

## CALL FOR MASTER THESIS

### ***Testing the capacity of fifteen-minute city policies to create short-distance travel using big data cellphone locations***

#### **Project framework:**

This MSc thesis is offered within the [GEMOTT](#) (Grup d'Estudis en Mobilitat Transport i Territori) research group, within ICTA and the UAB's Geography Department.

#### **Research Background:**

Fifteen-Minute City (FMC) is a new holistic model for urban planning based on the idea that residents in urban settings should have access to most of their basic needs (work, commerce, health, education, and entertainment) within less than 15 minutes, on foot or by bicycle (Moreno, 2016. Duany & Steuteville, 2021). This concept, although based on previous ideas of crono-urbanism, was firstly introduced by the mayor of Paris but has raised interest among both academics and urban planners from cities around the world for its potential, among others, as valuable strategy to achieve the Sustainable Development Goals in the New Urban Agenda of the United Nations.

However, given the fact that is a new idea, many questions are still being raised. Among the most important one is whether people is actually using the proximity environments when they are available to them. Testig the capacity of the FMC to foster short distance travel is essential to validate this policy as an effective sustainable travel tool.

#### **Objectives:**

- a) This study will assess whether areas with different accessibility levels in Barcelona can create shorter distance travelling***
- b) To elaborate a framework on how to work with big data origin-destination cellphone location data to calculate traveled distances.***

#### **Methods:**

To do so, the student will use an already-built pioneering spatial index at 100x100m resolution and the BMR's Everyday Mobility Survey (EMEF) 2021 editions to estimate the main mobility changes while stratifying by age, gender, and income level. We will be using a big data database provided by VODAFONE with the exact location of all cellphones in Barcelona during the years 2019-2021 to calculate traveled distances and assess the role of local proximity and FMC conditions over setting travel behavior.

#### **Technical details:**

The thesis will be directed by Dr. Oriol Marquet with the collaboration of the rest of the GEMOTT members. We expect that a revised version of the MSc Thesis will be submitted to a peer-reviewed journal for publication. The final document can be presented in Catalan, Spanish or English.

The type of data involved requires that the student have strong quantitative skills including R/Python skills

**If you are interested on writing your MSc thesis on this topic, please contact [oriol.marquet@uab.cat](mailto:oriol.marquet@uab.cat)**