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Insertion of Amazon Inc. in Brazil: logistical operations, disputes and territorial strategies

ABSTRACT

This article aims to discuss the repercussions of Amazon Inc.'s entry into the Brazilian e-commerce market, based on the dispersion and articulation of its logistics warehouses, the procurement and management of inventory and the operation of delivery flows. To do this, we used a set of techniques involving a bibliographical and documentary review and the systematization of reports from recognized and/or specialized media outlets. We were able to observe that the insertion of this global firm depends on economic and historical variables that change from country to country, and that in Brazil it happened with the establishment of partnerships, disputes, and conflicts with national and international agents, including e-commerce firms, logistics warehouse operators, real estate investment fund managers, publishers, bookstores, logistics service providers, and outsourced delivery companies.

Keywords: Amazon. Disputes. E-commerce. Competition.

Inserção da Amazon Inc. no Brasil: operações logísticas, disputas e estratégias territoriais

RESUMO

O objetivo deste artigo é discutir as repercussões encadeadas pela inserção da Amazon Inc. no mercado brasileiro de comércio eletrônico, a partir da dispersão e articulação de seus galpões logísticos, da obtenção e gestão do inventário e da operação dos fluxos de entrega. Para tal, utilizamos de um conjunto de técnicas que envolve revisão bibliográfica e documental e a sistematização de reportagens de veículos de mídia reconhecidos e/ou especializados. Pudemos observar que a inserção dessa firma global depende de variáveis econômicas e históricas que mudam de país para país, e que no Brasil deu-se através do estabelecimento de parcerias, disputas e conflitos com agentes nacionais e internacionais, dentre os quais firmas de comércio eletrônico, operadores de galpões logísticos, gestores de fundos de investimento imobiliário, editoras, livrarias, prestadores de serviços logísticos e entregadores terceirizados.

Palavras-chave: Amazon. Disputas. Comércio eletrônico. Concorrência.

Inserción de Amazon Inc. en Brasil: operaciones logísticas, disputas y estrategias territoriales

RESUMEN

El propósito de este artículo es discutir las repercusiones causadas por la inserción de Amazon Inc. en el mercado de comercio electrónico brasileño, a partir de la dispersión y articulación de sus almacenes logísticos, obtención y gestión de inventarios y flujos operativos de entrega. Para ello, utilizamos un conjunto de técnicas que involucran la revisión bibliográfica y documental y la sistematización de reportajes por medios de comunicación reconocidos y/o especializados. Pudimos observar que la inserción de esta firma global depende de variables económicas e históricas que cambian de un país a otro, y que en Brasil pasó por el establecimiento de alianzas, disputas y conflictos con agentes nacionales e internacionales, entre las que

se destacan las firmas de comercio electrónico, operadores de almacenes logísticos, gestoras de fondos de inversión inmobiliaria, editoriales, librerías, proveedores de servicios logísticos y mensajeros subcontratados. **Palabras clave:** Amazon. Conflictos. Comercio electrónico. Competencia.

INTRODUCTION

The telecommunications revolution, which began in Brazil in the 1970s (Santos; Silveira, 2006), gave rise to the retail sector two decades later, when the first websites focused on internet sales appeared. This was only made possible by the popularization of the World Wide Web and the development of the Hyper Text Transfer Protocol (HTTP), which allows users to navigate between content through a system of linking and redirecting pages, and the creation of the first browsers—computer programs that made it possible to operate this system through a simple and user-friendly interface (Israel, 2019; Mayo and Nohria, 2008).

Amazon was created in 1994 by Jeffrey Bezos in the city of Seattle, in the United States, after the founder's time on Wall Street, where he worked at D.E. Shaw and Company, a firm focused on applying computer science to the stock market. Initially, the firm sold books exclusively online, using the stock of the wholesale Ingram Book Group and shipping the goods via United Parcel Service (UPS), a private logistics company (Robinson, 2010).

The company arrived in Brazil in 2012 in the context of the internationalization of its operations, which had begun in 1998 with the opening of logistics centers in Germany and the United Kingdom and, throughout the 2010s, reached countries on the periphery of the system, including Mexico, India, and Egypt. In this context, the company was consolidating itself as a global firm. Santos (2020, p. 205) explains that these companies are the largest companies of the present time and are organized in networks, whose tendency and need for creation are the result of the combination of the imperative of integration and the imperative of globalization. They have developed a whole set of global branches and interdependencies, so as to make them flexible and mobile.

However, Amazon's foray into Brazilian territory was slow: it began exclusively by selling the company's e-ink reader, called "Kindle." To support it, the company launched the Brazilian version of its sales website, which sold only digital books that could be purchased, downloaded, and read directly on the device.

Physical books were only sold two years later, in 2014. The company entered into partnerships with publishers and started storing its own stock in a warehouse in the Greater São Paulo Metropolitan Region, as we will see below. Gradually, the company opened up to selling a variety of items, initially in April 2017, when it began to allow third-party bookstores to sell physical books. Six months later, electronics such as cell phones, stereos, and cameras could already be bought on the Brazilian version of the site, but sold by partner retailers in the marketplace¹ mode. It was only in 2019 that the company began to sell a variety of products from its own stock.

According to information from the Brazilian Society of Retail and Consumption (Sociedade Brasileira de Varejo e Consumo, 2022), in 2021 Amazon was the 48th largest retail company operating in the country in terms of sales volume and 5th in terms of e-commerce. It is

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estimated that Amazon sold a volume of goods equivalent to R\$3.8 billion in the year analyzed, less than the three national conglomerates (Magazine Luiza, Americanas, and Via) and Dafiti, a clothing e-commerce that is part of the multinational group GFG. When we also analyze marketplace sales, the company loses one position, given the leadership of Mercado Livre, in sixth place.

Thus, when Amazon arrives in Brazil, the e-commerce scenario it faces is one of deep competition between domestic and foreign companies. We can question how the entry of this new global player into the oligopolized national market has impacted on already structured companies in the sector, as well as on marginal segments. It is in this context that we aim in to analyze the specific aspects of Amazon Inc.'s entry into Brazil, highlighting the disputes, partnerships, and competition in three areas that summarize the firm's operations in the country: the dispersion and articulation of its spatial fixtures, illustrated by its network of logistics warehouses, inventory management, and the operation of delivery flows.

LOGISTICS CENTERS AND THEIR RELATIONSHIP WITH WAREHOUSE OPERATORS

Logistics centers can be understood as a real estate commodity which they profit not only from the activities they host but also with land rent. Finatti (2016), when analyzing the case of commercial condominiums, emphasizes that the logic of obtaining land or real estate income is the intention behind the production of these structures. Logistics warehouses, as well as business condominiums and industrial allotments, have emerged to meet a demand for flexible spaces, with low maintenance and management costs and easy demobilization of facilities. They are the result of productive restructuring in the real estate sector (Yassu, 2022).

Amazon Inc. began managing physical goods in Brazil in 2014, in a logistics center in the municipality of Barueri, in the São Paulo Metropolitan Region, managed by the Rio Grande do Sul logistics operator Luft Logistics. In 2018, the company moved Amazon's operations in Brazil to the logistics complex of the American firm Prologis, located in Cajamar (SP). This municipality gained prominence as a national logistics hub with the creation, in 2007, of a warehouse for the Marabraz retail group, which set up this center to serve its more than 100 stores located in the São Paulo Metropolitan Region, within a 200km radius of the structure. Yassu (2022) stresses that the production of this hub is linked to the formation of a coalition between landowners, particularly the Abdalla family—which owns a large amount of land in the areas where the warehouses are built—large economic groups, and the State, which acts through tax incentives, removals, and the destruction of historical heritage.

Cajamar's position as a logistics hub was reinforced from the 2010s onwards, when developments by groups such as Prologis, Singapore's Global Logistics Properties (GLP) and Correios Log+, Correios' corporate logistics arm, appeared in the municipality. Yassu (2022, p. 275) emphasizes that the rapid expansion of Prologis' ventures in the municipality, which managed to build three units almost simultaneously, was due to the expectation that Amazon's activities would spread in Brazil. According to the author, these developments are part of the PBVL11 investment fund, owned by the same group, which was launched a few months after the announcement of the American company's entry, making it the largest

fundraising by a logistics real estate investment fund (REIF) up to that point. Magnani and Sanfelici (2022) explain that these funds bring together financial resources from a group of investors who invest them in real estate assets, such as offices, shopping malls and logistics warehouses, or in financial securities backed by real estate operations.

The relationship between e-commerce and the income from real estate funds is evident here, which points to a financialization of logistics real estate. In recent years, there has been growth in the Brazilian logistics real estate complex; in 2020 it had an increase of 1.1 million m², of which 615.5 thousand m² were in the state of São Paulo and 281.1 thousand m² particularly in the municipality of Cajamar. According to the authors, the recent financialization of the national logistics real estate park is the result of the convergence of two main factors: a) the COVID-19 pandemic, which boosted demand for logistics warehouses by retail companies in the electronics segment; b) the successive falls in interest rates, which reduced the attractiveness of fixed-income investments and redirected investors towards profitable alternative investments that are less susceptible to stock market fluctuations, such as REIFs (Magnani; Sanfelici, 2022).

Santoro and Rolnik (2017), in their investigation into the participation of companies in the real estate-financial complex in São Paulo, list GLP as one of the global companies operating in the Brazilian real estate market. GLP's first enterprise in Cajamar was built from 2014 to 2016, and today houses the distribution center of the supermarket company Assaí. From 2020 to 2022, GLP warehouses III and IV were built nearby, which will now house two new Amazon distribution centers. Cajamar has thus consolidated its position as the American company's main warehousing and freight forwarding hub in Brazil. In addition to the companies already mentioned, other companies that store their stocks in warehouses in the municipality are Samsung, Americanas SA, Mercado Livre, Magazine Luiza, SKF, and Leroy Merlin.

In 2019, Amazon announced its first distribution center outside the São Paulo Metropolitan Region (Amazon, 2019). The chosen location was the metropolis of Recife (PE), more precisely the municipality of Cabo de Santo Agostinho. The warehouse, which is rented by the American company, is around 15km from Recife International Airport and the Port of Suape. It is located within the Armazenna 4 Logistics Center, a company that manages a total of six logistics centers in the municipalities of Cabo de Santo Agostinho and Jaboatão dos Guararapes, both in the metropolitan region of Recife. This enterprise, specifically, is made up of two blocks: A, with an area of 48,300 m², used as a distribution center by Americanas SA, and B, a facility made up of 28 modules totaling approximately 40,000 m², used by Amazon and financed by Banco do Nordeste (BNB)². Szapiro and Schwambach, as cited in De Chiara (2019), point out that the choice of location for the venture was helped by the existence of a skilled workforce in the technology area, the good infrastructure in the region and the tax benefits, given that since 2016 there has been a regulation in the state of Pernambuco that reduces the Tax on the Circulation of Goods and Services (ICMS) for sales made online outside the state.

In 2021, Amazon announced the installation of its second distribution center in Cabo de Santo Agostinho. The warehouse belongs to LOG Commercial Properties (LOG CP), a

² Silva and Medeiros (2017) point out that, from the 1970s onwards, projects financed by this bank were redirected towards profitable activities, among which we can consider logistics condominiums, given the constant loss of stable resources by the bank and the search for alternative sources of financing.

warehouse operator owned by the Menin family, who are from Minas Gerais and also control the MRV construction company and Inter bank, as well as other companies in the housing, property rental and communications sectors. The structure is located a few meters from the first, on the banks of Av. Nossa Senhora do Bom Conselho, and has 74,000 m² of gross leasable area. The company is highly penetrated nationwide, with warehouses in all the states of the Concentrated region³ (except Santa Catarina), in all the states of the Northeast (except Paraíba, Piauí, and Maranhão), in Goiás, in the Federal District, and in Pará (LOG CP, 2022).

Starting in 2020, Amazon began a process of expanding its network of distribution centers in Brazil, locating structures of this type in other parts of the territory, in the Northeast, the Midwest, and the Concentrated region. In addition to the new facilities in the metropolises of São Paulo and Recife, distribution centers have been set up in Minas Gerais, the Federal District, Rio Grande do Sul, Ceará, and Rio de Janeiro. The warehouse used by Amazon in Minas Gerais is located in the municipality of Betim (MG) and was completed in 2009 when it was used as a distribution center for the American retailer Walmart. The project passed to Amazon under a long-term lease agreement. The move to Brasilia took place in a similar way. The warehouse currently used by Amazon belonged to another supermarket retailer, the French company Carrefour.

In Rio Grande do Sul, Amazon's distribution center is located within the 3SB Logistics Park, in the municipality of Nova Santa Rita, in the metropolitan region of Porto Alegre, occupying an area of approximately 40,000 m² in warehouse A7, the largest in the enterprise. The logistics park was inaugurated in 2009 with the participation of four companies linked to the construction and real estate markets, all from Rio Grande do Sul: Benin Imóveis, Grimon Saneamento e Construções, Gueterres Combustíveis and Dallasanta Empreendimentos Imobiliários.

In 2021, Amazon expanded its operations in the Northeast region, locating a new distribution center on the 4th Ring Road in Itaitinga, in the metropolitan region of Fortaleza (CE). Like the one in Cabo de Santo Agostinho (PE), this distribution center belongs to logistics warehouse operator LOG CP, which also manages another enterprise on the same highway and has a third under construction. LOG Fortaleza II houses, in addition to Amazon's warehouse, a distribution center for Assaí supermarkets. Finally, in the same year, Amazon began operating a logistics warehouse in São João de Meriti, in the metropolitan region of Rio de Janeiro. The structure is located in the Prologis Dutra logistics condominium, which belongs to the Prologis company. There are a total of six buildings with a total constructed area of 200,000 m². They are located along Rod. Pres. Dutra, a highway which connects the metropolises of São Paulo and Rio de Janeiro (Figure 1).

This presentation of the locational strategies of Amazon's logistics warehouses in Brazil shows that there is a preference for cities in metropolitan regions to host the structures, a pattern common to other companies in the segment. They are located on high-traffic roads, which facilitate the flow of goods. As Hesse (2004) explains, due to the search for economies of scale, distribution centers (DC) have become increasingly larger, implying new locational requirements. The metropolitan region is the ideal place to build logistics centers, due to its traffic and space requirements, cheaper land, and good road access conditions. In other

³ Regionalization by Santos and Silveira (2006).

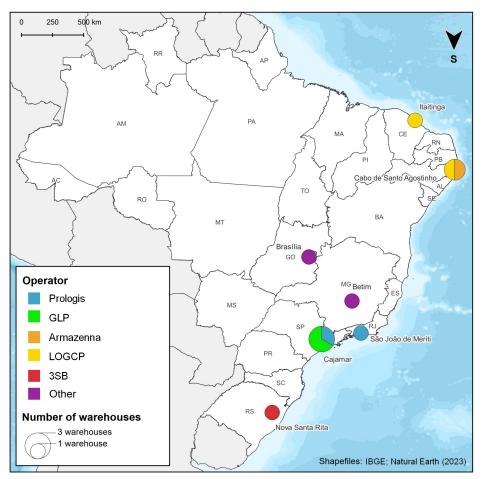


Figure 1 - Dispersion of Amazon Inc. warehouses in Brazil. Prepared by the author.

words, they are located close to the metropolitan core for fast delivery flows, but far enough away to guarantee higher yields.

We can also point out that Amazon's distribution centers in Brazil are located in areas that are already specialized in this activity. This is the case of Cajamar (SP), the country's main logistics hub, but also Cabo de Santo Agostinho (PE), which has been consolidating itself as "the second main location for e-commerce logistics centers in Brazil" (Venceslau, 2020, p. 136, free translation). This also holds true of other locational choices: around Fortaleza's Fourth Ring Road we find warehouses for the Post Office, the Atacadão supermarket, the Normatel home center and LOP CP enterprises; in Nova Santa Rita, structures for the BRF food company, the Plimor transport company and others; along the Via Dutra, we can mention the existence of the Marlog's logistics condominium.

This picture brings us to another consideration: except when renting structures already in use, Amazon's predominant strategy has been to use centers managed by logistics warehouse operators, international in São Paulo and Rio de Janeiro, and national in the other cases. This type of association was found with Prologis, GLP and Parque Logístico 3SB in the Concentrated region and with Armazenna and LOG CP in the Northeast. Hesse (2004) points out that the entry of large institutional investors, such as investment funds, has changed the development pattern of the logistics real estate complex, multiplying the number of intermediary agents, such as developers, who buy, own, and rent land, and brokers, who negotiate rental services for warehouses with clients, often global companies. In addition, there is an increasing participation of banks and real estate investment funds (REIFs). But these changes are not unique: there is the replacement of the act of buying property with the practice of leasing, as seen in the case under analysis, and the reduction in the length of leasing contracts, which have gone from 10 to 3-5 years.

INVENTORY, TECHNOLOGY AND SUPPLIER RELATIONS

Cavalheiro (2013) points out that Amazon's relationship with suppliers of goods or wholesalers takes on specific characteristics depending on the country. While in the United States and, to a lesser extent, in the United Kingdom, the company relies on the partnership of a small number of wholesale services to fulfill most of its orders, France, at the time the company entered the national market, had no wholesalers in the book, music, and video sectors, and Germany had only one in each segment. The solution was to establish direct relationships with hundreds of publishers and distributors.

In Brazil, sales from Amazon's own stock initially took place through partnerships with publishers, which could take place via exclusive contracts. This was the content of the relationship between Amazon and São Paulo publisher Cosac Naify, which sold around one million copies of 1,200 titles through the company's website in 2016, the year the agreement was signed. This company, in the context of its closure announced in November 2015, sold the remaining stock estimated at 230,000 copies to the American firm. Amazon later signed agreements with the publishers Pipoca & Nanquim and Antofágica, guaranteeing exclusivity in the sale of their titles in large retailers.

Important impacts related to Amazon's entry into the book retail market are related to the practice of discounts, which reached 60% of the publisher's suggested price in e-commerce, according to a survey by Fascina (2014). This scenario has prompted movements by organizations in the sector to regulate the market, suggesting measures such as fixing prices for physical books for a limited period, as is the case in France, Spain, and Germany. This movement accompanied international protests in the publishing market against Amazon in the United States and Europe, which accused the company of pressuring publishers to accept its pricing policies, including the dispute between the American company and the French publisher Hachette. Krugman (2014) points out that Amazon's behavior in the publishing market has been that of a monopsonist, i.e. a dominant buyer with the power to control prices.

In Brazil, an episode that illustrates this dispute involving Amazon and national publishers was the request in 2021 by the American company to increase the discount on the purchase of works over the cover price and the additional fee for advertising. Farinha, a representative of small and medium-sized publishers, quoted in Passos and Perassolo (2021), suggested that the American company should take advantage of its high bargaining power generated by its great management and distribution capacity and the rarefied competition from national bookstores. We should remember that, unlike traditional bookstores, the American company does not work on consignment, i.e. it does not require the publisher to bear the risks of the sales process, which has made Amazon the main customer for publishers in the country (Porto, 2020). Added to this is the fact that this company's entry into the country

took place at the same time as the national book market was shrinking and the main national bookstores, Saraiva and Cultura, filed for court-supervised reorganization in 2018.

The relationship between Amazon and its suppliers became more complex when, in 2020, the company launched Fulfillment by Amazon (FBA) in the country, under the name "FBA – Logística da Amazon." This program allows partner shopkeepers to send their inventory to Amazon's distribution centers, which then operate the warehousing and shipping processes, guaranteeing delivery within two business days for buyers who pay for the monthly prime subscription service, in addition to carrying out after-sales service work. Internationally, Cavalheiro (2013) points out that this system is used by large companies such as Target and Eddie Bauer. The service began with a limited scope in the state of São Paulo, requiring an extra payment from the partner. Shopkeepers opting for the Simples Nacional regime with addresses in the states of São Paulo, can register with the service by invitation (Arbex, 2020; Amazon, 2022b; Cavalheiro, 2013).

At the same time, the FBA Onsite program was launched, in which shopkeepers keep their stock but entrust Amazon with delivery and after-sales management. This service began to be available in the southern and southeastern states, as well as Pernambuco, Bahia, and the Federal District (Arbex, 2020). In addition, Delivery by Amazon (DBA), a program similar to FBA Onsite, was implemented in Brazil, but without eligibility for the prime seal and without after-sales management by Amazon.

Figure 2 summarizes the relationships between Amazon, third-party retailers, and their suppliers.

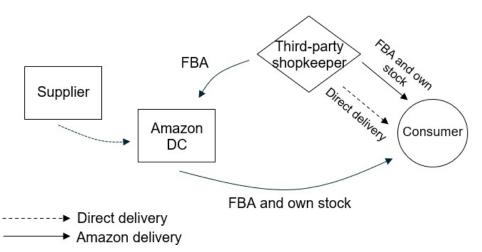


Figure 2 – Relationships between suppliers, third-party shopkeepers and distribution centers mediated by the Amazon (2024) information platform. Prepared by the author.

Cavalheiro (2013) points out that, in addition to the use of their website or physical structure by third-party shopkeepers through the programs listed, retail companies use the company's technological bases through Amazon Web Service (AWS). In Brazil, multiple companies use one of the AWS services, including competing e-commerce companies (Mercado Livre, OLX, and Dafiti) (Amazon Web Services, 2022). Mercado Livre used Amazon S3 and Amazon EMR big data services, which make up AWS, to build MeliLake, a tool for

storing sales, payment, and customer service data, Amazon Rekognition, used by Mercado Pago's fraud detection team in the process of verifying consumers' identities, and Amazon Translate, which automatically translates the titles and descriptions of items in its catalog when they are made by international suppliers (Amazon Web Services, 2020).

The use of technology is also common in warehouse inventory management. In this regard, in addition to software such as the Warehouse Management System (WMS)⁴, the application of robotization stands out, with an important chapter being Amazon's acquisition of Kiva Systems in 2012 for US\$775 million. As Bogue (2016) explains, the company, renamed Amazon Robotics, had around 30,000 robots operating in 13 distribution centers globally by 2016. These machines are used to move items within the distribution center, including loading pallets between racks of different heights. It is estimated that the use of robotics in warehouses has reduced operating costs by around 20%, as a result of labor savings and the elimination of the need for wide aisles for workers to pass through, which increases storage capacity (Bogue, 2016).

Scott Dresser, vice president of Amazon's robotics division, quoted in Braun (2022b), however, points out that, unlike what is happening in the United States, Canada, Japan, Australia, and some European countries, robotization is not a reality in Brazil or Latin America as a whole. This situation is in line with Ribeiro (2022), who points out that manual work in DCs is similar in structure to the classic image of a "shop floor," with repetitive and partialized activities, including the processes of storing goods, picking products from shelves, and arranging them on conveyor belts. The storage location of each item is identified using a bar code, and the information is recorded in software. Thus, knowledge about the inventory belongs exclusively to the computer program, and it is the algorithm that manages the picking work, assigns demand to workers, dictates the pace of work, and generates performance information for each employee.

The OECD (Organisation for Economic Cooperation and Development, 2019), in a recent report, points out that the fall in robot prices in relation to labor costs can boost robotization. This is because when the cost of one input decreases in relation to another, companies start using the less expensive one. Cséfalvay (2019) summarizes by stating that higher wages can create incentives for firms to make intensive investments in robot-based automation, while the availability of a low-wage workforce, on the other hand, is a disincentive to such investments. In the case of the Latin American experience, low wages hinder the advance of robotization. This picture is emphasized in data from multiple sources systematized by the International Labour Organization (ILO), which reveals that the hourly cost of labor per employee in the wholesale and retail sectors in Germany, France, and Canada was respectively US\$ 38.99, 38.54 and 25.27 in 2020, while in Brazil this figure was US\$ 3.83 (Internacional Labour Organization, 2022). Figure 3 below shows the causality between labor costs and the degree of robotization.

DELIVERY FLOWS AND THE RELATIONSHIP WITH COURIERS AND LOGISTICS SERVICE PROVIDERS

As Aćimović, Mijušković and Milošević (2020) summarize, the last-mile delivery process for goods purchased on Amazon.com.br, can be carried out by Amazon itself, by postal

 $^{^{\}scriptscriptstyle 4}$ On this subject, see Barros (2005).

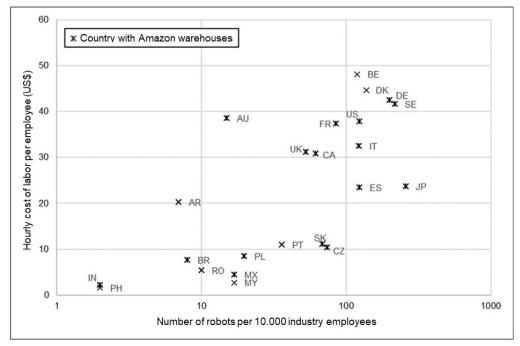


Figure 3 – Density of robots and cost of labor remuneration per hour in industry in selected countries (2015). **Source:** Cséfalvay (2019).

services or by a third-party logistics operator. Solomon (2020) and Hassel and Sieker (2022) point out that Amazon's entry with its own operations at this stage of delivery took place in 2014, after discontent over how FedEx, USPS, and UPS handled Amazon's package volume in the winter of 2013 and the company's conviction of being able to develop a more cost-efficient and faster delivery service. As a result, two main systems emerged for managing shipments of goods directly by the company, with varying degrees of flexibility in working relationships: Amazon Flex and Amazon DSP (delivery service partner).

Amazon Flex, launched in 2015, allows individuals to deliver goods using their own vehicles, bearing the costs of fuel, maintenance, insurance, etc. The process is carried out via a cell phone app, from where the delivery person must scan the package at the collection center and take a photo of the package at the time of delivery, and observe the route to be followed. On the other hand, the DSP service, launched in 2018, encourages individuals to start their own delivery businesses, so that they work exclusively for Amazon. In addition to payment for the work done, the American company offers these service providers discounts on vehicles, fuel, insurance, and uniforms, the latter of which are standardized and mandatory. The vehicles used, also standardized, are Mercedez Benz vans (Hassel; Sieker, 2022; Aćimović; Mijušković; Milošević, 2020).

Hassel and Sieker (2022) point out that this working relationship put into practice by Amazon is part of the "uberization of work" trend, driven by the emergence of platform companies. Pochmann (2016) points out that, unlike in the past, in the context of "uberization" there are no guarantees about pay, which depends on the worker's availability. Wages cease to be a fixed cost and become a variable cost, which exists if the work is actually done. Companies are freed from their responsibilities towards workers, transferring the economic risks to them (Vallas, 2019).

The greater or lesser degree of intensity in the use of self-employment varies according to the national context. In the United States, and especially in the United Kingdom, the company applies the Amazon Flex and Amazon DSP models and uses a considerable number of self-employed workers, whereas in Germany, stricter labor legislation prevents the spread of this hiring model. To meet the demand for delivery drivers in that country, the company resorted to directly hiring around 200 drivers in Munich in 2019, paying \in 12.80 per hour, a higher rate than competitor Hermes (Hassel; Sieker, 2022; Sawall, 2019).

In Brazil, Amazon operates its DSP service, whose platform has been online since 2020. According to the official website, to apply for the service, the interested party must make an initial investment of R\$45,000 in addition to working capital, an amount that is not paid to Amazon, but is estimated to cover initial costs such as opening a legal entity or permits, services of accountants and lawyers, purchase of material, hiring of employees, etc. In addition, the partner is expected to operate 20 to 40 vehicles a day (Amazon Logistics, 2023). Figure 4 shows the municipalities in which Amazon was accepting applications to operate this service in January 2023, highlighting state capitals and cities in metropolitan regions, especially in the Southeast and Northeast, as well as the Goiânia-Brasília axis. In the case of the states of São Paulo, Paraná, Rio de Janeiro, Goiás, Bahia, and Paraíba, Amazon is accepting applications for some lower-level cities in the urban hierarchy, especially regional capitals (Feira de Santana, Campina Grande, Anápolis, Piracicaba, Jundiaí, Ponta Grossa, etc.).

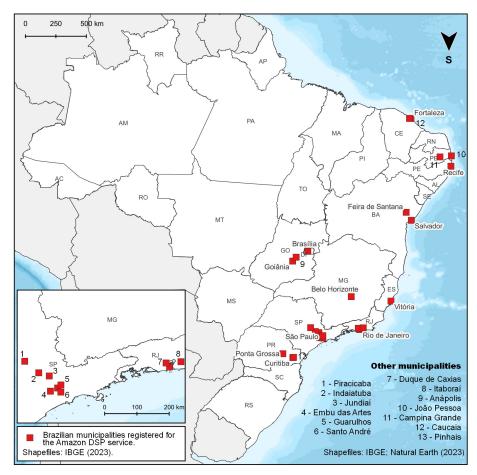


Figure 4 – Brazilian municipalities registered for the Amazon DSP service (January 2023). Prepared by the author based on Logistics Amazon (2023).

In addition to deliveries through these programs, Amazon can use third-party firms, which in turn can hire their drivers directly or subcontract them. The relationship between the American company and its partners in last-mile delivery does not always translate into complementarity, as "Rather than just matching buyers and sellers on Amazon Marketplace, Amazon aims to take advantage of the lower logistical efficiency of the traditional CEP⁵ companies and manipulate them with new distribution networks, different labour standards and new kinds of employment" (Hassel; Sieker, 2022, p. 374). One example is what happened in 2019, when FedEx ended its partnership for ground deliveries of Amazon packages in the country. Markman (2020) points out that this decision was related to the fact that Amazon was, at the time, structuring its own delivery system, which could later become a competitor for FedEx and other logistics operators. The trend is for direct competition between Amazon and logistics operators to intensify, given that the company manages the "Buy with Prime" service in the country, which allows shopkeepers who do not operate stores on Amazon.com to offer Prime subscription services to their customers, including the American company's management of payments, storage and delivery (Amazon, 2022a).

In Brazil, an important move in relation to carriers was the acquisition of 9.68% of the shares in Total Express. This nationwide logistics operator is controlled by the Abril Group and had net revenue of R\$510 million in 2019. It has a structure of 130 warehouses, 5,300 company-owned vehicles, and 2,400 employees. The company operates in 2,000 Brazilian municipalities and has the capacity to process 300,000 parcels a day (Mattos, 2022; Cruz, 2021). Despite this, Total Express is not exclusive in managing Amazon's delivery flows in Brazil. In fact, the company ships goods from thirteen companies, most of them of national origin. They are: Total Express, Sequoia, Loggi, JadLog, Shippify, TLOG, Dominalog, Diálogo, Favorita, Azul Cargo, Carvalima, DHL Express, and Correios.

In 2022, an agreement was reached between Amazon and Azul Cargo, which allowed the American company to use previously reserved spaces in the cargo area of commercial flights departing from Guarulhos and Viracopos airports to the north of the country. The aim, according to Rafael Caldas, head of Amazon's logistics division in Brazil, is to reduce the delivery time in the cities of Macapá from seven days and Manaus and Belém from five days to two or three days (Braun, 2022a). The choice of air transport to speed up deliveries in the region is in line with the analysis by Cruz (2021), who explains that the difficulties with road transport in the Amazon are known by local logistics service providers and those from other locations, related to natural roads with few paved stretches (BR-319, BR-230, etc.).

Internationally, the use of air travel is a recurring practice in Amazon's delivery services. In 2016, the company started using a leased Boeing 767-300 to exclusively transport its goods in the United States (Clark, 2016). Schwieterman, Craig and Mader (2022) point out that, as of September 2022, Amazon Air had more than 88 aircraft, both leased and purchased⁶, including Boeing 767s and 737s and ATRs 42/72. Nevertheless, the company does not have an air operator's certificate, and for this reason it hires companies to manage its flights, such as the American Air Transport Services Group (ATSG), Atlas Air, and Silver Airlines and the Irish ASL Airlines Ireland, the first two of which have Amazon among their shareholders.

 $^{^{\}scriptscriptstyle 5}\,$ CEP: Courier, express, and parcel.

⁶ In 2021, Amazon acquired 11 Boeing aircraft from Delta Air Lines and WestJet Airlines (Day, 2021).

Amazon's air transportation network does not cover Brazil or any other South American country⁷. In the United States, the company managed an average of 194 flights a day in September 2022, 44 of them at its main hub, Cincinnati-Northern Kentucky International Airport (CVG), in the state of Kentucky. In Europe, there is also an internal network, connecting Madrid, Barcelona, Paris, Milan, Rome, Cologne, and Leipzig. The flights, which average 8 a day, are operated by the Irish company ASL Ireland Airlines from a pair of Boeing 737s. In addition, there are transoceanic flights between the continuous territory of the United States and Alaska, Puerto Rico, and Hawaii, and between this country and airports in Amsterdam and Shanghai, on a semi-regular basis (Schwieterman et al., 2021; Schwieterman; Walls; González, 2020).

FINAL CONSIDERATIONS

Space is not a thing or a system of things, but a relational reality: things and relationships together. With the globalization of society and the economy, geographical space is globalized, and today there is no longer a single point on the globe that can be considered isolated, as the whole world has become one to meet the needs of production. Technique, in turn, is a concrete universal, in that the set of techniques is potentially the same everywhere. But this does not mean that spaces become homogeneous: in fact, the more they become globalized, the more they become singular and specific, because they are increasingly specialized (Santos, 1996). It is in this context that we can understand the insertion of a global firm, in this case Amazon Inc., into national e-commerce, highlighting its adaptations to the specificity of the Brazilian territory, its economic agents and its historical framework. As Santos (1996) argues, the same element will have different impacts in different areas of the planet, and these differences will depend on the history of the place, the conditions that exist at the time when what is external becomes internal, and the set of relationships that will be established between what arrives and what already exists.

Thus, from what has been discussed, we can see that the processes and results generated by Amazon's actions as a global company are different depending on the country or part of the country that receives it. In Brazil, the existence of agents linked to the logistics real estate market led to the company's association with firms operating logistics warehouses all over the country, but international ones in most of the Concentrated region—where the technical-scientific-informational environment is established more intensely—and national and local ones in the other regions. There are also players closely linked to the financialization of logistics real estate: groups of investors linked to REIFs, brokers, and logistics operators.

Obtaining inventory is happening at the same time as the national book retail market is crumbling, with two of its main companies filing for judicial recovery. This factor, combined with the economic and logistical advantages offered by Amazon, results in a scenario of dependence by publishers, in which disputes involving discounts and fees are widespread. The spread of the FBA program, in turn, complexifies the global firm's relations with its suppliers, insofar as it removes ownership of the goods and spreads it among a large number of small and medium-sized shopkeepers.

⁷ It is estimated that in January 2023 ATI will start operating Prime Air flights to Bogotá, Lima, and Quito. There are no forecasts for Brazil (Lennane, 2022).

The high volume of goods and the specific characteristics of the national territory, in turn, have led to the participation of a variety of delivery companies, most of them national, including the Brazilian Post and Telegraph Company, which is able to maintain delivery flows in areas that are not very attractive to private agents, while Amazon itself is trying to establish itself in the business, through partnerships, the purchase of shareholdings or even its own delivery services. These services, in turn, have established themselves in Brazil, but also around the world, based on the flexibilization of labor relations and the rarefaction of commitments between the company and the courier. All these aspects, taken together, guarantee the global firm the imperative of flexibility, facilitating the activation-deactivation of its processes and making its revenues increasingly secure.

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Author's contribution

Fernando Soares de Jesus: Analysis of works obtained through bibliographic and documentary review; Writing; Preparation of maps, tables, and diagrams; Survey of newspaper reports; Systematization and linking of content, items, and sub-items. José Messias Bastos: Review and completion of theoretical and methodological notes; Survey and systematization of works (books and articles) that served as a source for preparing the manuscript; Systematization and linking of items and sub-items.

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