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MOBILITY AND URBAN FRAGMENTATION

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Abstract: *Improving the quality of life of citizens is based on restructuring both the way of making the city and the collective transport system. The city is growing in a disorderly manner and, consequently, social inequality is increasing, giving rise to social exclusion, as well as to the segregation that is always observed. Therefore, there must be urban policies with a prospective vision that mitigate informal growth, reduce social inequality and that are thought from the citizens, seeking their well-being and a correct quality of urban life for each one of them.*

Keywords: *Urban mobility, urban fragmentation, quality of life, urban expansión, urban public policies.*

INTRODUCTION

Starting in the 1950s, urban growth in Latin America began in a disorderly manner that, today, is very worrisome because it led to an exponential increase in motorized vehicles; this disorderly growth of the city caused difficulties in gaining access to the public transportation system. This led to the search for adequate systems of mobility that are sustainable, equitable and that take into account both the organizational and economic conditions of public policies related to mobility directly or indirectly (Vasconcellos, 2019).

Mobility is one of the most important challenges faced by cities; it is understood as the set of journeys made by each citizen individually, which, in turn, helps to provide access to workplaces, goods and services. With an adequate knowledge of urban mobility, it is possible to have a sustainable model; therefore, it is necessary to study citizen mobility behaviors to elaborate correct diagnoses and, in this way, use instruments that model and estimate the impact of the actions to be promoted (Osorio and García, 2017).

The concept of urban mobility, according to Montezuma (2003), emphasizes the perspective that each citizen has according to the socioeconomic and spatial reality, elements that are completely broader than the definition of transport itself; therefore, it is important to take into account the public infrastructure that, as stated by Jans (2017), shows different realities of territories. The networks linking the urban and regional sectors with the spatial approach therefore have a relationship that goes beyond the physical and spatial. Improving the quality of life of citizens is a function of how the way of making a city is restructured and how collective transport is promoted. The inclusion of the concept of urban mobility and the efficient response to it has represented an important economic growth in various cities that have been able to visualize its advantages. The way in which the city has been growing in an explosive and disorderly way due to the demographic and spatial increase has caused an increase in social inequality, giving rise to social exclusion, as well as the segregation that is observed every day (Pérez-Tamayo, Gil-Alonso and Bayona-Crrasco, 2017).

For Lange (2011), urban mobility refers to one of the problems that the city has to face today. It is the means that ensures accessibility to various functional areas, and is also necessary in political, economic and socio-cultural development since it is relevant to the way of life of citizens, diversifying their cultural and social experiences. As Regalado (2019) states, urban mobility is conditioned by the urban space that is fragmented, discontinuous, unconnected and segregated because there is no urban planning that is sustainable, damaging the spatial conditions that occur in the urban aspect.

For Quintero-González (2017), the problems of urban mobility cause urban congestion and environmental pollution; that is, they harm the urban economy. From Lizarraga's (2012) point of view, mobility allows the inhabitants to access the various services that the city offers; but, in a broader concept, it is incorporated into the political goals related to territorial planning and the security that should exist in the streets and that is not only limited to transportation. The limitations observed in the development of cities are due to the lack of accessibility to goods, services and destinations.

As Soria and Valenzuela (2015) point out, urban mobility is a dynamic system in constant change, conditioned by urban, technological and socioeconomic factors that affect the entire city and that, in turn, harm the environmental effects. When we talk about mobility and not transport, the problem is centered on the citizen and his or her environment, benefiting the inhabitants of low resources and which, in many cases, are not taken into account in any research required to take action (Montezuma, 2003).

When talking about urban mobility, it is always related to how people move from one place to another or what are the difficulties they have in accessing the transport system; with this research, it is intended to see urban mobility not from the instrument that people use to move, but from their environment, how the city has become so fragmented that the urban space has been transformed and, therefore, social, economic or cultural differences arise. Therefore, it is necessary to understand urban mobility as a

set of interrelations that take place in the city. Furthermore, it is necessary to think about how to redesign the city through an adequate territorial restructuring with urban policies according to the growth that the city has, taking into account the needs of the citizens.

BACKGROUND

It is important to consider some cases in order to have a better perspective on the problem of urban mobility and its fragmentation; for example, the city of Santiago de Chile has experienced a high level of segregation both at the residential level which causes a marked urban fragmentation because the physical distance between the urbanizations of people with a high economic level and those with low resources is notorious, which does not help to be considered an urban model; rather, a very marked spatial segregation is observed. This is much better reflected in the processes of urbanization that take place in the interior of the city and that are linked to globalization, which generates separations and new constructions in the urban periphery. This situation causes the fragmentation of the city since the inhabitants do not have an identity; the lack of new public spaces where a better identity is sought between the inhabitant and the city is mainly due to the fear of crime, which leads to urban fragmentation, consolidating a model of non-city where the spaces of anonymity and fear are greater than those of exchange and difference (Dammert, 2004).

Escolano-Utrilla, López-Escolano and Pueyo-Campos (2018) carried out an analysis of how urban space grew in the city of Zaragoza, growth characterized by a socio-spatial fragmentation. This was composed by a monofunctional fragmentation that was related to the pre-existing urban space, mainly, by the main circulation avenues that caused physical obstacles that interrupted the movement of people. This new pattern allows new connections of these spaces with the local urban environment, which promotes a social segregation while promoting a polycentric model that is based on the displacement of the private car.

For the research topic to be framed, it is necessary to know what it refers to and, within the framework of related theories, concepts must be defined that manage to determine the value of this research; on this basis, urban mobility, according to Mataix (2010), refers to the movement that cities have and how their inhabitants mobilize within them; At present, many people must move to their workplaces, health centers and, in some cases, are very far from where they live; therefore, they need to be connected, which means that it is related to a communication system in accordance with the needs of the inhabitants. Because it is a need, mechanisms must be found to satisfy it to improve the quality of citizen life.

Sapena and Ruiz (2015) refer that urban fragmentation is related to the way in which each characteristic and pattern of how the city grows and what the impacts are on the territory are known and identified. With respect to the subcategories, López (2015) mentions territorial planning and relates it to public policies to achieve regional balance. This concept is important because, based on the use of space, it results in a specific structure that affects the political, administrative, cultural, religious, social and economic spheres.

The aim is to propose an orderly spatial structure in which social evolution related to the increase in population density is achieved, leading to a modification in the structure of the area that is used according to the demands of land use. According to

Vicuña, Orellana, Truffello, and Moreno (2019), when they refer to the quality of urban life, they consider that it is necessary to satisfy the needs associated to the citizens' well-being; satisfaction is measurable when referring to what is provided in a city through both public and private goods and services.

On the other hand, Cárdenas (2013) relates the need for joint work between public and private actors with the governance of public policies; he explains that different participants take part in producing policies for the city according to its needs. According to Zenteno (2018), urban space is related to both the subjective and physical spaces found in the city, which acquire a special meaning for each of its inhabitants. Then, what acquires meaning is not the material space itself, but the symbolic space that is created among those who live in it, giving rise to different ways of inhabiting, observing and feeling the territory.

Citing Lara, Estrada, Zentella, and Guevara (2017), urban sprawl is an easy phenomenon to understand, but difficult to define because certain parameters must be established to measure it. Mainly associated with the physical growth that occurs in cities, the concept is confronted with the impossibility of establishing territorial limits to the urban phenomenon. It is also considered as a process that occurs within cities in terms of their development and extension, with a population growth rate that has land use planning on a regional scale.

According to Arteaga, Escobar and Galindo (2020), the transformations of urban areas are due to the informality that urban development registers in cities, originating complex processes due to the lack of action on the part of the authorities. These changes that cities have experienced are due to an unplanned accelerated demographic growth; likewise, migrations from the countryside to the city that are related to the physical and natural conditions of the territory. When Rojas-Naranjo (2016) refers to territorial management, he associates it with the analysis of the dynamics that occur in territories and that are related to the way in which they are dealt with and their development, integrated into institutional procedures, with the purpose of guaranteeing the well-being of citizens in a harmonious spatial context. For this reason, it is an instrument that helps the State to implement spatial trajectories in the social, economic and environmental spheres; therefore, it must be specified in different models of organization and development at different scales.

López, Arriaga and Pardo (2018) propose that the vertebral axis of the concept of sustainable development is given from the relations that are formed between economy, social justice and protection of the environment. Initially, this concept has been based on environmental and economic aspects, rather than on social issues. According to what has been described, it poses a general problem: How will urban mobility affect the fragmentation of the city?

In order to delimit this general problem, the following specific problems are being considered: i) How to establish the urban expansion of the city based on territorial planning and urban public policies? ii) How to describe the sustainable development of the city based on the quality of urban life and the urban space in the city? iii) How to interpret public policies and urban space in the management of the city's territory? iv) How to reflect on the urban space and the territorial ordering of cities based on the transformations of the city's urban areas?

The justification for the research is based on:

i) theoretical justification, based on experiences and expertise of neighbors, professionals and specialists, will have the knowledge about mobility and urban

fragmentation. Therefore, it is necessary to resort to phenomenology to find the interpretations of each of the participants, with this, it is expected to understand each of the meanings of shared experiences;

ii) practical justification, the phenomenon of mobility and urban fragmentation will be studied, taking into account social, economic, political and environmental factors. Likewise, the problems of the disorderly growth of the city and how it influences the problems of urban mobility will be studied, since it is important to see the problems that affect the citizens and the way in which they will intervene in the city, manifesting their interests and demands through actions with the aim of influencing the formulation of government decisions. The research seeks to influence the improvements that can be made in the city;

iii) methodological justification, the research has followed scientific rigor, taking into account the criteria of credibility, transferability and confirmability.

The general objective of this research is to analyze the incidence of urban mobility on the fragmentation of the city; the specific objectives are i) to establish how territorial ordering and urban public policies of urban mobility affect the urban expansion of the city, ii) to describe how the quality of urban life and urban space improve sustainable development in the city, iii) to interpret public policies and urban space in the management of the city's territory, and iv) to reflect on urban space and territorial ordering of cities according to the transformations of the city's urban areas.

METHOD

The type of research was an inductive analysis because it sought to describe and understand clearly the environment studied (González-Monteagudo, 2001). The study methodology was the interpretative paradigm, which leads to the description and interpretation of the essence of what was experienced, recognizing the meaning and importance of the social sciences according to the experience gathered (Fuster, 2019). This research was qualitative because it sought to understand the phenomena explored from the participants' point of view (Hernández-Sampieri and Mendoza, 2018).

The design refers to phenomenology which, according to Peña and Bayardo (2016), is a philosophical current originated by Husserl in the mid-1980s, whose main characteristic is centered on personal experience, having four key concepts: temporality (the lived time), spatiality (the lived space), corporeality (the lived body) and relationality or community (the lived human relationship), because it is considered that people are linked to the world and always emphasize in their lived experience, in relation to objects, persons, events and situations.

For this research, three types of participants were taken into account: 1) the neighbors, to be considered between the ages of 30 to 70 years; 2) the professionals knowledgeable about the subject such as architects, sociologists, anthropologists and 3) the professionals expert in public management. According to Martínez (2006), the semi-structured interview is carried out in a colloquial manner, as well as being adjusted to the specific nature of the interviewees and the peculiarity of the research.

The semi-structured interview allows the collection of the necessary information, as well as the definition of processes and their strategies. To carry out the data analysis, it was considered that the information will not be structured, the data are different consisting of participants' narratives, videos, audios, photographs, texts and verbal and non-verbal expressions, in addition to the researcher's narratives.

RESULTS

Due to the situation, it was convenient to modify the field work; for this, technological methods were used to elaborate a questionnaire with open questions in which each participant would have the option to express himself freely. The month of July was used to carry out this fieldwork. Once the questions had been defined, potential participants were contacted and the reason for the questionnaire was explained, as well as the benefits of their assertive responses.

According to what the participants indicated to the question about mobility and urban fragmentation, they stated that when they refer to urban mobility they consider that it is the reflection of the disordered growth that the city is experiencing due to the lack of future proposals and that this disorder is largely manifested by a growing social inequality that began with human settlements without basic services, giving rise to a fragmentation in the territory due to the unevenness of attention to these needs that must be covered.

In response to the question "From your experience, do you think it is important to plan the spatial structure of the city in an orderly manner to improve land use? the participants indicated that it is important to plan the spatial structure of the city by rethinking it from a multi-factorial plane (land, mobility, sustainability, social risks) and that it is thought out on the basis of its inhabitants because their basic needs must be covered, taking into account an adequate distribution of urban spaces, which will give a better quality of life to each citizen and improve land use. To the question "From your experience, do you consider that if a city is restructured in a planned way, the quality of urban life of citizens can be improved? the participants indicated that it is important and necessary to restructure the city, to have a correct planning to improve the quality of urban life, reducing with this the stress and dissatisfaction of the inhabitants, having an orderly public transport, articulated with each sector of the city.

In response to the question "In your experience, do you think that in order to have adequate urban mobility it is important to propose public policies for the improvement of the city", the participants indicated that it is urgent to propose and implement public policies for urban renewal, seeking the integration of the city, with a basic idea of adequate sustainable development, in which all the actors participate, both at the political level and as citizens, so that an adequate diagnosis of the reality can be made for the benefit of all the inhabitants.

To the question "From your experience, do you consider that with an adequate urban planning it is possible to obtain urban spaces that help the city to reduce the urban fragmentation? the participants expressed that it is important to plan the city in an orderly way in order to achieve urban spaces; that they collaborate with reducing the urban fragmentation that is observed in the city and that an integration of all the sectors that compose it can be achieved from immediate measures of containment and development because a problem of sanitary sustainability is being experienced that increases the problems of the city.

To the question "From your experience, do you think that urban policies should be made with a prospective vision of the city in order to consolidate the urban expansion it is experiencing?", according to the participants, public policies need to be proposed taking into account the future impact on the city, so that a solid base can be formed for the sustainable development of the city and the disorderly growth it is experiencing can be mitigated.

To the question "From your experience, do you consider that the transformation of urban areas in the way they are manifesting themselves is due to the informal and disorderly growth of cities?", in relation to what was expressed, you consider that the phenomenon of migration from the countryside to the city was experienced in an informal way and has caused the disorder that can be seen in the city; everything has been due to a lack of planning and the little intervention of the State.

To the question "From your experience, do you consider that in order to improve the well-being of citizens and to have a harmonious territorial occupation it is important to improve the management of the territory?", according to what has been expressed, they consider that the management of the territory is the way to improve the city based on the adequate actors that ensure the good use and quality of the services for the well-being of the citizen.

To the question "From your experience, do you consider that in order to improve the quality of life of citizens it is important to carry out sustainable development in cities? according to what has been indicated, it is important that cities are sustainable, that they ensure the continuous improvement of the whole territory based on orderly growth, where there is a synergy between all the actors that participate in the decisions for the city both on a political and citizen level, with which the well-being and quality of life of the inhabitants is sought.

DISCUSSION

Based on the general objective of analyzing the incidence of urban mobility on the fragmentation of the city, it is concluded that the problem is a reflection of the lack of planning in the city, where the State has not intervened in an adequate manner, that is, with a prospective urban policy that mitigates informal growth and does not generate social inequality due to the neglect of providing basic services that the population needs.

Mataix (2010) relates urban mobility to the movement that cities have and how their inhabitants move within them; at present, it is very important because they often have to move to their workplaces, health centers, among others, and in some cases are very far from where they live; therefore, a communication system is needed in accordance with the needs of the inhabitants. Urban mobility has become a necessity; therefore, mechanisms must be found to satisfy it. As for Sapena and Ruiz (2015), urban fragmentation is related to the way in which each characteristic and pattern of how the city grows and what impacts it has on the territory are known and identified.

In accordance with the first specific objective, which was to establish how territorial planning and urban public policies on urban mobility affect the city's urban expansion, it was concluded that adequate planning in the city's spatial structure, which must be rethought from a multifactorial perspective (land, mobility, sustainability, social risks) and which are designed based on its inhabitants, will be able to cover basic needs. The above is supported by López (2015), who relates territorial planning with the State's public policies on the territory to achieve a regional balance. This concept is crucial because the use of space results in a specific structure that affects the political, administrative, cultural, religious, social, and economic spheres.

The aim is to propose an orderly spatial structure in which social evolution takes place, related to the increase in population density, leading to a modification in the structure of the area that is used according to the demands of land use. According to Vicuña, Orellana, Truffello and Moreno (2019), the quality of urban life responds to the

satisfaction of citizens' needs, which is measurable by making reference to what is provided in a city through both public and private goods and services.

According to the second specific objective, which was to describe how the quality of urban life and urban space improve sustainable development in the city, there was a lack of public policies for urban renewal, a lack of participation by public and private actors focused on proposing urban spaces that help reduce the urban fragmentation that causes the disintegration of all sectors.

The above is supported by Cárdenas (2013), who argues that urban public policies imply joint work between both public and private actors and the governance of public policies. Likewise, Zenteno (2018) refers to the fact that urban spaces are both subjective and physical in the city and that they acquire a special meaning for each of the inhabitants because each one gives them a special value. The most important thing is that among the inhabitants a symbolic space is created with different ways of inhabiting, observing and feeling the territory.

In accordance with the third specific objective, which was to interpret public policies and urban space in the management of the city's territory, we conclude that there is a lack of public policies to mitigate the impact of the disorderly and informal growth of the city, so that urban areas are transformed and are in a state of deterioration and worrying vulnerability that has been caused mainly by the inaction of the authorities.

It is supported by quoting Lara, Estrada, Zentella and Guevara (2017) when interpreting urban expansion, the authors define it as a phenomenon difficult to define because certain parameters would have to be established to measure it. The concept is confronted with the impossibility of establishing territorial limits to the urban phenomenon. It can be considered that it occurs within cities in terms of their development and extension with a population growth rate that has land use planning on a regional scale. According to Arteaga, Escobar and Galindo (2020), the transformations of urban areas have been affected by the informality that registers the urban development in the cities, originating complex processes due to the lack of action on the part of the authorities. These changes that cities have experienced are due to unplanned accelerated demographic growth; likewise, rural-urban migrations are related to the physical-natural conditions of the territory.

In accordance with the fourth specific objective, which was to reflect on urban space and the territorial ordering of cities as a function of the transformations of urban areas in the city, it was concluded that the lack of adequate territorial management due to inaction on the part of the authorities has caused cities to be unsustainable because a relationship between factors such as economic, social and environmental protection cannot be found, and therefore the adequate well-being required by citizens is not being provided.

The above is supported by Rojas-Naranjo (2016), for whom territorial management implies the analysis of the dynamics that take place in the territories and that are related to the way in which they are dealt with and their development, integrated in institutional procedures with the purpose of guaranteeing the well-being of the citizens in a harmonious spatial context. For all the above reasons, it is an instrument that helps the State to implement spatial trajectories in the social, economic and environmental spheres; for this purpose, it must be specified in different models of organization and development at different scales. As proposed by López, Arriaga, and Pardo (2018), who state that the axis of the sustainable development concept is based

on the relationships formed between economy, social justice, and environmental protection.

CONCLUSIONS

There must be an adequate urban policy that plans the city with a prospective vision to mitigate the informal growth in it, seeking to diminish the phenomenon of social inequality and that the issue of urban mobility is not only seen as the use of a transport instrument; all of this is thought out by the citizens, seeking the well-being and a correct quality of urban life for each one of them. Considering an adequate planning in the spatial structure of the city, rethinking it from factors such as soil, mobility, sustainability, social risks, which can cover the basic needs of each citizen.

Public policies for urban renewal should also be implemented with the active participation of public and private actors, focused on proposing urban spaces that collaborate in reducing the urban fragmentation that can be seen in the city and that generates disintegration among the sectors that it has. In addition, the authorities should actively participate so that, based on correct public policies, the disorderly and informal growth generated in the city is mitigated and the deterioration of vulnerable urban areas is avoided. Finally, the territory should be managed in such a way that it generates sustainable cities that are interconnected with economic, social and environmental factors, seeking the well-being of the citizens.

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