

The role of the government in the implementation of accessibility on sidewalks

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ABSTRACT: Sidewalks are public properties destined for people's movement, ensuring their rights. Researchers have demonstrated the precarious situation of sidewalks in Brazilian cities, noting that the existence of rules and laws regarding sidewalks does not guarantee the physical and environmental quality of this area. Municipal laws usually attribute the execution and maintenance of the sidewalks to the owners of adjacent properties to them. We discuss this aspect, therefore, seen as a public space, sidewalks constitute an allocation of public authorities. It is the Municipal duty to grant execution licenses of sidewalks and supervise the execution of works, and, in still run them in areas and public buildings. Many municipalities have provided standard project aimed sidewalks suitability to accessibility standard. Aiming to verify the adherence to affordable pavement pattern, and investigate the perception of public power, as to its role as a transforming element of this space, this survey in Colatina-ES, included a technical survey of the sidewalks of the central area of the city, quantifying the linear length of sidewalks that follow the pattern, pointing stretches over the government. Questionnaires were applied to municipal civil servants in order to apprehend the perception of the role of government in implementing this space. It was found that the assignment of responsibility to the citizens execution resulted of the discontinuation of application of the proposed model. It is expected to expand knowledge in the area, allowing the pointing potential and obstacles resulting from the production process of this public space.

Keywords *sidewalks, public authorities, responsibility, accessibility*

1. INTRODUCTION

The sidewalks are public goods for the movement of people that must ensure the right to come and go. Researchers have demonstrated the precarious situation of sidewalks in Brazilian cities, noting that the existence of rules and laws regarding sidewalks does not guarantee the physical and environmental quality of this area (Pires 2008, Fiorelli et al. 2015, Lunaro & Ferreira 2009). It is emphasized that this aspect has not received due to the attention of public officials (Rostworowski & Magagnin 2012).

In Colatina-ES Law no. 5,256, of December 14, 2006 (Espírito Santo, 2006) regulates the sidewalks of this city, linking to NBR 9050 (2015), a standard that deals with the universal accessibility. This regulation was popularly referred to as citizen sidewalk.

The law proposes the division of sidewalks in different bands, called:

- Free range - intended for movement of people, free of any obstacles;
- Service range - adjacent to the curb should be used for installation of equipment, public spaces fixtures, lamppost, vegetation, etc.;
- Directional range - used to indicate ramps, crosswalks, and also in large places such as squares, promenades indicating preferred way of visually impaired people.

The widths of these bands fit the width of the existing pavement, or approved the allotment, and these differ in the use of materials that must have visual and textural contrast, being indicated for the service range tactile floor alert, and directional range directional tactile floor.

The implementation and maintenance of sidewalks in the city of Colatina, are the responsibility of the owners of adjacent properties to the same (Espírito Santo, 1996), the locator (in allotments approved by the municipality) and the Municipality on your own domain (Espírito Santo, 2006). It is also a Municipality duty a grant that permits execution sidewalks projects and oversee the implementation and maintenance of them.

Another aspect established by law was the deadlines for the regulation of existing sidewalks, 04 years for the government and 08 years for private driveways. As from the date of its creation in 2006, it's been 10 years, but the predominance of sidewalks in Colatina out of this pattern is remarkable as well as several other issues affecting urban mobility.

Viziole & Perez (2004) investigated the conditions of accessibility under the technical and behavioral aspects, involving psychological, needs, attitudes, goals and human perceptions. One of the solutions listed for the solution of the problems encountered was the change of responsibility for the implementation of the sidewalks, going to the city, not the homeowners.

On the responsibility of running, Silva (2008) points out that the restructuring of sidewalks, as every public space is an essential assignment of the government. Bezerra (2012) agrees and points out as unconstitutional the Municipal Laws that attach to individual owners of urban real estate the obligation of execution, maintenance and adaptation of sidewalks. And it points out that the allocation of these obligations to the citizens also entails consequences as the lack of standardization of this part of the road,

and prevents the full accessibility in cities, preventing the exercise of individual freedom of movement of people with disabilities or with limited mobility.

Santos (1988) explains that when discussing the sidewalk as "scenario" where happen urban scenes of a city and its "actors" it can begin to understand the conflicts in this space, and points out the causes of the problems, the lack of control in the planning of urban spaces and rampant permissiveness of particular actions on the collective use.

In this respect Del Rio (1990) points out that there are difficulties in implementing standards and projects that seek physical and environmental quality of cities, and highlights the government, the business community and the population (user space) as main agents of change in the urban.

Considering the above, and the precariousness of sidewalks in the city said, and understanding the sidewalk as part of the resulting urban landscape of the interaction between social agents, among which stands out the government, this research aims to verify the adherence to affordable pavement pattern stipulated by Law no. 5,256, and investigate the perception of the government, in the figure of the technical and municipal officials, as to its role as a transforming element of this space.

2. METHODOLOGY

This research covered a site survey of the sidewalks of the central area of the city of Colatina-ES, to portray more accurately the situation of sidewalks. It was also applied questionnaires to municipal civil servants intending to apprehend the perception of the role of government in implementing this space.

2.1 Local Survey

Colatina-ES is a relatively small city with 111.788 inhabitants, and it is characterized by having a central region with a predominance of services widely used by local people, for this reason this central area was defined for this study.

It was made a graphic and photographic mapping of the area, recording their physical-space situation. The data collection included:

- Sidewalk stretches with presence of standard construction materials adopted by the legislation - identified as an attempt to run within the law;
- Stretches which did not have the materials stipulated by the standard;
- Stretches without sidewalks;
- Identification of the sections in charge of public power (squares, sidewalks, schools, bus terminal stations, etc.) and private;

It was used the ArcGIS 10.1 software for production of the general statement with the collected data. The use of this software facilitated the sum of the perimeters of the cobbled sections in each aspect raised up in linear meters, used to calculate the percentage of sidewalks that followed or not the standard citizen sidewalk differentiating public and private enforcement of responsibility.

2.2 Perception Survey

The sidewalks should ensure the displacement of people regardless of their physical or sensory conditions, limitation of perception or mobility with autonomy and safety (Dias et al. 2012).

Several research related to perception regarding the accessibility of sidewalks used as indicators comfort aspects, safety and environment (Rostworowski & Magagnin 2012, Smith 2008, Lunaro & Ferreira 2009, Keppe Junior & Ferreira 2008).

These aspects were considered by this study to draw up a questionnaire which involved the above aspects as anthropodynamic comfort, safety when walking, environmental quality and also added an item concerning the responsibility for the production of this space.

The issues facing the anthropodynamic comfort, considered the existence of obstacles that could hinder the flow to move. The safety aspect addressed issues facing the risks of accidents that users are exposed to carry over the sidewalks. It investigated how environmental conditions are perceived by users, and finally questioned the responsibility of conservation and implementation of sidewalks seeking the understanding of this perception.

The questionnaire was administered to 17 employees of the City of Colatina-ES, from the Municipal Secretary of Urban Development, working in the analysis of architectural and urban projects, and therefore in the analysis of the projects of the sidewalks, and the tax works, responsible for monitoring the implementation of sidewalks as approved project.

The questionnaire has 17 questions, 2 open and 15 closed, with response options "yes", "no" and "do not know". Tabulation of data and graphing to express the results was performed with the help of Microsoft Excel software.

3. RESULTS

3.1 Site survey result

The survey results of the study area (Figs 1-2) indicate that most central area of the sidewalk is not built according to the standard citizen sidewalk established by the Municipality.

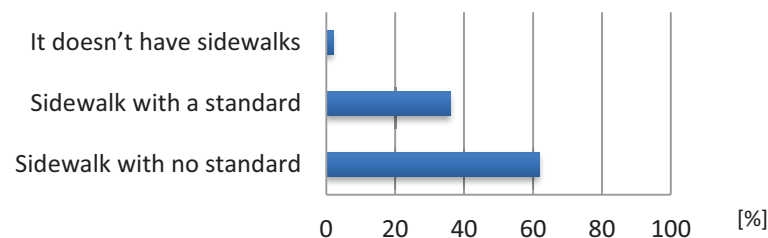


Figure 1: Indicative of the lack of adherence to standard citizen sidewalk in the study area.

It was found that in the central area, only 36% of sidewalks have materials in accordance with the standards established in municipal law, and most of the perimeter sidewalks,

64%, does not follow the standard set, and 2% did not present sidewalk and pedestrians have to walk in the street.

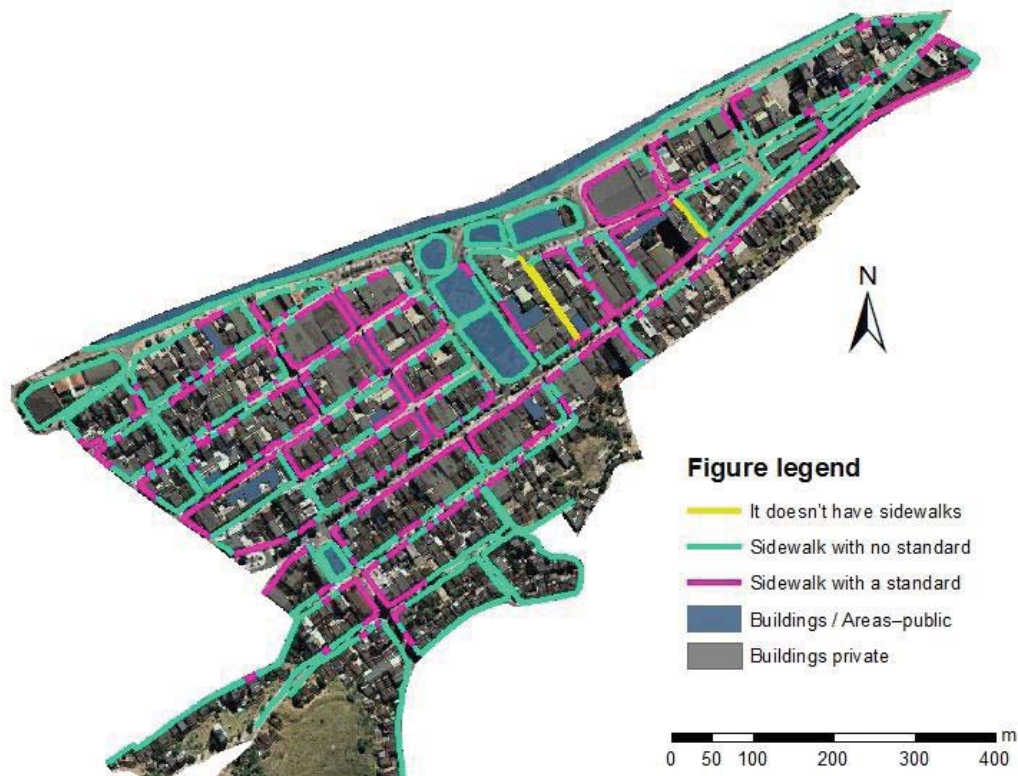


Figure 2: Map of the sidewalks of the central area of Colatina - ES.

In the passage where it was noted the absence of pavement, shown in Figure 3, the area under study is an old area of the city, fairly consolidated, and that the width of the road, very narrow, influenced this spatial configuration.



Figure 3: Streets with no sidewalk.

Regarding the responsibility of implementation, most of the sidewalks, 81% is up to the owners of adjacent properties to the same, and only 19% of the investigated area sidewalks are public, with promenades, squares and sidewalks adjacent to public buildings.

Figure 4 shows a comparison between the sidewalks of the implementation of public and private power and responsibility reveals that the percentage of compliance with the

standard of public power is still less than private. Promenades, squares and bus stations: the lack of compliance with the standard in public areas as it was recorded.

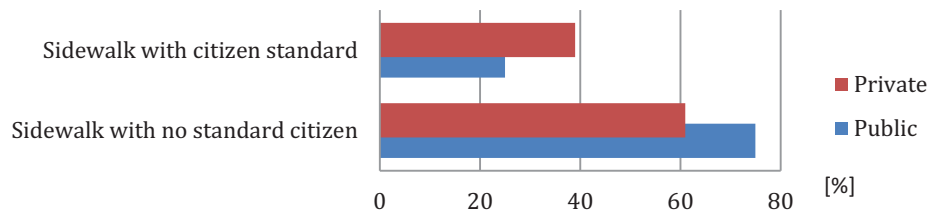


Figure 4: Quantitative public x private enforcement of responsibility for sidewalks.

Most driveways are adjacent to private property, having several owners on the street, so it was common to find citizen sidewalk running discontinuity featuring stretches with or without the standard alternating (Fig. 5).

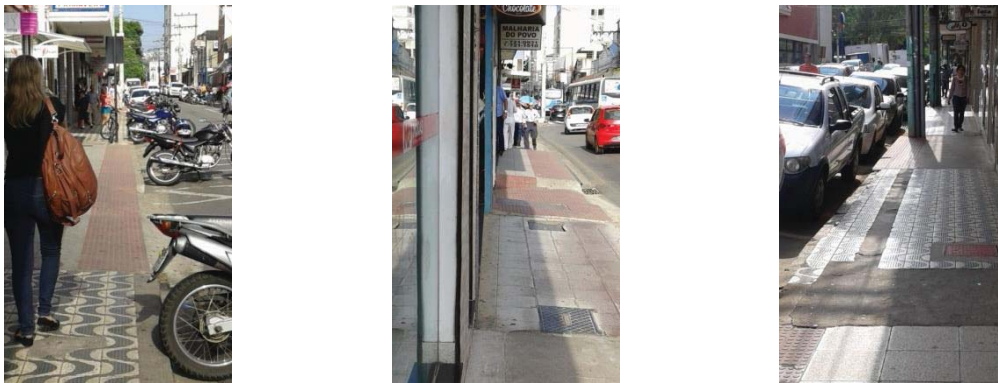


Figure 5: Standard execution of discontinuance of sidewalks.

Another point that should be highlighted is in relation to pavement materials, as the law stipulates the difference of texture and visual contrast to the tracks, but leaves open several options. The free range, for example, can be cemented or coated with ceramic, so each owner can use as you wish, which makes a visual standardization.

It was noted other situations, as shown in Figure 6, where there was an attempt of standard execution, but incorrectly, demonstrating failure during project approval and / or supervision, as the ramp for access to private property cannot generate rebounds, or affect the cross slope of the sidewalk. The post should be in the service range, not in the free range. The last example shows the lack of coherence of the Municipality with the lease of municipal dumps occupying the width of the sidewalk, forcing pedestrians to walk on the street.



Figure 6: Incorrect execution of citizen sidewalk pattern and location of inadequate public spaces fixtures.

It was common the lack of ramps that should connect the crosswalks to sidewalks (Fig. 7), failure result in the design, implementation and supervision. The last picture shows a town square without access ramp for pedestrians.



Figure 7: Lack of ramps to access sidewalks together with the pedestrian crossing.

Another aspect highlighted in several parts of the area studied was relative to the topography of the city that made it difficult to standard deployment (Fig. 8).



Figure 8: Part of the sidewalks with steps due to the topography of the city.

3.2 Results of the questionnaires

According to the results obtained from the questionnaires given to government officials, it is observed in Figure 9, the aspect " Anthropodynamic Comfort ", 94% of respondents say that the useful width of the sidewalks is not enough to demand users, 100% realize abrupt unevenness when walking through the city center and 94% are uncomfortable with the sidewalks conservation status.

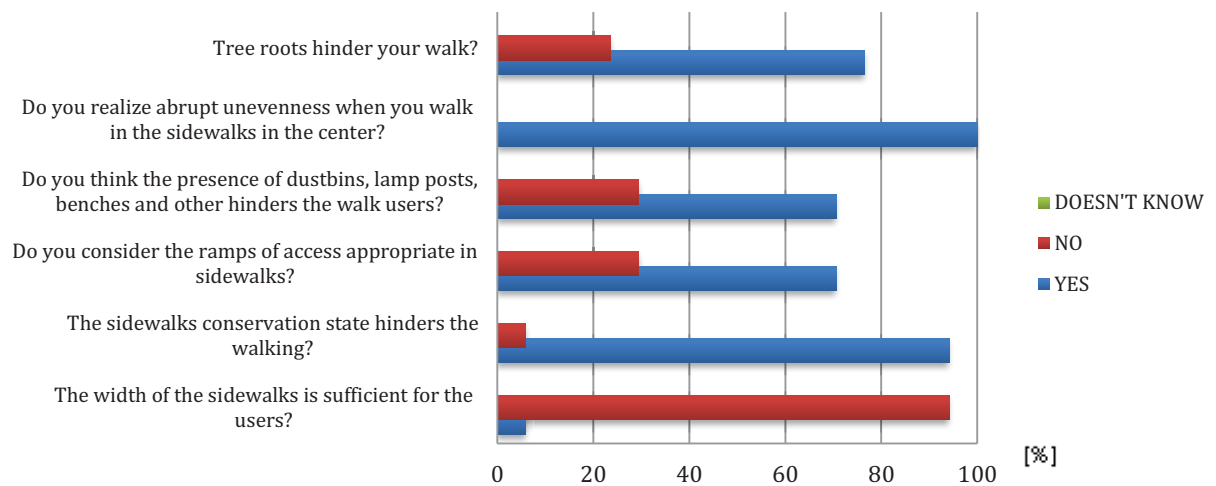


Figure 9: Perception about the anthropodynamic comfort aspect.

Expression of results on the security aspect, given in Figure 10 shows that 76% of respondents remember snippets from the central area where the lack of sidewalk affect safety while walking and 71% miss ramps connecting the crosswalks the sidewalks and point out that the points where there are these ramps, they are not in accordance with the standard.

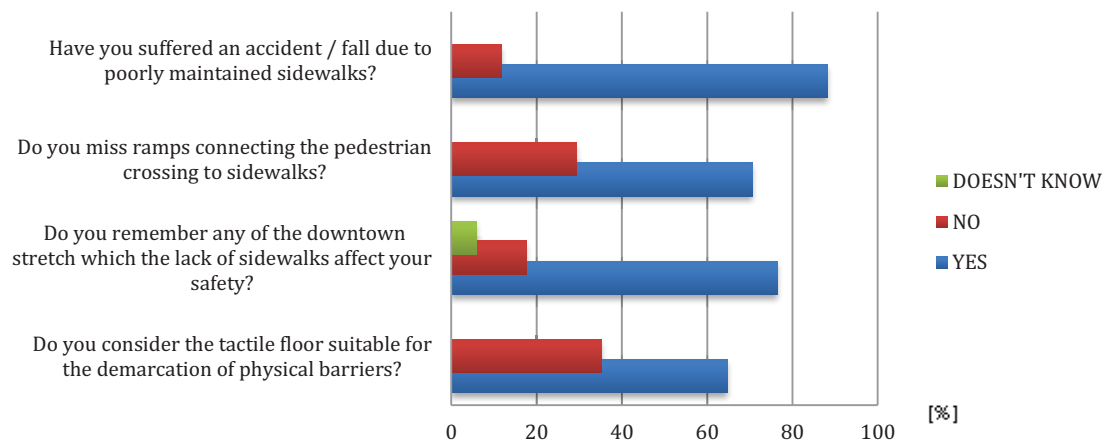


Figure 10: Perception about the safety aspect when walking.

Figure 11 shows the results about the quality of the environment where 76% of employees say they feel lack of trees for shading the sidewalks, 65% miss elements such as trash cans and benches and 59% consider the available citizen sidewalk model the municipality suited to the needs of users.

There is a coherence in results both on-site survey and in the perception survey, confirming the lack of quality in the spatial configuration of the sidewalks. It is noteworthy, however, that despite the employees of the city hall claiming able to identify the pattern of the sidewalk (94%), the survey showed that many sidewalks that have the standard stipulated by the materials do not fully meet the standard of accessibility.

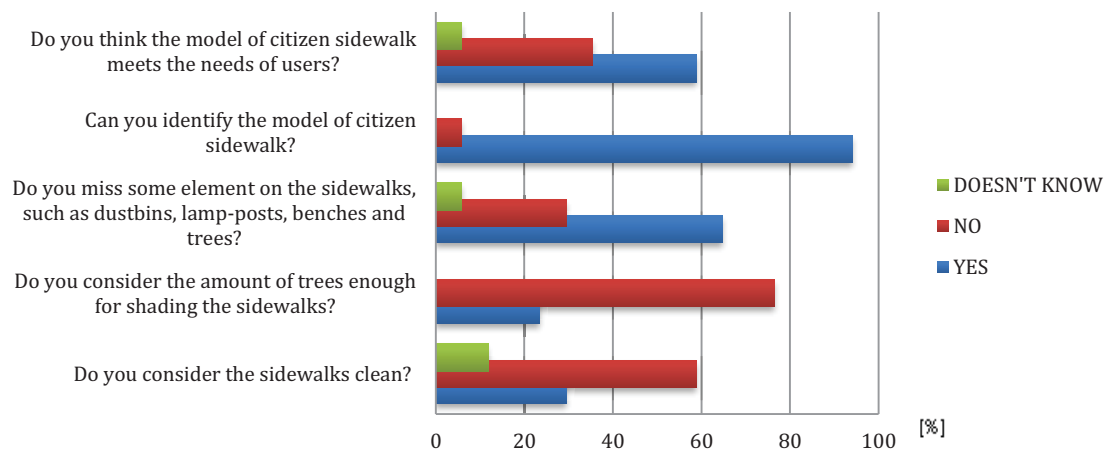


Figure 11: Perception of the environment and standard citizen sidewalk.

The city officials recognize their primary role as oversight and demand of implementation of the standard citizen sidewalk. It was also said, that the solution to achieve the standardization of this environment is that the government itself design and run the sidewalks, however, excelled in their responses, the lack of urban planning and lack of public interest, by managers, as difficulties in the full implementation of citizen sidewalk.

4. CONCLUSION

From the results of the site survey and insight research, it is confirmed that the construction of the urban space is not simply gives the existence of laws and regulations on how to place the occupation of this space. For the region studied it was found that most of the roads are not in accordance with the standards established by the Municipal Law, existing for 10 years, whose deadlines for compliance have become extinct both for the government, which would be four years, as private that would be 8 years.

We emphasize the difficulty of the correct implementation of this standard, since many sidewalks have materials citizen sidewalk, but not fully fit the standard of accessibility, it is common to find lampposts and bins in the range that should be free, disrupting circulation. Besides the absence of ramps connecting the crosswalks and ramps for access to done improperly garages.

Another aspect checked against the legislation is that it only regulates the sidewalks on streets with up to 12% slope, and the city analyzed has marked topography, emphasized how difficult for standard deployment accessible both on-site survey and in the perception survey.

It was found, in general, the attribution of responsibility to implement the property owners brought the discontinuity in the application of the proposed model, with different materials and with errors of execution that pervade the design stages, surveillance and enforcement. On the other hand, the sidewalks under the government's responsibility to have lower adherence to the standard that the sidewalks are the responsibility of individuals.

In view of all the difficulties and obstacles to the implementation process of accessible sidewalks, the legislation object, a possible solution could be a public-private partnership, in which it proposes a single planning of sidewalks in the central region and the owners contribute with the materials and the city with the labor.

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