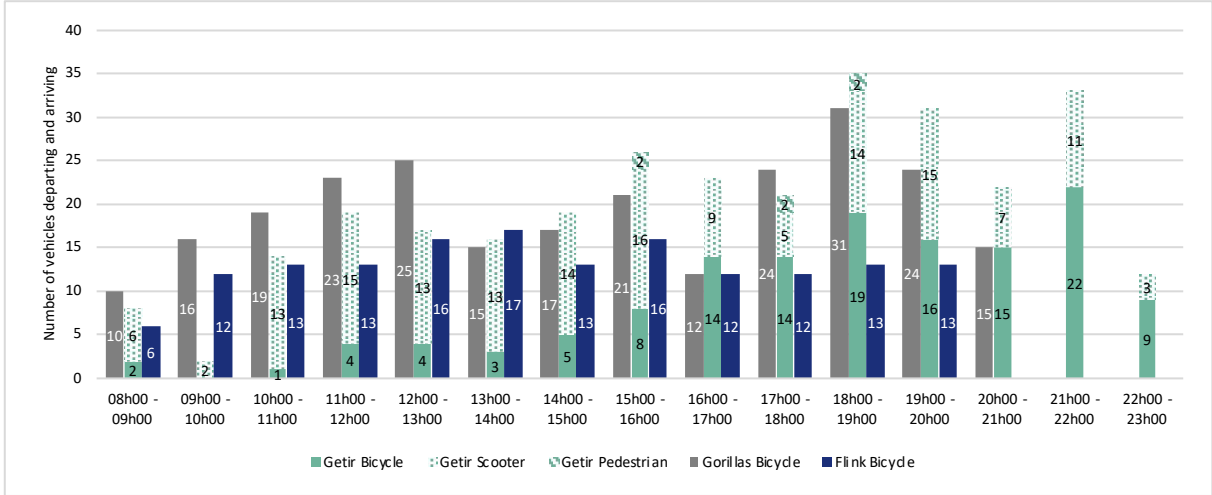


The last-mile segment – deliveries from dark stores to end customers – is served mainly by in-house deliverers (contracted to the quick commerce company on a part-time or full-time basis). Each deliverer is assigned to a specific dark store. Indeed, quick commerce mobile apps have developed a “geo-fencing” strategy so that a geographical area around a dark store is precisely delimited (customers are automatically assigned to the nearest dark store and no orders can be made in an area where the service is not yet available). This last-mile segment is supplied by carbon-free transportation modes (bikes, electric scooters, cargo bikes for orders that exceed a certain number of items). This in-house delivery model nevertheless poses the problem of higher labor costs. Some q-commerce players have opted for a hybrid model combining in-house couriers, gig workers from specialist companies (Uber Direct, Stuart), and to a lesser degree third-party services for specific needs (coursier.fr, Urb -E, or Olvo for cargo bikes).

4.4. A high level of transportation activity, especially in dense urban zones

The Chair has funded in 2022 (see methodology) two surveys conducted by the JuniorEUP Enterprise (Paris Urban Planning School) to collect data on transportation activity related to dark stores. These observations confirm that dark stores are transportation-intensive facilities (Buldeo Rai et al., 2023). Figure 8 gives an estimate of the number of delivery vehicles departing and arriving during an average weekday at three dark stores in Paris. On average, there is one delivery vehicle departing or arriving every three minutes – mostly by electric bikes (Flink) or electric mopeds (Getir). Figure 8 gives a breakdown of the transportation modes used in the course of the day. During the week, an estimated average (for the Getir dark store only in February 2022) of 1.3 orders are stacked per trip, which increases to 1.5 orders per trip at the weekend.

Figure 8. Departing and arriving delivery vehicles on an average weekday in February/June 2022 at three dark stores in Paris (produced by the author from observations by students from the JuniorEUP Paris Urban Planning School). Note: missing bars mean that there are no data, but this does not necessarily mean that there are no vehicles. (@Logistics City Chair; Buldeo Rai et al., 2023)



Transportation activities at dark stores tend to increase throughout the day, with peaks around noon, towards the end of the workday, and later in the evening. The pattern is similar at weekends, although the late evening peak then seems more pronounced and longer (Buldeo Rai et al., 2023). A dark store generates an estimate between 150 and 300 vehicle movements per day in the week and a little more at weekends (Figure 9).

Figure 9. Departing and arriving delivery vehicles during an average weekday and weekend at three dark stores in Paris, on February/June 2022 (based on observations by the students from the JuniorEUP Paris Urban Planning School). (@Logistics City Chair; Buldeo Rai et al., 2023)

		Weekday		Weekend	
		Total	Average per hour	Total	Average per hour
Getir	Bicycle	136	9.1	174	12.4
	Moped	156	10.4	137	9.8
	Pedestrian	6	0.4	0	0
	<i>Total</i>	<i>298</i>	<i>19.9</i>	<i>311</i>	<i>22.2</i>
Gorillas	Bicycle	252	19.4	247	20.6
Flink	Bicycle	156	13.0	183	15.3

These vehicles occupy a increasing volume of public space with an average of 11 to 13 vehicles filling the nearby on-street parking spaces or curbsides or even sidewalks. The main problem here is this occupation of public space rather than the problems of pollution and vehicle-related noise (except for the noise generated by the discussions of parked delivery drivers). Some dark stores now store their vehicles inside dark stores (such as Getir or Flink) not online in closed-business hours but even during the day (this practice has been observed in Manhattan in several Getir dark stores – see below).

4.5. The spatial distribution of warehouses in the city and the relationship with food retail

We have represented the six most firmly established quick commerce companies in Paris and its neighboring municipalities. They account for 91 dark stores overall, 67 inside Paris’s city limits (25 Getir dark stores, 14 Frichti, 13 Flink, 13 Gopuff/Dija, 10 Gorillas, 8 Cajoo, 6 Zapp). The most developed q-commerce companies (Getir, Frichti, Flink, Gopuff) have established a network of dark stores that, with a few exceptions, covers the whole of Paris. Quick commerce players have set a radius of 1.5 kilometers as the reference for defining the catchment area around their dark stores. Figure 10 represents these catchment areas, revealing both extensive coverage and overlaps and competition between companies. This can be explained by the fact that the Paris market is in a phase of consolidation, and still has too many players whose number will fall over time (the start-up Zapp has withdrawn from the Paris market, Cajoo has merged with Flink, and Getir has bought Gorillas).

Figure 10. Locations and catchment areas of dark stores in Paris and neighboring municipalities, by company, on April 2022 (©Matthieu Schorung, 2022).

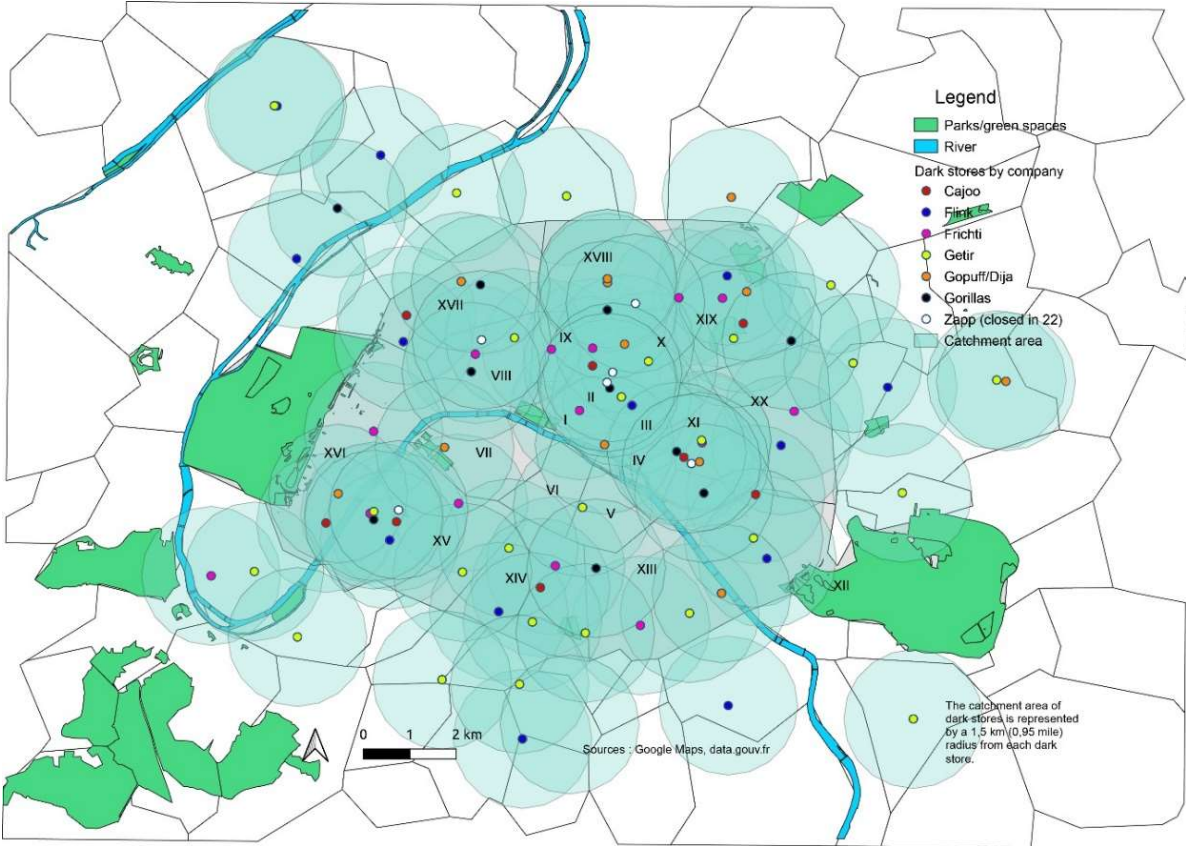


Figure 11. Locations and catchment areas of dark stores in Greater London, by company, on April 2022 (©Matthieu Schorung, 2022).

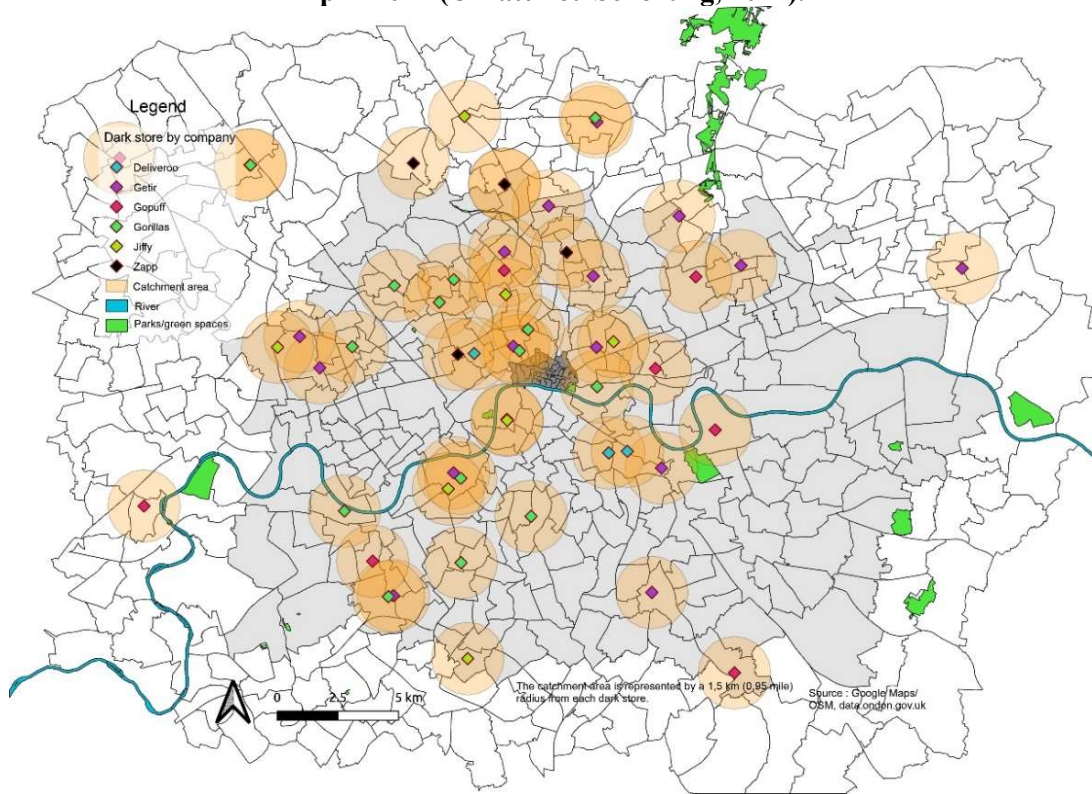
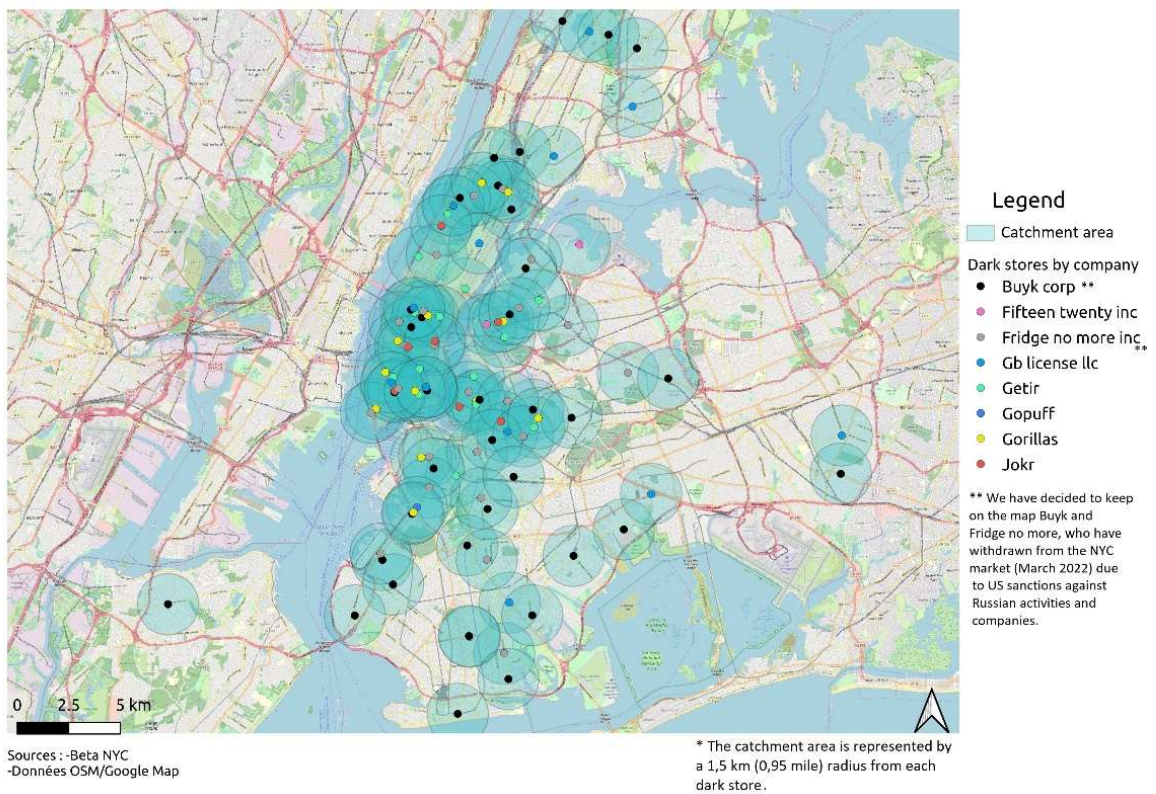


Figure 12. Locations and catchment areas of dark stores in New York City, by company, on April 2022 (©Matthieu Schorung, 2022).



A comparison of the spatial patterns of dark stores in Paris with those of dark stores in New York City and London leads to three conclusions. First, the market development is different, with the largest number of dark stores in New York City (115 dark stores) versus 55 for Greater London on April 2022; second, market maturity differs according to the context, with a smaller number of players in London (three dominant players, three secondary players) and New York City (four main players after the withdrawal of two Russian start-ups, Buyk and Fridge No More, following the sanctions against Russia in place since March 2022) than in Paris; third, the spatial pattern in Paris is more uniform than in London and New York City. Figure 11 shows the location of dark stores in Greater London as well as their catchment areas. There is a very strong concentration in the north and southwest of the city, with the result that spatial coverage is uneven. In New York City, the vast majority of dark stores are located in Manhattan and western Brooklyn. Figure 12 shows the location of dark stores in New York with their catchment area. The map of New York City also shows a spatial imbalance within the metropolitan area. The majority of dark stores are located in Manhattan and in West and North Brooklyn. The spatial coverage of quick commerce is therefore very uneven, with some areas particularly well served and others left out (i.e. Bronx, East Brooklyn, Staten Island).

The international press has reported extensively on the development of quick commerce and dark stores in major cities, notably emphasizing the opposition of municipalities (e.g. Amsterdam, Rotterdam, Paris) to these “shadow warehouses”. Three main criticisms are made. First, non-compliance with land use and zoning rules by installing small warehouses in commercial or residential areas (Schorung et al. 2022); second, the risk of unfair competition with small businesses and traditional food retail; third, the development of a dystopian city made up of closed stores and covered windows. The mapping work adds nuance to the second criticism, since the development of dark stores needs to be compared with the food retail network, which has considerably more locations. The maps of Paris (Figure 13) and New York City (Figure 14) below illustrate this. In both cities, we see a clear imbalance between the two sectors and the installation of dark stores near traditional stores. Sales data are needed to confirm whether these are strategies of duplication or direct competition.

Figure 13. Dark stores versus traditional food retail networks in Paris, on April 2022 (©Matthieu Schorung, 2022)..

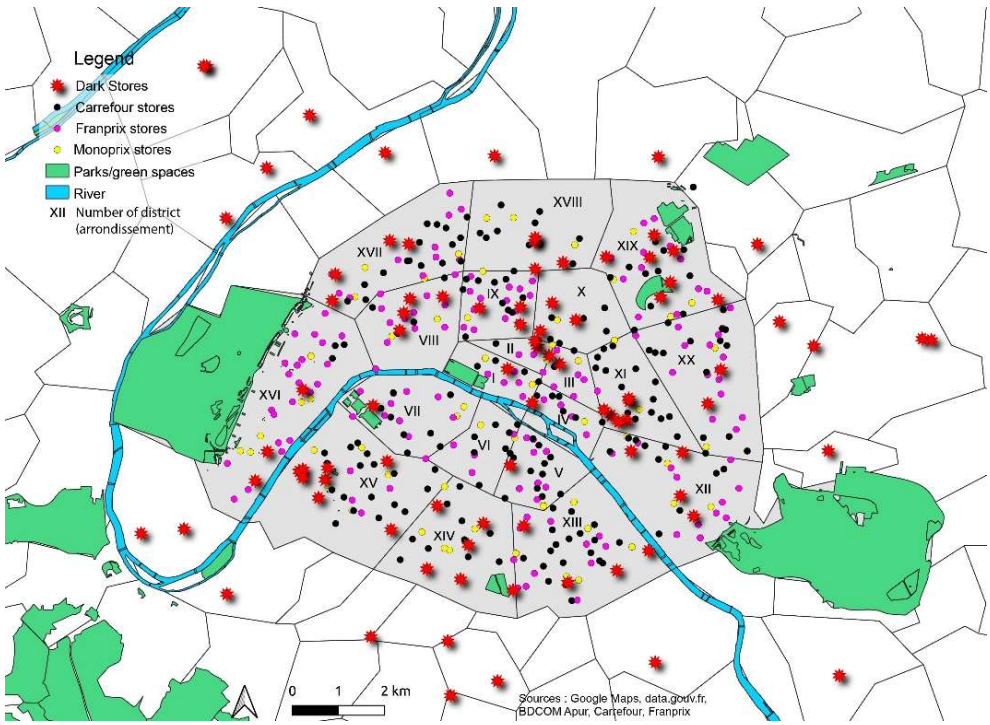
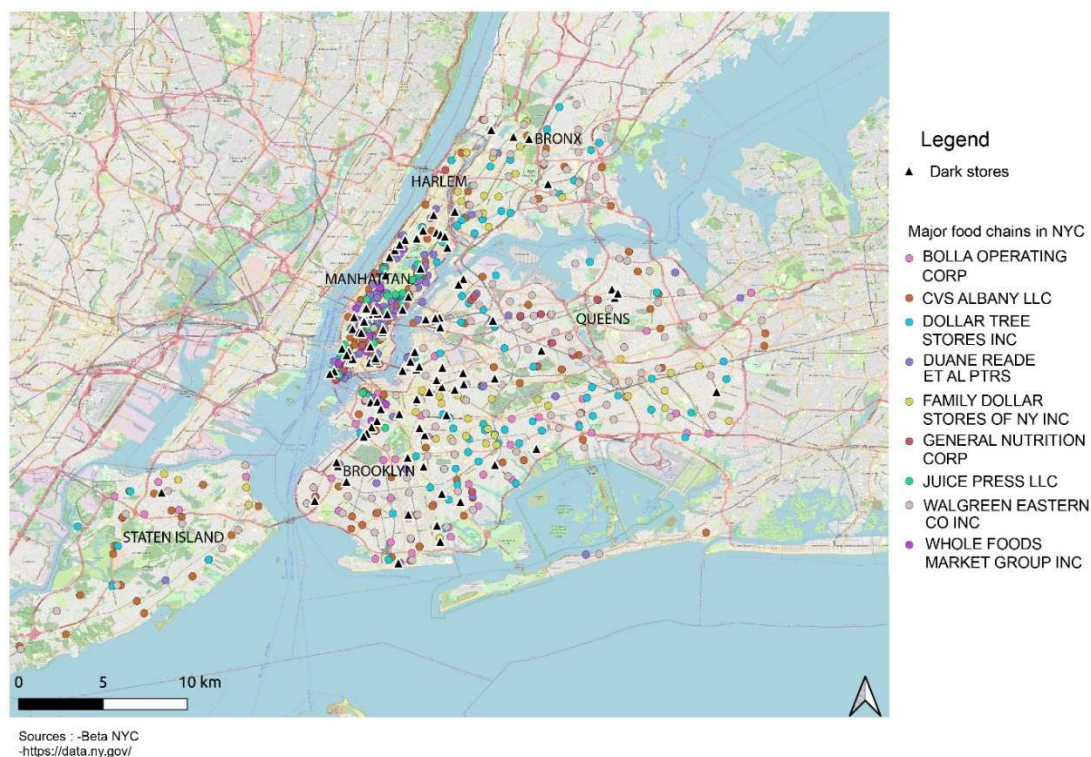


Figure 14. Dark stores versus traditional food retail networks in New York City, on April 2022 (©Matthieu Schorung, 2022).



5. Conclusions and discussion: regulation and governance issues

Quick commerce is a fast growing sector that is set to become just another segment of online food consumption and convenience shopping, particularly in large, dense urban markets. This research analyzed the logistical, operational, and economic characteristics of quick commerce companies, identifying both the instruments that should enable this sector to achieve financial profitability and the way it can meet specific consumption and delivery needs. This study was carried out in a context (2022) of rapid consolidation and regular changes in the landscape (bankruptcies, takeovers, new entrants, etc.) – the panorama provided here thus presents the situation as of March 2023, in particular for France and Europe. This research analyzes the organization of the quick commerce supply chain (organization based on logistics micro-hubs (dark stores), partnerships with large retailers, third-party logistics operators, handling of the last mile) and also underscores the high intensity of transportation activities (in terms of vehicle movements and delivery flows) generated by the dark stores. The establishment of dark stores in dense urban areas (Paris, London, New York, etc.) arouses controversy with local elected officials concerning the problems caused by the activities on these sites (noise, congestion, pollution, waste, compliance with local planning rules, aesthetics linked to blank facades) and about the negative externalities, real or supposed, of quick commerce with respect to local trade and urban life (Figures 15, 16).

This rapid development raises questions about the need for regulation in this sector, beginning with questions about public space. What can be done to limit the disturbance caused to local residents by the movements and parking of delivery vehicles? How can their impact on the overuse of the cycling and road infrastructure be assessed?³ There are also questions about the commercial impact of q-commerce:

³ <https://thehill.com/changing-america/sustainability/infrastructure/584994-how-dark-stores-are-taking-over-american>

do dark stores threaten small retail outlets or even larger urban stores? Does the proliferation of these inaccessible spaces, hidden from the public, undermine a certain form of urban life and street atmosphere? And legally, how should dark stores be treated, particularly with regard to local planning documents: as commercial spaces or logistics spaces? Especially given that we know that competitive mechanisms will necessarily result in the closure of the smallest dark stores and therefore a proliferation of vacant premises.⁴

Figure 15. JoKr dark store in Manhattan in February 2022 (New York) (©Matthieu Schorung, 2022)



Figure 16. Problems with parking and occupation of sidewalks and public space (example of a Flink dark store in Paris – June 2022) (©Logistics City Chair)



⁴ https://www.lemonde.fr/economie/article/2021/12/16/kol-premiere-victime-de-la-frenesie-du-quick-commerce_6106338_3234.html

Some point out that dark stores, for opportunistic reasons, often move into former commercial premises in locations that have become undesirable. In London, for example, they set up under railway arches, in light industrial parks, and in the basements of shopping malls. However, municipalities have begun to express concerns and are introducing more and more initiatives to regulate or even prevent their development. Some leaders display a hostility that might be considered excessive, employing moralistic arguments and ignoring the fact that these services are a response to consumer demand.⁵ In March 2022, for example, the City of Paris decided to initiate a procedure to close 45 of the 80 dark stores identified by APUR (Paris Urban Planning Agency). The argument used: non-compliance with the rules of the local urban plan. It has also introduced a procedure allowing citizens to report unauthorized warehouses in their neighborhood.⁶ In France, after heated political discussions during the summer of 2022, a compromise was reached in September 2022 between the government and local authority representatives. They agreed to consider dark stores as warehouses, even when they provide a click-and-collect service or a coffee-shop, for example. However, in an order dated October 5, 2022, the Paris administrative court ruled that according to the French urban planning code, dark stores are actually “urban logistics spaces”, not warehouses. The Council of State (France's highest administrative court) issued a ruling in March 2023 that "dark stores" are "warehouses" within the meaning of the urban planning code and the Paris local urban plan. These places store goods to deliver quickly to customers and are no longer intended for direct sale within the meaning of the urban planning code⁷. In the Netherlands, in Amsterdam and in Rotterdam, a one-year moratorium on the opening of new premises of this kind was decided in January 2022.⁸ This was followed in April 2022 by the municipality of Amsterdam banning dark stores in the central downtown area and then issuing a decree requiring quick commerce companies to relocate to industrial areas. This is a decision that seems to be targeted at this sector in particular, since sharing economy platforms, retail delivery services, and restaurant chains are excluded from these regulatory measures.

However, ways of regulating quick commerce remain quite limited. Since the start of 2022, two trends have emerged among the companies. On the one hand, there is a desire to adapt to or even to circumvent the new local rules. Several quick commerce companies plan to experiment with a click & collect service (Getir, Gopuff, Flink). The establishment of these kinds of pickup points would enable dark stores to be classified as businesses. The development of partnerships with start-ups specializing in anti-waste baskets (in Paris with companies such as Phenix or Too Good to Go) also entails incorporating collection points into dark stores.

Other players are innovating and offering take-out fresh produce, for example GoPuff in New York which opened GoPuff Market, a combination of a logistics space, a store, and a café. This allows Gopuff to classify this large dark store as a business rather than a warehouse to fit in with New York City's normal commercial zoning in its urban and land use plan, and also contributes to neighborhood life (Figure 17). Finally, some quick commerce players have made changes to their organization, clearly in order to develop good neighborly relations with local residents. According to field observations and discussions with employees in January 2023, most Getir dark stores in Manhattan (New York) now have transparent storefronts and even signs saying “Walk-in customers welcome” (Figure 18). And in some of these dark stores, the delivery vehicles (electric scooters in the case of Getir) are parked in the dark store during opening hours, and riders load their deliveries inside the store with their scooters switched off. These adjustments seem to be evidence of a desire to limit local disturbance, while giving guarantees to the New York City government and to district representatives.

⁵ <https://www.franceinter.fr/economie/pourquoi-la-multiplication-des-dark-stores-au-coeur-des-grandes-villes-inquiete-les-municipalites>

⁶ <https://www.paris.fr/pages/signaler-un-dark-store-non-autorise-20717>

⁷ <https://www.conseil-etat.fr/actualites/la-transformation-de-commerces-en-dark-stores-devait-etre-autorisee-par-la-ville-de-paris>

⁸ <https://www.swissinfo.ch/eng/rotterdam-joins-amsterdam-in-freezing-new--dark-stores-/47318284>

Figure 17. A Gopuff Market between Soho and Tribeca New York with its storefront area reserved for take-out sales (February 2022) (©Matthieu Schorung, 2023)



Figure 18. Getir dark stores in Manhattan (New York): towards good neighborly relations? (January 2023) (©Matthieu Schorung, 2023)



The need to regulate quick commerce, in particular on issues such as compliance with urban planning rules and limiting disturbance, should not, however, make us forget that the sector is now just one among many instances of developments in urban trade. Online sales have penetrated urban life and transformed consumer habits. Deliveries from physical stores, click-and-collect, walk-in collection points, automated

lockers, are all markers of these developments in the city. In addition, the effects of dark stores on the local economic fabric should perhaps be put into context: Paris currently has fewer than a hundred warehouses in a downtown area that counts more than 60,000 businesses.

In these debates, it is important to find ways of collecting reliable data. The goal is to make the organization of sustainable urban logistics in all its dimensions part of the local agenda and to adapt to the fast-changing patterns of urban shopping. Rather than engaging in legal battles over the status of dark stores, it would seem more useful for municipalities to focus on the impacts of transportation, in particular the disruption caused by delivery vehicles serving dark stores, which fall within the regulations governing street use and sidewalk management. Issues of road safety and accident risk are also important, as previous studies of instant food delivery in Paris have shown (Dablanc et al., 2022).

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Webography

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Mobility Foresights: <https://mobilityforesights.com/product/quick-commerce-market/>

NielsenIQ: <https://nielseniq.com>

PitchBook: <https://pitchbook.com/>

Credits and funding

This research received financial support from the [Logistics City Chair](#) in 2022-2023. I would like to thank the interviewees for their contributions, Laetitia Dablanc for her supervision and Heleen Buldeo Rai for her collaboration in 2022 on this subject (especially the co-supervision of the field surveys of the EUP Junior Entreprise).