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**Intersectoral debate on urban mobility on a medium scale. Some guidelines.**

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**Abstract**

*This work aims to present analysis on the impacts of mobility in its relationship with urban management through the intersection of social, spatial and intersectoral data from a small to medium-sized city in Brazil. By intersectoral data we define the information obtained in different sectors of the state - regional – and municipal administration that correspond to public transport and mobility in different strata of the urban space. The Municipal Government Plan of São João del-Rei (PGM, 2016-2024) regarding mobility has a fragile base of studies, data surveys and analyses that allow effective guidance of public policies and legislation. This research approach, besides the PGM study, independent analyses made from information collected about the location, the incidence of traffic accidents by the Civil Police (2016-2020) under State jurisdiction and spatialized data from the Brazilian Geographic and Statistical Institute (IBGE) such as ethnic-racial, educational and income. Understanding that the debate on mobility follows the scale of the place and its geopolitical location, if there is inequality in social, economic and schooling terms, the problems are not restricted to object systems - urban form - but to its inseparability from action systems. This debate proves relevant because the South and Latin America's challenges are also decolonial and do not correspond to immediate responses or those guided by exclusively formal problems, so that they are sustainable. Data spatialization processes were carried out from different approaches that intersect with those of urban morphology, seeking to establish indicators and guidelines for integrative public policies for the municipality. This perspective on mobility begins at the impacts of intersectionality in its relationship with urban management. In a complex overlay of information, forged from data of different origins and character, it is possible to indicate the correlations in impacts that interact with the physical form of the urban space.*

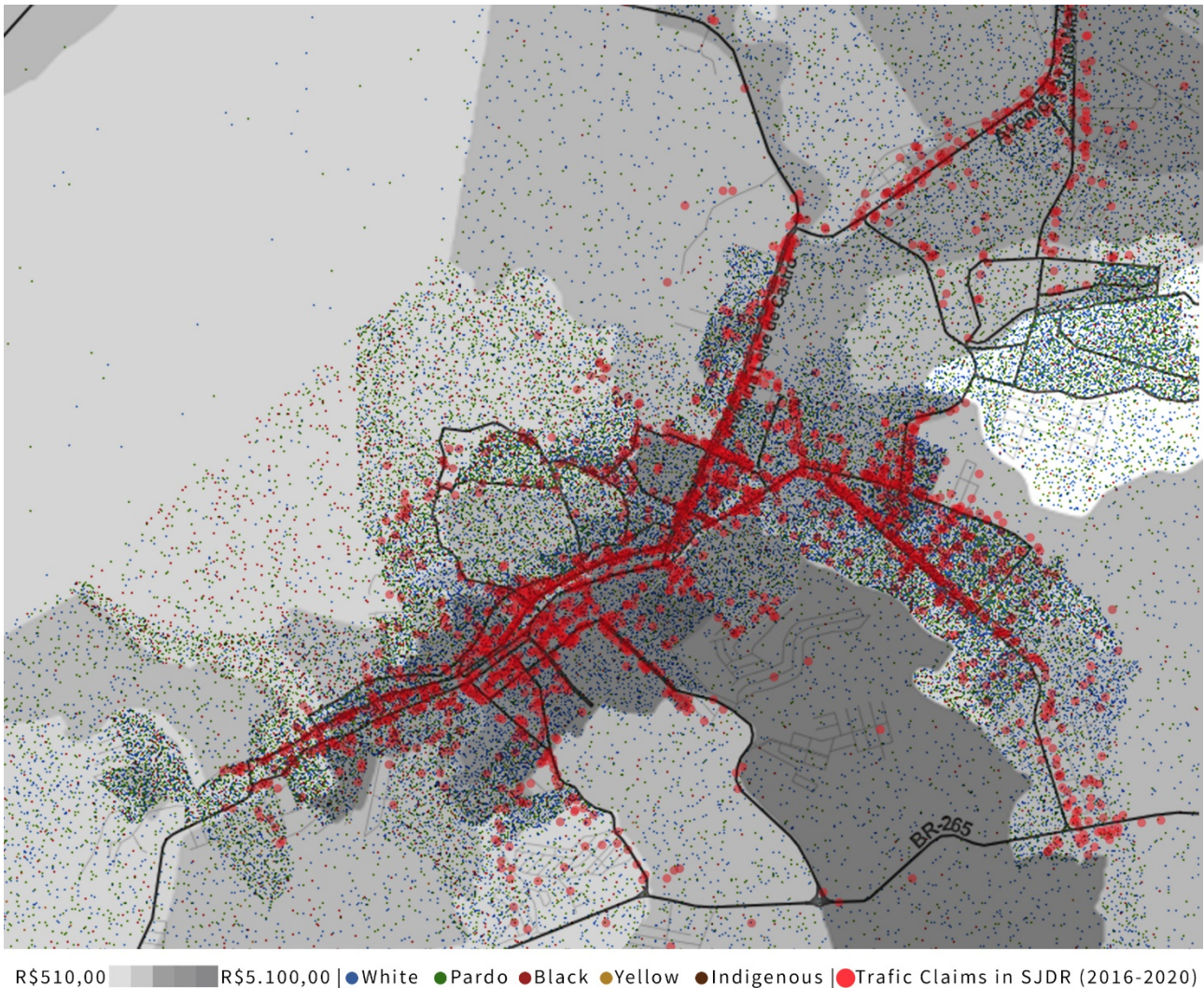
**Keyword:** *mobility, sustainability, society, urban morphology, decoloniality.*

**Introduction**

This study locates the debate on mobility in the city of São João del-Rei (SJDR) in Minas Gerais, Brazil. It seeks to analyse locally the impacts of urban mobility considering the Brazilian urbanization process, its uncritical repertoires of reproduction, replacement and adaptation of exogenous models that do not always fit the reality and scale of places.

Although the city has in its history and its foundation related to the imperial gold cycle, we focus on the industrialization process that arrived in Brazil in the 19th century.

The layers of inquiry built here are not in themselves new. The innovation is presented in the superposition of these layers of different origins, in the compilation of data that are not only spatial, but social, racial, of urban density and the most unprecedented in urban space works: the rate of traffic accidents.



**Figure 1.** Specialized and overlapped data about income, ethnic-race and traffic claims registered between 2016 and 2020.

When compiling all the information and performing the overlapping of the constructed layers, it is analysed beyond the impacts of form on the quality of urban life, a theme already explored in the area, it is questioned to what extent form is responsible for what occurs in it in terms of urban mobility and car accidents. Here, we always keep in mind the relationship between space and society and the interaction between physical form and the way space is used and appropriated by people. The investigation goes beyond the relationship between design and urban form.

It is important to emphasize that the stage in which this discussion takes place within the research also has complexity and direct influence on the object studied, since this investigation analyses and considers a small town with a colonial matrix in the interior of Brazil. Under the effect of various phenomena, such as social

inequality, structural racism, and others common to the global South and Latin America, it is presented an analysis that relates factors that are commonly treated in a dissociated way.

### **Urbanization process in Brazil and São João del-Rei**

To understand the general dynamics of Brazilian cities, it is necessary to look at the historical-political context. Thus, some events are highlighted, and parallels are drawn between the macro and the micro, from the global to the most local scale.

The first industrialization movement in Brazil arrived with the railroad at the end of the 19th century, beginning of the 20th century. The beginning of the 20th century marks countless spatial transformations in Brazilian cities that grow exponentially, expanding even more with the arrival of the automobile, multinationals and the expansion of the industrialization process that continues for decades. With reference to the Brazilian metropolis and plans of avenues, such as the São Paulo's, from the 1930s, elucidated by Leme (1999), indicate processes of multiple interventions, and plans of different types.

With the government of Juscelino Kubitschek (1956 - 1961) and the country's development and industrialization policy, automobile factories were brought to the country with economic intentions (SILVA, 2002), in a relationship between automobile production and consumption, abandoning the railway system for the highway matrix. Many roads are built, and the car becomes an increasingly individual and "popular" item among Brazilians (SACCHETTA, 1989), who replace the matrix of public use by the private one. Here, the strength of the private political lobby stands out as an engine of cultural and built space transformation.

What becomes a reference and repertoire in Brazil's great cities, reverberates from its verve of colonial matrix, mirroring itself once again in the urbanization patterns of the countries of the global north occidental.

In the mid-twentieth century, it is the repertoires of the great avenues and parkways, also referenced in Robert Moses and his role in the North American public administration, that guide this type of changes in the urban and road structure, with the construction of highways and fast transit roads, with the premise of speed and thinking big and ambitious for the growth of cities.

In Brazil, this model has its repertoire applied in different plans for large cities, such as the Plan of Avenues in São Paulo (LEME, 1999, p. 399). In parallel, there are processes of industrialization, population growth and rural exodus, which increasingly attract cars to urban centers.

In the Brazilian context, there are some events that can help understanding a little more about the relationship of the State with the built space of Brazilian cities, considering social movements and the creation of new legislation. In 1963, the Urban Reform Movement came together to build debates on the theme, agrarian and land reform, among others. There is an attempt to claim urban rights, but with the 1964 military coup, this and the others similar movements lose strength and are, in a way, stifled.

Until the 70s, the State did not control the growth of cities, but in the following decade the debates resurfaced, with the incorporation of the "Master Plan" in the 1988 Constitution, as a basic tool for development. A relative achievement, as it defined objectives, but did not show how to achieve them, disregarding that the municipalities had no previous experience in technical-legal or democratic definition, culminating in the emergence of obstacles and difficulties in adapting to the new rules of urban policy.

### **The Urban Mobility Debate: The Case of SJDR**

With the creation of the City Statute in 2001, new laws are incorporated into the constitution, such as the National Housing System and Plan Law (2005); Solid Waste Federal Law (2011); Urban Mobility Federal Law (2012).

All of this looks promising, but it is still too new to generate visible benefits in cities. The current situation is that the streets no longer hold the number of cars that try to circulate on them, generating long traffic jams and triggering a series of possible negative experiences for those who live there and need to move around daily.

The urbanization practices conceived and adjusted to realities such as the city under study have brought a series of reflections, surveys and challenges that guide us to a reading of the local reality, which cuts the debate into several layers. The reality of large metropolises does not reach small and medium-sized cities. In the case of the main avenues and axes of the city of SJDR, there are a series of interruptions that strangle their flows, making the relationship between mobility and access to public transport more difficult.

If, on the one hand, bottlenecks allow a reduction in car traffic speed, on the other hand, it generates disconnections in relation to the public transport system, difficulties in the fluidity of traffic, among other inconsistencies.

The COVID-19 pandemic contributed, in a way, to the visualization and the intensification of the contradiction of mobility issues in relation to urban transport systems, since the non-isolation and concentration of people is what allows the spread of the SARS-COV-2 virus and its variants.

About SJDR, we bring some observations. Located in the south of the state of Minas Gerais, the city is one of the poles of the micro-region where it is located, known as Campos das Vertentes. The largest neighbourhood in the city, Matosinhos, has more residents than many cities in the region, with around 20 thousand inhabitants, according to data from the IBGE (Brazilian Institute of Geography and Statistics, 2010).

The city's growth has been stable - within the parameters of the events mentioned above, such as the growth of the general population and the rural exodus. However, in recent decades the city has faced some changes that possibly influenced a more intense development, such as the arrival of a Federal University (2002) and

with more substantial investments in tourism through the creation of the Ministry of Tourism in 2003. The city starts to attract more residents and visitors, that is, more people passing through its streets.

Another relevant factor among the processes that, in a way, resulted in the increase in road traffic, coincide with the period between 2008 and 2013 regarding the federal economic policy of reducing taxes (ALVES and WILBERT, 2014) for the purchase of automotive vehicles.

This policy favoured the acquisition of industrialized goods such as automobiles and motorcycles in Brazil, considerably increasing the fleet of motor vehicles on Brazilian streets. Of the most visible consequences in local data, we have above all the increase in traffic accidents.

Even with the guidance of the Ministry of Cities to review the Master Plan every ten years, the last reformulation of the plan in SJDR took place in 2006. Currently, five years after the indicated deadline, the city goes through this process slowly, but continue to host public hearings, maintaining the character of participation of the population in the formulation - or reformulation - of it. In 2019, the commission responsible for developing a mobility plan for the municipality was created, a document that has not yet been made public.

Several authors, including Brazilian geographer Ana Fani Carlos (2011) and Italian architect and urban planner Bernardo Secchi (2015), raise questions about space as a reflection of society, including more complex forms. Carlos (2011) states that space is a product of human behaviour, as well as political action, with spatial relationships being the materialization of social relationships.

It is possible to predict that a population away from the decision-making processes about the production of space will not have their needs met, especially considering the pressure exerted by capital. In the case of the city studied, public participation remains alienated from political debates.

In a capitalist society, the first values that are reflected in political and economic matters are the financial-economic ones, which aim at profit and productivity. If there is no participation or popular pressure, the city grows ignoring its real needs, being guided by the interests of the owners of capital who establish the guidelines for public investments. This is generally more visible in unequal societies, especially in developing countries such as Latin America.

Currently, contemporary debates in society represent urban issues about landscape quality covered by environmental demands, seeking alternative means capable of reducing, above all, the levels of air pollution, especially in great urban centers. Large conferences since the second half of the 20th century have dealt with environmental issues, which have become increasingly urgent, especially regarding the transformation of energy matrices.

Standing out the first UN world conference on the environment in 1972 and its consequent annual occurrences since ECO-1992. On a more local scale, we can also see debates being built gradually, especially in the last decade, which, in addition to addressing global issues such as quality of life and mobility, are also fruitful for the creation of new programs in the world, and in Brazil at federal, state, and municipal scales.

When mentioned the recent popularization of the implantation of bicycle lanes in Brazilian cities, it is thought about the use of the bicycle and its importance as a transportation, which, although not the biggest answer in terms of mobility, has a relevant role in this mission. Investments made in bicycle paths, both in large cities and in medium and small ones, are achievements of the social struggle, above all because they clash with the interests of capital.

The implantation of bicycle lanes in Brazil seems to cause more controversy and clashes between different economic classes and society's interests than in other places. With the emergence of new debates nowadays and their reflections on the built space, more and more issues are being discussed, such as safety in the public space, especially in relation to the road, for people who travel through the space, and not only for the automobiles.

The bike path is still currently a fragmented reality in the city studied. With short stretches, it puts the entire population that uses the modal as their main transportation at risk. The rates of traffic accidents and victims observed in the study are considered alarming. On the last decade, SJDR registered an annual average of 2.161 traffic claims, 983 victims and almost 12 deaths, wherein between 2019 and 2020 only, 18 people died. This scenario reveals the need to review and update the management and urban mobility policies.

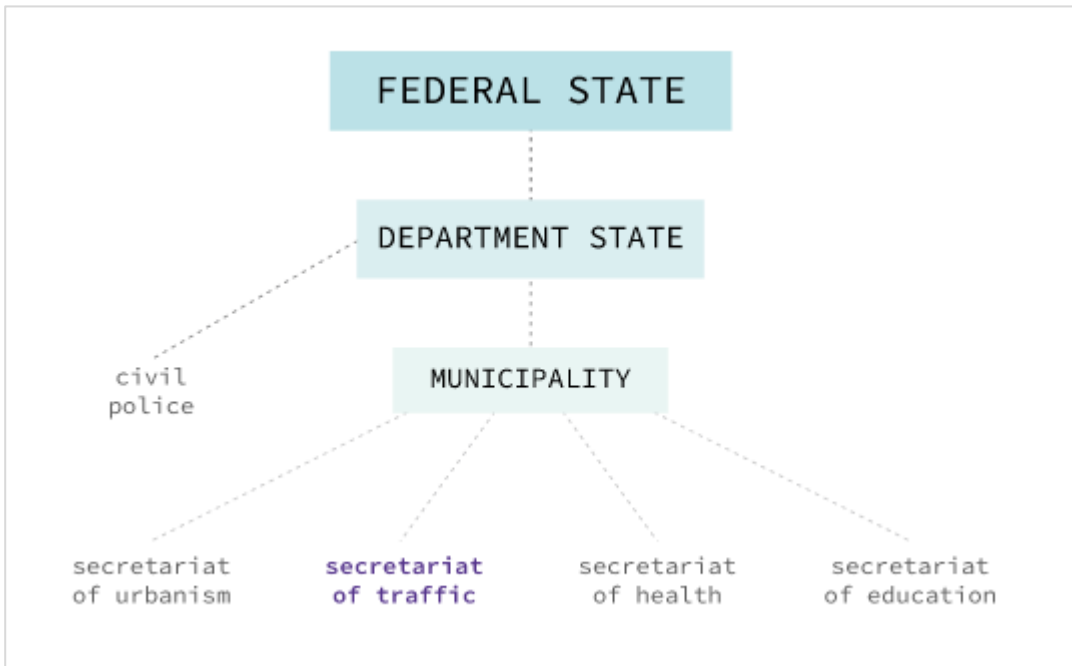
Currently, mobility management is carried out by the Department of Traffic, separate from the Department of Urbanism and Environment, as if they were separate things or issues.

### **Approaches and methodological crossings**

By building an analysis by superimposed layers, this research turns to some public databases, which are not always managed and compiled in an organized and intelligible way by the government.

With the layers drawn, whether through numbers, graphs and tables or drawings and maps, some overlays are built. The crossing of qualitative and quantitative information to understand the relationships between the different aspects that influence both the quality of urban form and the quality of life of the population also considers its historical and geopolitical context critically.

From the public management point of view, it is understood that the division of departments is relevant because of the increased specificity and consequently higher technical quality for each area, but it is not productive to isolate each theme in its particular secretariat since a coherent analysis requires a base of complete and detailed data.



**Figure 2.** Infographic about the organizational structure of the public government.

In SJDR, as can be observed in the figure above, the municipal government is divided into secretariats that, among several others, have the secretariat for urban planning, traffic, health, and education.

Urban mobility should be a topic addressed by both, but there is a local tendency to determine a responsible sector for each project, easily culminating in the suppression of relevant information for a quality plan.

## Conclusions

Throughout the research, several questions emerged about the relationship between mobility and urban morphology. To what extent is it possible to talk about the impacts of mobility without first analysing how the current debate around the topic is taking place? And if the debate does not prove to be sufficient, or even important or consistent with the reality of the place studied, how to analyse its impacts? It is necessary to understand the context and its formation from various layers, at the same time historical, geopolitical, racial, economic, cultural, and political.

When outlining the considerations needed, regarding the debate on the studied subject, it begins with the analysis of its impacts on the urban environment. The method of analysis based on the overlapping of different layers of data, with different sources, brought up and emphasized issues that remain open.

The main question that stands out at this moment is to what extent is physical form solely responsible for the quality of life in certain urban spaces? Are there other responsible aspects? What factors should be analysed, considering the geopolitical position of the studied location?

It is considered that an unequal society, built from the logics of colonization, European urbanization, exploitation, and slavery, must be analysed considering all these aspects and their consequences in the

present moment, even if the main theoretical debate that addresses the object under analysis in the study, do not be.

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