


## COVID-19 IN THE PERIPHERY OF CURITIBA: Urban Mobility as a “thermometer” of inequality

COVID-19 NA PERIFERIA DE CURITIBA: A Mobilidade Urbana como “termômetro” da desigualdade  
COVID-19 EN LA PERIFERIA DE CURITIBA: La movilidad urbana como un “termómetro” de la desigualdad


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### ABSTRACT:

The article presents some partial results of the author's postdoctoral research and analyzes how the coping strategies for Covid-19 in the periphery of Curitiba, adopted by the Municipal Health Department, can be impacted by the decrease in urban mobility, because, although the reduction of public transport services is a relevant strategy to limit the spread of the virus, in practice, it has revealed itself as a potential catalyst for uncontrolled transmission, as it promotes agglomerations, precisely in the peripheral regions furthest from health facilities capable of treating more severe cases of the disease.

**KEYWORDS:** Urban mobility; Social inequality; Covid-19.

### Introduction

The analysis of the literature on urban sociology reveals an increase in the number of studies that associate the social organization of the territory with numerous forms of inequality. Such studies acquire special relevance in face of the current Covid-19 pandemic and efforts from health authorities to prevent an increasing number of its cases in many different countries. It is important to note that, currently, urban sociology has studied different forms of sociospatial segregation which characterize large Brazilian cities.

On a macro level, we observe predominance of the center-periphery pattern, which concentrates the majority of the poor population in the peripheries, and the middle and high income groups in central areas. This segregation makes these vulnerable social groups more dependent on public transportation services to have access to most public services, usually located in the central regions of urban territories. Thus, urban mobility reveals itself as another indicator of inequality, since the peripheral neighborhoods are

those that have both the highest ratio of inhabitants per private vehicles and the lowest number of bus terminals and lines, precisely where the demand for public transportation is larger, which has generated crowds within bus vehicles and at boarding areas, increasing the risk of contamination by coronavirus. This reality has caused concern in health authorities around the world, since it can be the trigger for uncontrolled transmission, if actions focusing on these areas with high levels of social vulnerability are not carried out.

The objective of the present study - which presents partial results of the author's postdoctoral research in Sociology - is, specifically, to investigate this aspect of inequality in the city of Curitiba, through a comparative analysis based on urban mobility, which - as we tried to demonstrate - follows the same picture of asymmetry and social inequality found in other indicators, such as income, housing, sanitation, waste disposal, etc. In other words, urban mobility is directly proportional to income. So, we use samples of areas located in the central region (macro zone Matriz) and in peripheral areas of macro zones 9 (Bairro Novo) and 10 (Tatuquara).

As we try to demonstrate in section 1, which also contains the theoretical framework for the research, in Curitiba the most traditional form of spatial segregation predominates (the opposition center x periphery), where the more affluent are located near the center while the economically disadvantaged inhabit the urban fringes, far from equipment and infrastructure.

In section 2, we analyze how urban mobility, provided by the Public Transportation System, entails restriction on the right to the city, by not ensuring that the population has equitable access to public services, since, the farther away from the regions of consolidated infrastructure (neighborhoods of the central region), the fewer commuting options, which calls into question the fact that transportation is supposed to be a social right of Brazilians provided for in the national Constitution.

In section 3, we analyze how - in an eventual, and predictable, increase in the number of Covid-19 cases in these peripheries - unequal urban mobility in the city of Curitiba is related to the social selectivity of hygiene and isolation measures recommended by the authorities, considered essential in coping with the pandemic, since these peripheral neighborhoods are distant from the facilities with capacity to handle the most severe cases of Covid-19.

In the fourth section, through a discussion about the results from the present work, we propose a reflection on how the methodologies used here - content analysis, bibliographic analysis and conjuncture analysis - can contribute to establish, according

to Velasco and Cruz (2000), "the necessary identification of ingredients, actors and interests at stake", considered fundamental for the analysis of public policies.

Finally, in the last sections, we present final considerations and bibliographic references.

### **Theoretical Framework: The spatial segregation process in Curitiba**

The analysis of the state of the art in the urban sociology field reveals that the number of studies that associate the social organization of territory with the numerous forms of inequality has grown. Such studies, in general, have used the terms "vicinity effect", "territory effect" or, also, "neighborhood effect" to describe explanatory models based on the causal relationship between certain events and the social context in which they occur.

As a methodological option, in this article, we will use the term "territory effect", which is described, according to Andrade and Silveira (2013), as socioeconomic benefits or losses that affect some social groups due to their location in the urban social space. According to these authors, the sociological hypothesis regarding territory effect does not presuppose a deterministic action of space on social relations, but investigates the interrelations between the characteristics of spaces, such as urban infrastructure, neighborhood, service offering and the characteristics of social groups (Andrade & Silveira, 2013).

The Atlas of Social Vulnerability in Brazilian Municipalities (IPEA, 2015) already emphasized the need for an effort to broaden the understanding of situations traditionally defined as poverty, in order to express an expanded perspective complementary to that linked to income insufficiency. As well as the notions of "dissatisfied basic needs", "multidimensional poverty" and "human development", exclusion and social vulnerability. According to the study, these are mainly political notions which introduce new interpretative resources about social development processes, in addition to their monetary dimension.

In this sense, the reading of these processes, resulting from this "new" conceptualization, can dialogue with and produce effects on the proposals and designs of public policies, extending their scope and emphasizing the responsibilities of public administration, at all its administrative levels, in promoting the well-being of citizens (IPEA, 2015).

Although Curitiba is known as "model city", it is one of the most unequal in the world. Inequality that has its roots in exclusionary urban planning and can be understood

through the analysis of the Urban Development Plan put into practice, mainly through housing policies, in the 1970s. According to Albuquerque (2007):

[...] the most explicit element of Curitiba's housing policy was the peripheralization of the low-income population "(...) the housing production of the 'model city' pushed the poor from Curitiba to the edges of the municipality" <sup>1</sup>.

Still, according to Lojkine (1997), the most traditional form of spatial segregation is the center-periphery opposition, where the wealthiest are located near the center and the economically disadvantaged inhabit the fringes of the cities, far from equipment and infrastructure.

Curitiba follows this pattern. The peripheral neighborhoods analyzed here are located at the southern end of the municipality, far from the neighborhoods of the central region. According to Carvalho and Sugai (2013), the actions and repercussions of the city's Urban Development Plan – elaborated during the 1970s – as well as the whole dynamics of "transformation" of space and the image of the city proved to be contrary to the production of a more democratic and egalitarian city. Also, according to the authors:

Above all, there is a clear interest in warding off and making invisible poverty and conflicts in parts of the city that should be shown in a positive manner, publicized and sold as a successful project of a viable, creative city with good quality of life and opposed to other chaotic and disorganized Brazilian metropolises.<sup>2</sup>

The aforementioned Urban Development Plan for the city of Curitiba, which would remodel the urban structure of the city in the following decades, was promulgated in 1971, just at the time when the studies that would come to be known as a theory of urbanization on the periphery of capitalism were growing in the country.

Those studies were developed mainly by CEBRAP (Brazilian Center for Analysis and Planning) and FAU-USP (Faculty of Architecture and Urbanism of the University of São

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<sup>1</sup> N.T. Original quote: [...] o elemento mais explícito da política habitacional de Curitiba foi a periferização da população de baixa renda "(...) a produção habitacional da 'cidade modelo' empurrou os pobres de Curitiba para as bordas do Município" (ALBUQUERQUE, 2007, p.113).

<sup>2</sup> N.T. Original quote: Observa-se, sobretudo, um claro interesse em afastar e invisibilizar pobreza e conflitos das partes da cidade que deveriam ser positivadas, midiaticizadas e vendidas como um projeto bem sucedido de cidade viável, criativa, com boa qualidade de vida e oposta às demais caóticas e desorganizadas metrópoles brasileiras (CARVALHO, SUGAI, 2013, p.4-5).

Paulo) that sought to analyze the effects of underdevelopment on the reproduction of the workforce – which takes place spatially – occurring very differently from what occurred in Welfare States, generating, consequently, a different kind of urbanization.

In light of the objectives in this work, the research from the group that studied cities, mass culture and urban popular movements, coordinated by sociologists Lúcio Kowarick, Vinicius Caldeira Brant and Cândido Procópio de Camargo, acquire special relevance for the emphasis, although descriptive and not analytical, given on the issue of peripheralization of the metropolises.

According to Arantes (2009):

This is how the problem of the "periphery" arises: clusters, whether clandestine or not, lacking infrastructure, where the labor needed for the growth of production will reside. The periphery, as a physical place, is presented, after all, as the only properly urban category of the book, and even so in descriptive rather than analytical form. It is the spatial consequence of the "horizontal spread" of the city (without this being actually explained) and the "paradox of mobility". According to the authors, based on data from Dieese, in 1958, transportation spending represented 2.9% of salary and, in 1970, jumped to 11.5%, a phenomenon that is the result of an urbanization based on home ownership (instead of rent), which tends to fix the worker in the neighborhood, at the same time that there is an intensification of employment mobility. That is, the transformation of the worker into a small owner has become an additional source of life difficulties.<sup>3</sup>

The analytical part acquires importance, mainly, from Lucio Kowarick's book, "A espoliação urbana" [Urban spoliation] (1979), that is, the expulsion of the poor to the peripheries, characteristic of the urbanization process in Brazil and resulting from the combination of growth and depauperation. By way of example, figure 1 below shows the map of the city of Curitiba with each of the ten macro zones.

As it can be seen on the map, the peripheral neighborhoods analyzed here (Sítio Cercado, Campo de Santana, Umbará, Tatuquara and Caximba) are located in macro

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<sup>3</sup> N.T. Original quote: É assim que surge o problema da "periferia": aglomerados, clandestinos ou não, carentes de infra-estrutura, onde vai residir a mão-de-obra necessária para o crescimento da produção. A periferia, como lugar físico, é apresentada, por fim, como única categoria propriamente urbana do livro, e mesmo assim sob a forma descritiva em vez de analítica. Ela é a decorrência espacial do "espraçamento horizontal" da cidade (sem que este seja de fato explicado) e do "paradoxo da mobilidade". Segundo os autores, baseados em dados do Dieese, em 1958 o gasto em transporte representava 2,9% do salário e, em 1970, pulou para 11,5%, fenômeno que é resultante de uma urbanização baseada na casa própria (em vez do aluguel), que tende a fixar o trabalhador no bairro, no mesmo momento em que ocorre a intensificação da mobilidade de emprego. Ou seja, a transformação do trabalhador em pequeno proprietário tornou-se fonte adicional de dificuldades de vida (ARANTES, 2009, p. 116).

zones 9 (Bairro Novo) and 10 (Tatuquara), both in the south of the municipality, very far from the neighborhoods of the central region (Matriz), where we find the best conditions of security, infrastructure and urban mobility.

According to Firkowski e Moura (2014):

Despite the dispersed and fragmented expansion of the metropolitan agglomeration, sometimes merging antagonistic social segments, inequality remains a striking expression of the RMC [Curitiba Metropolitan Region], reflecting the adopted occupation model, which induces the peripheralization of poverty and the abandonment of large contingents of population in areas with low urban well-being conditions.<sup>4</sup>

Figure 1 Macro zones and neighborhoods in Curitiba



Source: IPPUC (2017)

<sup>4</sup> N.T Original quote: Apesar da expansão dispersa e fragmentada da aglomeração metropolitana, mesclando segmentos sociais por vezes antagônicos, a desigualdade segue sendo uma expressão marcante da RMC, refletindo o modelo de ocupação adotado, que induz à periferização da pobreza e ao abandono de grandes contingentes de população em áreas com baixas condições de bem-estar urbano (FIRKOWSKI, MOURA, 2014, p. 36).



As we try to demonstrate below, the analysis of urban mobility, besides revealing another aspect of social inequality in Curitiba, also demonstrates the social selectivity of hygiene and isolation measures recommended by the authorities and considered essential in coping with the Covid-19 pandemic. This selectivity can be the trigger for uncontrolled transmission if actions focusing on these areas with high levels of social vulnerability are not carried out.

### **Central and peripheral Curitiba: Urban Mobility as an indicator of inequality**

According to Bergman and Rabi (2005), urban mobility can be understood as a result of interacting flows of displacement of people and goods in urban space, including both motorized and non-motorized flows.

It is, therefore, an attribute of the city and it is determined mainly by socioeconomic development, the appropriation of space and technological evolution, while urban transportation refers strictly to services and modes of transport used for displacement within the urban space.

Urban mobility, ensured through the Public Transportation System, is also indicative of inequality in the city of Curitiba, since the peripheral neighborhoods analyzed here, located south of Curitiba, are the ones with the lowest number of terminals and bus lines, precisely where the demand for public transportation is higher, which has generated agglomerations in boarding areas, as well as inside vehicles, increasing the risks of coronavirus contamination.

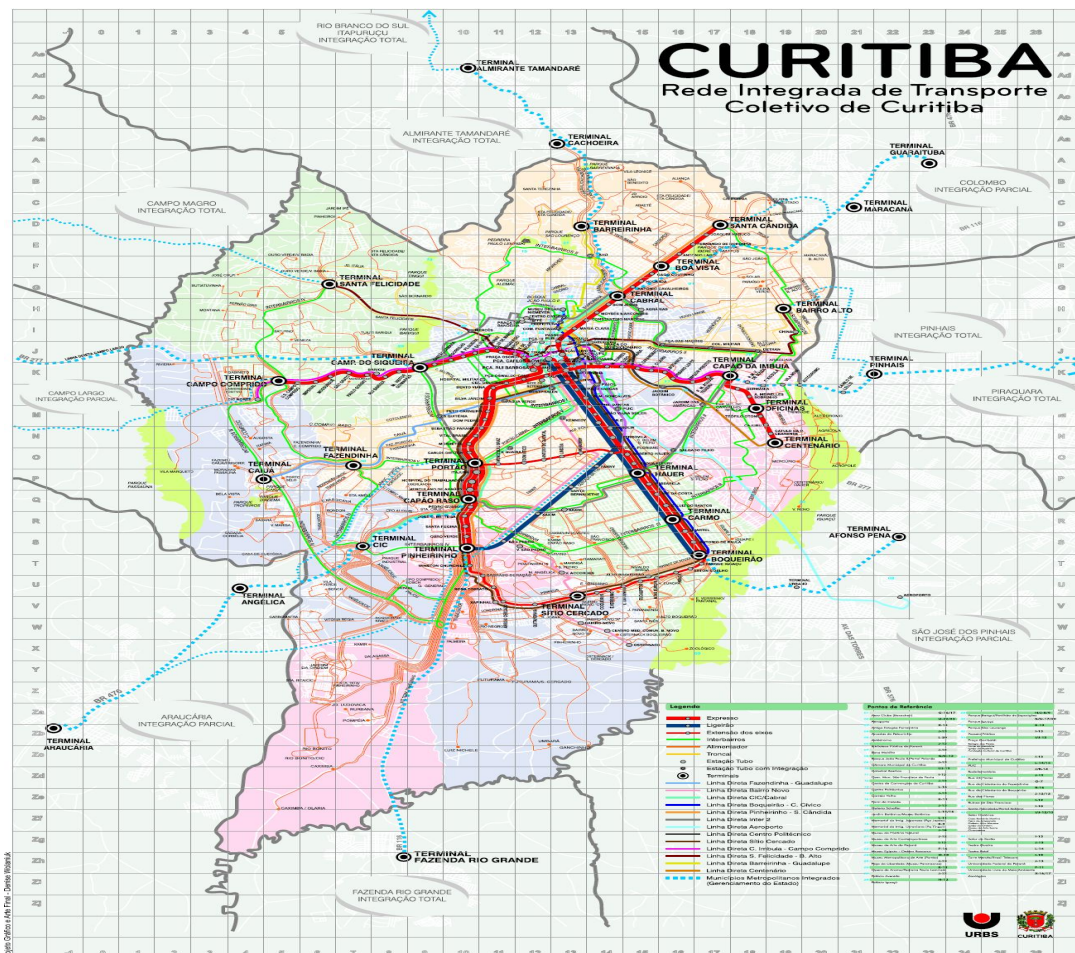
Inequality causes a restriction on the right to the city, in the sense of not ensuring that the population has equitable access to the formal city, since, the farther from the regions of consolidated infrastructure (neighborhoods of the central region), the fewer options of displacement. It should also be noted the limited scope of the Integrated Transportation Network (RIT) that comprises a variety of types of lines and terminals, but it shows, however, inequality in service between users who are within the scope of the terminals and those outside it, as shown in Figure 2 below.

Mobility via public transportation is conditioned to the use of local buses (feeders) leading to integration terminals, which have restricted schedules and routes, with few buses available. According to Polli, Mendes and Lourenço (2016):

If they are residents of Curitiba, these users will have their mobility via public transportation conditioned to the use of local buses (feeders)

that lead to the integration terminals, and then they raise to the integrated system. These feeders have restricted schedules and routes, with few buses available due to the short route (terminal-neighborhood) which impairs the quality of the service. If they are residents of municipalities from the metropolitan region, this complexity is even greater. To access the integrated system, the user will have to access the metropolitan feeders, which represent a very small number of lines. Or a RIT-M [metropolitan] bus that is not always integrated into the RIT system, that<sup>5</sup> is, it can stop outside the terminals, which leads to paying a new fare

Figure 2 Integrated Transportation Network in Curitiba (RIT)



Source: URBS CURITIBA (2020).

<sup>5</sup> N.T. Original quote: Caso sejam moradores de Curitiba, esses usuários terão sua mobilidade via transporte coletivo condicionada ao uso dos alimentadores que levam até os terminais de integração, para depois alçar ao sistema de fato integrado. Esses alimentadores possuem horários e trajetos restritos, com poucos ônibus disponíveis devido ao trajeto curto (terminal-bairro) o que prejudica a qualidade da oferta dos serviços. Caso sejam moradores de municípios pertencentes a região metropolitana essa complexidade é ainda maior. Para acessar ao sistema integrado, o usuário terá que acessar os alimentadores metropolitanos, que tem número bastante reduzido de linhas. Ou um ônibus da RIT-M que nem sempre é integrado ao sistema RIT, isto é, pode parar fora dos terminais, o que leva a pagar uma nova tarifa (POLLI; MENDES; LOURENÇO, 2016, p. 5-6, grifos nossos).



Another indication of social inequality in Curitiba is the number of inhabitants per vehicles in neighborhoods from central and peripheral regions, as shown in Table 1.

**Table 1** Ratio of inhabitants to vehicles in neighborhoods from central and peripheral regions

LOCATION	INHABITANTS PER VEHICLE
<b>SELECTED NEIGHBORHOODS FROM MACRO ZONE MATRIZ (CENTRAL REGION)</b>	
Downtown	0,49
Rebouças	0,42
Batel	0,52
Mercês	0,96
Água Verde	1,24
<b>SELECTED NEIGHBORHOODS FROM MACRO ZONES BAIRRO NOVO E TATUQUARA (PERIPHERAL REGION)</b>	
Sítio Cercado	2,49
Tatuquara	3,15
Umbará	1,90
Campo de Santana	3,85
Caximba	6,99

Source: Detran-PR (2010) and IPPUC (2014)

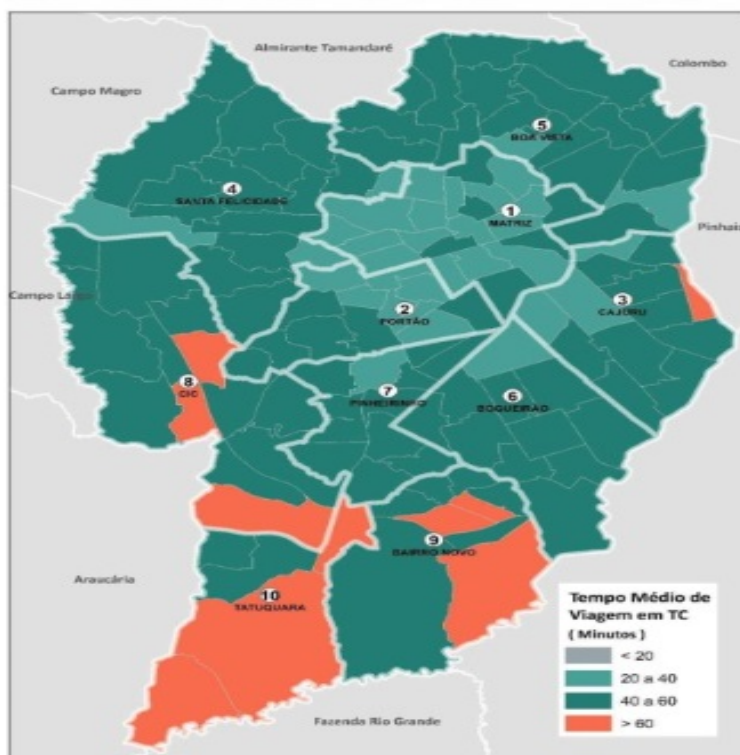
According to data from the National Traffic Department (Denatran) and population estimates from IBGE (2013), Curitiba is the capital with the highest number of cars per capita. However, as the data in Table 1 show, there is a smaller number of inhabitants per car in the central region, the region with higher income compared to the other neighborhoods and with greater ease of access to equipment and public goods.

In contrast, the neighborhoods of the peripheral region have a higher ratio of inhabitants per car. They are precisely the neighborhoods of the southern portion of Curitiba, the most distant from the equipment and public goods, in addition to jobs,

located mainly in the central region of the city. This may explain the fact that the peripheral neighborhoods analyzed here present the longest average commuting time in public transportation, as shown in Figure 3.

In other words, the population of the peripheral neighborhoods analyzed here is extremely dependent on the public transportation service, mainly to commute to work. However, the obstacles shown so far – such as the low number of buses available in the peripheries, agglomerations in boarding areas, or even within vehicles, etc. – becomes even more serious in face of the pandemic that the world currently confronts, since, as indicated in a technical document from IPEA (2020), although the reduction of public transport services is a relevant strategy to reduce levels of urban mobility, therefore limiting the spread of the virus, it can also restrict access to health facilities for healthcare professionals, patients and low-income family members who do not have another alternative for mobility, as it will be analyzed below.

**Figure 3** Average Commuting Time in Public Transportation (TC) in the Integrated Transportation Network (RIT) of Curitiba



Source: IPPUC (2017).

Limitation of urban mobility and access to the Unified Health System for suspected and severe cases of Covid-19 in the periphery of Curitiba

Regarding the numerous forms of inequality present in the city of Curitiba, it is important to note that in July 2018, therefore prior to the beginning of the Covid-19 pandemic, the Municipal Health Department (SMS) initiated a wide-ranging study based on the Vulnerability of Coverage Areas of Municipal Health Units Index (IVAB), prepared in accordance with the Family Vulnerability Index of Paraná (IVF-PR) by the State Institute for Economic and Social Development (IPARDES) and the population of the IBGE Census - 2010 by coverage area using data from the federal government database.

Since then, IVAB has been used as the strategy to promote equality in SUS in Curitiba, defining the distribution of resources and guiding health actions in the municipality.

IVAB is given by the arithmetic mean of 4-dimensional indices: household adequacy, family composition and profile, access to work and income, educational condition.

From IVAB, the Municipal Health Units are ranked in regular intervals based on the set of data in ascending order, and divided into three groups in the form of terciles.

The Municipal Health Units located in tercile 1 are denominated as low vulnerability (health units with a percentage lower than 3.91%), in tercile 2 as medium vulnerability (units with a percentage greater than or equal to 3.91% and less than 7.80%), and in tercile 3 as high vulnerability (units with a percentage greater than or equal to 7.80% up to the upper limit, possibly reaching 100%).

Figure 4 shows the map with the distribution of health units according to IVAB.

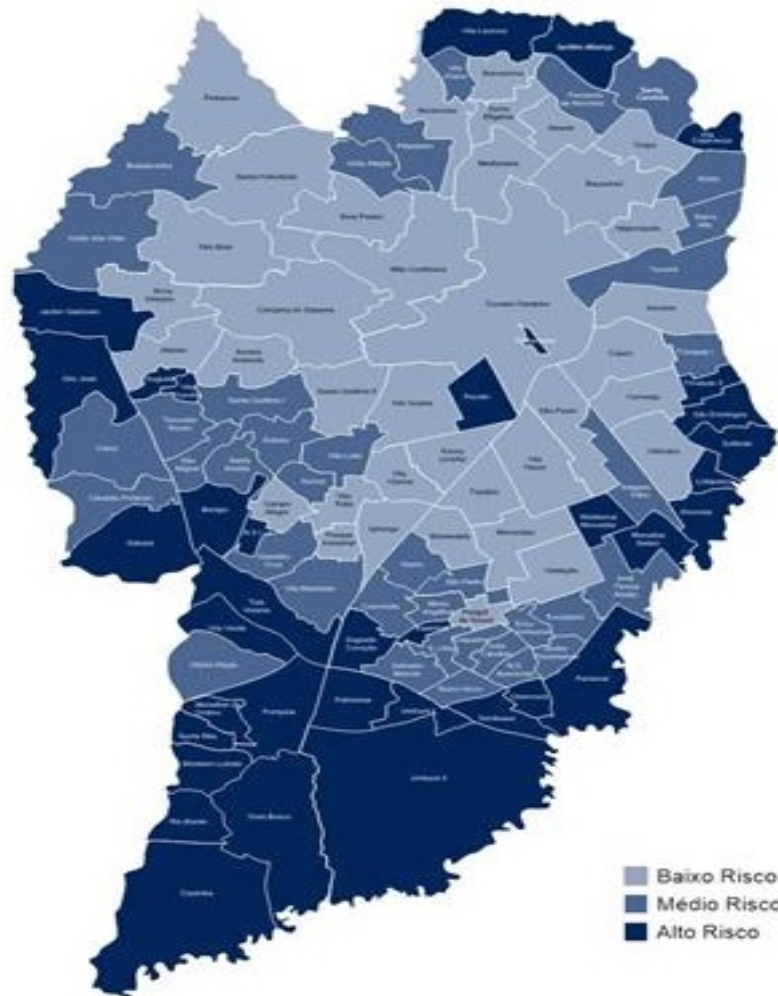
Note that all neighborhoods of the southern region of Curitiba, the poorest in the municipality, are located in areas with high risk and well away from the central region, where the main public services are located. In contrast to this reality, all health units best evaluated by IVAB are in the neighborhoods of the central region, all of them with low vulnerability.

According to the Curitiba municipal news website, at the time of implementation of IVAB, Curitiba had nine health units with low vulnerability and still worked with family health strategy. Gradually, the PSF [Family Health Program] teams of these nine units were transferred to units with high vulnerability.

In this sense, the strategy adopted by the Health Department to transfer professionals – based on IVAB – to areas with greater social vulnerability is consistent with the recommendations of health authorities regarding the reality of peripheral territories with a greater propensity to spread coronavirus.

However, it is a strategy that can be negatively impacted by urban mobility policy in more severe cases of the disease.

**Figure 4** Distribution of health units according to the Vulnerability of Coverage Areas of Municipal Health Units Index (IVAB)



Source: Secretaria Municipal de Saúde de Curitiba (ano).

In this regard, in April 2020, IPEA launched the technical document "Urban mobility and access to the public health system for suspected and serious cases of Covid-19 in the twenty largest cities in Brazil", which estimated how many and where the most vulnerable people live (low income and over 50 years of age).

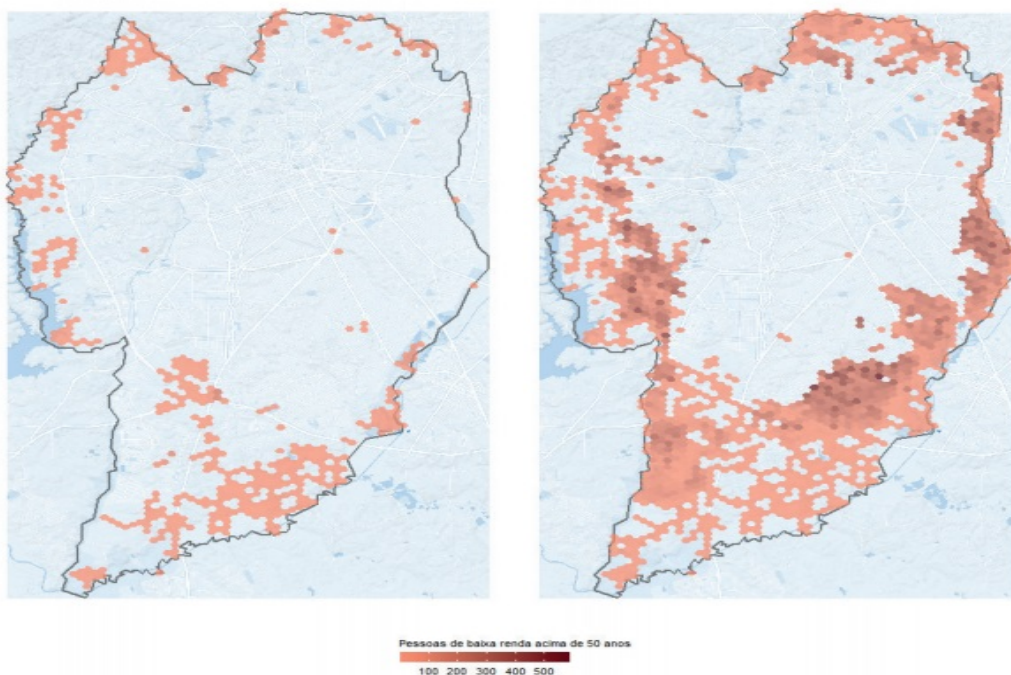
Figure 5 presents this outline for the city of Curitiba, being: A) the low-income population over 50 years of age who could not access in less than a thirty minute walk, at least, a health facility that admits patients under SUS and is able to triage and refer

suspected patients of Covid-19; and B) the population living at a distance greater than 5 km from a hospital with the capacity to admit patients in severe respiratory distress.

**Figure 5** Population access to health facilities in Curitiba (2020)

A) 5,1 mil pessoas

B) 116,4 mil pessoas



Source: IPEA (2020)

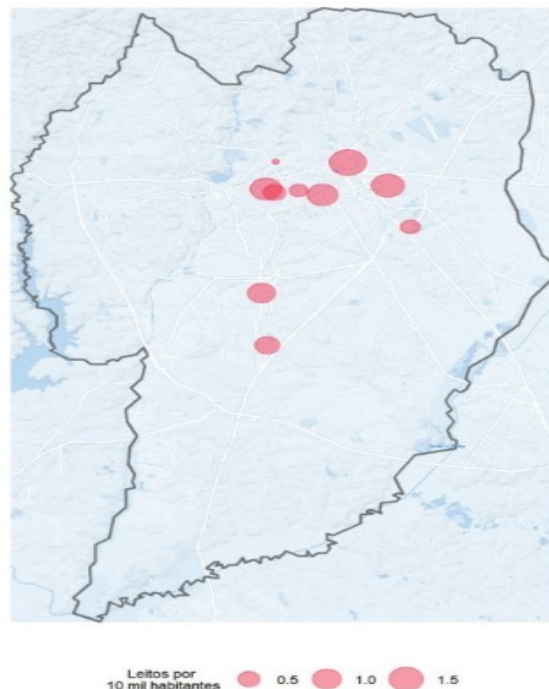
The document also evaluated the SUS ability to meet the demand for ICU admission of patients in serious condition, with suspected or confirmed cases of Covid-19.

Figure 6 shows the ratio between the number of adult ICU beds with ventilators available on SUS per 10,000 inhabitants in the area of each hospital, which is represented by a circle whose size reflects the ratio between the number of beds/ventilators of that hospital and the size of the population in its area.

Curitiba follows the pattern observed in other cities such as Porto Alegre, Rio de Janeiro, São Paulo, Maceió, Goiânia, Brasília and Belém, that is, it concentrates a greater number of hospitals with more beds per inhabitant in the central region. The availability of ICU beds and ventilators to treat patients in severe condition with suspected Covid-19 tends to be considerably lower in the peripheries of these cities.



**Figure 6** Ratio of adult ICU beds with ventilators available on SUS per 10,000 inhabitants in the area of each hospital - Curitiba (2020)



Source: IPEA (2020).

An eventual, and predictable, increase in the number of Covid-19 cases in these peripheries – due to other situations of social vulnerability, such as precarious housing conditions, restricted or non-existent access to water and sewage services, among others – could make them the focus of uncontrolled transmission. And, in this sense, the distance between these peripheral neighborhoods and the facilities with capacity to treat the most severe cases of Covid-19, aggravated by the low rate of urban mobility, caused by the low number of available buses, is another indication of the social selectivity of the measures adopted by the authorities.

As previously analyzed, the peripheral region analyzed here, south of Curitiba, is the most dependent on the public transportation system and has always suffered the consequences of the reduced number of buses and the consequent agglomeration, both in boarding areas and inside the vehicles. Situation that made health authorities alert to the danger of uncontrolled virus spread.

So much that, on March 20, 2020, the Curitiba Urbanization Company (Urbs) determined – due to the 37% reduction in passenger demand – that extra bus lines, which serve in the morning and afternoon, would no longer work. In addition, the system was

expected to operate, from March 25th, with Saturday schedules on weekdays and Sunday schedules on weekends.

It is not surprising that the measure caused agglomerations in the bus terminals, becoming news in the city's main media, which led mayor Rafael Greca (DEM) to not only revoke the measure, but also determine the opening of an investigation into what happened, as reported by the news site Bem Paraná: "It is unacceptable that the population has to be subjected to this overcrowding at a time of coronavirus pandemic. Let's investigate", said the mayor.

This was already a concern from IPEA, as reported in its technical document from April 2020:

[...] the reduction of public transport service, with a decrease in fleet and frequency, leads to an increase in waiting time at transportation stops and can consequently lead to increased density of people at stops and overcrowd in vehicles that potentiate the spread of the virus.<sup>6</sup>

It is important that local administrations promote the reorganization of public transportation service, without compromising the provision of regular lines because, although the reduction of public transportation services is, in theory, a relevant strategy to reduce levels of urban mobility and limit virus spread, in practice, it proved to be a potential catalyst for uncontrolled transmission – by promoting agglomerations in terminals and vehicles – precisely in the regions furthest from facilities capable of treating the most serious cases of Covid-19.

## Results and Methodological Considerations

The analysis of the data presented here follows the pattern of a conjunctural analysis, defined, according to Velasco and Cruz (2000), as "the necessary identification of the ingredients, actors and interests at stake". And, also, according to these authors:

A conjuncture analysis is a dynamic portrait of a reality and not a simple description of facts that occurred in a given place and period. It must go beyond appearances and seek the essence of what is real. However,

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<sup>6</sup> N.T. Original quote: [...] a redução do serviço de transporte público, com diminuição da frota e da frequência de viagens, leva a um aumento no tempo de espera nas paradas de transporte e pode, conseqüentemente, provocar aumento do adensamento de pessoas nas paradas e lotação dos veículos que potencializam a disseminação do vírus (IPEA, 2020, p. 46).

the world reality, national or local, is multifaceted, which makes its apprehension difficult at first sight.<sup>7</sup>

Thus, in order to understand the issue of social inequality in the city of Curitiba, we point out that it is directly related to the actions and repercussions of the city's Urban Development Plan from the 1970s, which revealed a clear interest in warding off and making invisible poverty and conflicts among parts of town.

The invisibility of poverty is part of this conjuncture of construction of the ideal of a "model city" that pushed the poor to the edges of the municipality, through the peripheralization of the low-income population. That is to say, the inequality observed in the city of Curitiba has its roots in exclusionary urban planning and is revealed through the analysis of public policies, such as the municipal policy for urban mobility, as we try to demonstrate.

In order to enrich/complement the proposed conjuncture analysis, the present study also used some basic concepts of public policy analysis, with emphasis on approaches of neo-institutionalism, which attempts to elucidate the role played by institutions in determining social and political results.

In this sense, it should be noted that the transportation system is managed and supervised by a mixed-level provider, the Urbanization of Curitiba S.A. (URBS), which is responsible for contracting bus companies ensuring that the public service is provided in a decentralized manner.

Urban mobility, ensured through the Public Transportation System, is, as we tried to demonstrate, indicative of inequality in the city of Curitiba, since the peripheral neighborhoods analyzed here, located south of Curitiba, are the ones with the lowest amount of public transportation equipment, precisely where the demand for public transportation is higher, which has generated agglomerations and increased risk of coronavirus contamination.

Risk that, at first, seems to have been ignored by the city's urbanization company (Urbs), which, on March 20, 2020, determined the reduction of the fleet, claiming a 37% reduction in passenger demand. It resulted in agglomerations in bus terminals and a negative repercussion in the media. The (institutional) city administration – fearful of

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<sup>7</sup> N.T. Original quote: Uma análise de conjuntura é um retrato dinâmico de uma realidade e não uma simples descrição de fatos ocorridos em um determinado local e período. Ela deve ir além das aparências e buscar a essência do real. Porém, a realidade mundial, nacional ou local, é multifacetada, o que torna difícil a sua apreensão à primeira vista (VELASCO, CRUZ, 2000, p.145).

social and political consequences – had then to intervene, revoking the decision and opening an investigation into what happened.

This relationship can be understood, still within the neo-institutionalist approach, through elements of "social network analysis", whose existing studies, according to Marques (2006):

[...] have innovatively explored the dynamics internal to the State and its relations with other social actors, demonstrating the importance of the policy for the "fabric of the State" – its internal relational structure.<sup>8</sup>

In order to broaden this understanding, we also used a documented analysis, considering that this methodology is the most appropriate to perform a contextualized analysis of the information present in the sources. According to May (2004):

[...] moving away from the idea that a document independently reports social reality, or that its production is yet another method, by which people build the social order, we now use our own cultural understandings to "engage" with "meanings" that are embedded in the document itself. So, researchers do not apologize for being part of the social world they study, but instead use this fact.<sup>9</sup>

Thus, when analyzing the documents of the Municipal Health Department of Curitiba (SMS), we found that the strategy of transferring professionals from the Family Health Program (PSF) to areas with greater social vulnerability, based on the Vulnerability of Coverage Areas of Municipal Health Units Index (IVAB), is consistent with the recommendations from authorities regarding the reality of peripheral territories with greater propensity to spread coronavirus. However, this assertive strategy from SMS can be negatively impacted by the municipal urban mobility policy, as we also try to demonstrate in the study, regarding more severe cases of the disease.

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<sup>8</sup> N.T. Original quote: [...] têm explorado de forma inovadora as dinâmicas internas ao Estado e as suas relações com outros atores sociais, demonstrando a importância para a política do "tecido do Estado" – a sua estrutura relacional interna (MARQUES, 2006, p. 1).

<sup>9</sup> N.T. Original quote: [...] afastando-se da idéia de que um documento independentemente relata a realidade social, ou que a sua produção é ainda outro método, pelo qual as pessoas constroem a ordem social, agora utilizamos os nossos próprios entendimentos culturais para "engajar-nos" com "significados" que estão embutidos no próprio documento. Então, os pesquisadores não se desculpam por serem parte do mundo social que estudam, mas pelo contrário, utilizam esse fato (MAY, 2004, p.113).

The technical document from IPEA (2020) corroborates our concern by stating that the central region of Curitiba (as we observe in other cities such as Porto Alegre, Rio de Janeiro, São Paulo, Maceió, Goiânia, Brasília and Belém) concentrates a greater number of hospitals with conditions to treat patients in severe condition with suspected Covid-19.

The inequality of access to these public goods and services, associated with other situations of social vulnerability, such as precarious housing conditions, water supply and sewage, among others, that characterize the peripheral regions of Curitiba is aggravated by the low rate of urban mobility, caused by the low number of available buses. This is another indication of the social selectivity on measures adopted by the public administration, which also reveals the need for greater feedback on municipal public policies which aim, in fact, to reduce social inequalities considered catalysts of Covid-19.

### **Concluding Remarks**

As we try to demonstrate in the present study, although Curitiba is known as "the model city" it is also recognized by its social inequality, which manifests in different ways. The peripheral neighborhoods analyzed here encounter great difficulties due to this context of spatial segregation, evidencing the need for the public administration – the main provider of goods and services – to establish a more effective policy of its democratization, aiming to break down strong inequalities that mark these vulnerable territories. Thus, the strategy of the Municipal Health Department of Curitiba to adapt – based on IVAB – the distribution of professionals in the primary care network, prioritizing the most deprived communities with greater need for services in the area meets the recommendations from health authorities regarding the current Covid-19 pandemic.

We consider that the strong inequalities in vulnerable territories demand specific policies, taking into account that, due to our history of inequalities, the legal right to a universal service (such as health) has not been made effective through universalist policies, which often end up promoting an increase in these inequalities by mistakenly promoting equitable distribution of resources to groups, territories and regions with different needs.

However, their effectiveness can be negatively impacted if not articulated with other public policies, such as those related to urban mobility, for example,



as we tried to demonstrate. The population of the peripheral neighborhoods analyzed here is extremely dependent on public transportation service, which entails, as we tried to demonstrate, a restriction on the right to the city, by not ensuring that the population has equitable access to public services, since the farther from the regions of consolidated infrastructure (neighborhoods of the central region), the fewer commuting options, the less available buses, in addition to agglomerations in terminals and vehicles, which calls into question the fact that transportation is a social right of Brazilians provided for in the constitution.

They are "old" problems that acquire "new" contours in the face of the pandemic that the world is currently confronting, since, as indicated by the IPEA technical document (2020), although the reduction of public transport services is a relevant strategy to reduce levels of urban mobility and thus limit the virus spread, in practice, it has proved to be a potential catalyst for uncontrolled virus transmission – by promoting agglomerations in terminals and vehicles – precisely in the regions furthest from health facilities capable of admitting the most serious Covid-19 cases.

In other words, the social selectivity of pandemic containment measures will not be resolved if it is not the case that a set of articulated public policies take into account the concrete reality of these peripheries.

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**RESUMO:**

O artigo apresenta alguns resultados parciais da pesquisa de pós-doutorado do autor e analisa como as estratégias de enfrentamento da Covid-19 na periferia de Curitiba, adotadas pela Secretaria Municipal de Saúde, podem ser impactadas pela diminuição da mobilidade urbana pois, embora a redução dos serviços de transporte público seja uma estratégia relevante para limitar a disseminação do vírus, na prática, ela revelou-se como potencial catalisadora de uma transmissão descontrolada, por promover aglomerações, justamente nas regiões periféricas mais afastadas dos estabelecimentos de saúde com capacidade para atender os casos mais graves da doença.

**PALAVRAS-CHAVE:** Mobilidade urbana; Desigualdade social; Covid-19.

**RESUMEN:**

El artículo presenta algunos resultados parciales de la investigación posdoctoral del autor y analiza cómo las estrategias de afrontamiento de Covid-19 en las afueras de Curitiba, adoptadas por el Departamento de Salud Municipal, pueden verse afectadas por la disminución de la movilidad urbana porque, aunque la reducción de los servicios de transporte público es una estrategia relevante para limitar la propagación del virus, en la práctica, se ha revelado como un catalizador potencial para la transmisión incontrolada, ya que promueve las aglomeraciones, precisamente en las regiones periféricas más alejadas de las instalaciones de salud capaces de servir Casos más graves de la enfermedad..

**PALABRAS-CLAVES:** Movilidad urbana; Desigualdad social; periferias; Covid-19.