




Recent Developments on Urban Mobility: An Integrative Review

Desdobramentos Recentes sobre Mobilidade Urbana: Uma Revisão Integrativa

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Abstract: The theme urban mobility has been approached with relevance in Brazil, where the National Urban Mobility Policy (PNMU) was enacted in 2012 — Law n° 12,587/2012 —, a public effort for its improvement. Faced with the problems of urban mobility, it seems to be of great interest to observe how the issue is being addressed after the PNMU. Therefore, the research questions that guide these works are: What is the situation of the debates about urban mobility in Brazil, after the implementation of PNMU — Law n° 12,587/2012? On urban mobility in Brazil, what issues still need to be addressed? To answer these questions, an integrative review of articles published in the SPELL platform (Scientific Periodicals Electronic Library) was carried out from the year 2012. The integrative review categorized urban mobility into dimensions — public, private and social — and themes — accessibility, market, new habits, planning, safety and sustainability. The results demonstrated that the debates are advancing in the country, but there are still specific issues that need to be better addressed, such as the need for cultural change — required for the adoption of new modes, such as bicycling and pedestrianism.

Keywords: Urban Mobility; Integrative Review Method (MRI); National Urban Mobility Policy (PNMU); Modes of Transport; Automobility.

Resumo: O tema mobilidade urbana tem sido abarcado com relevância no Brasil, onde foi promulgada, em 2012, a Política Nacional de Mobilidade Urbana (PNMU) — Lei n°. 12.587/2012 —, um esforço público para sua melhoria. Frente aos problemas de

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mobilidade urbana, parece ser de grande interesse observar como a questão está sendo tratada após a PNMU. Portanto, as questões de pesquisa que norteiam este trabalho são: Qual a situação dos debates acerca de mobilidade urbana no Brasil, após a implantação da PNMU — Lei nº 12.587/2012? Acerca de mobilidade urbana no Brasil, quais assuntos ainda precisam ser melhor abordados? Para responder às questões, foi feita uma revisão integrativa dos artigos publicados na plataforma SPELL (*Scientific Periodicals Eletronic Library*) a partir do ano de 2012. A revisão integrativa categorizou a mobilidade urbana em dimensões — pública, privada e social — e temas — acessibilidade, mercado, novos hábitos, planejamento, segurança e sustentabilidade. Os resultados demonstraram que os debates estão avançando no País, porém restam assuntos específicos que precisam ser melhor abordados, como a necessidade de mudança cultural — exigida para a adoção de novos modos, como a bicicleta e o pedestrianismo.

Palavras-chave: Mobilidade Urbana; Método de Revisão Integrativa (MRI); Plano Nacional de Mobilidade Urbana (PNMU); Modos de Transporte; Automobilidade.

1. Introduction

In general, urban mobility can be understood as the displacement of people and objects in cities. And, in contemporaneity, it plays a fundamental role in promoting a more egalitarian public space (Brazil, 2012). However, problems of urban mobility are common all over the world — in Brazil it is not different. Precarious infrastructure, difficulties in access to mobility, high concentration in a single mode of transportation and excessive congestion are just some of the characteristics observed in the country. There seems to be a consensus that automobility, i.e., the concentration of urban displacements in a single mode of transportation — the automobile — is the main responsible for these problems (Sheller & Urry, 2000; Furness, 2013).

The term automobility, according to Urry (2008), points to the fact that cities have been planned and governed to meet the demands of those who own automobiles — and, by extension, underlying the automotive industry. This gave rise to a self-organized and non-linear system, which assumes and calls attention to the existence of a set composed of automobiles, drivers, roads, supplies, new technologies, as well as cultures and public policies directed to it — the system (Urry, 2008).

Thus, Sheller and Urry (2000) explain that automobility provides car owners with higher status and associates them with diverse comprehensions such as speed, home, family, security, sexual desire, career success, freedom, masculinity, even affecting the judicial system by generating considerable crime rates — theft and robbery, excessive speeding, dangerous and/or alcoholic driving —, building a powerful political economy made up of technical and social interconnections of cars themselves with other industries

such as parts and accessories, fuels, road construction and maintenance, suburban housing and urban planning, subordinating other forms of mobility, such as hiking, public transport or bicycling.

The automobile, besides spending high amounts of natural resources to sustain itself, is the "iron cage" of modernity — motorized, moving and privatized (Urry, 2008). While favouring individual domains as freedom and flexibility, cars also restrict them to living compressed lives to their limits of space and time, reorganizing the way people negotiate opportunities and restrictions on work, family life, leisure and pleasure, for example.

According to Furness (2013), the perception of automobility as the only solution to daily journeys is dependent on the perpetuation of the belief and reproduction of unlimited technological progress, as well as on the rooted colonialist and militaristic practices and principles of the technocultural project. More critically, the invasion of automobiles and the pressure of the automobile lobby make of them a pilot object, of parking an obsession, of circulation a priority objective — an association that destroys social and urban life (Lefebvre, 1999).

Regardless of more forceful positions, it is undeniable that the number of cars is growing more and more. In fact, the metropolis no longer supports such demand and several bottlenecks have begun to appear — which is still present in the Brazilian reality, in which automobility contributes to foster the problems of urban mobility. According to Rodrigues (2016), the maintenance of the "highway" model seems to indicate the inexorable strength of the automobile industry, with actions and projects in the field of urban mobility guided by strange logics, and not by the prioritization of the real needs of population displacement. The urban mobility crisis is a reality, persisting with serious urban transport problems, with direct effect on both the environment⁵ and individual well-being.

Nonetheless, this is a reality that demands reflection. In addition to the high risk of accidents and the existence of ever — increasing traffic jams — due to concentration in a single mode of transportation — private motor vehicles are extremely polluting when compared to other means, such as subway and train, or even hybrid buses — not to

⁵ Here, one must understand "environment" — the unfolding of this word — as being composed of biotic elements - flora and fauna — and abiotic elements — water, air and soil — thus excluding mankind (Valença, Sobral, Ramos & Cavalcanti, 2010, our translation).

mention social exclusion, the priority of mobility of the public space destined for a single private mode, and the individual's distance from the environment one lives in, taking into account that, through using a car, one loses direct contact with the neighborhood and the city where lives (Sheller & Urry, 2000; Urry, 2008; Neumann, 2011; Barczak & Duarte, 2012).

However, in recent years in Brazil, there have been public efforts to improve urban mobility. In 2012, for example, the National Policy for Urban Mobility (PNMU) — Law no. 12.587/2012 — was enacted and its objective is to:

[...] contribute to universal access to the city, the promotion and execution of conditions that contribute to the implementation of the principles, objectives and guidelines of urban development policy, through the planning and democratic management of the National Urban Mobility System (Brazil, 2012, our translation).

Since then, the country has had the necessary guidelines to direct public policies that encourage and promote a better way for their displacement. Specifically, Law n° 12.587/2012 determines to the municipalities the task of planning and execution of actions that prioritize the non-motorized mode of transportation and public transportation services (Brazil, 2012). Too much emphasis given to automobility over the years has made legal interventions necessary for the emergence of improvements in mobility through other modes of transport.

According to Seabra, Taco and Dominguez (2013, p. 103, our translation), "at different scales of complexity levels, urban mobility management represents a potential to produce actions and reflexes towards new development models." Thus, PNMU offers support for the implementation of new public policies for urban mobility. Public policies in this area must be designed to meet the needs of all the actors that make up the broad and complex urban system.

In view of the still existing problems of urban mobility in Brazil, it seems of relevance to observe how the issue is being dealt with after the PNMU — in other words, from the year 2012 onwards. For this, one can, for instance, resort to the most relevant academic papers on the subject, as they have the potential to offer subsidies to answer research questions, such as:

- A. What is the situation of the debates about urban mobility in Brazil, after the implementation of PNMU — Law n° 12,587 / 2012?
- B. On urban mobility in Brazil, what issues still need to be addressed?

Such questionings can help clarify how urban mobility is being addressed in Brazil after the country generated political mechanisms that provide a guarantee for new urban mobility to emerge.

2. The integrative review method

For the systematic analysis of data and information, the "Integrative Review (IR)" method was used. This, in consonance with Botelho, Cunha and Macedo (2011), summarizes the past of empirical and/or theoretical literature, in order to provide a more comprehensive understanding of a given phenomenon. The purpose is to produce an analysis of the knowledge resulting from previous studies and research on the subject. It is possible, therefore, to elaborate a synthesis of the knowledge in question and, consequently, to produce a new and more advanced one.

The term "Integrative" represents the integration of opinions, ideas and concepts from previous studies and researches, mentioned above. For Whitemore and Knafelz (2005), IR evidences knowledge within limits — temporal and/or spatial, for example. This is not a search for the state of the art — it is more ambitious and, at present, perhaps, unfeasible, in countless fields of knowledge — but rather for a knowledge, in a way, punctual, that contributes to the development of theories and sciences.

The Integrative Review Method (MRI) allows for the inclusion of studies and research that adopt various methodologies — for example, experimental and/or theoretical. According to Souza, Silva e Carvalho (2010, p. 103, our translation), an IR can combine "also data from theoretical and empirical literature, and incorporate a wide range of purposes: definition of concepts, review of theories and evidence, and analysis of methodological problems of a particular topic."

Although there are numerous studies located in the health field, IR is an interdisciplinary method and has already been used, for example, in research related to organizational studies (Botelho *et al.*, 2011) and, more specifically, in work related to moral harassment (Cahú, Rosenstock, Cahú, Costa & Gomes, 2011) and organizational learning (Macedo, Botelho and Gerhmann, 2012).

As claimed by Mendes, Silveira and Galvão (2008), in order to elaborate an IR it is indispensable that certain procedural stages are rigorously followed, which are well presented in the literature affecting the method. It is a process composed of six stages: 1) identification of theme; 2) establishment of selection criteria; 3) selection of studies; 4)

categorization of selected studies; 5) analysis and interpretation of results; and 6) synthesis of knowledge.

To better visualize the overview, Figure 1, exposed below, summarizes the MRI steps.

Figure 1: *Systematization of steps to the Integrative Review Method*⁶



Source: Botelho *et al.* (2011).

By exposing the systematization of MRI, this study will then follow to the procedures applied to this research.

⁶ Translation of Figure 1 - *Systematization of steps to the Integrative Review Method*.

First step: **Identification of the theme and the selection of the research question.** Definition of the problem; formulation of a search; delineation of the search strategy; definition of the descriptors; definition of the databases

Second step: **Establishment of inclusion and exclusion criteria.** Use of databases; search of studies based on inclusion and exclusion criteria.

Third step: **Identification of pre-selected and selected studies.** Reading of abstract, keywords and title of publications; organization of pre-selected studies; Identification of selected studies.

Fourth step: **Categorization of selected studies.** Elaboration and use of the synthesis matrix; categorization and analysis of information; formation of an individual library; critical analysis of selected studies.

Fifth step: **Analysis and interpretation of results.** Discussion of the results.

Sixth step: **Presentation of the knowledge review/synthesis.** Creation of a document describing the review in detail; proposals for future studies.

3. Methodological procedures

It is reiterated that the IR must follow a series of six well defined steps (Botelho *et al.*, 2011; Mendes *et al.*, 2008), exposed through Figure 1. Thus, the actions linked to each of these stages will be briefly described below.

3.1. Identification of theme and selection of research question

To guide RI, the following research questions were formulated:

- A. What is the situation of the debates about urban mobility in Brazil, after the implementation of PNMU — Law n° 12,587 / 2012?
- B. On urban mobility in Brazil, what issues still need to be addressed?

3.2. Establishment of inclusion and exclusion criteria

After the choice of theme and the selection of research questions, it was defined: (i) the SPELL — Scientific Periodicals Eletronic Library platform — as the place of search; (ii) the key word(s): "urban mobility"; and (iii) the publication period — from the year 2012 onwards.

Initially, thirty-four articles related to the theme were located. All were pre-selected.

3.3. Identification of pre-selected and selected studies

For the selection of articles, a careful reading of titles, abstracts and keywords of all pre-selected was executed. This time, the pre-selected articles were selected based on the following criteria:

- a. Referring to “urban mobility” in Brazil; and
- b. Referring — as of “urban mobility” — to what the PNMU defines as “displacement of people and objects in the city”.

Based on the criteria, then, twenty articles were selected, with dates from 2013 to 2018 (see table 1).

Table 1: *Selected articles for the Integrative Review*

N.	Título	Citação
1	Sobre cidades, bicicletas e turismo: evidências na propaganda imobiliária em São Paulo.	Allis (2015)
2	Para onde nos leva a principal política de mobilidade urbana na Região Metropolitana do Recife? Do modelo tradicional às novas percepções sobre desenvolvimento.	Béhar & Dourado (2017)
3	Entre a casa e a escola: articulações discursivas em torno do transporte escolar privado.	Cordeiro & Mello (2017)
4	Perspectivas de mobilidade urbana sustentável e a adesão ao modo cicloviário.	Diógenes <i>et al.</i> (2017)
5	Mobilidade urbana: motivações intrínsecas à utilização do automóvel nos centros urbanos de São Paulo e Rio de Janeiro.	Dubeux <i>et al.</i> (2017)
6	Mobilidade e turismo em favelas cariocas.	Fagerland (2015)
7	Das carroças de cinco sous para a comodidade dos burgueses: Paris, São Paulo e o desafio histórico da mobilidade urbana.	Guimarães e Cruz (2013)
8	Difusão da política cicloviária no município de São Paulo: resistências, apoios e o papel da mídia.	Leite <i>et al.</i> (2018)
9	Qualidade das calçadas na cidade de Camboriú/SC: em busca da acessibilidade e mobilidade sustentável para área turística.	Vieira e Morastoni (2013)
10	Plano de mobilidade urbana do município de Campina Grande-PB: uma análise à luz da sustentabilidade urbana.	Martins <i>et al.</i> (2017)
11	Políticas organizacionais para incentivar bicicletas na mobilidade urbana em Porto Alegre, Rio Grande do Sul.	Matzembacher e Nascimento (2016)
12	Estudo da mobilidade urbana no contexto brasileiro.	Netto e Ramos (2017)
13	O uso da mensuração de desempenho para a comparação dos sistemas de transportes urbanos públicos.	Neuenfeldt Jr. <i>et al.</i> (2015)
14	Acessibilidade como critério de qualidade do espaço turístico: estudo de caso da área central de Balneário Camboriú-SC.	Oliveira <i>et al.</i> (2016)
15	Mobilidade urbana e desigualdade social: um estudo sociológico dos deslocamentos no sentido bairro centro da cidade de Santarém-PA.	Oliveira <i>et al.</i> (2013)
16	Dia de bicicleta ao trabalho: uma potencial ferramenta para planejamento e promoção da mobilidade sustentável.	Patrício e Kruszielski (2016)
17	Diagnóstico, perspectivas de uso e expansão dos serviços de trens metropolitanos no Brasil.	Santos e Sobral (2014)
18	Mobilidade urbana e políticas públicas.	Silva <i>et al.</i> (2015)

19	Mobilidade e turismo: hospitalidade no transporte coletivo em Caxias do Sul/RS.	Simon <i>et al.</i> (2014)
20	Mobilidade urbana sustentável: fatores determinantes da escolha pelo transporte alternativo na percepção dos usuários que fazem a rota Campina Grande-PB/Alagoa Nova-PB.	Soares <i>et al.</i> (2017)

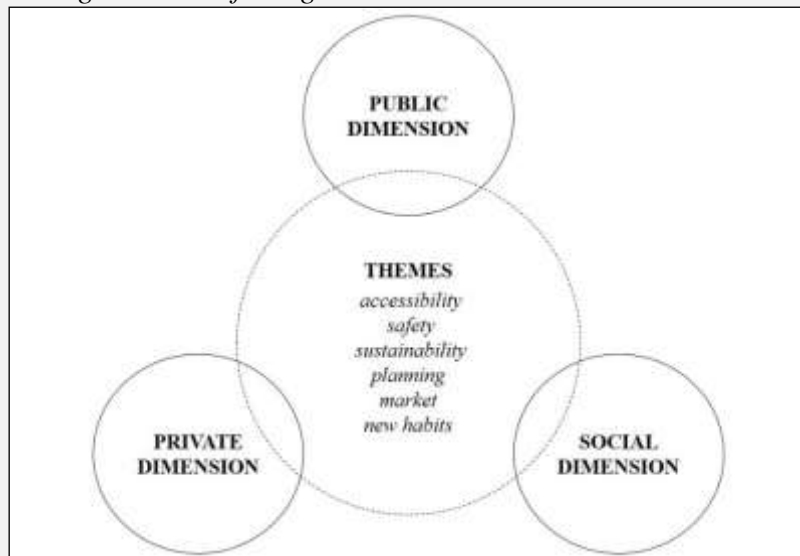
Source: Elaborated by the authors.

3.4. Categorization of selected studies

At this stage, the synthesis matrix was elaborated, from which two levels of categories emerged, referring to:

- I. the private, public e social dimensions; and
- II. the themes of accessibility, security, sustainability, urban planning, market and new habits.

Figure 2: Categorization of Integrative Revision in dimensions and themes/topics



Source: Elaborated by the authors.

Note: "Themes" are contained in "dimensions"; and "dimensions" may contain up to all "themes".

Level I — with its three "dimensions" — was used in previous IR works, such as Cahú *et al.* (2011); Level II — with its 6 "themes" —, in turn, synthesized from those of greatest occurrence in selected articles.

3.5. Analysis and interpretation of results

Here, summaries and excerpts of the articles selected for the construction of the final text were prepared. The following are examples of applications of procedures at this stage:

- "*Camboriú's low Index of Walkability (sic) reveals the need for qualification of sidewalks, elements of tourism infrastructure that would increase accessibility to the attractice, ensuring its permanence*" (Vieira & Morastoni, 2016, p. 256, our translation) refers, simultaneously, to the theme *accessibility* and *public* dimension.
- "*the real estate market is gradually taking advantage of these transformations [...], this may indicate the emergence of the theme in urban life – although this does not necessarily has the capacity of damage the consolidation of urban bicycle paths*" (Allis, 2015, p. 404, our translation) reveals the relationship between the theme *market* — real estate — and the urban transformations arising from mobility, pointing to potentialities in the *private* dimension.
- "*The population shows that it has a desire for change and this has created conditions for several recent advances, such as the approval of several laws and implementation of public policies in large cities that make urban mobility more sustainable*" (Netto & Ramos, 2007, p. 70, our translation) show how *sustainability* is a preponderant factor in discussions about mobility, thus referring to the *social* dimension.

Finally, there will be a stage, after the analysis and interpretation of data and information, in which the presentation of results will occur, in the following sections — "Results" and "Conclusion".

4. Results

In order to implement the Integrative Review, twenty articles were analyzed, which met previously established inclusion criteria. The results of the analysis will be presented below.

The research revealed that, after the Law n° 12.587/2012, a range of modes of transportation started to be explored by researchers, which were now categorized into (I) "dimensions" — public, private and social — and (II) "themes" — accessibility, security, sustainability, urban planning, market and new habits.

In other terms, from the categories, results were produced in consonance to the "themes" contained in "dimensions" — reiterating that these three could contain up to all six.

4.1. Mobility in the light of public dimension

There we contexts that, as a result of the study, intertwined mobility and the public dimension. The focus was on the evaluation of the actions — or the absence of them — of governments in their public mobility policies. Here, the themes that stood out the most were accessibility and planning.

Something that is well tied to urban mobility is accessibility. Some authors have made a clear evaluation of actions by public authorities on the subject (Vieira & Morastoni, 2013; Oliveira, Franzen & Valleri, 2016). To make urban space accessible is to provide more equality to all users, especially those with reduced mobility, who gain autonomy from it (Oliveira *et al.*, 2016). Moreover, it is, for example, a matter of touristic interest, since the quality of accessibility is an attractive factor for tourists and, therefore, key to decision makers (Allis, 2015; Fagerlande, 2015; Vieira & Morastoni, 2013).

Another theme that proved relevant was the planning of mobility, necessary because of the significant population growth in the metropolis, which also implies a significant growth in the number of cars (Dubeux, Amatucci & Esteves, 2017; Silva, Carillo, Rocha & Prados, 2015; Guimarães & Cruz, 2013). Hence, alternative ways to daily commuting are pressing, making it extremely interesting to consider new possibilities of collective public transportation (Neuenfeldt Jr., Siluk, Soliman & Machado, 2015; Simon, Gastal & Santos, 2014; Santos & Sobral, 2014), as well as new active forms of movement of individuals (Diógenes, Araujo, Tassigny & Bizarria, 2017; Patrício & Kruszielski, 2016).

Nevertheless, regarding the lack of mobility planning, Béhar and Dourado (2017) attested that the problem seems to be aggravated by the traditional development model — oriented by the economic bias —, primarily promoted by the State, which assures new projects aimed at progress through the resolution of critical mobility problems, limiting, as a result, the developmental understanding — reducing it to economic growth. Sociocultural and environmental issues, for example, have secondary status. In line with the sustainability theme, according to Martins, Vasconcelos & Salles (2017), there are municipal urban mobility plans — required by the 2012 PNMU — which, strictly speaking, are not urbanistically sustainable.

4.2. Mobility in the light of private dimension

In the private dimension, the relationship between mobility and private organizations was the focus of some of the works evaluated (Allis, 2015; Fagerlande, 2015; Vieira & Morastoni, 2013; Oliveira *et al.*, 2016). Here, the most prominent themes were market, new habits and security.

On the theme of market, mobility has also become attractive to the economy. The mobility discourse can be assimilated by the real estate market in search of better performance, even if there is no real concern on the part of the beneficiaries (Allis, 2015). In addition, alternative forms of mobility arise to supply the inefficiency of the State in terms of mobility demands (Cordeiro & Mello, 2017; and Soares, Andrade, Medeiros Jr. & Queiroz, 2017).

With a tourism bias, it is pointed out that an entire economy is composed around the implementation of a new mode of transport (Fagerlande, 2015) and even mobility itself as an attractive tourist factor (Vieira & Morastoni, 2013; Oliveira *et al.*, 2016). It is clear, however, that urban mobility has been linked to the *market* and not to the transformation that it can provide to the city.

In contrast, different organizations have used mobility issues to strengthen business. For example, they have taken advantage of incentives for active mobility for their employees, in an attempt to create new habits linked to their sustainability plans, with a view to improving their organizational image in society (Matzembacher & Nascimento, 2016). Others, according to their interests (Leite, Cruz & Rosin, 2018), have played their part in strengthening or weakening the mobility policies implemented.

Finally, some use the issue of security in transportation — or the insecurity generated by alternative means — as a decisive argument to promote private transportation, although this is not supported in practice (Cordeiro & Mello, 2017).

4.3. Mobility in the light of social dimension

As for the social dimension, the relationship between the above-mentioned themes and society was examined.

Regarding urban planning, it is important to warn that mobility should be a topic treated along with different sectors of society and not be restricted only to infrastructure for mobility (Netto & Ramos, 2017). The construction of physical meshes, such as bicycle paths, therefore, does not necessarily guarantee the improvement of mobility. Individuals

need to identify the bicycle as a vehicle — and not only as a leisure object — to use it on bicycle paths (Diógenes *et al.*, 2017).

In another perspective, some unusual modes of transportation — such as cable cars, elevators and motor-taxis — promote accessibility to practically inhospitable places — either because access is restricted to pedestrians, or because the route is considered unsafe, as in the case of Rio's *favelas* (Fagerlande, 2015). This promotion represents a social gain for mobility.

“Insecurity” is a much discussed subject when dealing with urban mobility. It is indicated as one of the reasons for not sticking to the use of the bicycle as a means of transportation (Diógenes *et al.*, 2017). So, in order to avoid unsafety, on one hand, and to guarantee safety to students — especially children — on the home-school-home route, on the other, parents hire school transportation. The relationship between safety and school transportation, however, is paradoxical. Most vehicles that transport children on the home-school-home route are clandestine, and the public policies that regulate the activity exacerbate insecurity by dispensing with mandatory preventive equipment, which is required for private cars. Despite the clear caveats, this form of mobility is legitimized (Lamb & Mello, 2018). Security also emerges as one of the factors disregarded in the choice of clandestine modes of transportation in their displacement to the rest of the population (Soares *et al.*, 2017) — that is, it does not seem to be important for parents of students or the population in general.

On the subject of sustainability, the use of the bicycle as a means of transportation is related to “Sustainable Urban Mobility” and adds value to the awareness about environmental aspects linked to the economicity of locomotion with a non-polluting profile (Diógenes *et al.*, 2017; Matzembacher & Nascimento, 2016; Allis, 2015). In some municipalities such as São Paulo (Allis, 2015) and Fortaleza (Diógenes *et al.*, 2017), there is a growing bicycle culture, even if still with little representation, which even arouses curiosity to experiment with tourism in other municipalities, thus giving rise to a new market (Allis, 2015).

Despite the growth of bicycle use — a new habit — as a means of transportation, a cultural obstacle to greater representativeness of the practice is noticeable (Diógenes *et al.*, 2017; Dubeux *et al.*, 2017). The Brazilian — considering income limitations (Oliveira, Tobias & Oliveira, 2013) — gives preference to the use of individual motorized transportation (Béhar & Dourado, 2017; Guimarães & Cruz, 2013). This fact is associated

with the "way of life" — which values convenience, speed and status, for example —, the favoring of urban policies, linked to individual transportation by automobile (Béhar & Dourado, 2017) and the precariousness of the country's collective transportation system (Guimarães & Cruz, 2013).

5. Conclusions and findings

Based on the "Integrative Review of Urban Mobility", it was possible to achieve results according to "themes" contained in "dimensions", such as those presented in the previous sections. The intention of categorizing the revision into themes and dimensions was to obtain a better clarification of Urban Mobility in order to answer the research questions "A" and "B". From these questions, considerations regarding Brazilian urban mobility were woven and listed as follows.

A. What is the situation of the debates about urban mobility in Brazil, after the implantation of PNMU — Law n° 12.587/2012?

The debates about urban mobility are progressing in the country, in respect to the public, private and social dimensions.

The public dimension has involved the issue of accessibility, admitting that the improvement of this one implies in improvement for tourism, providing equality to those with reduced mobility. It was understood that mobility planning and incentives for innovation applied to collective and active modes of public transportation were pressing. However, it was identified that the actions of the State are mainly directed to economic growth, therefore not benefiting the socio-cultural and environmental pillars of development.

In the private dimension, urban mobility became attractive to the real estate market — projecting the sale of real estate associated with benefits in urban mobility, through bicycle lanes — and to the tourism sector — through modes of transportation, until then, unusual, such as cable cars and panoramic elevators. Some companies improved their images by encouraging the use of active modes — considered sustainable — and others appealed to *security*, with the argument of defense to the use of private transport.

In the social dimension — certainly the most discussed —, the use of some modes of transport has led to accessibility at inhospitable places. It was observed that safety is well discussed, but, in this case, in fact, not very relevant to society, especially

when it comes to the use of alternative transportation — even when the users are children. Insecurity and culture display reasons for not using active modes of transportation, like the bicycle — despite understanding its productive relationship with the concept of sustainability. The experience of using new modes of transportation, however, generates, as a result, new possibilities for the tourism market. And, little by little, a culture of bicycle use begins in some cities of Brazil, although the Brazilian still prefers individual motorized transport.

B. About urban mobility in Brazil, what subjects still need to be better addressed?

Although the debate on urban mobility is progressing in Brazil, it is noticeable that some specific issues still need to be better addressed, in particular regarding the priority of non-motorized transport, one of the central determinations of Law n° 12.587/2012 to encourage and promote an improvement in urban mobility.

The mode of transport most explored by the academy's studies and research is the bicycle — a notorious non-motorized mode of transport. In a way, this vehicle has become synonymous with improving urban mobility. It is clear that the bicycle improves urban mobility, notably because the space occupied by one on public roads is less than that occupied by a car with only one person, for example.

However, in fact, the improvement of urban mobility in a global way is not derived from only one mode of transport. It comes from a set of planned actions — improving public transportation infrastructure, integrating modes of transportation (where the different options complement each other in an integrated and efficient transportation network), decentralizing the urban context, exploiting unusual modes of transportation — such as waterways, where possible, and others, such as trekking — the latter being poorly exploited or perhaps disregarded.

In particular, pedestrianism is associated with a concept of proximity in the city. The tasks of people — of citizens, more properly speaking — should take place on a human scale. And almost nothing is debated about the fact that, after using the car, daily distances have become greater.

Thus, the improvement of urban mobility is also associated with cultural change. Such perception occurs in a similar way in the academia, although little explored in depth. Strictly speaking, no studies and research were found concerned with the subjective characteristics of the culture of resistance to active modes of transportation.

Another interesting perception is the emphasis on active modes of transportation, always treated with objectivity — linked to environmental sustainability and improvement of physical health, for example. There is no debate, however, about the subjectivities related to similar modes — how significant it is to walk or cycle around the city, and see it in a different space-time condition, recognizing that the speed of automotive transport alters the view of spaces. The world is perceived through the senses — sight, hearing, smell and touch — which are also altered by the way one perceives and experiences the city.

It should be emphasized that urban mobility should gain more notoriety regarding new modes of transportation — specifically, pedestrianism — as well as the subjectivities related to it. Thus, it will contribute to the development of knowledge and, consequently, to the elaboration of policies for its improvement.

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