

Bike-Sharing System Design - A monocentric continuous approach

Bike-sharing systems are spreading over the world at a fast pace. Several reasons have led to incentives from a government perspective, usually related to sustainability, health issues and general mobility.

Although there was a great prioritisation in the last years, literature on how to design and implement them are rather qualitative (e.g. guides and manuals), while technical research on the subject usually focus on extensive data inputs: O/D matrixes and other methods that may not be robust nor extrapolated to other places.

Also, lack of data in some regions makes them of little use to be easily transferred. The project proposes to work on a general conti-

num model for bike-sharing systems to be used as one of the transportation assets that cities have to tackle mobility. In particular, it develops a monocentric approach to capture demand heterogeneity on city centre-peripheries.

The hypothesis is calibrated on Barcelona's existing bike-sharing system and extrapolated to other scenarios that capture the most relevant inputs variations, so that it reflects distinct cities around the globe.

Results present clear trade-offs between the most relevant variables on a bike-sharing system. Also, the model estimates general operation cost related to implement and run a system, useful for operators at bidding phase •

