

REMOBIL – REthinking MOBILity, location patterns and urban form after the COVID19 pandemic. The effects of telework and e-shopping

Summary

The measures of social distancing adopted to contain the COVID-19 pandemic produced relevant changes in the way people work and shop, with a high proportion of people working from home (teleworking) and shopping online. It is expected that in the post-pandemic world, a substantial higher proportion of people will telework (at least for a part of the week) and shop online. This uptake in telework and e-shopping will impact not just transportation and travel patterns but also the configuration of cities in ways that are not completely understood. Telework has been seen as a travel demand management tool for quite some time, although its travel and urban form implications are subjected to controversy, with some studies pointing positive impacts and others not so optimistic and considered it as not effective. Teleworkers tend to be live predominantly in suburban areas, and the possibility of teleworking could allow workers to live further away thereby contributing to sprawl. Also, the causality direction between residential location and telework adoption is still an object of contention. The effects of telework on firm location are also controversial with different studies pointing either to job dispersion or centralization. Different sectors could be affected in different ways. More recent research acknowledges that firm location is still understudied in the transportation literature, making this a relevant topic of research. Telework could also influence retail location, as teleworkers tend to shop closer to home. Until recently the penetration of home based telework in Portugal has been rather small at less than 3%, being an understudied subject. Online shopping is also less popular than in other European countries, but has grown substantially, particularly between 2019 and 2020. Shopping is a relevant travel purpose, representing a relevant proportion of daily trips in the Lisbon Metropolitan Area (LMA). Understanding if e-shopping replaces or complements in-store shopping is, therefore, very important for transport planning. The impacts of e-shopping could extend to retail location patterns and ultimately to street vitality if in-store shopping is substituted by e-shopping. This project aims to study the impacts of telework adoption and e-shopping uptake on travel behaviour and urban form. Specifically, we will look at:

- The effects of telework frequency on weekly kilometres travelled by mode (which affects

emissions), trip scheduling (which impacts congestion levels) and activity spaces (which influences mode choice and which areas will be more congested).

- The relationships between e-shopping adoption and in-store shopping (complementarity, substitution, neutrality and modification).
- The relationship between teleworking and e-shopping.
- Residential location and preferences and office location as a result of telework adoption.
- Retail location as a result of e-shopping and telework adoption.
- Estimate global spatial impacts for the LMA resulting from different scenarios of telework and e-shopping adoption and discuss these results with policymakers.

The data collected here will be also compared in terms of mobility indicators with travel and shopping surveys prior to the pandemic. The project will employ different modelling frameworks depending on phenomena being modelled, and is organized into 7 main tasks, 5 of which are directly related with research work, 1 with project management and another with dissemination of results. The contributions from this project are related with its objectives. We will contribute to new knowledge about the relationships between telework, e-shopping and travel behaviour. This knowledge will have both national and international relevance. Telework and e-shopping are understudied topics in Portugal. At the international level the research design adopted here aims at addressing relevant shortcomings in similar studies identified on the literature, namely causality issues and self-selection. By studying location strategies of both households and firms we will also provide new evidence about the effects of telework and e-shopping on urban configuration and provide policymakers with relevant information. We will innovate also by relating both qualitative and quantitative research, using the insights provided by in-depth interviews to derive the design of the subsequent surveys and fine tune some of the research hypothesis.

Project Reference

PTDC/ECI-TRA/4841/2021

Leading Institution

IST-ID – Associação do Instituto Superior Técnico para a Investigação e Desenvolvimento (Portugal)

Partners

ISEG – Lisbon School of Economics and Management (Portugal), IGOT – Instituto de Geografia e Ordenamento do Território da Universidade de Lisboa (Portugal)

CERIS Principal Investigator

João Abreu e Silva
(joao.abreu.silva@tecnico.ulisboa.pt)

CERIS Research Team

Rui Colaço, Laisa Kappler

Funding

FCT – Fundação para a Ciência e a Tecnologia

Period

2022-2025

Total

245 592.00€

CERIS

150 421.25€

Project Website

-