

Leisure facilities are increasing in Brazil's largest city but are still mainly in high-income areas

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An article published in the journal *Cities & Health* points to important changes to the built environment that encourage physical activity in São

Paulo, Brazil's largest city and the center of the largest metropolitan area in the southern hemisphere.

The longitudinal study found that the most significant increases between 2015 and 2020 were in the number of areas of public parks with exercise machines in outdoor gyms and fitness trails (109%); bike paths (67%); train and metro stations and bus terminals (15%); and sports facilities (12%). However, the growth varied considerably in different parts of the city, especially depending on [income level](#).

In a [longitudinal study](#), subjects are observed over a relatively long period of time for continuous monitoring of specific variables, in this case changes in the built environment relevant to leisure-time [physical activity](#) and active travel. The researchers used data from online public libraries and departments of the municipal and state governments to measure numbers of public squares, parks, sports facilities, community clubs, outdoor gyms, bikeways, train and metro stations, bus terminals and primary health care units in census tracts.

The lower-income parts of the city had fewer bike paths and lanes (28.9 km) and benefited least from the creation of new structures (24.2 km). At the opposite extreme, bikeways increased most in absolute terms in wealthier areas (from 178.9 km to 294.4 km).

"A number of practical measures could be implemented on the basis of our findings. The study clearly showed that equality-related aspects may be neglected by policymakers, even taking into consideration the existence of different criteria to define the location of these structures," said Inaian Pignatti Teixeira, first author of the article. The analysis was part of Teixeira's postdoctoral research at the University of São Paulo's School of Arts, Sciences and Humanities (EACH-USP).

According to Alex Antonio Florindo, last author of the article and

principal investigator for the project, it detected important gaps and showed that leisure facilities are both altogether insufficient and unevenly distributed.

"Access to these facilities has to be improved, especially for the poor who live in outlying suburbs in the south and east of the city. Stronger policies are needed to implement them in lower-income areas. We know from [epidemiological studies](#) that the lower the person's socio-economic and educational level, the less likely they are to practice physical activity for leisure," said Florindo, who also leads a thematic project involving longitudinal studies on physical activity and nutritional status in the city.

Squares are also more frequent in wealthier neighborhoods, but their numbers are rising in low-income areas, as are those of sports clubs, bus terminals and train and metro stations, which can lead to more walking.

These structures facilitate engagement in physical activity, especially if they are located up to 500 m from people's homes. "We found that the built environment can contribute significantly to an increase in physical activity for leisure and as a form of mobility, such as cycling or walking to and from work," Florindo said.

The researchers continue to analyze the data and have also detected the influence of the environment on such factors as obesity, depression and cardiovascular disease.

Master plan

The city's policies and plans play an important role in the promotion of physical activity by means of changes to the urban environment and transportation systems. Finding out whether they are being implemented effectively helps policymakers plan necessary improvements. The results of this study can feed into a discussion of the effects of the measures

taken and of future projects.

"Major policy changes began when the Master Plan was introduced in 2014, calling for more and better distributed green areas and other facilities. This happened, as our study confirmed," Florindo said.

However, the improvements were insufficient from various perspectives. "According to São Paulo's Master Plan, the creation of new parks was to have been prioritized, but our findings point to an increase of only 2%," Teixeira said.

The study was longitudinal, a crucial type of research for analyzing these phenomena. "Longitudinal surveys track environmental changes over time and are necessary to infer causal relationships. They're also robust because they exclude temporal variations and individual differences," Teixeira said.

There are many studies on the influence of the built environment on physical activity, especially in residential neighborhoods, as a form of leisure or in connection with commuting, he added, but most are conducted in [high-income countries](#) and are cross-sectional in design. In low- and [middle-income countries](#), longitudinal studies tend to show a significant deficiency in the built environment as far as promoting physical activity is concerned.

More information: Inaian Pignatti Teixeira et al, Built environments for physical activity: a longitudinal descriptive analysis of Sao Paulo city, Brazil, *Cities & Health* (2022). [DOI: 10.1080/23748834.2022.2127173](https://doi.org/10.1080/23748834.2022.2127173)

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