

Between Public Space and Private Living: Social Infrastructure Types as Enablers of Compact Housing

Tamar Meshulam and Shoshanna Saxe
Pre-print:

Problem: The Missing Link in Housing Sustainability

Cities must reduce housing-related resource use and GHG emissions while accommodating growing populations. The housing sector is a major driver of material use and energy demand, and efficiency improvements alone are insufficient to meet resource and climate targets. Reducing private dwelling size is a high-impact solution but remains socially and politically challenging. Larger homes are associated with comfort and status. As a result, there is a persistent gap between environmental goals and housing preferences. A key unanswered question is: **What makes smaller homes livable and desirable?**

Solution: Social Infrastructure as an Extension of the Home

This research shows **that access to social infrastructure enables more compact living**. Across Toronto, Vancouver, and Montréal, neighbourhoods with greater access to shared amenities consistently have **smaller dwellings**, independent of income, family size, and density. Social infrastructure includes parks, cafés, community spaces, and other shared environments that support daily life. These spaces function as **extensions of private homes**, allowing activities to shift into the public realm.

Key Findings and takeaways

- 1) Higher social infrastructure density is associated **with smaller dwelling sizes across all cities**
- 2) In Toronto, its effect is **stronger than density** in explaining smaller homes
- 3) A moderate increase in amenities (~13 additional locations) corresponds to **~0.2 fewer rooms per dwelling**
- 4) The relationship holds across urban forms, including suburban areas
- 5) Notably, social businesses (e.g., cafés) and public open spaces (parks) are the most consistent drivers, suggesting that informal, everyday use spaces are particularly important.
- 6) Social infrastructure should be treated as **a core housing and climate policy tool**, not just an amenity.
- 7) Plan housing and social infrastructure together; Retrofit existing neighbourhoods
- 8) **Policy can actively shape this relationship**, aligning sustainability, affordability, and livability.

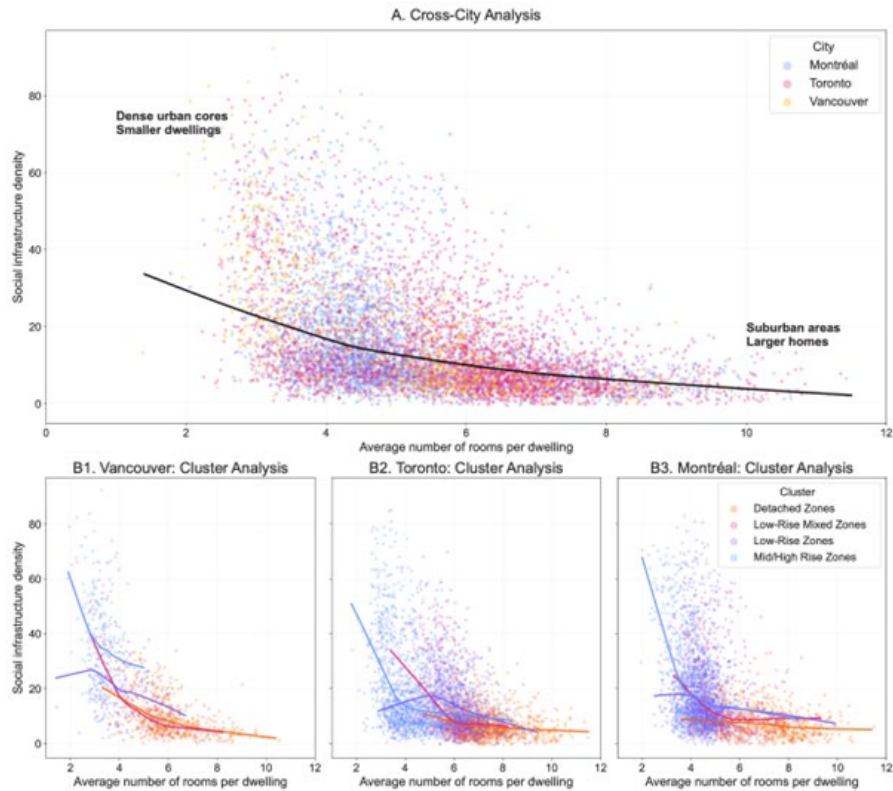


Figure 1: Multi-scale relationship between social infrastructure density and residential dwelling size across Vancouver, Toronto, and Montréal. (A) Cross-city analysis (B1–B3) City-specific breakdowns stratified by built-form clusters. Trendlines are drawn using locally weighted linear regression.

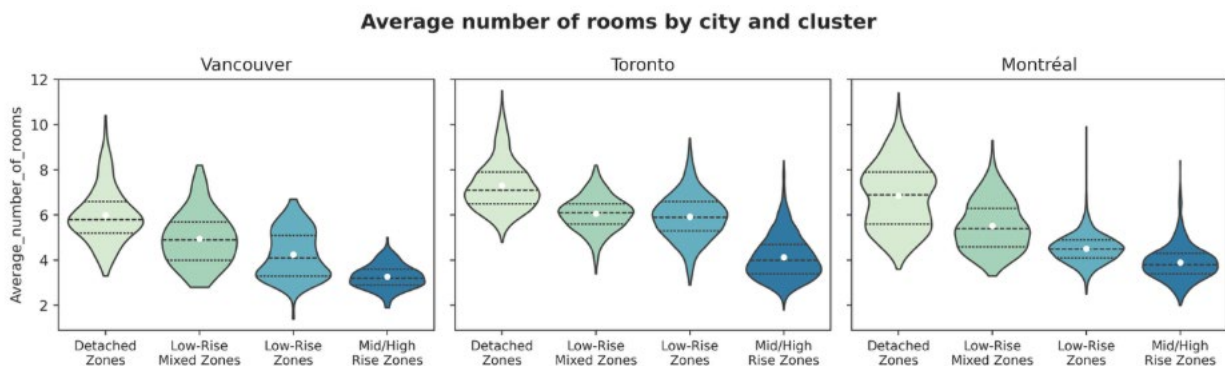


Figure 2: Average number of rooms per dwelling by city and urban density cluster. Distribution of average number of rooms for DAs within each cluster for Vancouver, Toronto, and Montréal.