

## Reflections on disordered growth on urban mobility



<https://doi.org/10.56238/Connexpemultidisdevolpfut-034>

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### ABSTRACT

Urban growth is a process of advancement of cities and their respective urban areas, both in size and population growth over time. This process occurs because more and more people decide to move to a certain urban area in search of better living conditions, in search of employment and economic

opportunities, services and other benefits that cities can offer. This article aims to present some elements that characterize the effects of disordered urban growth on urban mobility. These elements are based on a bibliographical survey of specific sources that deal with themes such as: urban growth or urbanization, urban dispersion and mobility. The literature review points out that urban sprawl and disorderly growth are directly related and reflected in the decrease in the quality of urban mobility. The research approach is qualitative because it presents the relevant concepts to the theme trying to understand its complexities trying to find a correlation that explains the theme and reaches the objective of this article. Therefore, the bibliographic base is fundamental for the presentation of arguments, analysis and conclusion. In this sense, this article anticipates that the result found shows that urban growth is interdependent on the urban mobility development process, the search for a better quality of life and the cost of living in a part of the city forces people to carry out this trajectory in search of another part of the city where it has lower cost, job, school, hospital, for example.

**Keywords:** Urbanization 1, Urban Mobility 2, Urban growth 3.

## 1 INTRODUCTION

Urban growth is the process by which cities and urban areas expand in size and population over time. This often occurs when more people move to an urban area in search of jobs, economic opportunities, services, and other benefits that cities can offer.

As more people move to a city, the demand for housing, transportation, utilities and infrastructure increases. This can lead to new construction of residential, commercial and industrial buildings, as well as the expansion of roads, bridges and other transport routes.

Urban growth can have benefits, such as increased trade, employment opportunities, and access to services and infrastructure. However, it can also bring challenges such as traffic congestion, pollution, lack of affordable housing, among others.



In Brazil, urban growth is evidenced by the numbers of urbanization, which in 1960 was 44.7%, later rising to 84.4% in 2010, but the PNAD – National Household Sample Survey in 2015 showed an increase to 84.72%, as an indicator for Brazil. Of the Brazilian regions, the Southeast region has the highest percentage of urban population with 93.14% (LOBO; BULL; COSTA, 2017).

The southern, southeastern and midwestern regions have always presented conditions of natural development because of the abundance of natural resources such as river water, forests, ores, fertile land for agriculture, climate; for instance. This caused people to settle in them, at the same time that new inhabitants were attracted to these regions. Soon, the process of urbanization was accelerated by the high internal migration of people who sought employment, income and economic opportunities of the most diverse.

So, urbanization is the process by which an area becomes more urban, that is, more developed and inhabited by people. On the other hand, urbanization can happen by the transformation of a rural area by the process of growth of its economic activities that makes emerge the buildings, busy streets and a dense population. The visual aspect of a rural area, in general with single-storey houses and large backyards, give way to vertical residences with a concentration of people and reduction of living space such as gardens, orchard and other denser green areas.

With the verticalization of residences in cities the spaces before single-storey houses such as garden are replaced by balconies and ballroom; The backyard for various purposes is limited in the city with buildings by the playground.

Urbanization can be driven by several factors, such as economic growth. Then there is the increased demand for housing and services, industrialization and the migration of people from the countryside to the city in search of work and opportunities. It can also occur through a dynamic of public investments, such as: the construction of an industrial park or production pole, causing people to move from their cities of origin and go to this new place attracted by the opportunities for improving their lives.

This can be verified in municipalities of the ABCD region, São André, São Bernardo do Campo, São Caetano do Sul and Diadema; when in 1956 occurred the installation of automakers encouraged by the federal government of Juscelino Kubitschek de Oliveira. This investment motivated an intense migratory flow and the urban expansion of these municipalities occurred rapidly due to the need for labor for these automakers.

There are other examples throughout Brazil, such as the city of Montes Claros in the north of Minas Gerais that received federal and state public investments for the installation of federal universities, hospitals, commercial expansion, among others. Private initiative took advantage of these public investments and contributed to this expansion. Among the public initiatives, it is important to note that in the 1970s, during the military government, with the II PND – National Development Plan,



and included in this plan was the PNCCPM – National Plan for Support to Capitals and Medium-Sized Cities, brought incentives for trade and, mainly, for industry, causing the city to grow rapidly (QUEIROZ et. al., 2014).

While urbanization can bring many benefits, such as better services and economic opportunities, it can also bring challenges such as traffic congestion, pollution, lack of green space, and public health problems.

The process of urbanization is global and has occurred in many countries over the last few centuries. Currently, more than half of the world's population lives in urban areas and the trend is that this proportion will increase in the coming decades. Several factors contribute to this growth, among them technology and the mechanization of productive processes in the countryside, reduce the need for labor, so the destination of these is the city.

In this sense, this article seeks to point out some elements of urban growth that reflected in urban mobility in a negative or positive way. As a central argument is urbanization, the process of urban growth, economic growth, the search for a better quality of life and the reflections on urban mobility.

This article uses bibliographic research to compose the theoretical repertoire on the subject, using as a basis scientific articles and books that deal with the theme urbanization, economic growth, urban growth and urban transport.

The first thematic item treated in the theoretical framework is economic growth with data demonstrating the evolution or deevolution of GDP – Gross Domestic Product that is an indicator of this macroeconomic aggregate.

It follows for the presentation of the theme Urban Growth showing the growth of cities in size and number of inhabitants. Following this article deals with the theme Urbanization that is conceptually different from the previous item, according to the content presented of both.

Finally, this article deals with urban mobility with the conceptual characteristics and direct relations with urban growth and urbanization. It seeks to follow the methodological concept of presenting the conceptual elements without delving into an analysis of the context in parameters of what is correct or not for the development of cities.

## **2 THEORETICAL BACKGROUND**

Urban growth is the process by which cities and urban areas expand in size and population over time. This usually occurs when more people move to an urban area in search of jobs, economic opportunities, services, and other benefits that cities can offer (PEDROSA; PEREIRA, 2014).

The concepts of urban growth and urbanization are not exactly the same thing, although they are related. As previously mentioned, the first represents a process of expansion of cities, urban areas



and population increase. While the second is associated with the transformation of a rural or less developed area into an urban area.

Urbanization is the process by which an area becomes more urban, that is, more developed and inhabited by people. This includes urban growth, but it can also include other social, economic, and cultural changes that occur when a rural area transforms into an urban area.

Thus, urbanization is a broader process and encompasses not only the physical growth of cities, but also the social, economic, and cultural changes that occur when people move from the countryside to the city and adapt to an urban life.

A study conducted by Gomide and Carvalho (2017) showed the need for a regulation of mobility services by bus due to the increase in demand attributed to urban growth and the urbanization process that Brazil has gone through, therefore, regulating to provide quality service and with the price for the service that is adequate to the budget of users.

## 2.1 ECONOMIC GROWTH

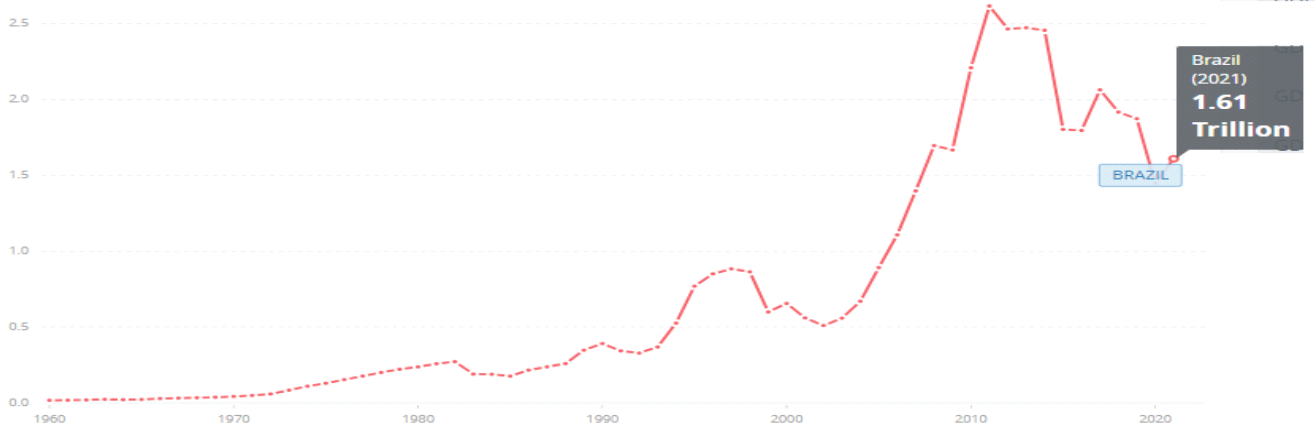
A city arises, grows and develops basically with people who decide to stay in the place and by the economic activity between them. This economic activity occurs for the sake of survival, since they need food, clothing, medicine, tools and other goods for their activities. Thinking of a historical period not too distant as in the period from 1830 to 1900 in the region of the American Old West that comprised the region basically of California, the people who arrived in this region were willing to found their homes and remain in the place. Soon, they received the recognition of the land given by the American army, a little help like a cow, a bag of flour, seeds, tools; to start their activities.

At this time the forest provided wood for the construction of their houses, hunting provided, in addition to meat; the skin that could be turned into clothes or traded for other products they needed. This superficially illustrates what can be defined as economic activity, when people produced and exchanged or sold their products.

Economic growth is the increase in the production of goods and services, which after 1941, came to have the GDP – Gross Domestic Product, as an indicator of the economic growth of a country. In general in the current context, this growth process is carried out from productive investments, by use of technology, by increasing productivity by improving production processes or technological modernization (VASCONCELLOS, 2015).



Graph 1: Evolution of Brazil's GDP from 1960 to 2021 in billions of US\$



Source: <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=BR>

The data show GDP figures with an increasing trend between 2004 with US\$ 669.29 billion until 2011 when the GDP reaches the value of US\$ 2.62 trillion. This indicates how intense the economic activity was so that the production values of goods and services had a variation of three hundred percent.

This process of growth attracts more and more people to large urban centers in search of employment, income, housing, school, hospital and other benefits that large cities can offer. This causes a process of productive-territorial restructuring and globalization of production in large centers to occur in cities and regions (ROLNIK; KLINK, 2011).

It is important to distribute this production generated by economic growth, that is, to generate economic development that indicates the quality of life of people measured by the HDI: Human Development Index with improvements in education, health, longevity, employment, income.

To illustrate this concept, Brazil's Human Development Index grew by 10.54% between 2000 and 2014, according to a report released by the United Nations (UN, 2014). The Brazilian score in the indicator (which takes into account indices of life expectancy at birth, expectation and average years of schooling and gross income per capita) was 0.755 last year, compared to 0.683 in 2000. According to the UN (2014), Brazil is currently in the group of countries considered to have high human development, in the 75th position of the ranking, which evaluates living conditions in 188 countries. In the annual comparison, Brazil fell one position in 2014, but still has a positive balance of three positions won between 2009 and 2014.

Economic development is a process of structural change that seeks to improve the quality of life of a society by increasing the production and distribution of goods and services. Some indicators may indicate more quality of life of a society, such as per capita income, life expectancy, education and the quality of the environment. To achieve economic development there must be investments in human and physical capital, technological innovation, institutional improvements and public policies that encourage sustainable economic growth and the reduction of social inequality (NOGAMI, 2012).



## 2.2 URBAN GROWTH

Any historical point that is taken as a starting point to define urban growth, the conceptual result converges to the increase of the population in a given region, with the expansion of economic activities in this locality to support the growth process, increase in the number of housing, commerce, schools and other buildings. Soon after these cities gain the dimension of metropolises and megalopolises, so all the problems of their disorderly growth become evident (PEDROSA; PEREIRA, 2014).

Population growth is the striking element for urban growth, since people need to survive on employment, income and housing, for example. In this sense, it is clear that the process of urbanization accelerated from the second half of the twentieth century, so that in 1960 in Brazil there were 32 million people and in 2010 this number exceeded 160 million inhabitants. When the percentage numbers of urbanization are observed, the year 1996 had 56% against the advance to 84.4% in 2010 (AMANAJÁS; KLUG, 2018).

Urban growth is the process of expansion of urban areas, which can be driven by several factors, such as the increase in population, the urbanization of rural areas, the migration of people to cities, among others. This process can result in significant changes in land use, urban infrastructure, building occupancy patterns and the urban environment as a whole.

The reflections of this economic growth is perceived in the increase in economic activity with a greater supply of goods and services, more employment, income, increase in the total of housing, schools and other resources to bring greater convenience to the population. On the other hand, the growth occurs in a disorderly way since the flow of people who arrive at the same time and in large volume, so there is no way to accommodate a large number of people in an already limited place, in a short time and with the need for a large number of resources (AMANAJÁS; KLUG, 2018).

It is possible to point out benefits of urban growth with more people in circulation and participating in the productive process and in the generation of goods and services.



Table 1: Benefits of urban growth

<b>Benefit</b>	<b>Analysis</b>
Increased supply of jobs and economic opportunities	People find jobs in the big cities and with the salary can consume other products and realize new economic opportunities
Access to urban services and infrastructure, such as transport, health and education	People need transportation to get from home to work, school, the hospital and vice versa.
Concentration of cultural and leisure activities	In the locality where they live they can enjoy leisure and cultural activities in a public square, for example.
Possibility of coexistence and social interaction	This interaction enables knowledge of other people and emergence of relationships that turn into dating and marriage, for example.
Stimulating innovation and technological development	More people in the same location requires technological innovation to improve people's quality of life.
Investment attraction and economic development	Here happens the virtuous circle of urban growth that attracts more investments to be able to meet the needs of these people.
Greater cultural and ethnic diversity	The city attracts people from various regions. They have cultural and ethnic profiles of origin from their region and end up merging with other people, often giving rise to new cultural expressions.
Strengthening democracy and citizen participation	In the political environment this interaction strengthens the sense of democracy and respect in the way the other expresses themselves and has different perception of each other.

Source: prepared by the authors based on PEDROSA; PEREIRA, 2014, ROLNIK; KLINK, 2011.

When urban growth is planned, the results are evidenced by the city's own sequence of implementation. On the other hand, it is possible that corrections are made throughout the process because of the need for adjustments so that cities are increasingly livable and with sufficient resources for people's comfort (LOBO; BULL; COSTA, 2017).

### 2.3 URBANIZATION

This article presents the two concepts separated because of the conceptual difference between them. Urban growth is different from urbanization not only by definition but by the process that gives rise to them. More objectively, urban growth is the process by which cities and urban areas expand in size and population over time.

Urbanization is the process by which an area becomes more urban, that is, more developed and inhabited by people. This means that it does not only include the growth of the city in size, but other changes such as economic, social and cultural changes that happen mainly when a rural area becomes urban.

Urbanization can be driven by several factors, such as economic growth, increased demand for housing and services, industrialization, and the migration of people from the countryside to the city in search of work and opportunities. Thus, the degree of urbanization in Brazil between 1872 and 1960 in cities with natural growth potential such as the ABCD region that receives federal investments for the implementation of automakers and ends up attracting a contingent of people interested in employment and income. The urbanization process was intense in such a way that from 1940, the population of these cities began to be separated by urban and suburban population (LOPES, 2008).



While urbanization can bring many benefits, such as better services and economic opportunities, it can also bring challenges such as traffic congestion, pollution, lack of green space, and public health problems. Note that the process of urban growth happens by the increase in the size of cities and the number of people, which in turn was driven to urbanization that originated with federal investments in the industrial sector. Therefore, the urban growth gave rise to a new dimension of city divided by urban and suburban, this generates benefits and disadvantages due to the increase in the total number of people and the deficiency of transport services, among others (SATHLER; LEIVA, 2022).

## 2.4 URBAN MOBILITY

The mobility of people refers to the act of moving from one point to another to solve their demands of work, leisure, employment, health. No matter the mode of transport you use for your mobility, everything must be done within an expectation of time that suits your need and that of the other party involved, that is, a medical appointment has a scheduled time to start, the place previously determined and the person must move and with the modal that can meet this time and place, for instance.

Urban mobility refers to the way people move within cities, whether on foot, by bicycle, by public transport or by private vehicles. The important thing is that this modal allows the person to meet their expectation of time, distance, point of departure and arrival, to fulfill their commitment. Efficient and sustainable mobility is fundamental to ensure access for all to the services and opportunities available in the city, in addition to contributing to the reduction of pollution, congestion and traffic accidents (VASCONCELLOS; OAK; PEREIRA, 2011).

Urban mobility is closely linked to urban growth that is the process of expansion of urban areas, which can be driven by several factors, such as the increase in population, the urbanization of rural areas, the migration of people to cities, among others (PEDROSA; PEREIRA, 2014) and urbanization understood as the process by which an area becomes more urban, that is, more developed and inhabited by people. It can be driven by a productive investment that needs people for its execution or by the economic growth of a region (LOPES, 2008).

From the moment that cities gain in territorial dimension and in number of inhabitants, urban mobility can be compromised because of this excess of people and disorderly occupation of the spaces destined to the mode of transport, whether on foot, by individual car, train, subway, bus or other means for the displacement of these people.

Both urban growth and urbanization are closely linked to the process of economic growth which is the increase in the production of goods and services. When the increase of this growth that is measured by the GDP – Gross Domestic Product happens, this means that more people are working





and this requires a commute from their home to work in a quantity of times greater (VASCONCELLOS, 2015). This means that urban mobility occurs in a greater number of times both by displacement done on foot, as by individual transport, collective transport or other means (SATHLER; LEIVA, 2022).

Several factors contribute to the difficulty of urban mobility in addition to urban growth and urbanization, such as urban sprawl that is mainly motivated by the increase in the cost of land and urban properties in general. Then, people are forced to move to regions more distant from their work and public transport does not efficiently meet their need, forcing them to buy their own vehicle, further worsening the situation of urban mobility with the increase in congestion (LOPES, 2008).

### 3 METHODOLOGY

This research is of a basic nature because it intends to generate new knowledge about the theme of this article, contributing to the advancement of science and the study about this specific subject and other correlated.

As for the objectives it is an exploratory research, which is how the research will be conducted, the type of data that will be collected, how the analyses will be made and the conclusions obtained. Thus, this article employs research of an exploratory nature because it intends to obtain initial information and identify issues that need further deepening for its understanding and possible solution.

As for the procedures, it is a bibliographic research that intends to gather theoretical arguments to understand the research theme. The bibliographic research is the center of attention for any research, because it makes it possible to gather the arguments about the object of research that is the theme, subject, the phenomenon to be investigated by this data collection, later the analysis and interpretation of them.

This article aims to identify the reflections of disordered urban growth on urban mobility from a bibliographic research based, for the most part, on books and scientific articles that deal directly with the theme or conceptual elements that are part of the larger theme such as: urban growth, urbanization, urban mobility and economic growth.

In relation to its approach, it is a qualitative research, because it deals with conceptual elements composed of texts and argumentative interpretations that seek to expose the why of the objects analyzed. Therefore, the concern with the universe of the theme with regard to the meanings, motivations, values and attitudes by the reflections of urban growth in urban mobility, go beyond numerical or quantitative representations but qualitative elements.



## 4 RESULTS AND DISCUSSION

The reflections of an urban growth in the activities of a city are perceived in a natural way by the number of people who circulate in a region. This buzz of people, cars, trucks, buses, train, subway, bicycle, motorcycle and other modes; show the extent of urban growth.

Urban growth does not always generate benefits for a city as shown in table 1, mainly because it considers that the planning to generate this urban growth provides the best result for urban mobility.

On the other hand, what is observed is that cities present disorderly urban growth for a number of reasons that among them is the increase in the flow of people almost at the same time to a certain locality, therefore, there is the occupation of land of lower cost and with low quality housing.

Table 2: Reflections of disorderly urban growth on people's lives

Consequence	Analysis
Environmental degradation	Increase in air pollution and worsening of water resources such as the quality of river water and groundwater
Difficulties in accessing services and urban infrastructure	The main reflection is the transport service both private and public. The health and education sector is hampered by a lack of supply to care for the excessive number of people in the same locality.
Traffic congestion	This generates an increase in travel time, with an effect on people's quality of life, air quality.
Increase in violence and crime	The concentration of people in less safe homes, streets without or with poor lighting, lack of social infrastructure such as school, hospital, employment; increases marginality.
Social inequality and exclusion of certain groups from society	Spatial segregation with people living in more peripheral regions of large cities increases inequality and exclusion, also due to lack of economic opportunities, for example.
Loss of the city's cultural and architectural identity	The disorderly growth gives rise to low-value houses and with it the design, finish and visual quality are compromised. Soon, the cities become darker, lose the architectural alignment by the very lack of resources of the inhabitants in building with materials with more beautiful finish.
Floods and climate change	Weakening of the capacity to respond to climate change and natural disasters. This is due to the lack of care of residents with garbage and the occupation of places that prevent the circulation of rainwater, for example.

Source: prepared by the authors based on PEDROSA; PEREIRA, 2014, ROLNIK; KLINK, 2011; WOLF; BULL; COSTA, 2017.

Disorderly urban growth occurs when the expansion of urban areas happens in a chaotic way and without proper planning, generating negative impacts on people's quality of life and the urban environment. In this context the context of the negative reflections of disorderly growth is present in other sectors of people's lives, but with special attention to mobility it is noted that transport compromises mobility, both by lack of supply of this type of service and by the congestion generated



by the excess of vehicles on the road and the occupation of the land due to the disorderly construction of the houses.

Although in everyday life the tendency is to use the concepts of urban growth and urbanization as being the same thing, this article highlights that they are different in their definition and process of emergence. Urban growth concerns the process of occupying the spaces of the city in a disorderly manner and without adequate planning. Urbanization is a process of occupation originated, in general, by an investment in a given sector that attracts people who leave the rural area for the jobs generated in this sector and start living near them, giving rise to the urban area.

Table 3: Negative effects of urbanisation on people's lives

<b>Effect</b>	<b>Reflex</b>
Exposure to environmental risks	As the cost of land is more expensive in the urban area, the occupation occurs in a disorderly way in risk areas, increasing floods and landslides.
Increased generation of solid waste and noise pollution	The increase in the population in one place generates a volume of garbage, leftover construction material, used furniture, tires and car parts, among other materials in high quantity, in addition to the increase in noise pollution.
Environmental degradation	Increase in air pollution and worsening of water resources such as the quality of river water and groundwater
Increased deforestation	To occupy the land with their homes, construction of commerce, roads and other needs, they opt for deforestation and the loss of large green areas.
Increase in violence and crime	The concentration of people in less safe homes, streets without or with poor lighting, lack of social infrastructure such as school, hospital, employment; increases marginality.
Increased emission of gases	The concentration of people and the convenience of the big city with appliances, cars, buses, trucks; generate the greenhouse effect and contribute to climate change. With effect on air pollution and respiratory problems.
Social exclusion and unequal access to basic services	The increase in the number of inhabitants concentrated in a city does not generate an increase in the supply of basic services such as health, education and transportation. This generates inequality and social exclusion, amplifying the negative effects of urbanization.
Stress and mental health problems	The concentration of people, the limitation of space, the natural competition for basic services such as health, transportation, education; generate negative effects on people arising from living in high-density urban environments.

Source: prepared by the authors based on (SATHLER; LEIVA, 2022), (ROLNIK; KLINK, 2011), (WOLF; BULL; COSTA, 2017).

Urbanization can bring with it several negative effects on the environment, people's health and quality of life in general. One of the sectors that receives this negative reflection is that of urban mobility, compromised by the fall in the supply of public transport services, which forces people to buy their vehicle to commute to work and other needs.



The negative effects on urban mobility go beyond transportation because it compromises the quality of life of people with loss of time in large congestions, generating delays in their commitments, increasing the stress and mental health of people due to urban concentration, the dispute for rare mobility spaces, time to maintain their agenda, among other negative effects such as greenhouse effect and climate change (VASCONCELLOS; OAK; PEREIRA, 2011).

Urban mobility suffers the negative effects of urban growth and disorderly urbanization due to the rapid increase in the movement of people, increased urban traffic and lack of infrastructure to support the displacements for people to fulfill their agenda.

Table 4: Negative effects on urban mobility with urban growth and urbanisation

<b>Negative effect</b>	<b>Reflexes</b>
Social inequality	The lack of adequate transportation infrastructure in urban areas can negatively affect low-income people, who often lack access to adequate and safe transportation options.
Increased transportation cost	As traffic increases, the cost of public transportation may also increase, making it harder for low-income people to get around.
Disorderly and excessive use of space	The expansion of cities causes people to take up more space, since more space is needed for streets and transport infrastructure, resulting in less space for green areas and other works such as schools, hospitals.
Air and noise pollution	With more vehicles on the roads, there is greater air pollution, which can lead to health problems such as respiratory diseases. In addition, the city has its noise added to that of vehicles, industries and commerce in operation.
Congestion and longer commuting time	Increased population and traffic can lead to congestion, resulting in delays and increasing people's travel time to meet their daily commitments.

Source: prepared by the authors based on VASCONCELLOS; OAK; PEREIRA, 2011, SATHLER; LEIVA, 2022, ROLNIK; KLINK, 2011.

As the table shows, the negative effects of urban growth and urbanization on urban mobility are perceived in congestion, travel time for people's commutes, delays in deliveries in the logistics sector, increase in the cost of transportation because of this delay and negative effects on the climate in general.

In relation to the economic growth that is the increase in the production of goods and services, it is benefited by the increase in the supply of labor and the consumer market, so investments tend to increase because of this availability of productive resource, however, the negative effect on mobility is perceived by the increase of inhabitants and urban concentration (NOGAMI, 2012) (VASCONCELLOS; OAK; PEREIRA, 2011).



## 5 FINAL CONSIDERATIONS

As mentioned in the specific literature on the subject of this research, urban growth has positive and negative effects on urban mobility (LOBO; BULL; COSTA, 2017); urbanization has the same effects during the process in which this fact happens, that is, it favors urban mobility on the side of the transport supply, however, it generates the negative effect when this supply is insufficient to meet the growth of the city (ROLNIK; KLINK, 2011).

An initial objective of the project was to identify the reflections of disordered urban growth on urban mobility, starting from a bibliographic research with exploratory objectives on the subject. This exploratory research sought to identify initial information that needs further study for a possible conclusion of the theme proposed by the article.

In general, therefore, it seems that the reflections of urban growth on urban mobility have their positive side when it promoted the growth of cities, the increase in economic activity, job creation, income, greater supply of goods and services, among others; as indicated in the information in Chart 1 (PEDROSA; PEREIRA, 2014) (ROLNIK; KLINK, 2011).

As for the negative effects of this urban growth mentioned in Chart 2, among them the traffic congestion generated by the occupation of the land and the increase of inhabitants in the same locality (AMANAJÁS; KLUG, 2018).

Therefore, it is likely that such connections exist between urban growth and urban mobility, with both positive and negative effects. Common sense points out that the negative effects are noticed by people who live in the urban area because of congestion, delay in commuting and daily difficulty to fulfill their schedule of activities for work, school, doctor, leisure and others (SATHLER; LEIVA, 2022).

In relation to the concept of urbanization, which the literature can often confuse with urban growth; This article showed that there is an important conceptual difference in the nature of the event process and the way urbanization and urban growth are implemented. Urbanization can begin with an investment, usually public, for the implementation of an industry or a large production process, that is, urbanization can be driven by several factors, such as economic growth, increased demand for housing and services, industrialization and migration of people from the countryside to the city in search of work and opportunities (VASCONCELLOS; OAK; PEREIRA, 2011). There are also the positive and negative effects of urbanization, as shown in Table 3 (SATHLER; LEIVA, 2022).

As in any study that aims at exploratory research, there are still many unanswered questions about the researched topic, however, because of what the article was proposed, which was to show the reflections of urban growth in urban mobility, this question had its answer built throughout the exposition of the items belonging to this article especially in the topic that deals with the presentation of the results and the discussion of them.



A limitation of this study is that quantitative data are limited to interpretative comments on economic growth (2.1 of the item Theoretical basis) and urban growth in Brazil (item 2.2 of the Theoretical Basis). It is important to note that this article proposed an approach by qualitative research, because it dealt with conceptual elements composed of texts and argumentative interpretations that seek to expose the why of the objects analyzed.

For further research on the content of the theme developed by this article, the case study on a city or a set of cities that may have quantitative research as an objective, in such a way that this future study can generate new interpretations on positive effects and negative effects of disordered urban growth on urban mobility.



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