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Workshop synthesis: Survey methods for hard-to-reach groups and modes

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Abstract

Transport decision-making requires data from *all* travellers. This is usually obtained from sample surveys – using rigorous sample selection, survey design and analysis. However people are often systematically excluded because they cannot respond to the chosen survey instrument and/or they represent rare behaviours not easily captured by traditional sampling techniques. These “hard-to-reach” groups are the subject of this paper.

This workshop identified current hard-to-reach groups in different cultural and geographical settings, providing case studies from three countries. It also identified research designs to address these challenges and suggested ways to identify hard-to-reach respondents whose absence in the data will affect results.

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1. Purpose and introduction

Decision-making in transport relies on input from the full universe of travellers, in order to consider the welfare of the full population when making decisions. This input is often obtained by measuring or soliciting people’s travel patterns and needs – usually done by conducting a sample survey of some type – using well documented processes of sample selection, survey design and analysis. However, in specific cases people are systematically excluded from

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reporting in these surveys though one of two main reasons. (1) they cannot respond to the chosen survey instrument; and/or, (2) they represent rare behaviours not easily picked up by traditional random or stratified sampling techniques. These so-called “hard-to-reach” groups are the subject of this paper.

There are five specific reasons that people or sampling units (e.g. households, modes) might be hard-to reach. First, travel surveys, like most surveys other than Censuses, are based on selecting a sample of people or trips. In order to select a sample, a sampling frame is required, i.e. a base list or reference which properly identifies every sampling unit in the survey population. This listing of all sampling units, or enumeration, relies on data that is often unknown (e.g. a list of all people who ride bicycles, or all people that have difficulty using public transport, or people using a car-sharing scheme). When enumeration is difficult, populations become hard-to-reach because it becomes difficult to draw a representative sample. Second, even when it is possible to enumerate all target sampling units, it is sometimes not easy to select a sample that can be interviewed. For example, it might be possible to obtain the number of people owning hydrogen powered cars, but it might not be possible to sample them due to constraints on availability of personal data of car owners. Third, even though it might be possible to enumerate and to choose a sample, it might not be possible to access that person or unit. This could include people without access to the selected survey technology (e.g. without a phone or internet connection), or people not in the chosen survey location at the survey time (e.g. night workers). A fourth reason that the target population becomes hard-to-reach is lack of ability to communicate with them. This could include a lack of understanding of survey questions (through language or lack of testing) or cultural barriers. Finally, potential respondents can be hard-to-reach because they do not want to participate in surveys. This category might include people with lack of time, who do not trust the survey designers, or who feel it is a burden in some way. This paper details papers and workshop discussions that addressed each of these issues.

The remainder of this paper is set out as follows. The second section of this paper summarises the process of the workshop. Section 3 presents some of the key methods for overcoming the barriers of hard-to-reach. The current state of research, open questions, challenges and opportunities are discussed in Section 4. A concluding section focuses on the outlook for future research on the improvement of methods to collect data from hard-to-reach populations.

2. The workshop process

The workshop discussions were initiated by three paper presentations. Stark et al. (2014) provided insights into the methodology that had been used in Austria to reach another hard-to-reach group – young students’ travel patterns. Travel patterns by this group are often recorded by proxy (through their parents) or suffer from a high level of under-reporting either through lack of understanding of the questions or lack of interest in the process. The researchers used the young students to assist in designing and testing the survey instrument (a travel diary) and achieved both a high response rate (95%) though this was achieved with a high level of supervision and checking in the classroom situation. Porter et al. (2014) presented another innovative approach to recording the mobility of older people in rural sub-Saharan Africa. In this case they trained older people in participatory research methods – and these people became the research team members. The research showed that ‘co-investigation’ in this manner is one of a number of qualitative approaches with great potential for wider application in research into transport- and mobility-related social exclusion. Finally, Heilig et al. (2014) presented a case study testing an innovative way of reaching small populations. They identified customers of a carsharing scheme on the company Facebook site of Car2Go in Berlin and conducted a web-based survey. Their paper evaluated the advantages and disadvantages, noting that it was possible to recruit almost three times more participants than by simply posting a link to the survey.

After the presentations, a lively discussion led to the listing of an extensive range of likely hard-to-reach groups – most of them based on the experiences of workshop participants. They could be divided into several categories, based on the reasons for their being hard to reach (Table 1). Note that, as discussed in Section 3, some groups have multiple attributes that make them difficult to reach.

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