

2024 LACF Annual Grant Final Report

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Summary

We would like to sincerely thank LACF for supporting our project titled “Utilizing big data to uncover the impacts of temporary outdoor dining design on encouraging active travel behaviours –multiyear evidence using Toronto CaféTO as an example”. This funding enabled the completion of two research papers on this topic.

The grant provided essential support for accessing subscription-based journal articles required for comprehensive literature reviews, as well as for acquiring key big data resources. These included street-view images of Toronto, which were collected through paid Application Programming Interface (API) service from Google. Additionally, the funding enabled us to utilise the online Google Colab platform, which provides support and computing resources for advanced statistical analyses and the training of machine learning models. Collectively, these resources were critical for the successful execution of the research.

Research Output

Paper 1: Revitalising Streets Through Pandemic-Induced Street Experiments: A Longitudinal Assessment of Outdoor Dining Programmes' Impact on Vitality in Toronto

The first paper, conducted in collaboration with Professor Jeroen van Ameijde, was initially presented at the conference “IFOU2024: Urbanism of Hope.” The paper benefited from feedback received during the conference. The revised version has since been published in the *Proceedings of the 16th Conference of the International Forum on Urbanism (IFoU)* (pp. 172–180) (<https://doi.org/10.17608/k6.auckland.30783074>).

This study examines street vitality in Toronto by analysing bikeshare data from 2020 and 2021, using trip-volume frequency as a proxy for street activity. Explainable machine-learning models were employed to uncover the nonlinear effects of the CaféTO outdoor dining program. Specifically, the study examines how curbside café design metrics—such as patio dimensions and the presence of planters—impact changes in bikeshare usage.

[A copy of our open-access paper can be found here.](#)

Paper 2: Evaluating the Multi-year Mobility Impacts of Pandemic-Induced Street Experiments – The Evidence of the Curbside Café Program in Toronto

The second paper has been completed and will be submitted to a high-quality journal in urban planning/landscape architecture later this year. The paper is expected to be published

as Open Access and shared through the LACF website.

This journal-length article compiles and integrates data from 2020 to 2022, covering three years of CaféTO implementation and bikeshare usage. Using a spatial difference-in-differences framework, this study provides the first longitudinal and causal evidence of the CaféTO curbside café program's influence on bikeshare usage throughout the pandemic.

The findings show that CaféTO significantly increased bikeshare usage in 2020 and 2021, with the magnitude of effects weakening in 2022 as travel behaviours gradually normalised. Together, these results position curbside cafés as demand-shaping urban amenities with time-varying and design-contingent mobility co-benefits. The study offers practical insights into when and how temporary street experiments warrant institutionalisation as part of long-term street governance strategies.