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## ABSTRACT

Transport infrastructure investment impacts mobility and may significantly affect the capitalisation of the areas surrounding these infrastructure projects, even before the projects are completed. This paper analyses the impact that the announcement of the First Metro Line has on housing prices in the city of Bogotá. It combines innovative databases, web scraping and Google Maps with administrative records—such as the Bogotá Urban Development Institute (IDU, by its acronym in Spanish) databases—to assess how the announcement of the metro construction impacts the rental or sales market prices for the houses surrounding the infrastructure projects. The results show that the housing sale prices increased since October 2019, the time when the awarding of the contract for construction of the First Metro Line was announced. The flats and houses on sale located within 1.5 km from the future metro stations showed an increase of 10.5 and 6.5% in prices, respectively.

## 1. Introduction

The relation between transport infrastructure and housing price variations is a crucial element of public policy. Particularly, capitalisation of the areas surrounding projects may occur even before the construction takes place (Agostini and Palmucci, 2008). Between the announcement of a project and its completion, there is a window of time during which community expectations play an important role in the following way. Once the construction details are disclosed, the community may move first seeking an early advantage (Yiu and Wong, 2005; Ruan and Yin, 2014). For instance, proximity to a transport station provides easy access to means of transport, thus housing prices are expected to increase after the transport project is completed. However, people can look for houses and flats in advance to take advantage of these benefits at a low cost. As demand grows, prices will be pushed up, and there may be significant increases after the announcement, but before construction. This scenario allows us to infer not only the importance of the construction impact on prices but also the impacts of the transport infrastructure project announcements (Chen et al., 2019).

Therefore, this paper seeks to understand how the announcement of

the Bogotá first metro line construction project may impact surrounding housing prices. This case study is relevant for a specific reason: the metro construction project is not new. Although the project was awarded on October 17, 2019, and the actual construction plan was approved, several announcements in the last 70 years promising the metro construction<sup>1</sup> may impact how prices react to the latest and more reliable pronouncement. In other words, the previous price increases derived from unofficial announcements may diminish the expected effect. However, given the expectations that the latest announcement will be followed by project fulfilment, a substantial increase in real estate market prices may occur (Chau and Ng, 1998; Yan et al., 2012).

Moreover, according to the Colombian National Statistical Office, Bogotá has a population of close to eight million, making it the most populated city in the country and one of the largest in Latin America, and therefore has a high need for transport solutions. According to the World Economic Forum (2020) and INRIX's global traffic index (2020), Bogotá was in 2019 the city with the highest congestion score, where an average person lost around 191 h of the year in traffic. Besides, the fact that Bogotá is a city with a substantial informal economy and a high incidence of criminality gives rise to the growing concern that building

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<sup>1</sup> The first proposal for the construction of the metro in Bogotá dates to 1942. Several unofficial announcements and construction proposals have been made in different periods by Bogotá's City Council. Please find a press release summarizing the announcements and proposals in the following link: <https://www.elspectador.com/bogota/por-que-mas-de-70-anos-sin-metro-en-bogota-articulo-547135/>.

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