

Urban space and digital platforms: Commuting journeys and working conditions of bicycle delivery workers in the metropolis of São Paulo

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Abstract

This article examines the imbrication between urban space and work by digital platforms in the metropolis of São Paulo, Brazil. Focusing on commuting journeys and the working conditions of *iFood* delivery workers who use electric bicycles. Interviews and field observations were carried out as research techniques, between January and April 2022, complemented by bibliographic and documentary research. The results show that the long-distance and time-consuming travels made by these workers between the various peripheries of the metropolis and some centralities with high potential for making deliveries. The ways in which spatial inequality manifests and reproduces itself in the commuting patterns of the deliverers are then evidenced, reaffirming the center-periphery relationship. By unveiling the working and living conditions of bicycle delivery workers, the articulation between ultra-precarious forms of platform work and urban space is made explicit.

Keywords: urban space; digital platforms; bicycle delivery workers; *iFood*.

Espaço urbano e plataformas digitais: deslocamentos e condições de trabalho dos entregadores de bicicleta da metrópole de São Paulo

Resumo

Este artigo examina a imbricação entre o espaço urbano e o trabalho por meio de plataformas digitais na metrópole de São Paulo. Com ênfase nos deslocamentos e nas condições de trabalho dos entregadores do *iFood* que utilizam bicicletas elétricas, adotam-se como técnicas de pesquisa o levantamento bibliográfico e documental, entrevistas e trabalhos de campo entre janeiro e abril de 2022. Como resultado, revelam-se os deslocamentos, em longas distâncias percorridas com significativo dispêndio de tempo, realizados por esses trabalhadores entre as diversas periferias

da metrópole e algumas centralidades com alta potencialidade para realizar entregas. Despontam também as formas pelas quais a desigualdade espacial se manifesta e se reproduz nos deslocamentos dos entregadores, reafirmando a relação centro-periferia. Ao destacar as condições de trabalho e de moradia dos entregadores que utilizam bicicleta como meio de trabalho, explicita-se a articulação entre as formas ultraprecarizadas de engajamento laboral pelas plataformas digitais de entrega e o espaço urbano.

Palavras-chave: espaço urbano; plataformas digitais; entregadores de bicicleta; *iFood*.

Espace urbain et plateformes numériques: déplacements et conditions de travail des livreurs à vélo dans la métropole de São Paulo

Résumé

Cet article examine l'imbrication entre l'espace urbain et le travail des plateformes numériques dans la métropole de São Paulo, au Brésil. En mettant l'accent sur les trajets domicile-travail et les conditions de travail des livreurs *iFood* utilisant des vélos électriques, des recherches bibliographiques et documentaires, des entretiens et des travaux de terrain entre janvier et avril 2022 sont adoptés comme techniques de recherche. En conséquence, des déplacements se révèlent, sur de longues distances parcourues avec un investissement de temps important, effectués par ces travailleurs entre les différentes périphéries de la métropole et certaines centralités à fort potentiel pour recevoir et effectuer des livraisons. Les manières dont les inégalités spatiales se manifestent et se reproduisent dans les déplacements des coursiers émergent également, réaffirmant le rapport centre-périphérie. En révélant les conditions de travail et de logement des livreurs qui utilisent le vélo comme moyen de travail, l'articulation entre les formes extrêmement précaires d'engagement au travail par les plateformes numériques de livraison et l'espace urbain est rendue explicite.

Mots-clés: Espace urbain; Plateformes numériques; livreurs à vélo ; *iFood*.

Introduction

New spatial practices have been produced worldwide due to the proliferation of digital platforms and the current determinations that affect workforce employment. During this recent expansion of digital platforms, app companies, as coined by Abílio (2017), of individual transport (such as *Uber* and 99) and delivery (such as *iFood* and *Rappi*) deserve to be highlighted, both for their quantitative importance and for the potential to produce and reproduce spatial practices.

The emergence of new determinations linked to these current modalities of labor engagement incorporates new contents to the classic Urban Geography theme of shifts between home and work. Several research possibilities unfold as various digital delivery and individual transport platforms engage workers in different conditions. Unlike other forms of engagement, which are also precarious, workers on delivery and transport apps present commuting as work, operating in and through urban flows. This characteristic – added to the current determinations that fall on workforce use – produces new spatial relationships, reiterating or even redefining urban morphologies.

Workers in the transport sector (drivers, freight forwarders and couriers) represent 90% of all workers engaged by digital platforms in Brazil (MANZANO; KREIN, 2022). The purpose (carrying out individual transport or making deliveries) and the means of transportation (car, motorcycle or bicycle) of these workers result in and imply different working conditions. A delivery person from the *iFood* app-company tends to have far fewer expenses and resources available than a driver who works with *Uber*, who has to pay for the maintenance or rent of the car and fuel.

Even when it comes to deliveries, displacements can be quite different, depending on the type of delivery, with two or three ends, according to the terminology used by Machado and Zanoni (2022). In two-way delivery, typical in e-commerce services and involving companies such as *Loggi*, displacements involve picking up goods from warehouses/warehouses, generally in locations further away from the center and delivering them to the customer. The three-pronged approach, which is the focus of this article, includes the customer, the platform company and a third company, such as a restaurant.

The new quantitative and qualitative dimension generated by the widespread use of digital delivery platforms gives rise to several issues that are still little addressed when related to urban space. Some extremely naive readings, already criticized by Slee (2017) and with solid commitments established with the success of this business model, acclaimed the freedom and spontaneity of the displacements resulting from digital platforms, just touching the contradictions of these work relationships. However, as verified in fieldwork and interviews, couriers engaged in and through digital delivery platforms carry out daily displacements between the different outskirts of the metropolis and some centralities with high potential to receive and carry out deliveries.

In the scope of the three-pronged delivery, the aim is to understand the overlap between the displacements and the working conditions of the couriers engaged through the digital platforms of the metropolis of São Paulo, showing how the diffusion of the digital delivery platforms at the same time in which it exacerbates the spatial inequality that already exists in the metropolis,

introduces new characteristics to displacements between home and work, with work itself also carried out in displacement. The emphasis of this article will be the displacements of couriers engaged by the *iFood* application-company, who mainly deliver products from restaurants and snack bars and use the paid service of shared bicycles from the company *Tembici* in São Paulo, picked up at the *iFood Pedal* bases.

This choice stems from the fact that these workers are in even more risky and precarious conditions than those who use a motorcycle, as verified in fieldwork and previously pointed out by authors such as Machado (2019) and Abílio (2020b). Unlike drivers and motoboys, this delivery person travels long distances a day, predominantly using his physical strength and is also exposed to the risks of accidents in São Paulo's traffic because he is on a bicycle.

The bases of *iFood Pedal* are localized where electric bicycles are taken, and some also have the infrastructure for couriers (such as outlets, bathrooms and microwaves). Its surroundings proved viable for fieldwork and interviews due to the large number of delivery men with more time available to report their working conditions while waiting, sometimes for hours, to collect bicycles for deliveries during lunch and dinner. Ensuring access to the working instrument further increases the time spent (as they remain in queues for hours to try to guarantee the collection of bicycles) and the distances covered by these delivery men, who also need to travel to the *iFood Pedal* bases, in certain centralities of the metropolis. Observing these places revealed dynamics linked to *iFood*, a Brazilian company founded in 2011 which, according to a survey released by Petropouleas (2022), held 83% of the Brazilian market share in 2021, followed by *Rappi*, with 13%, and by *Uber Eats*, with 4%.

In addition to a bibliographic and documental survey, fieldwork and semi-structured interviews were conducted at the *iFood Pedal* bases in São Paulo in the first four months of 2022. Information was collected on the places of residence of 270 couriers, which 210 are precisely at the *iFood* bases *Pedal* or surroundings while waiting to pick up electric bicycles from the company *Tembici*. With many of them, it was also possible to conduct interviews and obtain screenshots of smartphones, showing, in the *Google Maps* application, the routes taken and, in the *iFood* application, the dynamics of deliveries.

This article is divided into three sections: introduction and concluding remarks. In the first one, given a new quantitative and qualitative dimension of work on and through digital platforms, some of the working conditions of couriers that lead them to try to ensure more deliveries and income are detailed. In the second, the displacements undertaken daily by these workers are examined, the overwhelming majority from the outskirts to certain centralities of the metropolis, seeking to intensify the use of their workforce and carry out more deliveries. In order to understand the flows of these workers, characteristics of the urban space prior to the emergence of *iFood*, are explained. Finally, in the last section, forms of work engagement and mechanisms of operation of the application determined by *iFood* that reinforce the need for these displacements are highlighted. In these last two sections, processes are highlighted that provide evidence of the recrudescence of the center-periphery relationship through these displacements between the delivery men's places of residence and certain centralities of the metropolis.

A new quantitative and qualitative dimension of work through digital platforms

Many academic discussions deal with transformations and permanence in the world of work resulting from technological and organizational changes intensified in the last decades of the 20th century. New occupations have emerged, especially in the service sector, and ways of organizing production and the work process, with professionals being hired by project or paid by task, in the so-called intermittent work (BRIDI; LIMA, 2018). These changes in relations and ways of organizing work are marked by precariousness, informality and flexibility in a new morphology of work that accentuates exploitation (ANTUNES, 2020).¹

It is in this context of transformations in the modes of work engagement that work under the control of digital platforms gained importance, defined by Manzano and Krein (2022, p. 57) as work in which the worker “accesses the platform to obtain or deliver work,” with varying levels of control and management depending on each platform. As highlighted by Oliveira et al. (2020), alerting to the “technological fetish” risks, digital platforms—including applications – are organized and managed by capitalist companies. For this reason, in this article, the expression company-application, by Abílio (2017) was chosen to highlight the fact that applications are programmed by companies and the existence of contradictions that the discourse of unpredictability or neutrality of the application and its algorithms try to hide (OLIVEIRA et al., 2020).

The rise of new forms of work through digital platforms is strongly linked to the spread of internet access and new information and communication technologies, engendering new business models, labor organization, and exploitation. In Brazil, such labor relations were also favored by the growing destitution of labor rights and the overwhelming erosion of protective labor regulations due to neoliberal reforms, especially the Labor Reform of 2017, which regulated old and new practices of labor exploitation. As for some of its milestones, the arrivals in Brazil at Uber in 2014 and at Loggi in 2015, the work through digital platforms was catalyzed by the social isolation adopted during the Covid-19 pandemic, strengthening ongoing processes related to precariousness from work. On the one hand, the need for survival led some workers to engage in and through the app-companies. On the other hand, social isolation measures favored increased delivery consumption by families who could stay at home and bear such costs (ANTUNES, 2020; ABÍLIO, 2020b; MACHADO; ZANONI, 2022).

¹ The debate about the reproduction of the workforce is not recent. Engels, in the classic *The situation of the working class in England*, from 1845 [2008], already addressed the origins of the working class and highlighted the role of the Industrial Revolution in apprehending control of the production of goods by capital. Marx also dealt in detail with the social relations of production and highlighted, in *Capital* (2003 [1867]), as a fundamental condition of capitalist production the separation of workers from their means of subsistence and instruments of work. Currently, labor relations add to precariousness, flexibility and informality. In this sense, the old and new forms of living and working conditions are modulated, intensifying, with the platformization of work, a moment in which one is remunerated only for the tasks/ services actually performed (without any guarantees about remuneration and own workday) and assumption of the risks and costs of the activity by the worker himself (including to have access to work instruments, as in the case of bicycles and as evidenced in this article).

Linked to the new determinations of the precariousness of the work of the app-company couriers, the quantitative dimension of the platformization of work produces a qualitative dimension linked to the displacements of these couriers, who depend on the infrastructure and urban services to intensify the use of their workforce.

In the field of Geography, the theme of the relationship between technical advances and changes in the world of work and space is not exactly new. Specifically concerning the overlap between techniques, information and urban space, much has already been treated from different perspectives – in classic works such as Harvey (2008 [1992]), Santos (2008 [1996]) and Castells (2008 [1999]). However, the conditions of workers engaged through digital platforms produce spatial relationships at the same time that they are also influenced by them, bringing to the fore the need for further research.

Workers engaged through digital platforms, submitted to new practices of survival and precariousness, and produced urban practices arising from their working conditions and the specificities of this work (moving around). The working conditions of couriers, primarily *iFood*, reveal certain aspects of on-demand work that, added to the low remuneration for each task/delivery carried out, constitute crucial elements for understanding the flows of these workers across the metropolis, the necessary intensification of work rhythms and the search for more deliveries.

Both on-demand work, or just-in-time work, and the informality of work are crucial aspects to apprehending the platformization of work, according to De Stefano (2016) and Abílio (2022a). For Abílio (2020a, p. 116), “the condition of *just in time* is to be available to be used immediately, but to be remunerated only for what it produces.” In this perspective, couriers are remunerated exclusively based on each delivery made, without being paid for the time spent in the countless waits – for the app to call, to wait for the order at the restaurant and to deliver the customer’s order –, common throughout the journey of delivery work.

A wait that consumes a significant amount of time for couriers is to be able to use their means of work, the bicycle (the focus of this article). As verified through fieldwork, some delivery drivers spend up to six hours daily in line to pick up their bicycles at some points on *iFood Pedal*. Shared electric bicycles are released at two times: at 10:30 am for the lunch shift and at 5:00 pm for the dinner shift. Some couriers reported arriving at the bases at 6 am to ensure bike pick-up for lunch deliveries. Depending on the arrival time at each base and according to the queue, pick-up only takes place after 11 am. When they are unable to pick up their bicycles for deliveries, they return to their homes or use Itaú’s conventional (non-electric) bicycles, with less competition among workers as they involve more significant physical wear and tear and lead to longer travel times between pick-up locations of the product and delivery.

The testimonies obtained in the field at the *iFood Pedal* bases reiterate previous surveys on the profile of bicycle delivery people² in 2019 (MACHADO, 2019; ALIANÇA BIKE, 2019). In general, couriers are young black people who live on the outskirts of cities and use delivery app companies as their gateway to the world of work (ABÍLIO, 2020b). According to the Aliança Bike Report (2019), based on a survey of 270 workers, the app delivery person who uses the bicycle to work is generally male and black and aged between 18 and 22 years old. He lives in the outskirts, is unemployed and has completed high school. He works nine to 10 hours a day, travels an average of 40 km and earns an average of R\$992 per month. As the working conditions of couriers are constantly changing, fieldwork and interviews revealed that the distance traveled by them, hours worked and remuneration increased since the survey by Aliança Bike until the beginning of 2022.

The higher remuneration may be related to the minimum delivery fee itself, which in 2020, after a series of demonstrations by these workers, increased from R\$ 3.50 to R\$ 5.31. The greater distance traveled and the hours worked are possibly the result of the need to intensify the use of the workforce itself, as well as a likely lower number of deliveries received by each courier (due to the drop in delivery consumption with the end of the social isolation of the Covid-19), forcing them to seek to make more deliveries and extend the workday.

These just-in-time workers are subject to a broad informalization of work activity (ABÍLIO, 2020a). There is a complete absence of regulations on working hours limits and minimum work guarantees, including costs and risks (FILGUEIRAS; ANTUNES, 2020; ABÍLIO, 2022). The costs of bicycle couriers' activities, although lower than those of motorcycles, consume a significant portion of income: having a smartphone with accurate GPS, durable battery and mobile internet access, for example, is essential.

In addition, essential equipment is generally not provided by application companies, according to the interviewees, and when it is, it is distributed by lottery or in the form of bonuses to the most productive couriers. The costs to acquire a *bag* (thermal bag) range from R\$ 80 (used, square model) to R\$ 240 (new, folding model). The other items needed for the job are also acquired by the delivery person, from the cover to protect the cell phone in case of rain to the helmet.

The couriers also bear the costs of moving from their place of residence to the bases of the *iFood Pedal*, generally done by public transport. For a courier who only uses buses, paying for a single ticket in a three-hour interval, the expenses are BRL 8.80 per day or BRL 228.80 per month, considering a weekly day off (26 days a month). This figure jumps to BRL 397.80 reais when they need to take the metro/train and bus to and from the delivery areas.

2 We chose the expression "bicycle couriers" because it is the most used among the couriers themselves, in addition to being the most frequently found on social networks (such as groups of couriers on Facebook or WhatsApp) and internet sites with advertisements for job openings. . Although the preposition "de" may, in isolation, provide the idea that the delivery person could deliver "the bicycle", the context of this text refers to the bicycle as a means of work. In some passages, to avoid duplication of meaning, the preposition "por" was used. Other expressions used in academic texts are "cycle delivery men" or "bikeboys" (ABÍLIO, 2020b). There is also that of "cyclist delivery men", as in the Aliança Bike report (2019), which, in our view, emphasizes the use of bicycles as a sport, and not as a way to mobilize the poorest workers.

In the period analyzed in this research, from January to April 2022, it was still necessary to disburse BRL 34.90 per month (and another BRL 1 for each bicycle pick up) to use the *iFood Pedal* plan, managed by *Tembici*, which allows the removal of both the red *iFood* bicycles at the *iFood Pedal* bases and the conventional orange ones with the Itaú symbol, distributed at other points in the city, which can be collected at any time.³ For *iFood Pedal* electric bicycles, up to two withdrawals are allowed, of four hours each, with a tolerance of half an hour of delay and a fine of BRL 5 if the time limit is exceeded. Thus, to have access to the work environment, in the case of shared bicycles, R\$ 87.90 is spent (considering one day off per week). A delivery person who spends BRL 8.80 per day on public transport, eats at least one meal a day for BRL 15, pays a monthly internet access plan for BRL 50 and subscribes to the *iFood Pedal* plan, spends almost BRL 30 per day, which is equivalent to at least six deliveries, to cover the costs of the work itself. Such expenses are even higher if we consider smartphones and other equipment, such as *bags* and helmets. Not counting food, the income from at least three deliveries per day is consumed with public transport costs and to have access to the means of work (internet and *iFood Pedal* plan).

Some couriers set daily targets of an average of 15 deliveries (each at a minimum of BRL 5.31, in January 2022), seeking to ensure between BRL 80 and BRL 100 per day. Therefore, 26 days worked per month could result in a gross gain of R\$ 2,070.90 (15 deliveries per day, with a minimum rate of 5.31, considering 26 days worked per month), of which a portion is destined to the costs of own work (such as mobile internet and commuting to delivery regions). A courier who lives in Itapevi, a city in the Metropolitan Region of São Paulo, and picks up shared bicycles in Pinheiros, a district in the West Zone, at a fee received for each delivery:

(...) there should be food vouchers and transportation vouchers [provided by the companies they provide services to]. Because these costs are around 25 reais [transportation and food], and to make [by bicycle] there are at least five deliveries. It is too much. I think that also, about this issue of waiting, it is very complicated. They [the *iFood* company] charge us to be at the place ahead of time and everything, and we suffer a penalty for not arriving on time, but if the restaurant is late, or if the customer is late, this is not passed on to us. I also think they could increase the transfer amount. I don't know if you know, but when a restaurant chooses to take delivery from *iFood* they need to pay up to 26% of the order value to *iFood*, and none of that percentage is passed on to us. Sometimes, we take an order for 200 or 300 reais, and *iFood* pays five reais [to the delivery person], and they are making 26% of that.

3 It is necessary to be a delivery person with an active *iFood* account to access the *iFood Pedal* plan, but not all delivery people necessarily have delivered to this app company during the field survey. That is, a delivery person can be registered with *iFood*, pick up bicycles on *iFood Pedal* and also make deliveries to another app company, such as Rappi or Uber Eats (deactivated in Brazil in March 2022), which calls first or offers more deliveries or more promotions at the given time. More than one delivery application installed on the cell phone, *iFood* was the most used in the period in which the fieldwork was carried out.

To increase their income, and considering that for many couriers it is the primary or only source of income (ABÍLIO, 2022), they extend their workday when there is a “promotion,” the name given to bonuses in which they receive about R\$ 3 more for each delivery, usually on rainy days and periods of greater demand, such as Friday nights and weekends. It is important to remember that paying for the plan or going to the *iFood Pedal* base does not guarantee the collection of a bicycle, whose access depends on the arrival time or, even with the bicycle, on receiving deliveries to make. That is, couriers do not have any guarantees of remuneration or working hours. Phrases like “it is a lottery,” “one day at a time,” and “you need to take advantage of it when there is a promotion” were common in the interviews.

Faced with the costs and risks of their work and the low remuneration for each task/delivery carried out, couriers seek to reduce unproductive work times to a minimum, intensifying the use of their workforce, optimizing their displacements, looking for regions with greater demand for deliveries and prolonging daily working hours. Understanding these displacements implies understanding their manifestations in time and space and analyzing the particularities of the regions to which delivery people move and the territorial strategies of *iFood* itself.

The recrudescence of the center-periphery relationship

Based on what was verified in the field work and on seven elements that will be indicated and detailed, the hypothesis is put forward that the daily flows of couriers with bicycles engaged by digital platforms reproduce characteristics of displacements already reiterated in the metropolis, that is, of workers who need to move from the outskirts, where they live, to the center or other centralities, where they work. The center-periphery relationship, whose reaffirmation is indicated in this text, is not a dual or dichotomous relationship, nor does it refer to a single centrality, an exclusive attribute of the center until the last two decades of the twentieth century. The center-periphery relationship acquired new contents with the “deployment of centrality,” as Cordeiro (1980) expressed, from the center to new spaces in the metropolis and the formation of new centralities. It is a dialectical relationship in constant transformation and that, according to Alves (2010), strengthens the process of constituting the centralities of the metropolises insofar as the centrality “is never complete. It depends on the relationships between different locations, between the center and the periphery and, therefore, is in permanent movement” (ALVES, 2010, p. 37).⁴

4 A broad and dense discussion has been carried out within the scope of Critical Urban Geography on the concepts of center, centrality and periphery. Anchored in the thinking of Henri Lefebvre (2004 [1970]), this theoretical-methodological perspective considers the centrality as the essential of the urban phenomenon and from the dialectical movement that, at the same time, constitutes and destroys it. If the centrality, for Lefebvre (2004 [1970]), is the meeting and the simultaneity, the urban content also produces its negative, that is, according to Carlos (2020, p. 417), “by concentrating all the essential moments of urban life, it releases activities that are its own”. As Lefebvre (2004 [1970]) states, urbanization, when carried out through industrialization, generated, contradictorily, the process of “implosion/explosion” of the city: the implosion of centrality, saturated, in new centralities, and the explosion of the urban fabric in various suburbs. Such a movement generates, in a contradictory way, both the denial of centrality (in segregated and hierarchical spaces in the face of the process of valorization-devaluation and private ownership of urban land) and the spreading of the urban fabric and the generalization of urbanization.

The first element that helps to understand these displacements in search of reducing unproductive work time is the evident social inequality established between those who consume delivery, especially food and those who work through digital platforms. A survey by the Qualibest Institute (2022) indicates that most (53%) of the app's food delivery demand in Brazil was in the average monthly family income ranging from R\$ 5,755.23 to R\$ 21,826.74. The districts with the most significant demand for delivery in the city of São Paulo, identified based on *iFood* data in the first quarter of 2012, were Itaim Bibi, Pinheiros, Jardim Paulista and Moema (AGÊNCIA ESTADO, 2012). Not by chance, precisely where the bases of the *iFood Pedal* were implanted.

In addition to the fact that people with higher incomes, who consume delivery, live in more valued regions of the metropolis and order deliveries to their homes, it should be noted that specific orders are made at the workplace, especially during breakfast and lunch. Thus, the demand for delivery also varies according to the time of day, and whether the region is more commercial or residential: of the orders in Moema, with a more residential profile, 83% were made at dinner, while in Itaim, more commercial, orders at this time same period were only 5% more than at lunch (AGÊNCIA ESTADO, 2012). This difference influences the displacements of couriers and their work strategies: in Itaim, it was more frequent to find couriers with conventional bicycles in the morning due to the volume of demand.

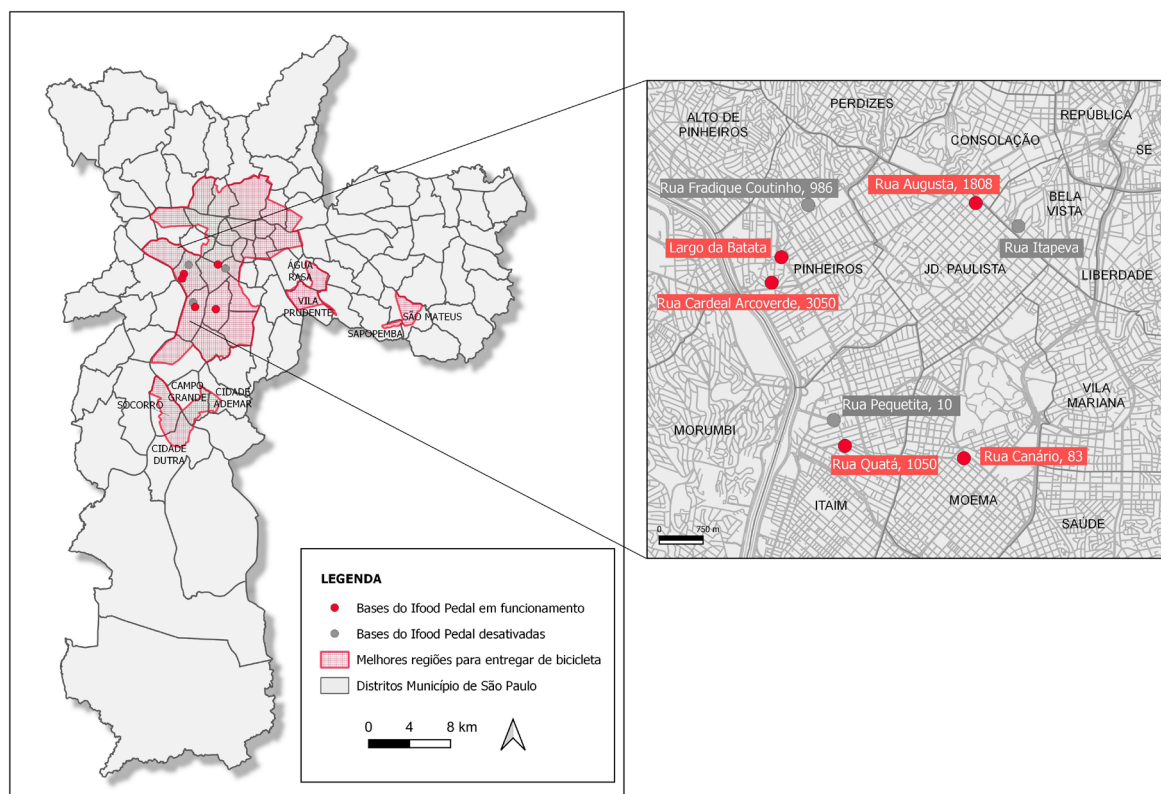
The second element is the concentration of restaurants in some areas of the metropolis. Data released by the Municipal Secretariat for Economic Development and Labor of the City of São Paulo (2019) recorded the highest number of formal gastronomy establishments (restaurants, bars and other food services) in Itaim Bibi and Pinheiros. As there is a maximum delivery radius on *iFood* for deliveries by bicycle (in general, 3 km between the restaurant and the customer's home), couriers need to be in the regions not only with the highest demand for orders but also in the regions where they will be going to take them out. Although this distance is frequently exceeded, according to reports from couriers, the proximity between the pick-up location and the customer is an aspect that increases the chances of a bicycle delivery person receiving more orders. If the distance between the restaurant and the customer is too great or even the delivery itself is heavy or bulky in such a way that it does not fit in the *bag*, the tendency is for it to be sent to a delivery person by motorcycle or car.

In the fieldwork, it was possible to obtain reports from couriers who had tried to deliver in regions closer to their places of residence. One of them was from Cidade Tiradentes, in the far east of the city, and he even delivered with his bicycle in Itaquera, the district of the East Zone closest to the center. "I earned 700 reais in Itaquera in 15 days of work. Here [Moema], I make between 1,100 and 1,300 [reais] in 15 days." Another delivery man earned BRL 300 a week in Grajaú, a district at the end of the South Zone, with motorcycle deliveries, and BRL 500 to BRL 700 in the region of Avenida Faria Lima, occupied by office buildings. A resident of Guarulhos, a city in the Metropolitan Region that is home to São Paulo's international airport, had tried to deliver to the region close to his house with his bicycle, but he said: "It was not worth it. There, I earned 1,200 to 1,300 [reais] per month. Picking up a bike here on Augusta or Pinheiros and delivering it here, I get between 2,800 and 2,900 [reais]".

The concentration of the consumer market and restaurants helps to explain the places delimited by *iFood* as the best to deliver by bicycle and the location of the *iFood Pedal* bases (Map 1). The best regions to deliver by bicycle are observed according to the perimeter indicated by the company itself and based on unstated criteria. Although districts in the East Zone (Água Rasa, Vila Prudente, Sapopemba and São Matheus) and in the South Zone (Cidade Dutra, Socorro, Campo Grande and Cidade Ademar) have regions recommended for delivering deliveries by bicycle, workers travel primarily to regions with *iFood Pedal* shared bicycles.

The *iFood Pedal* bases, implemented in mid-2020, are located in the districts of Pinheiros, Jardim Paulista, Itaim Bibi and Moema (Map 1). In March 2022, the following bases were in operation: Largo da Batata and Rua Cardeal Arcoverde (in Pinheiros); Rua Canário (in Moema); Rua Quatá (in Itaim Bibi) and Rua Augusta (next to Av. Paulista). The bases at Rua Fradique Coutinho and Rua Pequetita were, as verified in fieldwork, deactivated in February 2022. The demands of these bases were directed to the new bases, implemented, respectively, at Rua Cardeal Arcoverde and Rua Quatá.

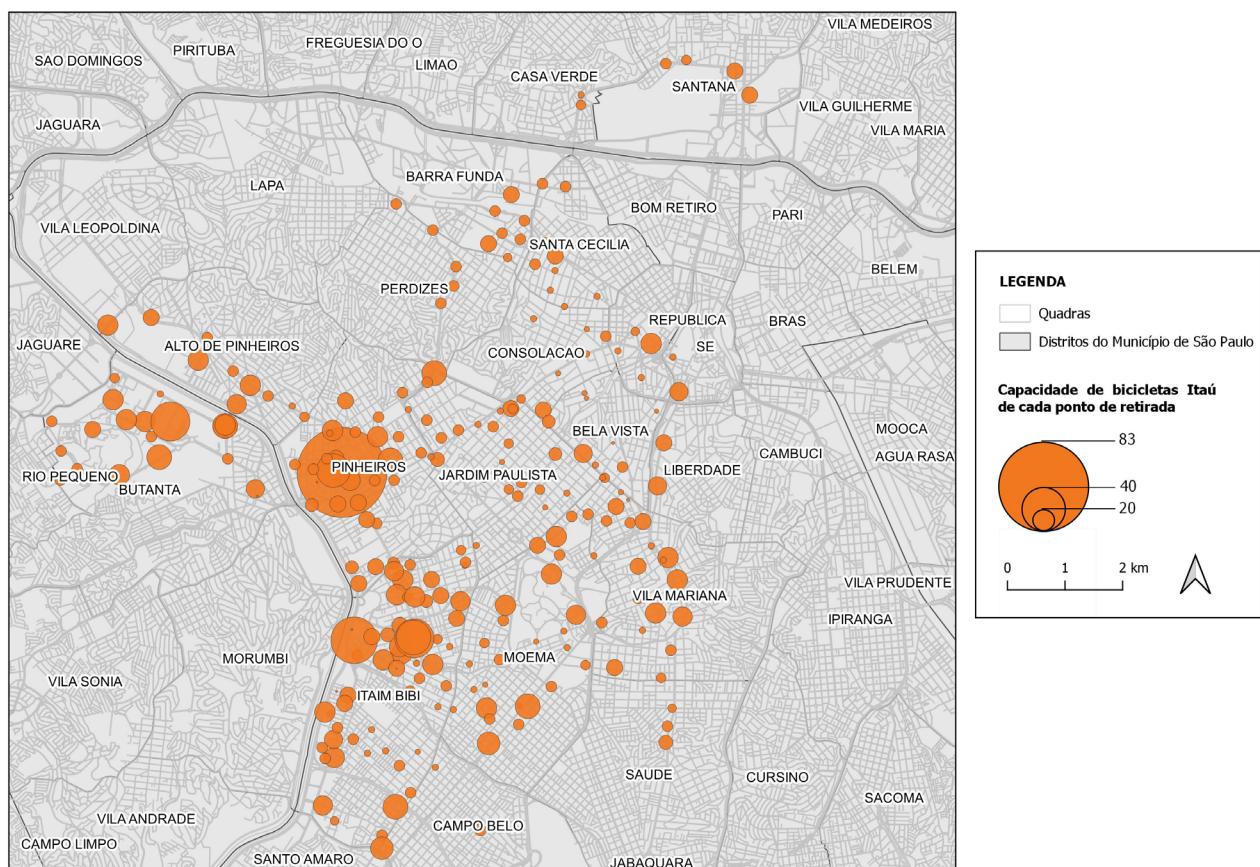
Map 1 – Best regions for bicycle deliveries in the city of São Paulo according to *iFood* and location of *iFood Pedal* bases, 2022.



Cartographic elaboration: Livia M. Fioravanti. Data source: The best regions for bicycle delivery were delimited by the author based on an image available at <https://entregador.iFood.com.br/dicas-iFood/melhores-regioes-para-entregar-de-bike-em-sao-paulo/>, published in January 2021. The criteria used by *iFood* to delimit the areas were not informed. The addresses of the *iFood Pedal* bases were obtained from fieldwork and the website: <https://entregador.iFood.com.br/>.

In addition to the *iFood* bicycles, *Tembici*'s plan for *iFood* couriers provides Itaú conventional bicycles, also available to the general public. They are an option if people cannot get the *iFood* electric bike. Some of the couriers interviewed in the surroundings of the *iFood Pedal* bases also used Itaú's conventional bicycles before 10:30 am or 5:00 pm, when the electric *iFood Pedal* bicycles were released, optimizing unproductive work times and trying to make more deliveries. The location of the Itaú bicycle stops also coincides with the most valued axes of the metropolis, such as Faria Lima, Luiz Carlos Berrini, Marginal Pinheiros and Juscelino Kubitschek avenues. The capacity of each station (Map 2), according to a survey carried out with data available on the Bike Itaú application, also shows this concentration: the stations with the highest capacity are in Largo da Batata (83 bicycles) and the vicinity of the Companhia Paulista de Trens terminal Metro (CPTM) from Vila Olímpia (45 bicycles).

Map 2 – Capacity and location of Bike Itaú stations in São Paulo, 2022.



Cartographic Elaboration: Livia M. Fioravanti. Data collection and organization: Lucas Andrade Alves de Lima and Livia M. Fioravanti. The location and capacity of each Bike Itaú station were obtained from a survey carried out between February 14 and 26, 2022, in the Bike Itaú application. On the map, 258 points are represented.

In this perspective, the concentration of the work environment itself, that is, the electric bicycles available at *iFood Pedal* points and conventional bicycles from Itaú, both supplied by *Tembici*, is the third element that allows understanding of the displacements of bicycle delivery workers to certain metropolis centralities. In the fieldwork, couriers who tried to use their bikes were interviewed but resorted to *Tembici's* to avoid maintenance costs, especially the electric bike. Delivery drivers who have had their bikes stolen also saw shared bikes as a safer and more practical alternative. In this sense, shared bicycles are predominantly used by delivery men not because they have specific skills but because they constitute the only possible alternative for this group of workers, becoming an element of hierarchy in the performance of functions (among those who use conventional bicycles, electric bicycle, adapted bicycle with a combustion engine, moped and motorcycle) and the division of labor itself.

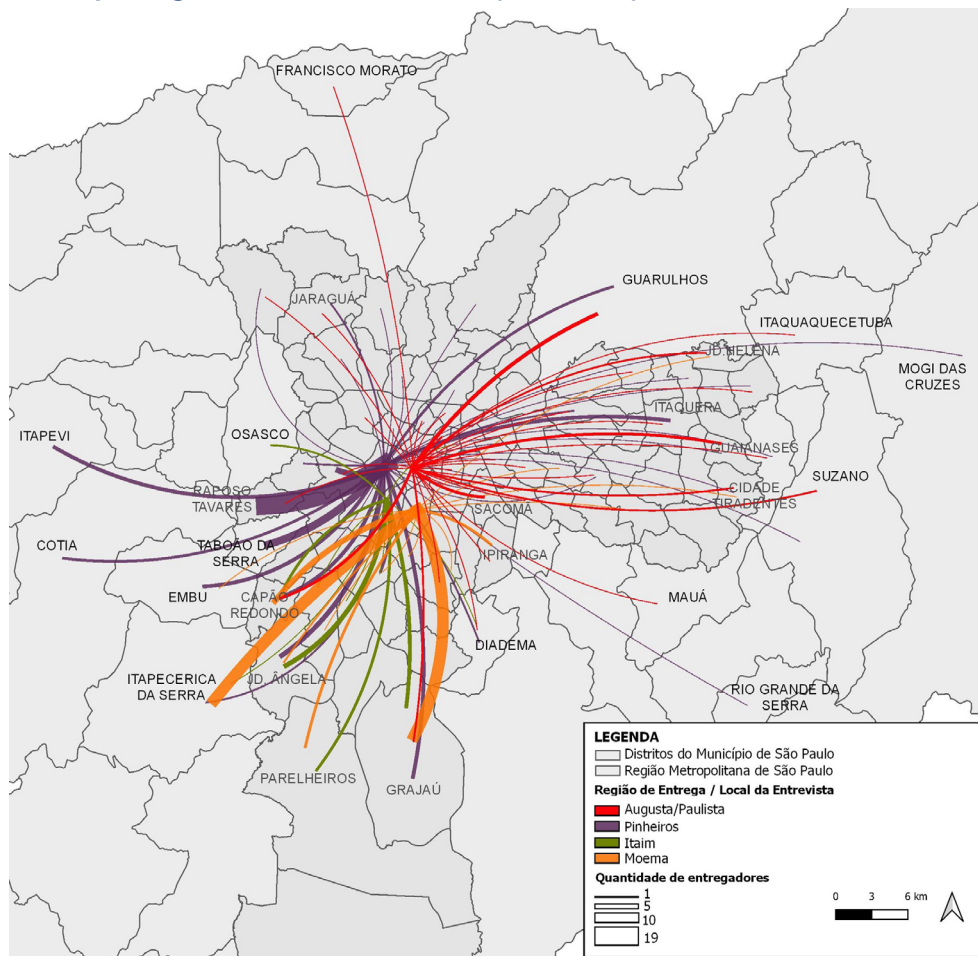
The three elements listed so far manifest and reproduce the spatial inequality of the metropolis by reinforcing the need for long distances to be covered by couriers between their places of residence and work. Although couriers engaged in and through digital platforms do not have a single place of work, as would be the factory, some regions are more sought after because they offer more deliveries and income.

Despite the surveys carried out in the field and through semi-structured interviews not being configured as a quantitative sample, such resources allow an initial sketch of a representative picture of the displacements of *iFood* order deliverers. In the research universe of 270 couriers in the first four months of 2022, the districts of residence (when in the Municipality of São Paulo) or Municipality (when living in the Metropolitan Region) of 210 couriers in the active bases of *iFood Pedal* or surroundings were obtained (Map 1).

Map 3 reveals the distances covered by couriers from the outskirts of some privileged centralities for delivery, which concentrate, as already highlighted in this article, restaurants, the demand for delivery consumption and shared bicycles. In these centralities, couriers try to make more deliveries, reducing the waiting time between deliveries and unproductive work times.

With the caveat that the data reflect the period of data collection, whose purpose was to open up qualitative paths for reflection, it is observed in Map 3 that the majority of couriers who move to the Paulista region reside in districts in the East Zone (highlighting the districts of Guaianases, Cidade Tiradentes and Jardim Helena), in the district of Capão Redondo (South Zone) and the city of Guarulhos. The workers who move to Pinheiros live predominantly in the Raposo Tavares (West Zone) district and the Municipalities to the west of the Metropolitan Region of São Paulo, notably Itapevi, Cotia and Embu. The base of *iFood Pedal* Canário, in Moema, attracts mainly couriers from the districts of Grajaú and Capão (South Zone), in addition to the Municipality of Itapeçerica da Serra. In turn, the base on Rua Pequetita, in Itaim Bibi, has most couriers residing in Jardim Ângela, Capão Redondo, and Grajaú.

Map 3 – Displacement of 210 couriers by bicycle from their residences to privileged centralities for delivery in the city of São Paulo, 2022.



Cartographic Elaboration: Elaboration of the map, survey and organization of the data by Livia M. Fioravanti. Field survey carried out by the author in the vicinity of the *iFood Pedal* bases. The map represents the district or Municipality where 210 workers live who deliver and/or collect shared bicycles in the regions of Paulista (*iFood Pedal* base on Rua Augusta), Pinheiros (base Rua Cardeal Arcoverde and Largo da Batata); from Itaim (base of Rua Pequetita) and Moema (Rua Canário).

The map also reflects the movement of workers in each base and nearby streets on the days of fieldwork. Between January and April 2022, the regions of Pinheiros and Augusta gathered more couriers using the *iFood Pedal* bases than in Itaim Bibi and Moema. In Pinheiros, adding the bases of Largo da Batata and Cardeal Arcoverde, the places of residence of 99 couriers were obtained, 19 (19.2%) of them residing in the Raposo Tavares district. At the base of Rua Augusta and close to Av. Paulista, there were 49 couriers, emphasizing Guarulhos (with 4 couriers or 8.2%). At the base of Rua Pequetita and the surroundings, there were 23 workers, with five of them (21.7%) from Jardim Ângela. Finally, in Rua Canário and surroundings, in Moema, there were 39 couriers, with Grajaú being the most prominent residential district (12 couriers, equivalent to 30.7%).

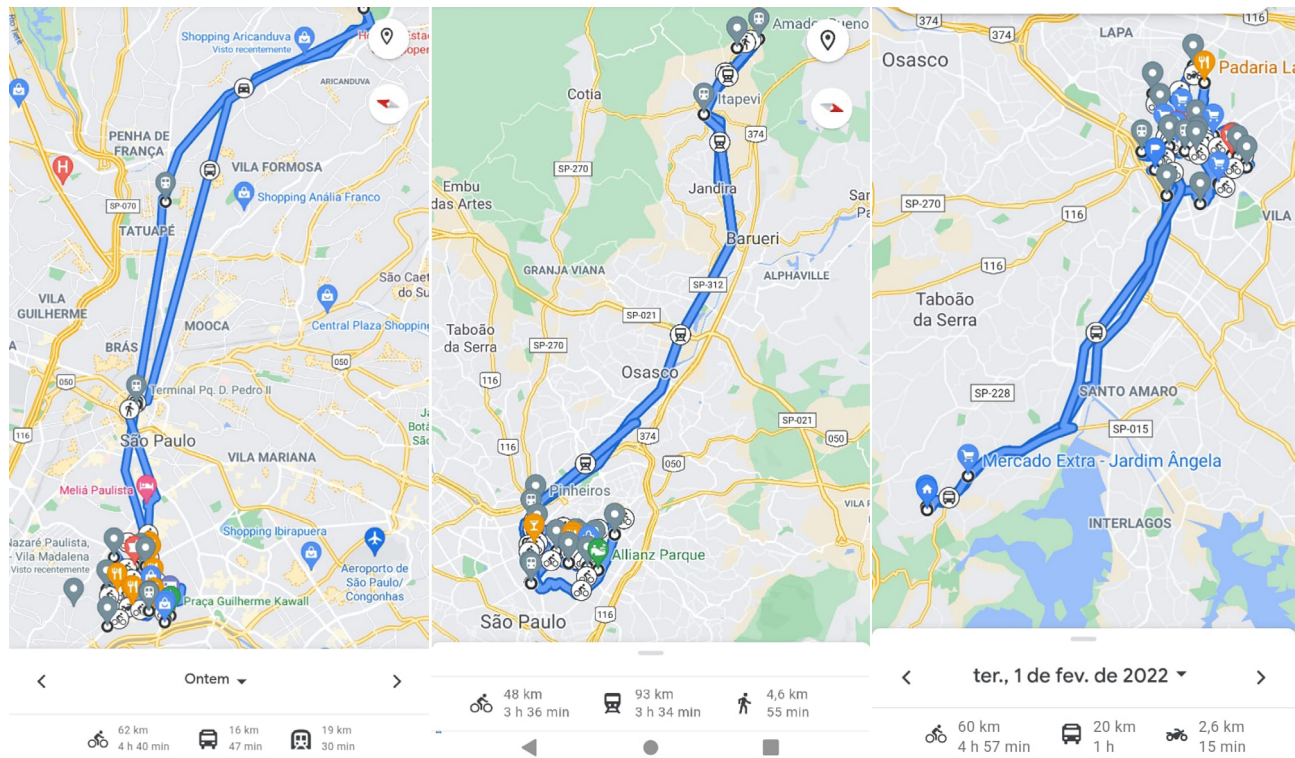
Travel trends indicate a crucial role for public transport services. Workers who move from the Raposo Tavares district have several bus lines that take them to Pinheiros. Similarly, couriers from Itapevi use CPTM's Line 8 – Diamante and Line 9 – Esmeralda to reach the stations where they will receive delivery orders. Many of those who deliver in the regions of Moema and Itaim take two buses or trains on Line 9 – Esmeralda or Line 5 – Lilac, depending on where they live and how much they can afford to travel to their workplace. In the case of the Augusta base, which has part of the workers in the East Zone, the primary means of transportation are the Red Line of the Metro, Line 11 – Coral of CPTM and urban buses, when necessary, due to the distance to the stations. , or even to pay for just one ticket, even if it makes the trip longer.

Paying for access to *Tembici's* shared bicycles is, therefore, an alternative for these workers who, even if they could afford the costs of owning a bicycle, would face difficulties in commuting to the delivery regions, either because they need to travel along highways dangerous areas with intense movement and high speed of cars (such as Rodovia Raposo Tavares and Avenida Radial Leste), or because they live in places far from train and subway stations which, since March 2020, allow bicycle transport from 10 am to 4 pm and from 8:30 pm until midnight.

The concentration of cycling infrastructure in these city regions, even if only on the part of the paths, facilitates travel and makes it safer. As Harkot (2019) states, the bicycle paths in the metropolis of São Paulo are already valued regions. Based on data from the 2017 Origin and Destination survey and analyzing the expansion of bike lanes and lanes in the bike lane policy from 2013 to 2016 in the city of São Paulo, Harkot (2019) highlights that, although people make up 70% of bicycle trips with incomes of up to four minimum wages, the cycling network reinforced historical trends by implementing few periphery-center connections and favoring “localities that are already the most benefited by the entire urban infrastructure and where the highest income population lives.” In this perspective, bicycle couriers engaged in and through digital platforms use not only shared bicycles available only in some areas of the metropolis but also a concentrated bicycle infrastructure, which is configured in the fourth point highlighted in this article to elucidate the displacements undertaken by these workers between places of residence and some centralities with high potential for receiving and making deliveries.

Screenshots from the *Google Maps* application (Figure 1A, B, C) give a dimension of the couriers' daily journeys. In the first **(A)**, a courier from Itaquera travels to Pinheiros to make deliveries. On the registration day, he used two buses and the subway and worked from 11:00 am to 10:00 pm, traveling 62 km by bicycle. The second delivery person **(B)** lived in the Amador Bueno neighborhood in Itapevi and spent about 3 hours by train and subway, traveling 93 km and returning to Pinheiros, where he cycled 48 km. The third delivery man **(C)** lived in Jardim Ângela, went by bus to Pinheiros to use the *iFood Pedal* bases and made his deliveries from 10 am to 10 pm that day, pedaling from 60 to 70km.

Figure 1 – Screenshot of the *Google Maps* application. A. Displacement of 35 km. from a resident of Itaquera who spent 1h17min to get to and from Pinheiros, where he makes deliveries with an *iFood Pedal* bicycle, with which he traveled 62 km that day. B. Commuting by a resident of Itapevi, who on that day spent 3h34 min traveling the 93 km round trip from his home, in Itapevi, to the *iFood Pedal* base, in Pinheiros, from where he traveled another 48 km making deliveries. C. Displacement of a resident of Jardim Ângela, who traveled 20 km in 1 hour to go and return from the Pinheiros region, where he covered 62.6 km with *iFood Pedal* bicycles. The *Google Maps* application identified 2.6 km by motorcycle, possibly due to the speed used in the 2.6 km by bicycle.



Source: Screenshots of the *Google Maps* app provided by couriers.

Despite the primordial role of ease of access by public transport to the *iFood Pedal* bases, greater availability of bicycles or even the organization of each of these bases influences the displacements of couriers who, sometimes, choose to take longer or longer journeys time-consuming. For example, the greater competition for bicycles at Rua Augusta's base led some of the delivery men from Guarulhos to move directly to the base at Largo da Batata, even if they say it takes longer. According to the report of a delivery driver who has lived in Guarulhos for four years: "If the day before, I stop at 11 pm, get home at midnight... sometimes the next day I cannot do it. I cannot get up early and get here [Paulista] early, so I am going straight to Faria Lima". Another Jardim Ângela resident who delivers to Itaim commented:

I started on Paulista. Then I stayed there for a while, around three or four months. Then I left because I could not get a bike anymore... because of overcrowding, that kind of thing. There were no more bikes available. So, I ended up coming to Pinheiros, right? Which was another point. Then, I could pick up a bike even after a while. Afterward, the point got messed up, and I could not get a bike either. Then, I had to move again and

ended up coming to Itaim. So, here I was, managing to work correctly, take a bike and everything... Until yesterday. Until closing point. Fortunately, they are distributing the bike here. I do not know if they will open another point... But that is what we have for now: we are jumping from branch to branch.

In addition to the time spent traveling from their homes to the *iFood Pedal* points, which, in many cases, takes more than an hour, there is the time spent waiting in lines, in often precarious conditions. At least before the inauguration of the base on Rua Cardeal Arcoverde and after the closure of Rua Fradique Coutinho, many couriers faced long queues early in the morning, in Largo da Batata (Figure 2), under the sun or rain and without access to a bathroom and water. The base on Rua Pequetita presented the same situation. Even at the bases that offer bathrooms, tables, chairs, microwaves and water, the physical space seemed inadequate for the workers' needs, such as at the Rua Augusta base, where delivery men were sitting or lying on the floor waiting for pick-up time, the bikes they would work with.

Figure 2 – Couriers are in line to pick up bicycles at Largo da Batata, in Pinheiros, at 10 am.



Source: Photo by Livia M. Fioravanti, Feb 13, 2022.

The bases in Moema and the then-newly opened base on Rua Cardeal Arcoverde were the ones that, among those visited, seemed to meet the demands of delivery men the most, as they offered restrooms and places to rest. As of March 2022, posters at the *iFood Pedal* bases indicated that the delivery of bicycles would be subject to availability (Figure 3), even though it is an essential work tool for workers searching for which they leave their residences and spend their resources on public transport.

The precariousness of these new forms of work engagement, linked to digital platforms and the intensification of forms of labor exploitation, interfere with the ways of experimenting

with space. There are currently new contents that reiterate or even go beyond what was already manifested when industrial capital had primacy in the production of urban space: the precariousness of housing and transportation, the long and time-consuming journeys between home and work and the difficulty in accessing services, urban infrastructure and collective consumption goods. In addition to what was already characteristic of the industrial economy, couriers experience everyday constraints, from the need to look for a place to drink water, use the bathroom or heat a meal brought from home to compromising part of the work day with the waiting and competition for the means of work, shared bikes.

Couriers spend their time and resources engaging with digital platforms and look for regions where they can use their workforce intensively. In this sense, app companies use urban services and infrastructure at a meager cost, provided by the State, such as public roads and cycle paths, or borne by the worker himself, in the case of public transport.

Figure 3 – Poster on the *iFood Pedal* base in Largo da Batata, in Pinheiros.



Source: Photo by Lívia M. Fioravanti, 12 mar.2022.

Territorial strategies of a concentrated dispersion

Operating mechanisms dictated by the app company reiterate the need for large displacements by couriers. Outlining a fifth element here to understand the movements of couriers, those registered in the *Tembici* plan are called more – or “touch more,” as they say – and receive more promotions, for which they earn more than with ordinary deliveries. In addition to their perception and experience concerning their working hours and the number of deliveries with their own or shared bike, the screenshot below (Figure 4) shows that the app company encourages sharing bikes. Some couriers also reported deliveries over shorter distances for those who subscribe to the *iFood Pedal* Plan, whether for conventional or electric bicycles.

Figure 4 – Screenshot of the iFood application notification showing exclusive promotions for deliveries made with conventional Itaú bicycles.



Source: Screenshot provided by the courier.

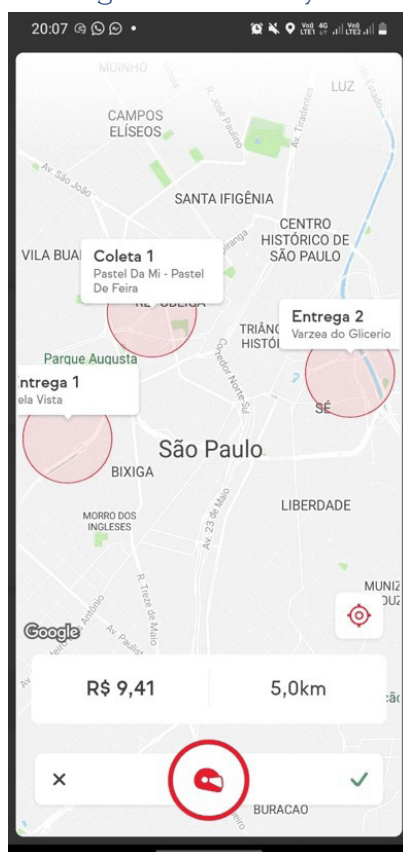
In this sense, the workers are encouraged to rent shared bicycles, concentrated spatially in the metropolis, to receive more deliveries, obtain a higher income and travel a shorter distance. Even if promotions are not constant and demand is not necessarily more excellent, the sporadic promotion of promotions helps couriers create strategies that favor *Tembici* bicycles.

The sixth element that leads workers to use *iFood Pedal* electric bicycles comes from the time and routes the app company determines, which are easier to complete with an electric bicycle. Electric bicycles allow for less physical wear and tear than conventional ones, making it possible to extend the working day and cover long distances, including steep paths. Accepting deliveries in a larger radius than theoretically would be intended for bicycle couriers is essential as it favors the score, which depends on the number of deliveries and reduces the risk of penalties for not meeting the deadline or refusing delivery (Figures 5 and 6).

The time imposed by the application to reach the restaurant and the consumer is often insufficient and disregards slopes and heavy or congested traffic. As couriers can suffer blockages in case of delays, using electric bicycles is a vital alternative to carry out displacements in timed times imposed by the application company.

One last element – and of paramount importance – to understand the journeys of couriers by bicycle, reiterating the center-periphery journeys, is the system of promotions in delimited regions of the city, the so-called “promo by zone” of *iFood*. In them, the courier receives more for each delivery, generally more than R\$ 3, representing an increase of 56% to the minimum delivery fee (R\$ 5.31). The order pick-up must be done in the area of each perimeter, although the delivery to the customer can be done outside it. The possibility of being paid more leads most workers from the periphery to move to where they could be paid more.

Figure 5 – Screenshot of the *iFood* app, showing the long distance to be traveled and what they call a dual route, in which they receive orders for two deliveries, receiving less than if they made them separately.



Source: Screenshot provided by the courier.

Figure 6 – Screenshot of the *iFood* application, showing the distance traveled, on a double route (two orders), from Av. Brigadier Luís Antônio to Santa Cecília.



Source: Screenshot provided by the courier.

The screenshot below (Figure 7) of a map released by *iFood* itself represents a promotion by zone, covering districts in São Paulo and neighborhoods in the eastern region of Osasco. The promotion area in Figure 7 excludes a large part of the East Zone of the city of São Paulo, keeping only the districts of Moóca and Tatuapé and a portion of Belém, Vila Prudente, Água Rasa, Vila Formosa and Carrão. Figure 8 shows a smaller area of promotions, covering an even more restricted and valued metropolis region.

The seven elements explained in this article, which help to explain the displacements between the couriers' residences and the privileged delivery regions, show that the app companies need to control the displacements of the couriers to make their strategies viable, which are, perforce, territorial strategies. There is an overlap between the control and management of work practices and the spatial practices of the couriers. As Abílio (2020b) states, application companies operate through dispersion, centralization and control mechanisms. Abílio resumes the characteristics of flexible accumulation exposed by Harvey (2008 [1992]) to conclude that the dispersion of a mass of workers performing tasks whose distribution is programmed by the application companies can only be affected through a forceful control over their work and the centralization of control.

This control, as shown in this article, is not restricted to labor engagement but also to the urban space itself: there are regions in which app companies, or at least *iFood*, privilege their activities. In this perspective, the dispersion of couriers and the performance of these companies do not occur randomly. It is a dispersion concentrated in centralities of the metropolis, which historically already hold income, formal jobs, infrastructure and services.

Figure 7 – Screenshot of the *Google Maps* application, from a link sent by the *iFood* application, whose caption read: “Promo per zone – Extra R\$ 3 per route. Cumulative value with any promotion in effect on the day”.



Source: Screenshot provided by the courier.

Figure 8 – Screenshot of the *Google Maps* application, from a link sent by the *iFood* application, with an area partially delimited by São João, Pacaembu, Dr. Arnold and Tereza Cristina.



Source: Screenshot provided by the courier.

Final Considerations

It is noted that work and Commuting are not only mediated by digital platforms, but how *iFood* defines priorities and how the application works plays a decisive role not only in the working conditions of couriers but also in the Commuting they carry out, either for privileged delivery centers or for each delivery. In addition to being in centralities with a greater demand to increase the possibilities of receiving an order through the application, couriers have to manage the displacements made during deliveries, adopting strategies in time and space for workforce employment. They seek control over which deliveries they must accept, considering the rate, the path, the distance to the restaurant and the customer's home, and the time stipulated by the application.

Traveling through these spaces is marked by time control and constraints on one's own body, especially in the case of couriers, in a process in which the entire city, ultimately, becomes a workplace. The instantaneity given by clicking on the apps to accept delivery is only achieved through long and often exhausting workdays with displacements concentrated in space and intensified in time. What is done is, therefore, the opposite of what the enthusiastic speeches proclaimed about the propagated algorithmic facilities and immaterialities about the displacements

linked to these new forms of work engagement: there are concrete contents, including the physical effort in the *Pedaling* of the couriers. Far from weakening the center-periphery relationship, the displacements and working conditions of bicycle delivery workers reveal that work on and through digital platforms is yet another expression and deepening of the spatial inequality that has long existed in São Paulo.

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