

Official Statistics: Bayesian Small Area Estimation of Origin-Destination Matrix

*Loredana Di Consiglio, Fabrizio Solari, Tiziana Pichiorri, Emanuela Scavalli,
Massimo Armenise, Lorenzo Asti, Carolina Ciccaglioni, Isabella Corazziari,
Luca Faustini¹*

Abstract

Flows between locations cover several forms of mobility, such as journeys to work, migrations, public facilities usage. There exist attributes of separation between origin and destination locations, such as transport friction or distance friction. In this work, we focus on work commuting flows. Administrative data can provide relevant information to be used in the estimation process of commuting flows. Commuting flows are estimated by means of Bayesians Small Area estimation methods, which because of their flexibility can handle easily several model assumptions. The estimation process is applied to the estimation of Italian work commuting flows.

Keywords: Bayesian inference, Commuting, Administrative data

¹ Loredana Di Consiglio (diconsig@istat.it); Fabrizio Solari (solari@istat.it); Tiziana Pichiorri (pichiorri@istat.it); Emanuela Scavalli (scavalli@istat.it); Massimo Armenise (massimo.armenise@istat.it); Lorenzo Asti (lorenzo.asti@istat.it); Carolina Ciccaglioni (ciccaglioni@istat.it); Isabella Corazziari (corazzia@istat.it); Luca Faustini (luca.faustini@istat.it), Italian National Institute of Statistics – Istat.