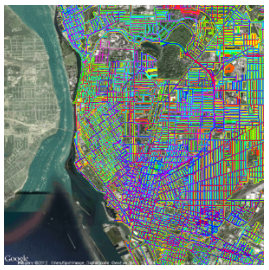
Feb 28, 2018 Version 1

Human Trajectory Sampling at the City-Day Scale V.1



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External link: http://activityspaceproject.com/

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Protocol status: In development
We are still developing and optimizing this protocol. It is currently being used for data collection in Barcelona, and it will be updated based on this experience.

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Keywords: activity-space segregation, human mobility, human trajectory sampling at the city, human trajectory sampling, sampling people, patterns of mobility, mobility, day scale, city, space segregation at the scale, activity, space segregation, people for purpose

Abstract

A protocol for sampling people for purposes of understanding patterns of mobility and activity-space segregation at the scale of city-days.

Select Sampling Points

1 Select a set of points at which sampling will be done. These should be chosen randomly within the boundaries of the census tracts of the city being studied, with probabilities of choosing points within each census tract given by the proportion of the population residing in that tract and adjusted to oversample tracts in which small populations of interest are believed to reside. The selection can be done using R and the sp package for R, or with QGIS, or any other software that allows for random selection of points in polygons.

Software

R NAME

R Core Team DEVELOPER

Software

sp: Classes and Methods for Spatial Data NAME

Edzer Pebesma [aut, cre], Roger Bivand [aut], Barry Rowlingson [ctb], Virgilio Gomez-Rubio [ctb], Robert Hijmans [ctb], Michael DEVELOPER

Software

QGIS NAME

Select Sampling Point Times

2 For each sampling point, select the hour at which it will be visited. These hours should be drawn randomly from a uniform distribution of times at which sampling is feasible and safe. Theoretically this could be between 0 and 24, but there are many considerations weighing against approacing people on the street during the night to ask them to

participate in a study by tracking their own locations. Standard working hours (e.g. 9-5) are probably more realistic, even if this means that some activity-spaces will have no chance of being part of the sample as a result.

Snap Sampling Points to Streets

3 The randomly-selected sampling points will not necessarily be in accessible locations. Each point should therefore be moved to the closest public street.

Software

QGIS NAME

Software

R NAME

R Core Team DEVELOPER

Software

sp: Classes and Methods for Spatial Data NAME

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Visit Sampling Points and Recruit Participants

4 Stand at the selected sampling points during the selected hours and ask people who pass by if they would like to participate in the study. Materials needed here are:

- Study information sheets and consent forms
- Paper-based mobility survey
- Cards with URL and QR code for data-collection app.
- Mobile phone for demonstrating app.

Software

SpaceMapper	NAME
Android	OS
John R.B. Palmer	DEVELOPER
https://github.com/JohnPalmer/SpaceMapper	SOURCE LINK