

DEMAND FOR 'SAFE SPACES': AVOIDING HARASSMENT AND STIGMA

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We crowdsource information on approximately 22,000 train rides undertaken by commuters on Rio de Janeiro's SuperVia to study sexual harassment in the public space and its effects on demand for a women-reserved space.

- ✓ Women in the public space experience harassment approximately once a week, but being randomly tasked to ride in a women-reserved space halves harassment.
- ✓ Demand for and benefits from the reserved space is not uniform across riders—top-tercile users make up 80 percent of the demand and experience half of the harassment.
- ✓ Over half of commuters associate women in the public space with more sexual openness; women who perceive this attitude to be the prevailing norm are more likely to use the reserved space.
- ✓ Perceptions of norms around the reserved space may limit women's agency; policies that directly address harassment and its perpetrators will be important improving women's mobility.

The Development Challenge: Sexual Harassment and Norms

Public sexual harassment or violence is pervasive—in a survey spanning 22 countries, over 50 percent of women reported being physically harassed in public (Livingston, 2015). Commuting to opportunities, such as jobs or education, therefore presents a risk that may reduce or distort women's human capital investments (Borker, 2021; Muralidharan & Prakash, 2017). Harassment and violence against women in the public space might even discourage women from participating in market activities altogether (Field & Vyborny, 2022; Jayachandran, 2020; Velásquez, 2019).

Yet the recurring nature of harassment and the costs faced by women have not been formally documented. Moreover, there is a lack of evidence on policies capable of combating sexual harassment on public transit. Some policies aim to help women reduce exposure and avoid harassment, such as gender-segregated “safe spaces.” Women-reserved spaces in

public transit have been adopted by cities worldwide in different contexts.

However, policies designed to address violence against women by ensuring women stay within safe bounds may actually reinforce norms that see women outside those bounds as provocative, and assign the responsibility for harassment to the victim, adding stigma to the costs of harassment.



Painting by Arianna Legovini.

Making an Economic Case for Managing Harassment on Public Transport

Sexual harassment on the transit system led the Rio de Janeiro state government to pass legislation to reserve a space for

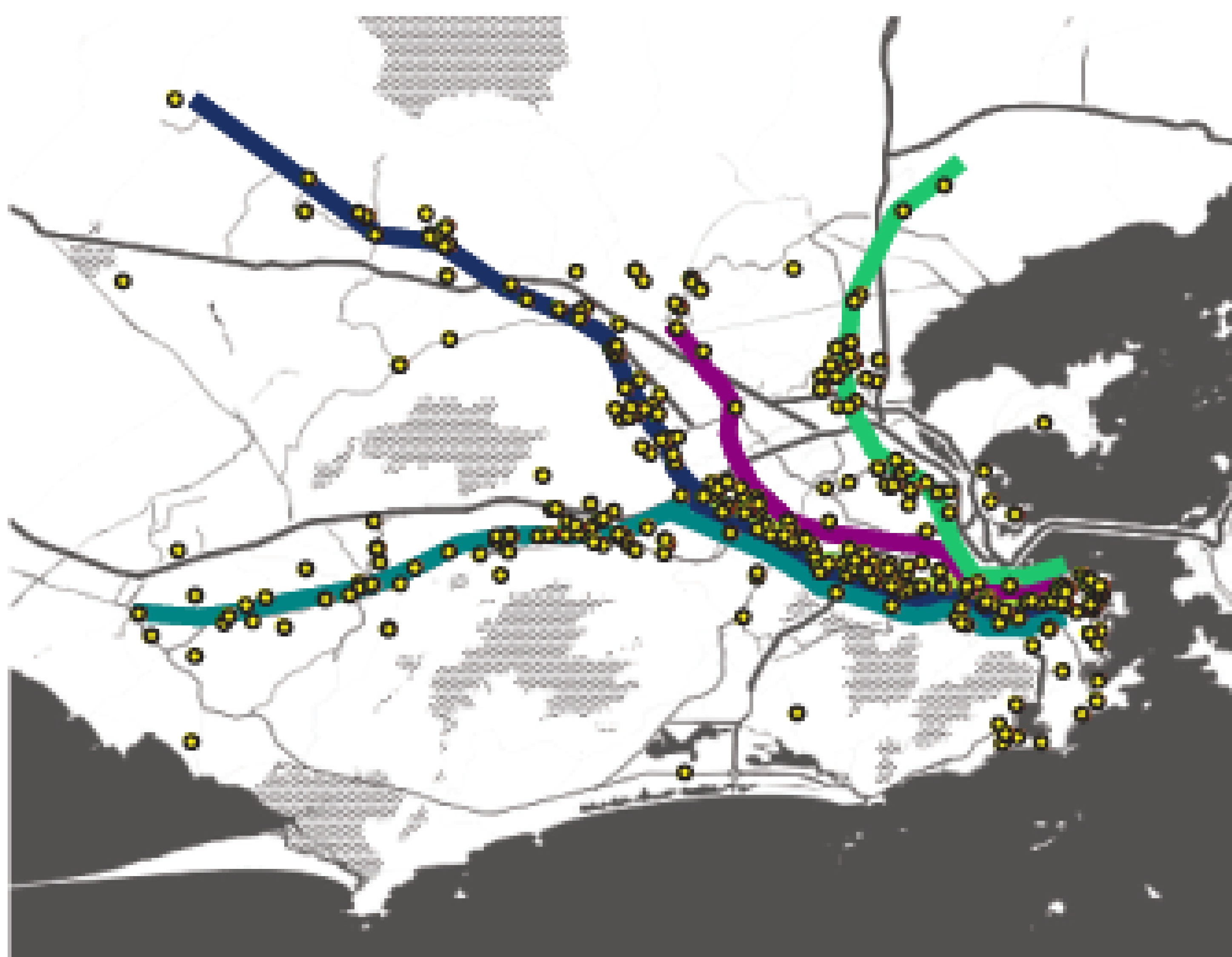
[†]Development Impact Evaluation (DIME) department, World Bank. [‡] Duke University. This brief is based on Kondylis, Florence; Legovini, Arianna; Vyborny, Kate; Zwager, Astrid; and Andrade, Luiza. 2020. Demand for “Safe Space”: Avoiding Harassment and Stigma. World Bank Policy Research Working Paper 9269. For more information, contact Florence Kondylis (fkondylis@worldbank.org).

¹Lei Nº 4.733, de 23 de Março de 2006.

women in its rail system. This 2006 law requires train and metro operators to have one women-reserved each train during rush hours (6–9 a.m. and 5–8 p.m.).¹

THE SUPERVIA

The SuperVia is Rio's suburban train system comprising seven lines that connect downtown with its outskirts, including many low-income areas. All lines radiate out of the central station, Central do Brasil, and it carries around 700,000 passengers a day. Half of the passengers are women, while women-reserved space accounts for one in eight or one in six carriages, depending on train length.

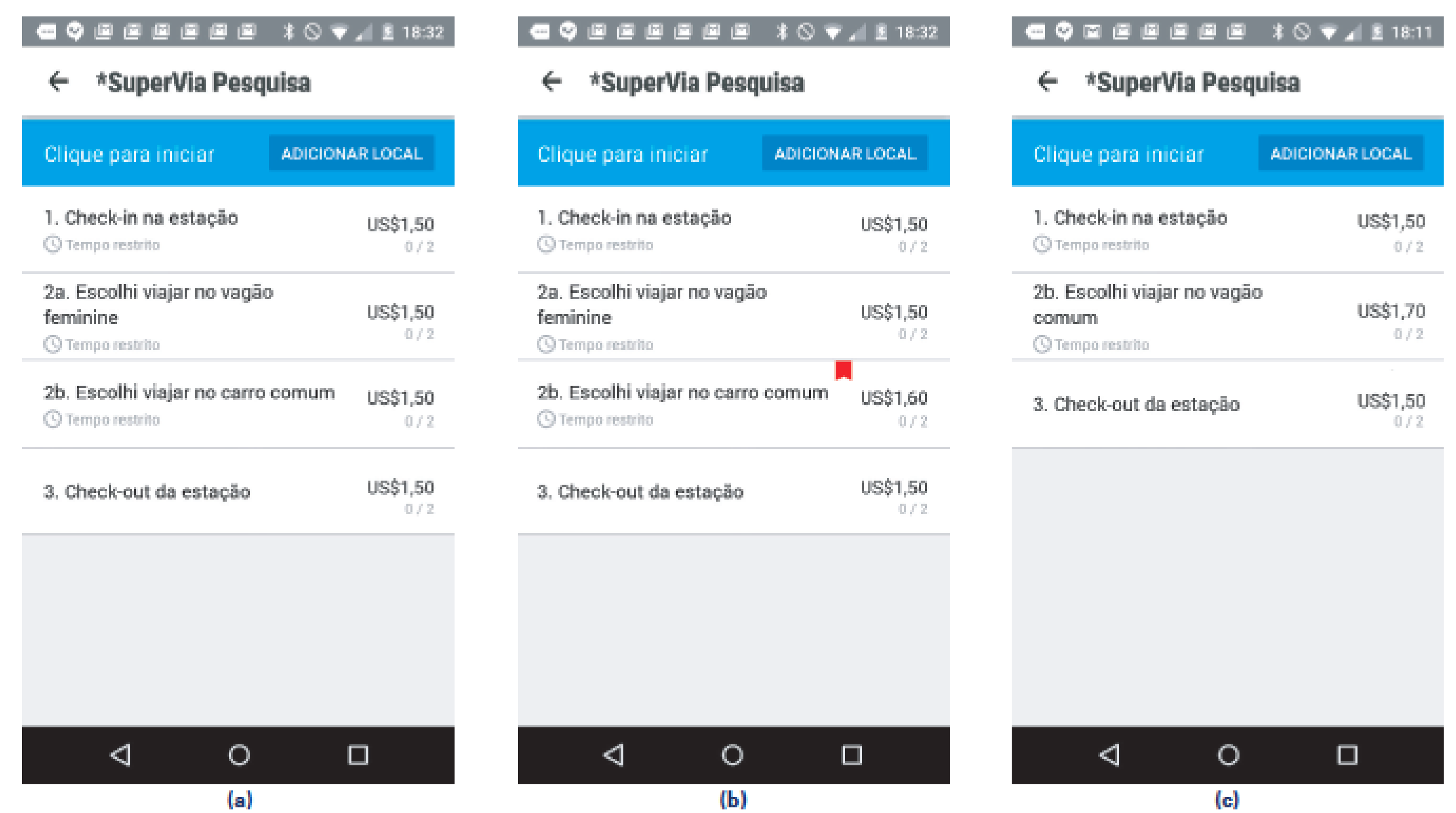


Distribution of recruited riders' homes and SuperVia lines.

We make an economic case for managing harassment on public transport using two types of data. First, we use a crowdsourcing app to task 363 women commuters and 51 men commuters on the SuperVia to report on riding conditions. Women were offered to participate in ride tasks (more on this, below), while men riders were asked to collect platform observations about how crowded the SuperVia was and the percentage of male riders in both public and reserved spaces (each verified using SuperVia administrative records and an observation team, respectively). Second, we use an in-person social norm survey and Implicit Association Tests for a random sample of men and women commuters.² Descriptives show that:

- Women in the public space report experiencing physical harassment once a month on average.

- The women-reserved space only partially offers an escape: there are often substantial numbers of men aboard, as there is limited policy enforcement. However, when the policy is followed, moving to the reserved space halves the likelihood of physical harassment.
- Participants also report reduced fear of physical harassment and reduced feelings of frustration when they use the women-reserved space.



Crowdsourcing app interface to capture rider experiences and preferences: (a) Revealed preference: zero opportunity cost; (b) revealed preference: positive opportunity cost; (c) randomized assignment to space.

Findings and Lessons

Cost of Exposure to Harassment

We estimate the cost of exposure to harassment by using a revealed-preference experiment to estimate women's willingness to pay to avoid it. We offer participants a series of paid opportunities to ride either car, with a payment differential between the women's and mixed cars that varies from ride to ride.

Twenty-six percent of participants were willing to give up at least 20 US cents in income to switch to the women's car for some of their rides, and this increased when there were fewer men in women's cars. This foregone payment equals \$1.17–2.25 per incident avoided, or approximately 0.4 percent of minimum annual wage. Such a wage penalty would cause a 0.48–0.60 percent reduction in women's labor supply (Vick, 2017).

Heterogeneous Demand, Benefits, and Attitudes

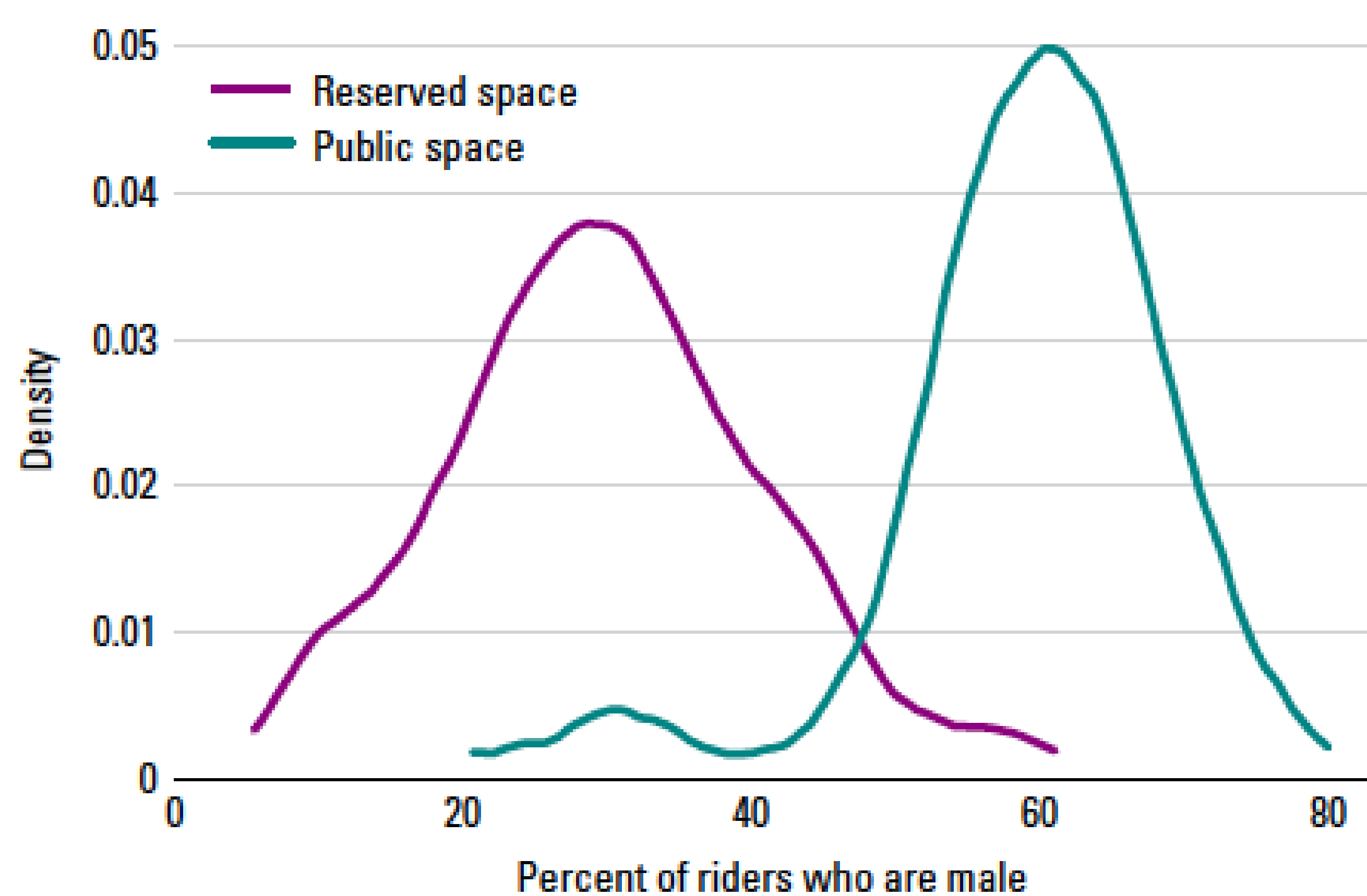
There is stark heterogeneity in who most uses and values the reserved space: high-level users are not only the most vulnerable, but also benefit most from the protection the reserved space offers.

²The analysis dataset is available on the [World Bank's Microdata Catalogue](#) under the reference code BRA_2015-2016_DSS_v01_M (Kondylis et al., 2020a).

Calculations (detailed in Kondylis et al. 2020) show that, while harassment in the public space imposes an economically meaningful tax on women, the welfare implications of offering a reserved space are both heterogeneous and ambiguous. Specifically, the most vulnerable, high-level users experience an implied cost of 12 cents per ride, and \$2.81 per incident, in contrast with \$0.16 per incident for the least vulnerable.

Further, only 40 percent of the value of the reserved car can be linked directly to avoiding harassment, the other 60 percent appears to come from a fixed-amenity value, which we interpret to be partially driven by a fear of breaking the perceived norm.

Overall, these findings indicate that the cost of the reserved space policy to women commuters may be as large as the protective value it offers.



Male presence across spaces—the policy reduces male presence in the reserved space but compliance is not perfect.

Summary

We study the impacts of women-reserved space on harassment across Rio de Janeiro’s SuperVia, and the drivers of demand for a women-reserved space. We provide women with a secure platform to report harassment, experimentally vary tasks to measure harassment, vary payouts to measure women’s willingness to pay for the reserved space, and leverage high-frequency riding conditions data to explore demand mechanisms. Two drivers of demand for the reserved space are documented: avoiding men (and, thus, harassment), and complying with norms. We also rule out alternative mechanisms that could explain our findings on willingness to pay, such as crowding and fear of crime (see (Kondylis et al., 2020b)).

By shedding light on the role of stigma for those who do not evasively move to “safe spaces,” our results highlight potential downsides of policies focused on harassment avoidance and instead suggest the importance of directly addressing harassment and its perpetrators.

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