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Framework for designing sample travel surveys for transport demand modelling in cities: some comments

J. de D. Ortúzar[1]

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Introduction

A recent paper by Horbachov et al. (2022) discusses the issue of sample size for urban travel demand modelling. The paper has some interesting ideas, but fails to consider the state of practice adequately and also makes a number of not quite true summary statements, which cannot be left uncommented.

Brief Comments to Complement the Paper

1. Computer modelling is, at most, one of the main instruments for urban transport planning. Although models are indeed important, equally so are good data and sound policy design.
2. The number of sources containing practical guidelines for survey design in this context is not really small, but the authors appear to be unaware of several key texts that deal with these issues (see, for example, Cascetta 2009; Meyer and Miller 2000; Stopher et al. 2008; Stopher and Jones 2003). In particular, I cannot agree that the handbook edited by Hensher and Button (2005), is a widespread and most reliable source[1]. In fact, the book "*Modelling Transport*" (Ortúzar and Willumsen 2011), is surely one of the first sources considered by practitioners (interestingly, it is only cited about a minor topic at the end of the paper). This book considers most of the issues discussed in the paper, and certainly provides standards and guidelines on methods to design travel surveys (Chap. 3).

[1] Table 1, cited from Hensher and Button (2005), was taken out of the last edition of *Modelling Transport* as it was obsolete.

✉ J. de D. Ortúzar
jos@ing.puc.cl

[1] Department of Transport Engineering and Logistics, Instituto Sistemas Complejos de Ingeniería (ISCI), BRT + Centre of Excellence, Pontificia Universidad Católica de Chile,

3. The way the issue of sample size determination is considered is odd (types of trips times number of modes), as what matters is different. You need to estimate trip generation, mode choice and trip distribution models, say, and the issues are what sample size is necessary for each case – this is well tackled by *Modelling Transport*, which shows – among other things – that it is just not practical to think about sample size for trip distribution, and you need to complement a household survey with a well-designed intercept survey (i.e., roadside interviews).
4. Further, *Modelling Transport* also discusses ways to optimize the sample size distribution for a household survey using mathematical programming, and how to achieve a sensible sample for intercept surveys.
5. Finally, and about the issue of pilot surveys, I cannot agree with the authors in that these are optional – particularly in the case of less developed regions. A pilot survey is not only key to the success of the complete survey, but this is even more so when the region is less developed and - for that reason – will tend to have less experience and not so qualified personnel to conduct the survey.

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