

Travel Survey Methods

TRB Committee ABJ40

Volume 5 Issue 3
September 2007

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Report on Paper Submissions - Laurie Wargelin, Paper Review Chair

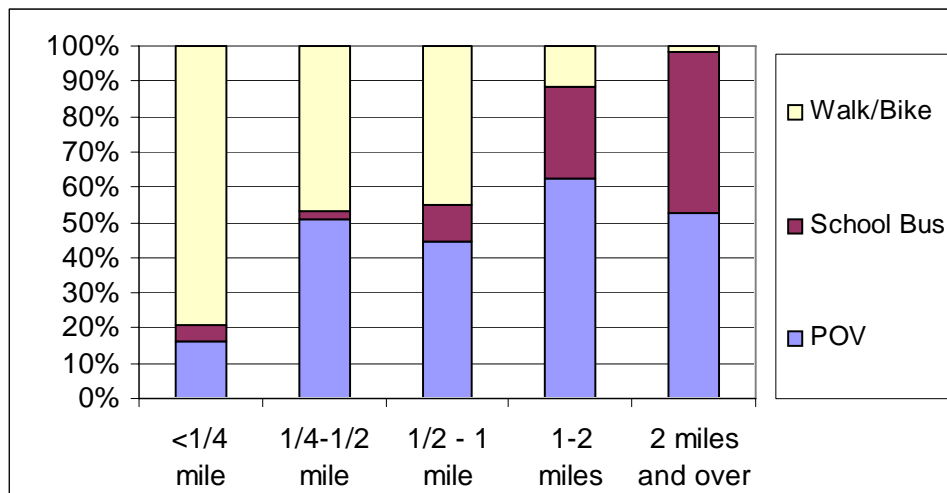
Twenty-six papers were submitted to Survey Methods for review in response to the committee's Calls for Research. The technology call was particularly effective with 10 papers submitted, including papers that review web-based systems to assist with GPS, cell phone, and PDA approaches. Three papers responded to the freight research call: sampling and multiple data collection methods for truck travel surveys, sampling schemes for measuring highway traffic using Weigh-In-Motion technology, and deciding when to update freight data.

Half of the papers received are directed to a rich variety of other topics, from computer modeling of household travel, methods for tracking shifts between major travel surveys, measuring lifecycle events, and using odometer readings to record trends in household travel. Finally, Survey Methods is sharing a paper review with the Stats Committee regarding complex sampling designs of post-motor-vehicle-crash surveys of motorists.

Focus on Transportation Data — *Did you know?*



Like all trip-making, travel to school has changed pretty dramatically over the last 40 years. For example, although the school trip rate per student has remained relatively constant, the average distance for school trips, like all trips, has increased. In 1969, nearly half of elementary school children traveled a mile or less to school, in 2001 only a quarter did. Not surprisingly, the mode of travel for school children also has changed, and changes with distance, as shown.



The distribution of these major modes (transit and "other" have been excluded) shows that short school trips are very likely to be made by walk and bike.

However, the private vehicle accounts for nearly half of trips between 1/4 and 1 mile, and is the dominant mode for all school trips over 1 mile (75.4 percent of all school trips were over 1 mile in 2001)

Source: 2001 National Household Travel Survey

How Serious Is Polling's Cell-Only Problem?

Excerpted from an article by Scott Keeter, Director, Survey Research, Pew Research Center, June 20, 2007
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Twenty years ago the survey research profession -- having grown comfortable with telephone interviewing as an alternative to personal interviewing for conducting surveys -- worried mostly about the roughly 7% of U.S. households that could not be interviewed because they had no telephone. Today our concern is somewhat different, and potentially more serious. According to government statistics released last month, nearly 13% of U.S. households (12.8%) cannot now be reached by the typical telephone survey because they have only a cell phone and no landline telephone.

To monitor the impact of the cell-only phenomenon, the Pew Research Center conducted four studies in 2006 that included samples of cell phone numbers as well as a full sample of landline numbers.² The four surveys covered a very wide range of topics, including use of technology, media consumption, political and social attitudes, and electoral engagement. Comparing the cell-only respondents with those reached on landlines allowed us to assess the degree to which our traditional surveys are biased by the absence of the cell-only respondents.

We compared the cell-only and landline respondents on 46 different survey questions. [A]lthough cell-only respondents are different from landline respondents in important ways, they were neither numerous enough nor different enough on the questions we examined to produce a significant change in overall general population survey estimates when included with the landline samples and weighted according to U.S. Census parameters on basic demographic characteristics.

The picture is not entirely positive, however. While the cell-only problem is currently not biasing polls based on the entire population, it may very well be damaging estimates for certain subgroups in which the use of only a cell phone is more common. This concern is particularly relevant for young adults. According to the most recent government estimate, more than 25% of those under age 30 use only a cell phone.

Including a cell-only sample with a traditional landline-based poll is feasible, as the four studies conducted last year indicate. But even if feasible, cell-only surveys are considerably more difficult and expensive to conduct than landline surveys. Federal law prohibits the use of automated dialing devices when calling cell phones so each number in the cell phone sample must be dialed manually. It also is common practice to provide respondents with a small monetary incentive to offset the cost of the air-time used during the interview. And the screening necessary to reach cell-only respondents among all of those reached on a cell phone greatly increases the effort needed to complete a given number of interviews. Pew estimates that interviewing a cell-only respondent costs approximately four to five times as much as a landline respondent.

Pollsters recognize that some type of accommodation for the cell-only population will have to be made eventually, as was clear from the large amount of research on the topic presented at the AAPOR conference in May.

Modal citizens

Excerpted from the ITS International Newsletter. Thursday 9 August 2007

The Massachusetts Institute of Technology (MIT) is working with a growing series of European cities on projects to use mobile phone and road traffic location data to map the real-time urban movements of people and vehicles. MIT's SENSEable City Laboratory is a research initiative, directed by Professor Carlo Ratti, which is studying the potential use of electronic sensors and handheld equipment in describing and designing cities and their transport systems.

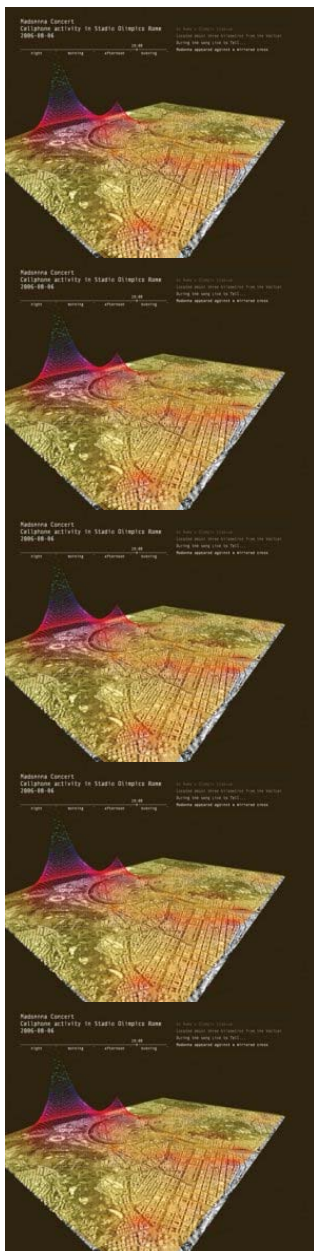
Researchers use the data to generate real-time maps of people's movements. Cellular networks constantly monitor several mobile phone traffic measures, which can be used to estimate use at an aggregated level. The aim is to provide vivid, real-time illustrations of a city's urban dynamics, and show how transport operators, businesses and individuals can use these for more informed travel provision and decision-making. The programme began with an invitation to MIT to contribute to the 'Mobile Landscapes: Graz in Real Time' project in Austria's second city, which ran from October 2005 to January 2006, and involved collaboration with mobile phone operator A1/Mobilkom Austria.

It prototyped and demonstrated three types of city mapping: mobile phone traffic intensity; mobile phone traffic migration (that is, cell-to-cell handovers); and the tracks of registered users (who signed up to take part). The results, says Ratti, indicated that mapping mobile phone data could open up "unprecedented perspectives" in urban cartography.

Displays showed computer-generated images of Graz's physical landscape with colourful representations of the density of mobile phone calls, their origins and destinations, and the locations of users in 'almost' real time. (While the network operator collected data instantly, transfers to the SENSEable City Lab server were aggregated at five-minute to one-hour intervals in order to optimise bandwidth and processing power; Ratti says that the system could theoretically have coped with frequencies of a second or less.)

Real Time Rome has aggregated data from residents' mobile phones via major Italian telecoms provider Telecom Italia's LoCHNESs platform (see Sidebar 'LoCHNESs') and from bus and tax locations via real-time transfer to the SENSEable City Laboratory's server. Vehicle owners signed up to take part and most of the mobile phone-derived data came from aggregated or statistical traffic flows with no connection to individuals.

Typical applications plotted population movements at the time of Italy's World Cup win and during a Madonna concert. Rome is likely to be the first city with commercially available people-movement maps; while ATAC expects to save €20,000 (US\$166,000) a year on origin/destination passenger surveys and achieve better deployment of its 2,100 buses. Several public administrations in Italy are now starting to use it as a model.



From the Chair: HATS OFF to our TERRIFIC committee CONTRIBUTORS:

Thank you for your hard work. This has been an unusually busy year for our committee!

We applaud the efforts of all our subcommittee chairs, as well as people like Jean Wolf, John Rose, Johanna Zmud, Mark Bradley, Heather Contrino, Nancy McGuckin, Sharon O'Connor, Guy Rousseau, Frank Southworth, and others:

- Eric Molin for spearheading our committee's first-ever Sunday workshop, together with his & Stacey Falzarano's talented subcommittee's members;
- Elaine Murakami for managing a highly sophisticated, multidisciplinary call for January 2008 papers on new technologies; and
- Laurie Wargelin for all her efforts in the paper review process.

Lisa-Altman Hall helped organize the research needs statements for the TRB website—thanks to those of you that have responded with comments and other useful feedback. They have been posted to the TRB website at rns.trb.org. You can see them by searching on ABJ40. You can find documentation of our top three research areas on the subcommittee website (www.travelsurveymethods.org).

And please **sign up to align yourself more formally with a subcommittee**, in case you aren't yet connected.

Thank you!

Mark Your Calendars!

TRB 87th Annual Meeting, January 13-17, 2008, Washington, DC

International Conference on Survey Methods in Transport: Harmonisation and Data Comparability (Anancy in the French Alps, France , May 25-31, 2008)

Transportation Research Board (TRB) Conference on Innovations in Travel Demand Modeling (Portland State University , Portland , Oregon , June 22-24, 2008) – *more information to follow*

12th [Conference of the International Association for Travel Behaviour Research](#) (Jaipur , India , December 2009) – *more information to follow*

CHECK OUT OUR COMMITTEE WEB PAGE AT:

www.travelsurveymethods.org