Mobility as Equity: Low-Income People Near Transit

By ITDP Brazil

If the transit situation for the average commuter in the world’s major cities is inadequate, the outlook for low income populations all over the world is likely to be much worse. In other words, no one likes an hour-long subway ride, but that’s a comparative luxury if the alternative is a two-hour bus-to-bus journey. Such comparisons are increasingly the norm, however, as the past few decades have seen a trend in major cities: the wealthy are moving into the center, and the poor and middle class are being pushed out. This has serious equity implications for how we design our transit systems, in that the people who are most in need of transit have the least access to it.

To get a sense of this problem, ITDP Brazil researched the People Near Transit (PNT) metric for Brazilian cities and went even further, examining different income brackets’ accessibility to rapid transit. The research encompassed the transit sheds of 900 stations along approximately 1,000 kilometers of rapid transit lines in the ten Brazilian metropolitan areas. These metros represent more than 60 million people, about a third of Brazil’s population.

The results indicate that even in metropolitan areas where there is good overall population coverage by the rapid transit network, it is still mostly located near high-income people. These findings subsequently indicate the importance of taking further steps to provide transit access for low-income people and the overall need to pursue more socially inclusive development in Brazilian cities.

In general, cities with wider rapid transit networks had better PNT results. The case of Rio de Janeiro, whose metropolitan area concentrates over 12 million people, is noteworthy. Between 2010 and 2015, the city increased its rapid transit network by 91 kilometers of BRT and a subway extension of 1.2km in investments for the 2014 FIFA World Cup and the 2016 Olympic Games. A new subway line and the downtown tram network were also opened in the second half of 2016. Rio showed the best population coverage by rapid transit at both the city (47%) and metropolitan area (28%) levels.

Other cities with similar rapid transit expansion patterns stood out, such as Curitiba (46% at the city level and 23% at the metropolitan level), Porto Alegre (42% city and 23% metropolitan) and Recife (29% city and 23% metropolitan).

However, São Paulo, Brazil’s largest metropolitan area and the one that holds the country’s most extensive rapid transit network (305.6 kilometers, of which 57 kilometers are BRT and 248.6 kilometers are subway and train), showed less significant PNT results (25% city and 20% metropolitan level). These results suggest that in certain contexts, the size of the rapid transit network alone is not able to influence the PNT outcome. Rather, the network’s distribution across the landscape and the city’s development patterns are decisive factors in the accessibility of rapid transit stations.

São Paulo is a city marked by a sharp process of verticalization, which increases density through high-rise construction. Consequently, since the 1970s, the metropolitan area’s footprint

Recife's BRT stations are located near low-income settlements in the metropolitan area.
has increased less than overall population and density have increased. At the same time, growth has not been oriented to public transport infrastructure, which explains the low PNT scores. Recently, the government of São Paulo has been trying to reverse this pattern, with the incorporation of Transit-Oriented Development principles in the city’s 2014 strategic master plan.

The study’s indicator of accessibility for each income bracket, or “Social PNT,” evaluates the percentage of people from each bracket that live within a one-kilometer distance of rapid transit stations. When analyzing the results of Social PNT, we find that, even in cities with relatively high PNT results, there are significant differences in the presence of people from different income brackets near rapid transit stations.

The main example among the metropolitan regions evaluated is Curitiba. The city is a worldwide reference for TOD given its pioneering role in the policy. In the 1970s, Mayor Jaime Lerner was responsible for the implementation of a policy that encouraged density along the city’s BRT corridors. Not surprisingly, Curitiba had one of the best PNT results among the cities and metropolitan areas evaluated. However, while 54% of the metropolitan area’s population from the highest income brackets (more than 3x minimum wage per capita per month) live near rapid transit stations, only 13% of the population from the lowest income brackets (up to one-half minimum wage per capita per month) do. The difference (delta) of 41 percentage points in the rapid transit coverage between the highest and lowest income brackets was one of the largest, along with Porto Alegre, among the metropolitan areas evaluated in the study.

These results reinforce the importance of adopting social inclusion measures in the context of urban policies aimed at promoting TOD. The
cities with the best comparative results, in terms of social equality in access to rapid transit, were Recife and Salvador, both in Brazil’s northeast region. These cities have a more significant presence of poor residents in central neighborhoods served by rapid transit.

When widening the vision from just the city proper to the metropolitan scale, inequalities in transport access inevitably increase. There is an average of 64% PNT decrease, along with an increase in the disparity between the highest and lowest income brackets between the city core and metropolitan level.

The results underscore the fact that the poorest populations are concentrated on the metropolitan area’s outskirts, the product of an intense process of urban sprawl and spatial segregation Brazil’s metropolitan areas over the last few decades. Central areas, which concentrate jobs and urban opportunities, tend to be more valuable, making it difficult for the lower income bracket to remain.

All ten metropolitan areas analyzed showed this trend. Newly implemented transport corridors within the context of investments for the 2014 FIFA World Cup managed to increase some cities’ PNT and access for all income brackets. However, coverage still focuses on municipal boundaries and tends to favor higher income brackets. The case of Belo Horizonte is also noteworthy: the city implemented 41 kilometers of BRT and increased its PNT from 16% to 27% in a city level, but also increased income disparity between highest and lowest income brackets from 9 to 14 percent.

Guaranteeing access to public transport is a good way of ensuring the right to a fair and sustainable city. It is important to consider, however, that the proximity to transport is only one of the elements of the access to the city as a whole. Other key factors to ensure accessibility include walking conditions to and from stations, the quality and capacity of public transport service offered and, in the case of social policies, the fare for different types of users. Cities that orient their development and concentrate a variety of opportunities around transit stations promote their residents’ welfare, generate economic development, and reduce their environmental emissions. The PNT indicator, in turn, allows us to properly monitor their success in achieving this goal.

What should Brazilian cities do differently?

- Expand public transport networks to dense areas far from the city’s central cores, especially in the metropolitan area’s more consolidated urban sections;
- Promote, through zoning, densification around rapid transit stations situated in less occupied areas, with consolidated infrastructure and few environmental restrictions in order to stimulate new centralities and reduce the need for long commute trips;
- Implement policies (e.g.: production of social housing, rent assistance and vocational training policies) to attract and maintain people from lower income brackets in housing near rapid transit to ensure their access to the city’s opportunities;
- Qualify the transport networks promoting physical, fare, operational and information integration between different modes of transport and expand the cycling network to ensure that transport is also available to people who live in remote and less dense areas still within reach of transport corridors.