



**Notes on Urban Mobility in Deindustrialized Cities: The Case of Greater  
ABC Region**

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**SUMMARY**

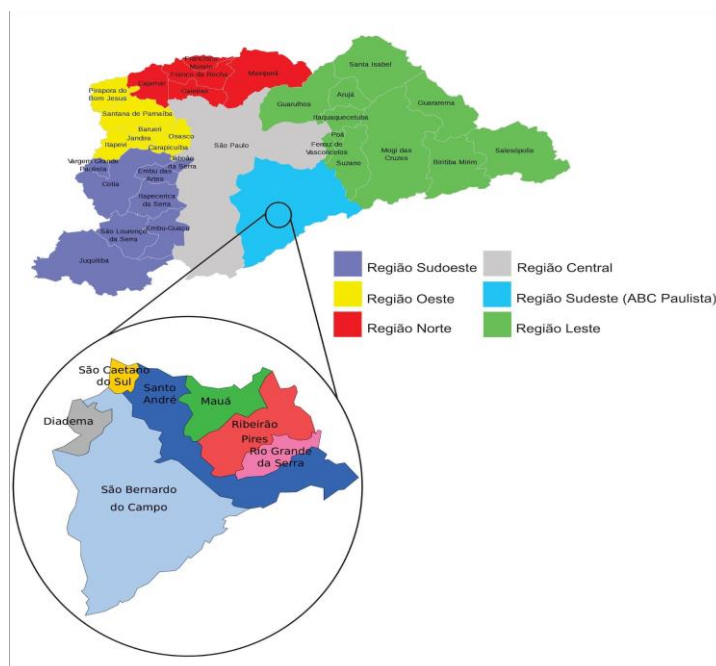
The ABC Paulista, located in the São Paulo Metropolitan Area, was the birthplace of Brazilian Fordist peripheral industrialization, established its economic foundations in the automotive, chemical, metallurgical, and construction sectors. This industrial dynamism facilitated rapid urbanization during the 1950s, 1960s, and 1970s, resulting in a region characterized by disparities in housing conditions, access to infrastructure, urban services, employment opportunities, healthcare, education, culture, and leisure. Since the 1980s, the region has been experiencing the impacts of the process of productive restructuring, in conjunction with the ongoing industrial deconcentration across the country. This study aims to analyze these impacts in this peripheral region, considering changes in territorial organization and, particularly, in the mobility of people and goods, with a focus on urban mobility policies that have been planned and implemented. A literature review was carried out concerning the following subtopics: productive restructuring, industrial deconcentration, and deindustrialization; mainly focusing in alterations in the structural organization of the territory and their effects on mobility conditions in the Greater ABC Region; the characteristics of mobility and commuting patterns in the region; and the consequences of the national urban mobility policy in the Greater ABC Region. The results revealed that in recent years, the region has undergone transformations in its territorial organization that have implications for its mobility conditions, including an increase in intra and inter-regional commuting. Even though the development of regional and local policies aimed at addressing these challenges, such as regional and municipal urban mobility plans, more actions are necessary for constructing a path toward sustainable development as advocated by the Agenda 2030.

**KEYWORDS:** Greater ABC Region; Urban Mobility, Mobility from Politics

**1 INTRODUCTION**

The metropolitan area ABC Paulista, known as the cradle of Fordist production in the 20th century, is in the southeastern region of Greater São Paulo. It includes the municipalities of Santo André, Mauá, Ribeirão Pires, Rio Grande da Serra, São Bernardo do Campo, São Caetano and Diadema.

Figure 1 – Map of the Metropolitan Region of São Paulo, highlighting the Greater São Paulo ABC Region



Source: Authors

In Brazil, the largest industrial centers are spread across the South and Southeast of the country, reflecting a national industrialization process historically characterized by the geographic concentration of its manufacturing plants. In this context, Sígolo (2014, p. 139) reports that

The industrial concentration that prevailed in the metropolitan area of São Paulo, particularly in the capital city and the ABCD region, during that period, was guided by a Fordist conception of the spatial organization of the production sector. This concept identified centralized production units as a mechanism for reducing production costs, as it decreased expenses related to the transportation of raw materials and labor, while optimizing the use of infrastructure and the road network already in place. In a similar vein, Conceição (2004) underscores that the primary reasons for the Greater ABC region to concentrate the size of its industrial park are associated with a favorable national and international context in which investment flows were high and highly liquid.

In the Southeast region, the Greater ABC Region is one of the most important industrial centers in Brazil, especially in the automotive, chemical, construction, and metallurgical sectors (CONCEIÇÃO, 2004). The region is also considered one of the country's largest consumer markets. According to estimates from the Brazilian Institute of Geography and Statistics (IBGE), in 2019, the metropolitan area of ABC region had approximately 2.8 million inhabitants, accounting for 12.84% of the total population of the São Paulo Metropolitan Region<sup>1</sup> and 6.08% of the total population of the state of São Paulo. In that particular year, the Gross Domestic Product (GDP) of the region reached an approximate total of R\$ 131 billion, signifying 10.40% of the GDP within the São Paulo Metropolitan Region and 5.56% of the GDP of the State of São Paulo.

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<sup>1</sup> The Metropolitan Region of São Paulo\* (RMSP) is composed of 39 municipalities. In addition to the seven municipalities belonging to Greater ABC Region and the city of São Paulo (the State Capital), it includes: Embu das Artes, Embu-Guaçu, Itapeverica da Serra, Juquitiba, São Lourenço da Serra, and Taboão da Serra, Barueri, Carapicuíba, Cotia, Itapevi, Jandira, Osasco, Pirapora do Bon Jesus, Santana de Parnaíba, Vargem Grande Paulista, Cajamar, Caieiras, Franco da Rocha, Francisco Morato, and Mairiporã, Arujá, Guarulhos, Santa Isabel, Biritiba-Mirim, Ferraz de Vasconcelos, Guararema, Itaquaquecetuba, Mogi das Cruzes, Poá, Salesópolis, and Suzano.

Table 1 – Population and GDP by city in the Greater ABC Region in 2019

Area	Population			GDP (in million Brazilian reais)			
	Number of inhabitants	São Paulo % State	% RMSP	Total GDP	PER CAPITA	São Paulo % State	% RMSP
S. B. do Campo	838.936	1,83	3,86	51.067	0,06	2,17	4,0670
S. André	718.773	1,57	3,31	30.339	0,04	1,29	2,4162
Mauá	472.912	1,03	2,18	16.283	0,03	0,69	1,2968
Diadema	423.884	0,92	1,95	15.301	0,04	0,65	1,2186
S. C. do Sul	161.127	0,35	0,74	13.706	0,09	0,58	1,0915
R. Pires	123.393	0,27	0,57	3.146	0,03	0,13	0,2505
R. G. da Serra	50.846	0,11	0,23	721	0,01	0,03	0,0574
<b>Total of Greater ABC Region</b>	<b>2.789.871</b>	<b>6,08</b>	<b>12,84</b>	<b>130.563</b>	<b>0,05</b>	<b>5,56</b>	<b>10,40</b>
RMSP*	21.734.682	47,33	-	1.255.656	0,06	53,47	-
São Paulo State	45.919.049	-	-	2.348.338	0,05	-	-

Source: Authors (using data from the Brazilian Institute of Geography and Statistics - IBGE, 2019)

Among the seven municipalities in the region, the most populous ones are São Bernardo do Campo, Santo André, Mauá, and Diadema, each with a population exceeding 400 thousand inhabitants, while the least populous are Ribeirão Pires and Rio Grande da Serra, each with fewer than 130 thousand inhabitants, as shown in Table 1. The highest population densities are found in São Caetano do Sul, with 9.7 inhabitants per square kilometer, and Diadema, with 12.5 inhabitants per square kilometer. In this context, it becomes evident that, despite being part of the same region, there are notable socio-spatial differences among the municipalities.

Although born from a single large municipality known as São Bernardo da Borda do Campo, later renamed Santo André, the seven municipalities comprising the Greater ABC Region in São Paulo exhibit significant differences. These differences manifest in variations in land use and occupation patterns, the socioeconomic profile of their populations, the prevalence of precarious settlements, the urban and environmental quality of their spaces, human development indices, municipal revenues, and the capacity for municipal investment, among others. São Bernardo do Campo, for example, situated along two major highways, the Anchieta Highway and the Imigrantes Highway, assumed a prominent position in the national industrialization project, led by the Goals Plan developed during Juscelino Kubitschek's Government (1956-1961), and significant public and private investments were directed towards it.

Sígolo (2014) emphasizes that the intensive process of administrative restructuring since the 1940s reflected the profound economic, political, and territorial transformations occurring in the Greater ABC Region. Consequently, São Bernardo do Campo, which was part of the municipality of Santo André until 1944, achieved autonomy in 1945. In 1948, São Caetano do Sul followed suit, followed by the municipalities of Mauá and Ribeirão Pires in 1953. Diadema gained independence in 1959, and finally, Rio Grande da Serra in 1963. In this context, Sígolo (2014) adds that significant public and private investments were directed towards the region, aimed at consolidating its robust industrial base, primarily through infrastructure projects and the expansion of road networks. However, the high economic growth rates in the ABC region were largely sustained by the low wages of “factory floor workers” employed there.

Supporting this, Ferreira (2015) asserts that as the region experienced economic growth, social problems also escalated, characterized by rapid urban growth marked by urban and housing precarities and territorial informality, exacerbated by speculative land market practices.

Since the 1980s, the Greater ABC Region has been experiencing the effects of productive restructuring and industrial deconcentration, leading to significant changes in its territorial organization. These changes are associated with the exacerbation of socio-spatial inequalities, challenges related to the movement of people and goods, and the migration of major industries to other regions within the State and country.

Considering the dynamics presented here, the literature review was conducted involving the selection of scientific works related to the topic. The works belonging to the first thematic axis present the process of productive restructuring and contextualize it by relating it to the changes in the structural organization of the territory and in commuting conditions in the greater region ABC. The works of the second thematic axis characterize urban mobility and current commuting patterns in Greater ABC Region, while the works of the third thematic axis address the current legal framework of national urban mobility policy and its regional and local implications in Greater ABC Region. In addition, data on the socioeconomic conditions of the region, as well as on urban mobility in this locality, were collected and analyzed.

In the context of the 17 Sustainable Development Goals (SDGs) outlined in the 2030 Agenda, particularly SDG 11, which aims to “make cities and human settlements inclusive, safe, resilient, and sustainable,” as well as its target 11.2, which seeks to “provide access to safe, affordable, accessible, and sustainable transportation systems for all” (UN, 2015). This study on the continuities and changes in urban mobility in a region heavily affected by productive restructuring and in the process of deindustrialization, such as The Greater ABC Region, offers significant contributions to the discourse on urban sustainability.

From the perspective of sustainable development as outlined in the 2030 Agenda, improving urban mobility should include promoting active mobility over motorized transport, in addition to universal access to infrastructure. It should also include transitioning from an energy matrix based predominantly on fossil fuels to one based on clean and renewable energy sources. This is critical because “the transport sector contributes to a quarter of global

greenhouse gas emissions and is the sector where carbon emissions have increased the most since 2000" (AGÊNCIA BRASIL, 2018). With the reflections we provide in this study, we aim to contribute to the necessary paradigm shifts in urban living, spatial planning and urban mobility in the face of the climate crisis and the urgent need to create healthier, more inclusive, sustainable and resilient cities.

## 2 METHODOLOGY

This study is a theoretical analysis that uses a qualitative approach. It is based on a literature review that focuses on the themes of mobility, industrialization, productive restructuring, urban mobility policy, and the Greater ABC Region. Okoli and Schabram (2010) argue that a literature review is valuable for understanding the current state of research on a specific topic, identifying gaps, and providing insights for future studies. To gather relevant publications, we searched journal repositories, event proceedings, doctoral theses, and master's dissertations. We used scientific validation and specific keywords such as "industrialization and urbanization," "urban mobility," "urban mobility policy," "productive restructuring," "territorial restructuring," "Metropolitan Region of São Paulo," and "Greater ABC Region."

Socioeconomic data as well as data on urban mobility in the region were also collected and analyzed, with a particular focus on databases provided by the Brazilian Institute of Geography and Statistics (IBGE), Fundação SEADE, and the Origin-Destination Survey conducted by Metrô-SP (Subway São Paulo city).

The analysis of the consulted literature and the collected data led to the definition of three thematic axes. The first thematic axis addresses changes in the structural organization of the territory and their impacts on commuting conditions in Greater ABC Region, in the context of the ongoing productive restructuring and industrial deconcentration process since the 1980s in Brazil. The Greater ABC Region, driven by President Kubitschek's Goals Plan (1956-1961) in the 1950s, attracted national and international investments, becoming one of the main centers of Brazilian industrialization during the 1950s, 1960s, and 1970s. This movement was accompanied by rapid population growth, as industrial concentration attracted a significant migratory influx that had a major impact on the organization of the region's territory.

The second thematic axis analyzes the characteristics of urban mobility and the behavior of commuting patterns in Greater ABC Region, linked to the intense urbanization driven by the industrialization process and subsequent changes in the territory's organization resulting from productive restructuring, industrial deconcentration, and deindustrialization, which increased the need for commuting, thus raising the flow of people entering and leaving each municipality in the region and beyond (BENTO, 2020). As the seven municipalities of Greater ABC Region grew in terms of industry and population, mobility problems associated with growing demand and increased motor vehicle traffic also escalated (GOUVEIA, 2017). These problems intensified in the subsequent decades. Rolnik (2011) adds, in the case of the

city of São Paulo, that in the first decade of the 2000s, the average time spent by Paulistas in their daily commutes was 2 hours and 42 minutes, which means that every month, two days and six hours were wasted in cars or public transportation.

The third thematic axis addresses the current legal framework of national urban mobility policy and its regional and local implications in Greater ABC Region. Considering that urban mobility is directly related to people's (and goods') movements and their ability to move from one point to another, and that the demand for qualification and diversification of transport modes has been growing, along with the negative effects of the high number of daily trips and the natural, financial, and time resources expended, this topic has gained prominence on the political agenda. It has progressively become a government concern (ARAÚJO, 2011). In response to this, a legal framework has been structured to guide plans and projects committed to improving mobility conditions in the country, in the RMSP, and in Greater ABC Region, as will be discussed later.

### **3 RESULTS**

The following sections will present the analyses developed within the scope of this research in three thematic axes.

#### **4 PRODUCTIVE RESTRUCTURING, INDUSTRIAL DECONCENTRATION, AND DEINDUSTRIALIZATION: CHANGES IN TERRITORIAL STRUCTURAL ORGANIZATION AND THEIR IMPACTS ON MOBILITY CONDITIONS IN GREATER ABC REGION**

The Greater ABC Region was a major industrial area in the 20th century, attracting investments in mass production and experiencing rapid and uncontrolled urbanization. However, since the late 1900s, the region has been dealing with the effects of restructuring and worsening urban mobility issues.

The Greater ABC Region in São Paulo, which includes Santo André, São Bernardo do Campo, São Caetano do Sul, Diadema, Mauá, Ribeirão Pires, and Rio Grande da Serra, was considered a significant center of Brazilian industrialization in the 1950s and 1960s. It is worth noting that during this time, the region received substantial investments from both the public and private sectors. In terms of logistics, the region had locational advantages that attracted investments, such as its convenient access provided by the strategic road network consisting of the Anchieta and Imigrantes highways. These highways connect the Greater ABC Region to various parts of the capital and the Baixada Santista, where the Port of Santos is located.

Conceição (2004) states that in order to support the Fordist industrial process, a pattern of urbanization was established, leading to significant migration of workers from different regions of the country, including the North, Northeast, and Southeast. This resulted in rapid and concentrated population growth in the seven municipalities of the Greater ABC Region, as shown in Table 2, which presents the population changes from 1960 to 2010.

Table 2 – Population evolution of the municipalities in the Greater ABC Region

Municipalities	1960-70	1970-80	1980-91	1991-00	2000-10
S. André	71%	32%	12%	5%	4%
S. B. Campo	145%	111%	33%	24%	9%
S. C. do Sul	31%	9%	-8%	-6%	6%
Diadema	541%	190%	34%	17%	8%
Mauá	252%	102%	43%	23%	15%
R. Pires	68%	95%	51%	23%	8%
R. G. Serra	112%	139%	49%	24%	19%
ABCD Cities	96%	67%	67%	15%	8%

Source: Sígolo, 2014 p.140

Between 1960 and 1970, Diadema had the highest population growth rate, reaching 20.42%. Mauá followed with 13.4% and São Bernardo do Campo with 9.36%. All seven municipalities experienced significant growth compared to the capital city and the State of São Paulo. During this period, the Greater ABC Region grew at a rate of 6.96% per year, surpassing the capital city's growth rate of 5.44% and the state's growth rate of 3.33%. These growth rates exceeded the national average of 2.89%.

The population of Diadema increased from 12.3 thousand inhabitants in 1960 to 78.9 thousand in 1970. Similarly, Mauá's population grew from 28.9 thousand to 101.7 thousand, and São Bernardo do Campo's population increased from 82.4 thousand to 201.6 thousand during the same period. In just 10 years, the population of the Greater ABC Region doubled, surpassing 504.4 thousand to reach 988.6 thousand. At the same time, the population of the São Paulo Metropolitan Region (RMSP) also increased by 70%, rising from 4.8 million to 8.1 million. The state of São Paulo experienced a 39% growth, going from 12.8 million to 17.7 million, and the country as a whole saw a 33% increase, soaring from 70.1 million to 93.1 million (SÍGOLO, 2014).

The economic, social, environmental, and political impacts were significant. In 1997, as highlighted by Conceição (2004), due to the strong industrial concentration in the region, Greater ABC Region accounted for a GDP of \$27 billion, representing a notable share of the Brazilian GDP at the time, which was approximately \$650 billion. This demonstrates the region's immense importance in national wealth production during that period. However, even as the country experienced robust economic growth, the living conditions of a large part of its population deteriorated, especially in major urban centers, revealing a stark wealth distribution inequality. Urban and housing precariousness manifested through a lack of basic sanitation, inadequate urban infrastructure and services, substandard housing, and limited access to adequate healthcare, education, culture, and leisure facilities, evidenced by the growth of slums in the region.

With such population growth, the need for mobility increased, requiring urban mobility infrastructure capable of serving the growing and diverse commuting patterns in the region. However, the deficient public transportation system, in addition to generating dissatisfaction among users, forced the search for extremely limited alternatives, driving the use of private



vehicles, ownership of which was distributed quite unevenly among different income strata, further exacerbating social inequalities (ÂNTICO, 2005).

According to Ré (2014), transportation policies should keep pace with urban growth and address the diverse commuting needs of the population. The author further emphasizes that urban mobility requires the development of a regionally oriented policy that ensures intergovernmental coordination involving all participating entities in the institutional arena, thus converging to meet the real demands of the population.

Starting in the 1990s, the Brazilian economy underwent structural changes, including market liberalization, macroeconomic policies based on high interest rates, aggregate demand contraction, currency appreciation, and complemented by productive restructuring, downsizing techniques, outsourcing, and tax competition among municipalities (YAMAUCHI, 2020). The author highlights that this broad set of changes negatively impacted traditional Brazilian "industrial cities," particularly the Greater ABC Region in São Paulo, resulting in a loss of investments and the deactivation of production units, many of which were relocated to the interior of the state of São Paulo and other states in the country.

As the unemployment rate grew, there was also a precarization of labor, with reduced rights, decreased purchasing power, and a diminished quality of life for workers and their families. Additionally, the new job positions often required longer commutes between municipalities in the region or to the capital city (GOUVEIA, 2017).

In the context of productive restructuring, industrial deconcentration, and deindustrialization in Greater ABC Region, there has been a shift in jobs from the industrial sector to the trade and services sector over the past 30 years (1989-2020). In 1989, industrial jobs accounted for 61.71% of formal employment, while the services sector represented 20.49%. In 2020, the share of industrial jobs decreased to 24.36%, while the services sector increased to 44.72%. Simultaneously, jobs in the trade sector also grew, from 62,913 positions in 1989 to 143,431 in 2020, representing an increase of 19.79% (YAMAUCHI, 2022).

Table 3. Number and share of formal jobs by sector of activity in the Greater ABC Region - 1989-2020

Year	Mining	Industry	Public Utilities	Construction Industry	Commerce	Services	Public Administration	Agribusiness Extraction	Total
1989	494	<b>363.333</b>	621	13.608	<b>62.913</b>	<b>120.613</b>	26.596	550	588.728
1999	70	<b>187.759</b>	2.872	11.299	<b>67.266</b>	<b>171.827</b>	34.559	2.796	478.448
2002	48	<b>192.724</b>	2.551	12.634	<b>81.935</b>	<b>224.908</b>	38.452	108	553.360
2005	47	<b>223.827</b>	4.053	16.805	<b>99.696</b>	<b>238.363</b>	41.594	151	624.536
2008	178	<b>255.452</b>	4.503	30.594	<b>123.616</b>	<b>276.361</b>	42.595	167	733.466
2011	62	<b>264.827</b>	4.946	40.420	<b>140.539</b>	<b>309.572</b>	49.286	318	809.970
2014	2	<b>238.722</b>	4.939	41.000	<b>148.050</b>	<b>334.116</b>	51.628	374	818.831
2016	2	<b>190.736</b>	4.342	33.663	<b>140.847</b>	<b>313.340</b>	47.948	360	731.238
2019	0	<b>182.385</b>	3.584	30.126	144.679	<b>328.871</b>	42.671	390	732.706
2020	0	<b>176.561</b>	3.476	30.709	143.431	<b>324.141</b>	46.227	272	724.817

Source: YAMAUCHI (2020), based on the Annual Social Information Report (RAIS) from the Ministry of Labor and Employment.

Gonçalves (2017) points out that dynamics related to the reduction of industrial employment, the growth and diversification of tertiary activities, the flexibilization of labor

relations, and the increase in unemployment rates marked the transformation of economic activities in the São Paulo Metropolitan Region (RMSP).

According to the Ministry of Cities (2004, p.13), urban mobility "is an attribute associated with people and goods," and thus, "the responses of individuals and economic agents to their travel needs" are inherently related to the dimensions of urban space and activities carried out within it, with direct implications for the model of urban life in our society. Therefore, urban mobility, albeit to varying degrees, impacts the daily lives of the population, directly influencing access to social rights, as well as individual choices related to housing, job opportunities, income generation, healthcare, education, culture, leisure, and more.

In this way, it can be concluded that mobility conditions directly impact the quality of life in a region, being intrinsically linked to urban planning and management agendas. Therefore, it is of paramount importance that urban mobility planning and management result from ongoing processes of plan development and revision, projects, and actions involving not only representatives of the public sector but also other active social agents. This alignment is crucial to achieving a model of sustainable development encompassing economic, social, and environmental aspects.

## **5 THE CHARACTERISTICS OF URBAN MOBILITY AND TRAVEL PATTERNS IN THE GREATER ABC REGION**

According to the 2017 Origin-Destination Survey conducted by the São Paulo Metro, 64% of formal job positions in the São Paulo Metropolitan Region (RMSP) are concentrated in the Central sub-region, corresponding to the city of São Paulo. This partially explains the high number of trips with this location as the destination. This scenario reveals an unequal and combined urbanization pattern that concentrated job opportunities and income generation in an exceedingly small portion of its territory, forcing a huge portion of its population to undertake long daily commutes between their place of residence and work (SÍGOLO, 2014).

It is worth noting that this high number of trips contributes significantly to traffic congestion and accidents, as well as environmental degradation. It also affects a large portion of family budgets and the physical and mental health of the population. In the Origin-Destination surveys conducted by the São Paulo Metro since 1967, data regarding trips between the 7 sub-regions belonging to the RMSP are organized based on volume and reasons for entries and exits. In other words, if a sub-region has many job positions, for example, there is a high likelihood that the number of entries will be higher than exits. Regarding this, Bento (2019) highlights that the capital is the only "sub-region" where the volume of "entries" is greater than "exits," making it the only locality with a positive balance. He also adds that the Greater ABC Region, in the Southeast sub-region, has the second-highest volume of entries and exits, surpassed only by the capital. However, the city of São Paulo has the largest relative difference between "entries" and "exits," while the Greater ABC Region has the smallest, indicating a greater balance in "commuter exchanges" in this sub-region.

According to Bento (2019), the Greater ABC Region (Southeast sub-region) stands out among other sub-regions of the RMSP for three reasons. Firstly, it has the highest rate of internal commuting, meaning that it has more people commuting within the region than to the capital. Secondly, it has the highest volume of pendular flows, both in terms of people coming into the region and leaving it (excluding the city of São Paulo). Lastly, it has the smallest difference in proportion between the number of people coming into the region and those leaving it. These unique characteristics of pendular mobility in the Greater ABC Region highlight its socioeconomic importance in the RMSP.

A significant portion of pendular trips in the RMSP are driven by work and education, as well as for shopping and leisure, among other reasons. According to the 2017 OD Survey, the number of jobs in the RMSP grew by 3.3% between 2007 and 2017, with the majority of job positions concentrated in the Central sub-region (the city of São Paulo), accounting for 64.1% of the total jobs in the region. However, there was a slight decrease in this share during this period, which was 65.4% in 2007. The East sub-region also experienced a slight decline of 0.2%, reaching 4.9% in 2017. Another sub-region that saw a slight decrease was the Southeast, going from 11.7% to 11.6% in 2017. On the other hand, the other sub-regions witnessed an increase in their share of total jobs in the RMSP. The West, Southwest, North, and Northeast sub-regions experienced percentage growth of 0.8, 0.4, 0.3, and 0.1, respectively. Additionally, the Northeast sub-region, where Guarulhos is located, saw a 6% growth in the number of jobs offered between 2007 and 2017, which is nearly twice the growth rate of the RMSP as a whole.

Table 4 - Jobs by Sub-region (OD 2007 and OD 2017)

SUB-REGION	JOBS 2007		JOBS 2017	
	(x 1.000)	%	(x 1.000)	%
SOUTHWEST [1]	215	2,4	255	2,7
WEST [2]	724	8	820	8,8
NORTH [3]	135	1,5	171	1,8
NORTHEAST [4]	540	6	573	6,1
EAST [5]	462	5,1	457	4,9
SOUTHEAST [6]	1.060	11,7	1.087	11,6
CENTER [7]	5.930	65,4	6.004	64,1
TOTAL	9.066	100	9.367	103

Source: Subway-Surveys OD 2007 and 2017.

According to the 2017 OD Survey, approximately 67.3% of the 42 million daily trips in the São Paulo Metropolitan Region (RMSP) were made using motorized transportation. Of these, 36.4% used public transport and 30.9% relied on individual transport. Non-motorized trips accounted for 32.7% of the total, with 31.8% made on foot and 0.9% by bicycle. Motorized trips originating in the Greater ABC Region (Southeast sub-region) were the majority, making up 67.1% of the total in 2017, surpassing their 65.1% share in 2007. Non-motorized trips in this sub-region decreased from 34.9% in 2007 to 32.9% in 2017. This indicates an increase in motorized

mobility and a decrease in active mobility, contradicting the principles of sustainable development advocated by the 2030 Agenda.

Table 5 Daily trips by motorized and non-motorized mode by sub-region in the Metropolitan Region of São Paulo – 2007 and 2017

Origin Sub-region	Trips by mode									
	2007				2017					
	Motorized (x 1.000)	%	Non-motorized (x 1.000)	%	Total	Motorized (x 1.000)	%	Non-motorized (x 1.000)	%	Total
Southwest	608	60,3%	400	39,7%	1.008	868	62,3%	525	37,7%	1.393
West	2.016	64,5%	1.112	35,5%	3.128	2.527	67,6%	1.211	32,4%	3.738
North	398	55,5%	319	44,5%	717	479	58,6%	338	41,4%	817
Northeast	1.321	62,9%	779	37,1%	2.100	1.744	63,3%	1.013	36,7%	2.757
East	1.119	52,6%	1.009	47,4%	2.128	1.413	57,3%	1.051	42,7%	2.464
<b>Southeast</b>	<b>3.577</b>	<b>65,1%</b>	<b>1.917</b>	<b>34,9%</b>	<b>5.494</b>	<b>3.354</b>	<b>67,1%</b>	<b>1.643</b>	<b>32,9%</b>	<b>4.997</b>
Center	16.128	68,6%	7.391	31,4%	23.519	17.895	69,3%	7.946	30,7%	25.841
Total	25.167	66,1%	12.927	33,9%	38.094	28.280	67,3%	13.727	32,7%	42.007

Source: Subway-Surveys OD 2007 and 2017.

Silva (2019) argues that the behavior of commuting mobility in the São Paulo Metropolitan Region (RMSP), as well as in the Greater ABC Region, in recent decades is associated with the process of productive restructuring, industrial deconcentration, and deindustrialization of traditionally industrial regions like the Greater ABC Region. Supporting this, Ântico (2005) states that commuting movements are intricately linked to the transformation of urban space.

In this regard, Zioni (2014) emphasizes that urban mobility is intrinsically linked to the process of urbanization and has gained greater prominence in public discourse in light of the ongoing changes in the São Paulo metropolis related to the intensification and acceleration of flows of people, goods, information, and the goods and services generated and attracted by it. The author presents multiple approaches to the analysis of the mobility issue, particularly those linking it to the paradigm of societal motorization, environmental deterioration, and the precarious conditions of travel in metropolitan areas, among others. Finally, Zioni (2014) argues that urban mobility should be fundamentally understood as relational—contextually produced and socially differentiated.

## 6 THE CURRENT LEGAL FRAMEWORK FOR NATIONAL URBAN MOBILITY POLICY AND ITS REGIONAL AND LOCAL IMPLICATIONS IN THE GREATER ABC REGION

There has been much discussion about urban mobility infrastructure in cities, or the lack thereof. This is because mobility, besides being essential for urban development, is also related to the population's quality of life. Poor conditions for the movement of people and goods can lead to significant congestion, air pollution, environmental degradation and accidents, among

other problems. In this regard, Gouveia (2017) points out that the low-income population is not the only one affected by mobility problems in urban centers, but it is the most affected.

According to Carvalho (2016), poor mobility infrastructure exacerbates socio-spatial inequalities, affecting everyone, but particularly the poor, due to its impact on income, job opportunities, education, health, leisure, among others. A study presented by the Institute of Applied Economic Research (IPEA) in 2021 reinforces that in recent decades there has been a trend of declining demand and efficiency of public transportation in large Brazilian cities, coupled with a rapid growth in the number of individual motorized vehicles. This phenomenon strains already deficient road systems and harms the fragile environment by increasing air pollution. This same study also reveals that the fleet of individual motorized vehicles increased by 331% between 2001 and 2020 in the country, consequently leading to longer commuting times in Brazilian metropolises. According to the same study, in 2018, the daily number of passengers transported by buses in large Brazilian cities decreased by 60% compared to that registered in the mid-1990s, highlighting the weakening of public transportation and the increasing use of individual motorized mobility in large Brazilian cities. Additionally, the research observes that bus fares and diesel fuel costs have increased above the inflation rate. These findings about the pattern of urban mobility in large Brazilian cities emphasize the urgent need to revise paradigms in the face of the climate emergency.

As part of the issue of mobility, travel times in large Brazilian cities have increased. Rolnik (2011) supports this by stating that in 2009, traffic congestion in São Paulo reached a new record with 294 km of slow-moving traffic. To demonstrate the worsening situation, data from the Traffic Engineering Company (CET) of the city shows that in March 2021, the city set a new record with 370 km of congestion. It is evident that this phenomenon is connected to the Greater ABC Region, where many people commute to the capital for work on a daily basis.

Ântico (2005) asserts that commuting movements have gained significant importance in metropolitan urban dynamics. This is because, in these regions, they occur on a magnified scale, as is the case in Greater São Paulo, whose high numbers of daily trips were presented in the previous section. Siqueira (2021) emphasizes that, given the mobility crisis faced by Brazilian cities, it has become urgent to develop a national policy that guides and coordinates efforts and investments from various levels of government, as well as the private sector and civil society, to address and overcome this crisis.

In this context, urban mobility has become a priority for the government, and there is a growing demand for specific public policies to address mobility issues. In response to these demands and the increasing problems with mobility in the country, the Federal Law N. 12,587/2012 was enacted on January 3, 2012. This law establishes the guidelines for the National Urban Mobility Policy, which aims to promote universal access to the city through the planning and democratic management of the National Urban Mobility System (BRASIL, 2013; SIQUEIRA, 2021).

In the planning and management of Brazilian cities, urban mobility is now the top priority. The National Mobility Law assigns the task of planning and implementing urban mobility policies to municipalities. Municipal entities with populations over 20,000 are required to

develop and present a local mobility plan. These plans aim to coordinate actions and investments in this area through a social agreement. It is to note that municipalities must present mobility plans in order to receive federal government funding (BRASIL, 2013). Siqueira (2021) highlights the considerable challenges in enhancing urban mobility through the development of plans, mainly due to the constraints faced by public administration in terms of limited resources.

In addition, Jeha (2019) asserts that Brazilian municipalities continue to encounter significant obstacles in achieving sustainable development, despite the emergence of new opportunities for urban mobility. He highlights the necessity for municipalities to prioritize investments in various areas, including the regulation of urban expansion, enhancement of land use and occupation practices, provision of universal urban infrastructure and services, expansion of public spaces, and the establishment of democratic management.

The early years of the 20th century saw a strong social movement for improved public transportation. To address the current mobility crisis in Brazilian cities, it is crucial to involve both government and non-government actors in the development and implementation of agreed-upon actions. In metropolitan areas, this collaboration should include representatives from various levels of government (JEHA, 2019). In the case of the Greater ABC Region, the Consortium of Intermunicipal of the Greater ABC Region plays a significant role. Established in 1990 by the seven municipalities in the region, it became the country's first multisectoral consortium with public law and an autarchic nature in 2010. Its primary objective is to facilitate coordinated planning and implementation of regional actions. In terms of mobility, the consortium spearheaded the creation of the Greater ABC Regional Mobility Plan in 2013. This plan aimed to propose urban mobility actions that support policies and projects integrating the municipalities in the region.

Ré (2018) emphasizes the effectiveness of federative partnerships in consolidating regional impact public policies. The author explains that during the development of the Regional Mobility Plan, the Consortium aimed to represent the interests of all seven municipalities in the region to the state and federal governments, while also addressing differences in institutional structure and administrative capacity. Additionally, Ré (2018) also highlights that regional cooperation in the Greater ABC Region managed to overcome some of the difficulties imposed by the Brazilian federative structure, which does not offer significant incentives for the association of federative entities, especially in the context of metropolitan regions, and has a history of regional cooperation. The author further reinforces that these initiatives lack incentives, particularly financial support, from state and/or federal governments and federative forums or arbitrators.

In conjunction with the development of the regional plan, the seven municipalities in the area have also formulated their own local urban mobility plans between 2013 and 2021. These plans share common guidelines aligned with the principles of Agenda 2030, such as prioritizing non-motorized mobility (SAMPAIO, SÍGOLO, 2022). However, it is important to note that the presence of socio-spatial inequality within these cities, which is evident in the unequal distribution of infrastructure, urban services, and facilities, as well as employment and income

opportunities, makes it impossible to achieve these goals. In fact, there has been a noticeable increase in the number of private vehicles in the region, as previously mentioned.

## 7 CONCLUSIONS

Considering the aspects highlighted in this article, it can be concluded that the Greater Region of ABC underwent an intense industrialization process in the middle of the 20th century, during which it received a significant volume of public and private investments, mainly from the industrial sector. These conditions led to a rapid urbanization process characterized by deficiencies in urban infrastructure, housing precarity, and informality in land occupation.

Since the 1980s, the Greater Region of ABC has been affected by the restructuring of production and the deconcentration of industry, which has led to significant changes in the territorial configuration as part of the deindustrialization process in the region. It is worth highlighting that the restructuring of this territory also led to changes in the conditions of mobility in the area. These changes are reflected in a decrease in the number of jobs in industry and an increase in jobs in the commercial and service sectors, which are located in central areas, increasing the need for intra- and inter-urban travel. This, in turn, exacerbated the urban mobility crisis in this region, which manifested itself directly in traffic congestion, overcrowded public transportation, increased pollutant emissions, and the waste of daily time and financial resources on commuting, with negative impacts on the physical and mental health of the population.

The urban mobility scenario in the Greater ABC Region remains highly challenging. There is a growing predominance of motorized travel over non-motorized travel, increasing from 65% in 2007 to 67% in 2017. In 2017, there were 42 million daily trips in the RMSP, with approximately 67.3% made by motorized modes, including 36.4% by public transport and 30.9% by private transportation. The study also shows an increase in areas with densities greater than 300 motorized trips per hectare, with the municipality of Santo André in the southeastern subregion following this trend.

Considering the importance of the Greater ABC Region in the national economy, it is necessary to discuss new paradigms for urban mobility in the region, as well as guidelines, strategies, and actions to expand urban infrastructure for active mobility, improve the public transportation system, including the transition to clean and renewable energy sources for its fleet, in line with the principles of sustainable development as advocated by the 2030 Agenda, notably SDG 11, which aims to "make cities and human settlements inclusive, safe, resilient, and sustainable".

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