

Measuring and Modeling Tourism Travel: A Scan of New Instruments and Techniques

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Presentation Content

- **Perspective and background**
- **Primary objectives and purposes of measurement**
- **Intersection of relevant disciplines**
- **Case studies of applications**
- **Case studies of recent innovations**
- **Examples of emerging innovations**
- **Possible recommendations**

A Different Perspective (hopefully)

- **From the U.S. – based on 25 years in travel behavior surveys**
 - ✓ Resident and/or visitor surveys from New York to Alaska, Orlando to Yosemite
 - ✓ Developing methods, designing instruments, and fighting the battle of persuading reluctant survey participants
- **From the international community of travel behavior research**
 - ✓ International Association on Travel Behavior Research
 - ✓ Series of International Conference on Travel Surveys – over 10 years, from South Africa, Costa Rica, France (last year), Chile (in 2011)
- **From the U.S. institutional perspective**
 - ✓ Transportation Research Board
 - ✓ Other federal agencies addressing transportation research

The Why of What We Are Measuring

- **Balancing international trade accounts versus addressing travel behaviors and patterns**
 - ✓ Is it about producing tourism statistics or understanding tourist travel and its impact on overall travel behavior?
 - ✓ Start with household travel survey data (personal travel behavior) or start with more effective and more complete trip counting?
 - ✓ Conclusions: Must do both
- **Getting there or getting around a tourist destination**
 - ✓ How much of our measurement is about “getting around” versus how much is about “getting there” – and the why and how of each
 - ✓ Conclusion: Both are important

Critical Challenges Identified

- **Definition variability and national idiosyncrasies appear quite significant – even though the UNWTO has very formally defined all statistical terminology, transport planners and researchers are not engaged**
- **Elimination of or non-existence of many borders as counting cordons and increased focus on security has reduced, slowed or stopped data capture**
- **Barriers to data access have been substantial and are becoming more severe – intercepts/cordon, proprietary nature of valuable information, privacy concerns**
- **Unrealistic search for a “one-stop” solution – we seem to want a highly centralized solution to a highly decentralized phenomenon**

Positive Context, Persuasive Rationale

- **Tourism is an undisputed net generator of revenues for public, private and household sectors; it is growing and becoming more important in many regions, countries, locales**
- **Global commitment to measure tourism patterns/impacts appears to be high and to come from many sectors, both public and private ... but is anybody in the transport community listening?**
- **Value of and need for research for strategic planning and operations of the tourism industry is easily and persuasively communicated rationale ... but are we talking with full community of stakeholders and customers?**

Tourism Surveys From Transportation Behavior Perspective

Surveys of Specific Traveler Groups

Purposes and Uses

- **Demographics for tourism marketing and tourist information**
- **Planning and operating transport facilities that link visitors to and from regional attractions**
- **Segmentation strategies for classifying visitor groups – retirees, emigrant revisits, international visitors, many others**
- **Identifying specific solutions for special needs populations, primarily around accessibility or safety**

Availability of Tourism Data in U.S.

From a U.S. national survey of state transportation departments – percent reporting data completely available:

- Tourists entering/leaving state – 25%
- Tourism sales by region within state – 21%
- Tourism-related employment – 16%
- Tourism fees (tolls and entrance fees) – 11%
- Visits to recreational areas – 11%
- Origin and destination patterns – 5%

Transportation Planning Solutions for Tourists

- **Travel routes and facilities that serve as visitor attractions – scenic byways, eco-tourism trails (bike and hike), historic transport**
- **Access facilities and services – shuttle services, 511 information services, multi-modal tour package development, TMP**
- **Travel messaging – signage, dynamic message systems, welcome or visitor centers/kiosks**
- **Operational improvements – streetscape and facility improvements**

Transport Department Tourism Surveys

- **Primary purpose – support new travel demand and forecast models**
- **Most common data – origin/destination patterns, visitor traffic counts, tourism sector employment data**
- **Secondary objectives and applications – seasonality, fine geospatial breakdown, marketing**
- **Example: New York region surveys currently being conducted**
 - ✓ **Massive household travel survey (including visitors)**
 - ✓ **Visitor surveys – multi-modal and multiple setting**
 - ✓ **Transit user surveys**
 - ✓ **Others**

Case: SAFECO Field (Seattle), Diverse Origin Visitors for Games

- **Attracts visitors from large catchment, weekend out-of-town visitors**
- **Tightly controlled regulations and required annual TMP**
- **Requires frequent attendee surveys for monitoring:**
 - ✓ **Information resources and use of attendee education resources**
 - ✓ **Pedestrian improvements and signage**
 - ✓ **HOV incentives, transit services, bike facilities**
- **Ultimate goal of surveys and planning efforts is to minimize the local traffic impacts from visitors**

Case: Utah Olympics and Applications

- **Principal objective: determining impact of tourists/visitors on key transport corridor between SLC and Park City**

Innovations for Data Capture: Instruments and Techniques

Example 1: CAPI Survey in Dallas, 2008

- **Objective:** obtain detailed information on demographics and travel behavior of visitors in Dallas downtown hotels – unrecognized population in the regional transportation model
- **Outcome:** identify bus and rail transit service enhancements for downtown visitors
- **Method:** interviewer mediated intercept survey, using computer assisted personal interviewing technology
- **Instrument:** classification, purpose, demographics, and detailed log of every single movement (trip) over >72 hours, with purpose, O/D location and time, mode, mode alternatives, size of party,
- **Technology:** tablet PC with Web access, GPS and interactive mapping, instrument programmed with real-time plausibility checking

Example 2: Ruidoso Ski Resort Surveys, 2009

- **Objective:** obtain detailed data on residents and peak season visitors, including demographic characteristics and 24-hour travel patterns
- **Outcome:** new regional travel demand model for supporting funding applications to expand/improve transport for residents and visitors
- **Method:** intercept survey in time and location stratified sites, using an interviewer-mediated scannable instrument with incentives and phone interview follow-up
- **Instrument:** individual and household/party demographics, entry/exit modes and routes, O/D locations, times, purposes for individual trips, other destinations if on tour
- **Technology:** use of immediate scanning and incentive (raffle requiring a phone number) to solicit additional info and clarification

Emerging 1: License Plate Recognition

- **Description: cordon-based image capture and automated verification of vehicle license plates (even in high volumes and speeds) has improved exponentially in past few years**
- **Relevance to transportation and tourism surveys**
 - ✓ Depending on ability to translate passive information into contact information, possible to conduct timely surveys of travelers or visitors, stratified by geographic origin
 - ✓ Within major travel corridors, can passively collect information on travel and visiting locations (and more) without personal interviews
- **Barriers: regional and highly differentiated privacy barriers (both legal and cultural); access to timely information; cost**

Emerging 2: Mobile Social Networking/Apps

- **Description:** increasing capacity of the mobile communications network to broadcast and communicate with highly specific populations: “If you are from ___ and are visiting ___, do ___”
- **Relevance to transportation and tourism surveys:**
 - ✓ Possible now to gain useful qualitative information about visitors, at least on narrowly defined topics
 - ✓ Possible to gather useful quantitative O/D matrix approximation in simple broadcast, especially if there is a follow-up communication exchange
- **Barriers:** still lack enough data about user population mix, especially by specific region; successful commercial market tests may not apply to tourist destinations (or could?)

Emerging 3: Dynamic Traffic Information

- **Description: real-time traffic information services will be a global product that is just being launched, expected to reach 150 million U.S. users and 350 million global users within five years**
- **Relevance for transportation and tourism surveys**
 - ✓ Individual customers will opt in to receive and submit a wide arrays of information motivated by the perceived value of life quality solutions provided by the service
 - ✓ Can provide fast, relatively inexpensive, and tightly targeted access to data
 - ✓ Can create a virtual link between data collection and personalized, location-based marketing for visitor destinations
- **Barriers: in some locations/regions/countries, there are legal or cultural constraints regarding information, but if the content is valued, these may be overcome**

Conclusions and Recommendations

Solutions and Data Recommendations

- **Make do with what we have; invest in, focus on:**
 - ✓ Data mining, integration, fusion
 - ✓ Apply methods of iterative adjusting, balancing and expansion
 - ✓ Meta analysis
- **Exploit new passive technology solutions to measure flows**
 - ✓ Mobile phones, GPS, RFID, credit card transactions on infrastructure, sensors,
 - ✓ Expand and extend proof of concept efforts
 - ✓ Standardize techniques for adjusting and expanding data from passive measurement with independent statistics
- **Sell better to get what we don't have – frame research as a tool for improving the tourism experience; collaboration with private sectors; barter insights for data access**