

11th International Conference on Transport Survey Methods 2017

in the era of big data: facing the challenges

24-29 SEPT
2017

Québec



PROGRAM & INFORMATION



Montréal 

ARJM
Autorité régionale
de transport métropolitain

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QUÉBEC
Québec 

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ISCTSC
International Society of Transportation
for Travel Survey Collection


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Table of contents

Foreword	3
Message from the Minister of Transport, Sustainable Mobility and Transport Electrification	4
Message du Ministre des Transports, de la Mobilité durable et de l'Électrification des transports	5
Thanks to our sponsors	6
Plenaries	7
Schedule overview	8
Detailed schedule.....	9
Workshops & Room Assignment	10
Hotel Map	11
Paper information	12
Transportation.....	12
Social Activities.....	12
Hotel information.....	13
Miscellaneous	13
Workshop A1 - Attitudes/perception how to measure in quantitative survey.....	14
Workshop A2 - New Directions in Experimental Design.....	15
Workshop A3 - New developments in travel diary collection systems based on smartphones and GPS receivers.....	16
Workshop A4 - Smart card data: new method and application for public transport.....	17
Workshop A5 - Household travel surveys in an era of evolving data need for passenger travel demands	18
Workshop A6 - Representativeness in surveys: challenges and solutions	19
Workshop A7 - Making the transition to new methods for travel survey sampling and data retrieval.....	20
Workshop A8 - Validation under "ground truth" in surveys.....	21
Workshop B1 - Use of social media, social networks and qualitative approaches as innovative ways to collect and enrich travel data.....	22
Workshop B2 - Behavioral changes in travel – Challenges and implications for their identification and measurement	23
Workshop B3 - Passive and sensor data: potential and application.....	24
Workshop B4 - Web-based: new insight to address main challenges	25
Workshop B5 - Dealing with immobility and survey non-response.....	26
Workshop B6 - Increasing survey participation levels without changing travel behavior	27
Workshop B7 - Data Fusion: Needs and Challenges in a New Transportation Data Landscape	28
Workshop B8 - Surveys on long distance travel and other rare events.....	29
Papers for poster presentation not related to a workshop.....	30

Foreword

We co-chairs, welcome you to the 11th International Conference on Transport Survey Methods. We have with us leading survey researchers and transport professionals from over 25 countries representing industry, government policy makers, as well as academic scholars and researchers. Around our theme “In the era of big data: facing the challenges”, we will discuss the latest advances in current and prospective transport survey and data processing issues while focusing on data quality and challenges associated with new data sources and survey methodologies.

This Conference continues the tradition of the International Steering Committee for Travel Survey Conferences (ISCTSC) to create a 5-day opportunity for networking, collaboration, and sharing of knowledge. A detailed conference program with an overview of the week, including special social events is available on page 6. We also maintain the workshop organisation of the previous conferences, which has contributed to its success. We have two series (A and B) of 8 workshops (descriptions available starting page 12). You have expressed your workshop preferences and we have tried to respect them as much as possible. You are therefore assigned to two workshops, one for A series and one for B series. We ask you to respect these assignments and to stay in the same workshop for the three time slots assigned to each workshop. It allows deeper exchange between workshop participants. All workshops must produce a synthesis of the discussions in order to present the state of the art and practice of the workshop thematic but also to identify the research needs and the main challenges we have to face. The Conference Chairs will also produce a general synthesis of the conference as a whole.

The Scientific Program comprises Plenary Sessions, Workshops, Poster Sessions, and an interactive survey session. 175 abstracts were received in response to the Call for Papers. These were the major inspiration for the definition of the Workshops themes, which will address cutting edge methodological issues. A set of 3 or 4 papers, that collectively illustrate the key survey research and practice issues on the topic will constitute a base for the workshop discussion. Some posters are also attached to each workshop.

Thanks to our local organizing committee, this conference continues our tradition of bringing us together in a beautiful and unique venue – L'Estérel Resort in the Laurentians region of Quebec, Canada. So, enjoy the Scientific Program but also take the time to relax and become acquainted with new people between sessions and other activities.

Finally, we gratefully thank our sponsors for their generous support of the conference. Their financial contributions have enabled us to offer subsidies to some colleagues and students who otherwise could not have attended and thus, to keep this conference series as internationally inclusive as possible. The list of sponsors is highlighted on next page.

Sincerely,

Your conference Co-Chairs

Marcela Munizaga, University of Chile, Santiago de Chile

Patrick Bonnel, ENTPE, Transport Planning and Economic Laboratory (LAET), Lyon, France

Local Organizing Committee Co-Chairs

Catherine Morency, Polytechnique Montréal, Mobilité chair & CIRRELT, Québec, Canada

Martin Trépanier, Polytechnique Montréal, CIRRELT, Québec, Canada

Message from the Minister of Transport, Sustainable Mobility and Transport Electrification



It is an honour for Québec to host the 11th International Conference on Survey Methods in Transportation, a prestigious event that brings together the world's foremost experts in the field. Welcome to this beautiful Laurentides region!

The transportation community in Québec, and particularly the Ministère, has long relied on such data to support its transportation planning and infrastructure project preparation activities. This means we understand the importance of relying on evidence-based knowledge in order to make the best choices for public investments in transportation systems.

These issues are particularly significant in this era of Big Data, where the amount and variety of information available as well as the processing requirements for organizations are increasing exponentially. This poses significant challenges to ensure validity and complementarity of the collected data.

For these reasons, your work this week is of great interest to the Ministère and its municipal partners. I am convinced that your exchanges will be as captivating as productive, and that they will better our practices regarding surveys in transportation. Our societies are in a period of rapid change, whether for transportation needs or technologies. Our work methods also have to adapt, hence the importance to share the most recent advances in the field.

I wish each and every one of you an excellent conference!

Laurent Lessard

Minister of Transport, Sustainable Mobility and Transport Electrification

Message du Ministre des Transports, de la Mobilité durable et de l'Électrification des transports



C'est un honneur pour le Québec d'être l'hôte de la 11^e Conférence internationale sur les méthodes d'enquêtes en transport, un événement prestigieux qui regroupe les plus grands experts de la planète dans le domaine. Bienvenue dans la magnifique région des Laurentides!

Le Québec possède une longue tradition d'enquêtes en transport, notamment en matière d'études origine-destination. Le Ministère des Transports, de la Mobilité durable et de l'Électrification des transports du Québec est d'ailleurs associé à la tenue de cette conférence, organisée par la Chaire Mobilité de l'École Polytechnique de Montréal, avec le soutien logistique du Centre interuniversitaire de recherche sur les réseaux d'entreprise, la logistique et le transport.

La communauté des transports du Québec, et au premier chef le Ministère, se fonde depuis fort longtemps sur de telles données pour étayer leurs exercices de planification des transports et de préparation des projets d'infrastructures. C'est donc dire que nous comprenons toute l'importance de disposer de données fiables et probantes pour être en mesure de faire les choix optimaux en matière d'investissements publics dans les systèmes de transport.

Les enjeux deviennent particulièrement importants en cette ère de mégadonnées («big data»), où le volume d'informations disponibles, leur variété et les exigences de traitement pour les organisations croissent de façon exponentielle. Des défis considérables se posent pour assurer la validité et la complémentarité des données recueillies.

Pour toutes ces raisons, vos travaux de cette semaine présentent un énorme intérêt pour le Ministère et ses partenaires municipaux. Je suis persuadé que vos échanges seront tout aussi captivants que productifs et qu'ils feront évoluer l'état de l'art en matière d'enquêtes en transport. Nos sociétés connaissent des changements rapides, autant en matière des besoins de transport, que des technologies. Nos méthodes de travail doivent elles aussi s'adapter, d'où l'importance de partager les plus récentes avancées du domaine.

À tous et à toutes, je vous souhaite une excellente conférence!

Laurent Lessard

Ministre des Transports, de la Mobilité durable et de l'Électrification des transports

Thanks to our sponsors



City of Montreal



Autorité régionale
de transport métropolitain

Montreal Regional Transport Authority

**Transports,
Mobilité durable
et Électrification
des transports**



Quebec Ministry of Transportation



Transportation consultants



Private equity fund, Montreal electric taxi fleet



Engineering consultants



Montreal bikesharing system



It's us!



*Mobilité chair in evaluation and operations of
transportation sustainability*



*Interuniversity Research Centre on Enterprise
Networks, Logistics and Transportation*

Plenaries

Daniel BERGERON



Daniel Bergeron holds the position of Executive Director of Transportation and mobility planning at the Montreal regional metropolitan transportation Authority (ARTM). In this capacity, he is responsible for public transportation strategic development planning, financing policy, pricing, organization and standards of public transportation service, service and infrastructures development evaluation, ridership and mobility forecasting. Mr. Bergeron worked at the Agence métropolitaine de transport from 1997 to 2016 and then served as deputy to the President of the Transition Committee responsible for implementing the new legislation transforming the organization and governance of public transit in the region metropolitan area of Montreal.

Guillaume BOURQUE



Dr. Bourque is Associate Professor, Department of Human Genetics, at McGill University in Montreal. He is also the Director of Bioinformatics, McGill University & Genome Quebec Innovation Center. As a genomic researcher, Dr. Bourque has developed expertise in analyzing huge quantities of data on mammals. The work involved examining billions of DNA base pairs and interpreting how variation impacts basic biology and disease. His team develops computational methods and resources for the functional annotation of genomes with a special emphasis on sequencing-based assays.

Eric MILLER



Eric Miller is a Professor in the Department of Civil Engineering and Director of the University of Toronto Transportation Research Institute. He is past-Chair of the U.S. Transportation Research Board (TRB) Committee on Travel Behavior and Values, Member Emeritus of the TRB Transportation Demand Forecasting Committee and past-Chair of the International Association for Travel Behaviour Research. He served on the US National Academy of Sciences Committee for Determination of the State of the Practice in Metropolitan Area Travel Forecasting. He has chaired or been a member of numerous travel demand modelling peer review panels throughout North America.

Alexandre TAILLEFER



As managing partner of XPND Capital since 2011, an investment fund for companies in the transportation, technology, media and entertainment sector, with nearly \$ 100 million, Alexandre Taillefer is a serial entrepreneur that became known publicly thanks to his participation on the television show « Dans l'Oeil du Dragon ». He founded Téo Taxi in 2015, an all-electric taxi company that revolutionized the industry.

Schedule overview

		ISCTSC 2017 OVERVIEW PROGRAM							
from	to	Sunday 24th	Monday 25th	Tuesday 26th	Wednesday 27th	Thursday 28th	Friday 29th	from	to
7h00	7h30		Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	7h00	7h30
7h30	8h00								
8h00	8h30		Opening Plenary	Plenary	Workshop reports	Workshop Session	Workshop reports	8h00	8h30
8h30	9h00								
9h00	9h30							9h00	9h30
9h30	10h00		Coffee break	Coffee break	Coffee break			9h30	10h00
10h00	10h30							10h00	10h30
10h30	11h00		Workshop Session	Workshop Session	Workshop Session	Coffee break & poster session	Coffee break	10h30	11h00
11h00	11h30								
11h30	12h00						Farewell	11h30	12h00
12h00	12h30							12h00	12h30
12h30	13h00		Lunch	Lunch	Lunch	Lunch	Lunch	12h30	13h00
13h00	13h30							13h00	13h30
13h30	14h00		Workshop Session	Interactive Survey		Workshop Session	ISCTSC Committee Meeting (for members)	13h30	14h00
14h00	14h30								
14h30	15h00			Organized activities (15h15)				14h30	15h00
15h00	15h30		Coffee break & poster session						
15h30	16h00							15h30	16h00
16h00	16h30				Visit to Montreal (Buses at 16h00)	Mont-Tremblant visit (Buses at 16h00)		16h00	16h30
16h30	17h00								
17h00	17h30	Welcome reception				Gondala		17h00	17h30
17h30	18h00								17h30
18h00	18h30					Conference dinner		18h00	18h30
18h30	19h00		Dinner	Dinner	Dinner				18h30
19h00	19h30	Dinner						19h00	19h30
19h30	20h00							19h30	20h00
20h00	20h30							20h00	20h30
20h30	21h00							20h30	21h00
21h00	21h30							21h00	21h30
21h30	22h00		Outdoor activities (weather permitting)					21h30	22h00
22h00	22h30							22h00	22h30
22h30	23h00							22h30	23h00
23h00	23h30							23h00	23h30
23h30	0h00							23h30	0h00

Detailed schedule

Sunday, September 24th

17h00: Welcome reception

19h00: Dinner (time may vary due to bus arrival)

Monday, September 25th

7h00 to 8h00: Buffet breakfast served in the Bistro à Champlain & 260°

8h00 to 10h00: Opening plenary, Salon Fridolin-Simard B-C (chair: Patrick BONNEL, speakers: Daniel BERGERON and Eric MILLER)

10h00 to 10h30: Coffee break, next to Salon Fridolin-Simard B-C

10h30 to 12h30: Workshop A, session 1 (see the "Workshops" section for the rooms)

12h30 to 13h30: Buffet lunch served in the Bistro à Champlain & 260°

13h30 to 15h30: Workshop A, session 2

15h30 to 17h00: Coffee break & Poster Session A, Salon Fridolin-Simard B-C

19h00: Dinner served in the Dupuis room

After dinner: outdoor activities (weather permitting)

Tuesday, September 26th

7h00 to 8h00: Buffet breakfast served in the Bistro à Champlain & 260°

8h00 to 10h00: Plenary, Salon Fridolin-Simard B-C (chair: Catherine MORENCY, speakers: Guillaume BOURQUE and Alexandre TAILLEFER)

10h00 to 10h30: Coffee break, next to Salon Fridolin-Simard B-C

10h30 to 12h30: Workshop A, session 3

12h30 to 13h30: Buffet lunch served in the Bistro à Champlain & 260°

13h30 to 15h00: Interactive survey, Salon Fridolin-Simard B-C

15h15: Organized activities (please register on the boards)

19h00: Dinner served in the Bistro à Champlain & 260°

Wednesday, September 27th

7h00 to 8h00: Buffet breakfast served in the restaurants

8h00 to 10h00: Workshop reports A, Salon Fridolin-Simard B-C (chair: Joan ABREU)

10h00 to 10h30: Coffee break, next to Salon Fridolin-Simard B-C

10h30 to 12h30: Workshop B, session 1 (see the "Workshops" section for the rooms)

12h30 to 13h30: Buffet lunch served in the Bistro à Champlain & 260°

14h00: Visit to Montreal, Pointe-à-Callière Museum (buses outside)

Thursday, September 28th

7h00 to 9h00: Buffet breakfast served in the restaurants

9h00 to 11h00: Workshop B, session 2

11h00 to 12h30: Coffee break & Poster Session B, Salon Fridolin-Simard B-C

12h30 to 13h30: Buffet lunch served in the Bistro à Champlain & 260°

13h30 to 15h30: Workshop B, session 3

16h00: Gala dinner, Mont Tremblant (buses outside)

Friday, September 29th

7h00 to 9h00: Buffet breakfast served in the restaurants

9h00 to 11h00: Workshop reports B, Salon Fridolin-Simard B-C (chair: Chester WILMOT)

11h00 to 11h30: Coffee break

11h30 to 12h30: Closing plenary & Farewell (chair: Marcela MUNIZAGA, farewell: Martin TRÉPANIÉ)

12h30 to 13h30: Buffet lunch served in the Bistro à Champlain & 260°

13h30 to 15h30: ISCTSC committee meeting (for board members)

Workshops & Room Assignment

A1 - Attitudes and perceptions: How to measure them in quantitative surveys

Chairs: Juan-Antonio CARRASCO & Kelly CLIFTON – Salon Dupuis

A2 - New Directions in Experimental Design

Chairs: Ricardo DAZIANO & Bilal FAROOQ – Salon Masson

A3 - New developments in travel diary collection systems based on smartphones and GPS receivers

Chairs: Toshiyuki YAMAMOTO & Adrian PRELIPCEAN – Salon Fridolin-Simard A

A4 - Smart card data: new method and application for public transport

Chairs: Maguelone CHANDESRIIS – Salon des Sommets

A5 - Household travel surveys in an era of evolving data need for passenger travel demands

Chairs: Eric MILLER & Siva SRIKUKENTHIRAN – Salon du Nord

A6 - Representativeness in surveys: challenges and solutions

Chairs: Jimmy ARMOOGUM & Adrian ELLISON – Salon Grenier

A7 - Making the transition to new methods for travel survey sampling and data retrieval

Chairs: Tobias KUHNIMHOF & Mark BRADLEY – Salon Estérel

A8 - Validation under "ground truth" in surveys

Chairs: Gerd SAMMER – Salon Exécutif

B1 - Use of social media, social networks and qualitative approaches as innovative ways to collect and enrich travel data

Chairs: Liz AMPT & Tomas RUIZ – Salon Estérel

B2 - Behavioral changes in travel – Challenges and implications for their identification and measurement

Chairs: Bastian CHLOND & Christine EINSENMANN (WEISS) – Salon Fridolin-Simard A

B3 - Passive and sensor data: potential and application

Chairs: Doina OLARU & Alejandro TUDELA – Salon Dupuis

B4 - Web-based: new insight to address main challenges

Chairs: Caroline BAYART & Andres MONZON – Salon des Sommets

B5 - Dealing with immobility and survey non-response

Chairs: Jean-Loup MADRE & Karen LUCAS – Salon Masson

B6 - Increasing survey participation levels without changing travel behavior

Chairs: Stacey BRICKA & Stephen GREAVES – Salon Grenier

B7 - Data Fusion: Needs and Challenges in a New Transportation Data Landscape

Chairs: Chandra BHAT & Elisabetta CHERCHI – Salon du Nord

B8 - Surveys on long distance travel and other rare events

Chairs: Regine GERIKE & Angelika SCHULZ – Salon Exécutif

SEE DETAILS OF THE WORKSHOPS AT THE END OF THIS PROGRAM

Hotel Map

Estérel Resort is composed of two sections: *Emotion* and *Evolution*. You must use the lower floor passage to go between these locations (or walk outside): there is no passage through the main floor.



Workshop rooms location

du Nord is located on the lower section of Evolution, near the restaurants entrance, at the end of the corridor

Dupuis is located near the Evolution Reception

Estérel is located below the Evolution Reception, take the stairs to the lower floor

Exécutif is located on the lower section of Evolution, near the restaurants entrance, at the end of the corridor

Fridolin-Simard is located near the Emotion Reception. It is divided in section A (workshop) and B-C (plenaries, poster sessions and reports)

Grenier is located on the lower section of Evolution, near the restaurants entrance

Masson is located on the lower section of Evolution, near the restaurants entrance

Sommets is located on the second floor of Evolution, take the stairs near the restaurants entrance

Paper information

Online Papers

Conference papers are provided online on the website <http://isctsc2017.ca/protected/>. Use the following username and password to get access:

user: isctsc2017

password: 7102cstcsi

Poster Sessions

Two poster sessions are scheduled through the week, in the Salon Fridolin-Simard B-C. Make sure to install your poster at the right time and the right place! Instructions will be provided on site.

Presentations

For in-room presentations, you can use your laptop or put your file (Powerpoint or PDF) on the room laptop. If you need help, please ask the volunteer (yellow scarf) in the room.

Transportation

Estérel Resort is a remote location 90 km north of Montreal. There is no direct bus service to reach the site (there is a private bus service to the town of Sainte-Adèle, and then you would have to take a taxi). Shuttle buses are provided for your convenience, on Sunday and Friday.

Sunday Buses

On Sunday, September 24th, four buses will depart from the Trudeau International Airport. Departure at **14h00 (2PM)**, **16h30 (4:30PM)**, **19h00 (7PM)** and **20h30 (8:30PM)**. Travel time is about 1h30.

If you arrive before Sunday, you should come to the airport with the 747 bus service of the STM (<http://www.stm.info>), and then take the 14h00 or the 16h30 shuttle. If you are not sure to make it for one of the shuttles, please contact mtrepanier@polytml.ca to arrange transportation.

At the airport, volunteers with yellow scarfs will greet you. The meeting point is at the International exit gate, near the convenience store. If you arrive on domestic flights, it is on the same floor, but at the other end of the terminal. If the 56-place bus is full, you will have to wait for the next one (sorry!).

Friday Buses

On Friday, September 29th, one bus will depart in the morning, at **8h45**. Two buses will depart at **14h00 (2PM)**. All buses will go back to the Trudeau airport. Due to travel and airport delays (international flights or flights to the USA, because customs are at the Trudeau airport), everybody having a flight before 18h00 (6PM) must take the 8h45 bus. An additional bus is provided on Saturday morning at 9h00, for those staying on Friday night.

Car Access

If you come by car, the hotel provides free parking for guests. Please enter "Estérel Resort" in Google Maps for directions.

Social Activities

The week will be full of activities. Be prepared! First, make sure you bring your bathing suit to enjoy the outdoor four season pool and hot tubs. Also, you will be able to rent bikes to ride around the lakes during your free time. You can also reserve a massage or other treatment directly at the Hotel.

Sunday : welcoming reception

If you take the first of the second bus, you will have the chance to take a drink to start the week.

Monday : *coureur des bois* and Québécois night

You will be entertained by a genuine Québécois wood runner and trapper. Local products and campfire (may the weather permit) will animate the evening!

Tuesday : Sports and Leisure

Plenty of organized activities at the hotel, starting in the afternoon: dragon boat, golf, kayaks, boat rides, golf, yoga, wine tasting, etc. The number of places is limited: please register on the boards that will be posted near the registration desk. Snacks and refreshments will be served.

Wednesday : Vieux-Montréal (Old Montreal)

Free walk in the heart of the Old Montreal, one of the oldest cities in North America. After your walk, there is a dinner cocktail at 18h00 (6:00 PM) in the Pointe-à-Callière museum (Montreal History and Archeology Museum: <https://pacmusee.qc.ca/en/>) . During the cocktail, you can visit the exposition and attend the short multimedia show.

Buses will depart from the hotel at 14h00 (2:00 PM).

Thursday : Mont Tremblant

The conference gala dinner will be held at the Mont Tremblant mountain. After a free walk in the ski village, you are asked to go to the ski cabins entrance at 18h45 (6:45 PM) for a cocktail. Then, you will be invited to go up the hill. It could be very cold outside, at the top. Please dress accordingly.

Buses will depart from the hotel at 16h00 (4:00 PM).

Hotel information

Internet

Free Wi-Fi Internet is available at the hotel.

Food and Drink

Food and drink will be provided all through the week. We have communicated your allergy and diet preferences to the hotel. However, please remind the hotel staff when sitting at the restaurant.

On Sunday evening, there will be two meal services at the restaurant, depending on your arrival time. The participants in the last bus will arrive too late and will therefore receive a lunchbox at their arrival.

Breakfasts and lunches will be served at the hotel restaurants Bistro à Champlain and 260°, on a self-served basis.

On Monday evening, the meal will be served in the Dupuis room.

On Tuesday evening, BBQ and Quebec specialities will be served in the hotel restaurants Bistro à Champlain and 260°.

Hotel rooms

Smoking is absolutely forbidden in the hotel rooms and in the hotel buildings. However, smoking is permitted with caution on the hotel room balconies (but not on the hotel terraces), at the campfire site and more than 9 meters in front of the hotel entrances (Quebec law).

Do not forget: mini-bar and in-room food are not included and will be charged on your credit card.

Miscellaneous

Weather

The Laurentian weather can be very surprising at the end of September! Temperatures may go well over 20°C, but may also stay around 10°C and below... Sun and rain can alternate quickly!

Clothing

So please bring warm clothes and be prepared for rain (umbrella). Dress casual for the conference, but also bring sports clothes and good walking shoes for outdoor activities. There are spas and pools at the hotel, provide a swimsuit... if the weather is good, you may also swim in the lake!

Emergency

In case of emergency, please advise the hotel desk. The emergency phone number in Quebec is 911.

Workshop A1 - Attitudes/perception how to measure in quantitative survey

Salon Dupuis

Workshop chair

Juan-Antonio CARRASCO, Universidad de Concepcion, Chile

Kelly CLIFTON, Portland State University, USA

Papers for oral presentation

- 24 - Meadhbh Maguire and Ahmed El-Geneidy.
The everyday vs the yesterday: A comparative study of commuter satisfaction with two travel survey approaches
- 75 - Patrick Singleton and Kelly Clifton.
Towards measures of the positive utility of travel: affective and eudaimonic travel subjective well-being
- 157 - Farzad Alemi, Giovanni Circella and Susan Handy.
Measuring Environmental and Transportation-Related Individual Attitudes in the California Millennials' Study
- 174 - H  l  ne Bouscasse, Patrick Bonnel and Iraga  l Joly.
Measuring psychological factors in ICLV models: an application on interurban mode choice

Papers for poster presentation related to workshop

- 1 - Juliane Stark and Reinhard H  ssinger.
Attitudes and mode choice: Measurement and evaluation of interrelation
- 3 - Aaron Lee, Florian Fessel, Greg Spitz, Kordel Braley, Mark Bradley and Christopher Chesnut.
Attitudinal market segmentation applied to transit service area: an updated approach
- 76 - Philippe Gerber, Marius Theriault, Christophe Eaux and Samuel Carpentier-Postel.
Modelling impacts of beliefs and attitudes on mode choices: Lessons from a survey of Luxembourg's cross-border commuters
- 94 - Martin Berger and Linda D  rzapf.
Sensing comfort in bicycling as addition to travel data
- 120 - Joanna Moody, Jintai Li and Jinhua Zhao.
Measuring 'Car Pride': the Implicit Association Test and Traditional Survey Techniques
- 158 - Giovanni Circella, Farzad Alemi, Susan Handy and Patricia Mokhtarian.
Use of an Online Opinion Panel to Study Individual Attitudes, Travel Behavior and Vehicles Ownership of Millennials and Older Generations

Workshop A2 - New Directions in Experimental Design

Salon Masson

Workshop chair

Ricardo DAZIANO, Cornell University, USA

Bilal FAROOQ, Ryerson University, Canada

Description

The use of stated preferences has a long tradition in transportation, as controlled experiments allow researchers to not only better identify causal relationships that may be hard to disentangle in revealed behavior but also analyze hypothetical situations such as the introduction of new alternatives. In this workshop, the evolution of experimental design will be discussed in the context of the rapid changes and challenges that the transportation field is experiencing. The transportation ecosystem is moving toward new modalities (mobility on demand) and new technologies (automation) and, at the same time, there are new tools to collect and analyze data. Therefore, new technology as both subjects of study and tool for data collection will be a key theme in the discussion. Specific topics and emerging issues that will be discussed include (and will not be limited to): immersive and interactive virtual experience and visualization of experiment conditions, treatment effects, natural and behavioral experiments, customization, and methods for analysis of mental processes involved with performing a task.

Papers for oral presentation

- 92 - Elisabetta Cherchi.
Using eye track devices to understand individual decisions process in stated preferences experiments: an application to the choice of electric vehicles
- 110 - Prateek Bansal and Ricardo Daziano.
Influence of Choice Experiment Designs in Eliciting Preferences for Autonomous Vehicles
- 152 - Hamzeh Alizadeh, Pierre-Léo Bourbonnais, Catherine Morency, Bilal Farooq and Nicolas Saunier.
An Online Survey to Enhance the Understanding of Car Drivers Route Choices

Papers for poster presentation related to workshop

- 21 - Luis Macea, Victor Cantillo and Ivan Serrano.
The use of stated choice surveys for estimation of deprivation cost functions
- 25 - Luis Márquez, Victor Cantillo and Julián Arellana.
Understanding the complexity of indicators on the estimation of a hybrid demand model
- 39 - Felix Becker and Kay W. Axhausen.
Predicting the use of autonomous vehicles in the short and long term.
- 81 - Rico Krueger, Taha H. Rashidi and Vinayak V. Dixit.
Will Driverless Cars Induce Urban Sprawl? Experimental Design of a Stated Choice Study
- 96 - Bozhezi Peng, Rico Krueger and Taha Hossein Rashidi.
Modelling Market Uptake of a New Mobility Option in the Sydney Metropolitan area: A Stated Choice Study on Motorcycle Taxis
- 105 - Joram Langbroek, Joel Franklin and Yusak Susilo.
A stated adaptation tool for studying travel patterns after electric vehicle adoption
- 108 - Gopriinda Nair, Sebastian Astroza, Chandra Bhat, SaraKhoeini and Ram Pendyala.
An application of a Rank ordered probit modeling approach to understanding level of interest in autonomous vehicles
- 114 - Kristina Currans, Ricardo Hurtubia and Kelly Clifton.
Using Imagery in Stated Preference Surveys: Lessons Learned from a Review of the Practice

Workshop A3 - New developments in travel diary collection systems based on smartphones and GPS receivers

Salon Fridolin-Simard A

Workshop chair

Toshiyuki YAMAMOTO, Institute of Materials and Systems for Sustainability, Nagoya University, Japan

Adrian PRELIPCEAN, KTH, Royal Institute of Technology, Sweden

Description

We have observed a decreasing response rate for traditional travel diary collection methods and an increasing need for a more accurate spatio-temporal description of how people travel over longer periods of time. As a response, scientists proposed systems that automate the collection of travel diaries using devices with location-sensing capabilities such as smartphones and GPS receivers. This comes as a natural step forward that has already proven to be complementary to the traditional collection methods. The following four topics will be discussed in the workshop, although they are not mutually exclusive: 1) the current status of travel diary collection systems based on smartphones and GPS receivers, 2) the methodologies to extract semantics from GPS trajectories and auxiliary data, 3) performance and usability considerations for using smartphones and GPS receivers to collect data for generating travel surveys, and 4) the potential applications of finer spatio-temporal granularity survey data.

Papers for oral presentation

- 40 - Peter Stopher, Vivian Daigler and Sarah Griffith.
Smartphone App versus GPS Logger: A Comparative Study
- 173 - Adrian C. Prelipcean, Yusak O. Susilo and Gyözö Gidofalvi.
Collecting travel diaries: current state of the art, best practices, and future research directions
- 147 - P. Christopher Zegras, Menghan Li, Talip Kilic, Nancy Lozano-Gracia, Ajinkya Ghorpade, Marco Tiberti, Ana I. Aguilera and Fang Zhao.
Measuring Travel Equity and Representativeness: Social and Technical Challenge of Using Smartphone-based Travel Survey in Dar es Salaam, Tanzania

Papers for poster presentation related to workshop

- 35 - Angela Ferreira, Norbert Braendle, Peter Widhalm and Cristina Olaverri-Monreal.
Trip validation interfaces of smartphone-based travel survey solutions put to test: a comparative usability study
- 177 - Chris Harding, Siva Srikukenthiran, Khandker Habib and Eric Miller.
On the User Experience and Performance of Smartphone Apps as Personalized Travel Survey Instruments: Results from an Experiment in Toronto
- 145 - Mark Fowler, Maren Outwater, John Gliebe and Courtney Nielson.
Oregon Metro Tour-Based Freight Model Data Collection: Lessons Learned
- 163 - Jean-Simon Bourdeau, Grzegorz Wielinski, Catherine Morency, Nicolas Saunier and Martin Trépanier.
Using GPS data from a fleet of shared free-floating cars to estimate parking search time
- 89 - Lei Gong, Toshiyuki Yamamoto and Takayuki Morikawa.
Identification of Activity Stop Locations in GPS Trajectories by DBSCAN-Entropy Method Combined with Support Vector Machines

Workshop A4 - Smart card data: new method and application for public transport

Salon des Sommets

Workshop chair

Maguelone CHANDESRIS, SNCF, France

Description

The incorporation of Automatic Fare Collection technology in public transport systems provides a fantastic opportunity for passive data harvesting. Even though the information recorded by payment devices is limited in terms of detail, its massiveness makes it valuable for different types of analysis. This workshop is devoted to discuss new methods and applications that use smart card data for different purposes, for example, moving from descriptive analysis towards modeling and prediction. Participants are invited to imagine and discuss new uses of this valuable source of data.

Papers for oral presentation

- 77 - Nadav Levy, Bella Dmitrieva, Itzhak Benenson and Eran Ben-Elia.
Mining Israeli smartcard data: a typology of public transport travel patterns
- 95 - Joe Yeun Touh Li, Takenori Iwamoto, Jan Dirk Schmoecker, Toshiyuki Nakamura and Nobuhiro Uno.
Analyzing long-term travel behavior: a comparison of smart card data and graphical usage patterns
- 124 - Catalina Espinoza, Marcela Munizaga, Benjamin Bustos and Martin Trépanier.
Assessing the public transport travel behaviour consistency from smart card data
- 160 - Shintaro Terabe, Arief Hidayat and Hideki Yaginuma.
WiFi sensing technologies for an affordable travel data collection from bus passengers

Papers for poster presentation related to workshop

- 64 - Frédéric Roulland, Jos Rozen and John Handley.
Insights of human-transportation system interactions inferred from public transit operational data
- 101 - Yanina Alicia Giorgis.
Quality Indicators and Public Transport Management: Permanent Passenger Survey
- 134 - Ashley Robbins and Howard Jennings. DC Circulator Rider Intercept Survey: Incorporating Market Segmentation in Survey Analysis to Guide Messaging Strategy

Workshop A5 - Household travel surveys in an era of evolving data need for passenger travel demands

Salon du Nord

Workshop chair

Eric MILLER, University of Toronto, Canada

Siva SRIKUKENTHIRAN, University of Toronto, Canada

Description

Household Travel Survey (HTS) has been an extremely successful method for efficiently gathering standardized, high-quality travel information for passenger travel. However, changes in communication technologies (e.g. increased use of smartphones and web technologies, decreased use of landline phones) and methodological issues (e.g. incomplete sample frame, dwindling response rates, under-representation of young population, increasing need of behavioural and multi-day information, etc.) are presenting increasing challenges to the conventional approaches of HTS. So, innovations in HTS is a dire necessity. This workshop presents an in-depth discussion of the key aspects of such innovations. It highlights the necessity of changes and adaptation of HTS methods and then presents some recent works on developing flexible frameworks of HTS design and data collection approaches. This will enable developing a general consensus and guideline on the state of the practices of HTS in the 21st century.

Papers for oral presentation

- 13 - Olivier Richard and Mathieu Rabaud.
French Household Travel Survey: the Next Generation
- 79 - Khandker Nurul Habib, Eric Miller, Siva Srikukenthiran, Martin Lee-Gosselin, Catherine Morency, Matthew Roorda and Amer Shalaby.
TTS 2.0: A Research and Development (R&D) Project on Passenger Travel Survey Methods
- 102 - Stefan Hubrich, Rico Wittwer and Regine Gerike.
Household vs. Individual Survey Practices – Implications for household travel survey expenditures in Germany

Papers for poster presentation related to workshop

- 7 - Pierre Tremblay and Assia Bellazoug.
An overview of OD-Surveys in Quebec
- 12 - Mathieu Rabaud. The Unified Household Travel Surveys Database
- 14 - Chris Harding, Siva Srikukenthiran, Khandker Nurul Habib and Eric J Miller.
Evaluation of cost effectiveness and feasibility of face-to-face surveys as an augment to the regional travel survey: a case study in the Toronto area
- 67 - Oliver Roeder, Gerd Sammer, Sebastian Riegler, Roman Klementschtz, Bystrik Bezak and Gabriella Balko
Challenges of Border-Crossing Transport Demand Surveys – Methodical Solutions and Experience with their Organisation to Achieve High Quality, an EU-Perspective
- 97 - Wafic El-Assi, Eric Miller, Catherine Morency and Khandker Nurul Habib.
Investigating the capacity of continuous household travel surveys in capturing the temporal rhythms of travel demand

Workshop A6 - Representativeness in surveys: challenges and solutions

Salon Grenier

Workshop chair

Jimmy ARMOOGUM, IFSTAR, France

Adrian ELLISON, Institute of Transport and Logistics Studies, The University of Sydney, Australia

Description

In this workshop on “representativeness in surveys: challenges and solutions” for mobility surveys, we will address three different issues. We will tackle the questions of sampling frame and sampling then we will discuss total non-response and measurement errors and propose solutions or best practices to limit these biases. The defects of sampling frame are: differences with the target population of the survey (under or over coverage), presence of duplicates, lack of updates or errors in the information used or collected. We should address the question on how to limit lack of coverage of sampling frames?

Total non-response is the failure of a unit in the sample frame to participate in the survey and could be important for some hard to reach populations. In the context of travel diary surveys, unit nonresponse can arise for a number of different reasons including refusal, non-contact, infirmity or temporary absence. The measurement error is the difference between a measured value of quantity and its true value. There are several sources of measurement error: Social desirability bias about the behaviour; interviewer effect (in person vs. paper/web); desires to influence policy; memory; imprecision; proxy responses.

The best way to avoid problems with representativeness in surveys is to tackle the problem upstream (good sampling frame, follow-up with respondents, incentives, response facilitators, etc.) but still at the end of the day we will need to reweight the respondent sample to account for differential probabilities of selection among subgroups; effects arising from non-response; inadequacies in sample frame, etc. and bring the respondent sample data up to the dimension of study population

Papers for oral presentation

- 4 - Martin Kagerbauer and Juliane Stark.
Does Supervision in Multi-Day Travel Surveys Lead to Higher Quality? A Comparison of Two Independent Surveys
- 84 - Elizabeth Ampt, Mark Davis and Elizabeth Stark.
Monitoring car use over extended periods with GPS devices – retaining response rates and understanding reactions
- 85 - Adrian Ellison, Nina Verzosa, Stephen Greaves and Richard Ellison.
Who stays in? An analysis of participation and data quality in longitudinal transport surveys
- 91 - Fabio Rendina, Mathieu Rabaud and Jimmy Armoogum.
Calibration strategies to reweight travel surveys: the case of household urban travel surveys in France

Papers for poster presentation related to workshop

- 55 - Raymond Hoogendoorn, Mathijs de Haas, Eline Scheepers, George Gelauff and Sascha Hoogendoorn-Lanser.
using inverted relative entropy to determine the representativeness of samples in mobility panels
- 60 - Lissy La Paix, Marie-José Olde-Kalster and Karst Geurs.
Measurement of non-random attrition effects on mobility rates using trip diaries data
- 161 - Hubert Verreault and Catherine Morency.
Impact of the call/recall strategy during household surveys on data quality
- 117 - Tian Yang Lin, Siva Srikukenthiran, Khandker Nurul Habib, Eric Miller.
Inverted Sampling Frames to overcome Under-Coverage of specific Population Cohorts: Examining the viability of recruiting households via employers and institutions
- 125 - Barbara Christian, Christophe Hurez and Jimmy Armoogum
Decomposition of non-response bias in travel survey with voluntary step

Workshop A7 - Making the transition to new methods for travel survey sampling and data retrieval

Salon Estérel

Workshop chair

Tobias KUHNIMHOF, German Aerospace Center, Institute of Transport Research, Germany

Mark BRADLEY, Resource Systems group, USA

Description

New methods are evolving for both sample selection and data retrieval methods in travel surveys. In sampling, there is a transition toward new methods to reach cell phone-only households and a new generation of respondents. In data retrieval, there is a transition toward web-based and GPS/smartphone-based response formats. In this workshop, we will hear about examples from recent practice and discuss questions such as: How can we best compare and assess the relative efficiencies and potential biases of these methods? How should we manage the transition to new methods, particularly when it may be necessary to use multiple methods in a single survey to accommodate different types of respondents? How might these methods evolve further in the coming years?

In Session 1, the presentations and discussions will focus on discussing the transition to new sampling methods. In Session 2, the focus will be on the transition to new data retrieval methods. The final session will be devoted to drawing conclusions from the first two sessions and developing recommendations for practice.

Papers for oral presentation

- 33- Florian Aschauer, Reinhard Hössinger, Basil Schmid and Regine Gerike.
Reporting quality of travel and non-travel activities: a comparison of three different survey formats
- 107 - Dana Gruschwitz, Johannes Eggs, Angelika Schulz and Claudia Nobis.
German national travel survey "Mobility in Germany – MiD 2016" Addressing Respondents Using Different Contact Channels and Offering Different Survey Instruments
- 115 - Albert Lo, Siva Srikukenthiran, Meishi Chen, Khandker Nurul Habib and Eric Miller. Impact of a Multiple Survey Frames on Data Quality of Household Travel Surveys: The case of the 2016 Transportation Tomorrow Survey
- 118 - Rebekah Straub Anderson, Gregory Giaimo, Elizabeth Greene, Chloe Ritter and Leah Flake.
Smartphone-Based Household Travel Survey in Ohio

Papers for poster presentation related to workshop

- 17 - Jennifer McSaveney.
Online and GPS: a national travel survey perspective
- 46 - Christine Eisenmann, Bastian Chlond, Clotilde Minster, Christian Jödden and Peter Vortisch.
Mixed mode survey design and panel repetition – findings from the German Mobility Panel
- 65 - Marcus Baeumer, Heinz Hautzinger, Tobias Kuhnimhof and Manfred Pfeiffer.
The German Vehicle Mileage Survey 2014: Striking the balance between methodological innovation and continuity
- 138 - João de Abreu E Silva and Claire Papaix.
The influence of information-based Transport Demand Management measures in commute mode choice. Comparing web based and face to face surveys.
- 156 - Behrang Assemi, Mahmoud Mesbah and Mark Hickman.
Can Smartphone Travel Surveys Improve our Understanding of Young People's Travel Behaviour?
- 159 - Caroline Bayart and Patrick Bonnel.
Mixed-modes surveys and data comparability issues: a French case study

Workshop A8 - Validation under "ground truth" in surveys

Salon Exécutif

Workshop chair

Gerd Sammer, Institute for Transport Studies, University of Natural Resources and Life Sciences, Vienna, Austria

Description

Travel behaviour surveys should be the basis for any fact-based transport policy. Such data are essential to describe the current travel behaviour and to estimate future developments with and without transport measures. Therefore the requirement to achieve high quality for survey results is essential. A lot of practical examples indicate that such a level of quality could not be reached easily. In this workshop the focus lies on the following issues: How can the term "ground truth" for travel surveys be defined? How can we describe the "real world" from the viewpoint of travel surveys? Which indicators are appropriate to identify and indicate the difference between the real and surveyed world of travel behaviour? What are the main reasons for the gap between the real and surveyed world of travel behaviour? How can we overcome the uncertainty in order to get valid data? It has to be emphasized that the main focus of the workshop A8 is the methodology of validation of surveyed data and the identification of possible as well as promising solutions to improve the quality of survey results. We should find arguments and methodologies that it is no illusion to represent the real transport behaviour world by travel surveys by validation. We will discuss tools of new technology, procedures of independent data merging, use of "big data" as well as advanced demand modelling procedures etc.

Papers for oral presentation

- 10 - Teresa Harms, Jonathan Gershuny and Doina Olaru.
Using diary data to analyse travel behaviour: Findings from the UK
- 66 - Gerd Sammer, Christian Gruber, Gerald Roeschel, Rupert Tomschy and Max Herry.
The dilemma of systematic underreporting of travel behaviour when conducting travel behaviour surveys - A meta analysis and methodological considerations to solve the problem
- 127 - Nicole Geitebruegge, Graeme Brown and Fox Jacob.
Validating traditional survey methods with big data to evaluate the quality of travel survey data

Papers for poster presentation related to workshop

- 123 - Vincent Dionne and Florian Cys.
Smartcard derived survey vs traditional survey - An operator findings and usages.
- 165 - Gabriel Sicotte, Mohsen Nazem, Alfred Chu, Timothy Spurr and André Lomone. Comparing smart card and OD survey transit data: from a route level to a route-sequence approach
- 168 - Thanh Tu Nguyen, Jimmy Armoogum, Jean-Loup Madre and Thi-Huong-Thao Pham.
GPS and travel diary: two recordings of the same mobility

Workshop B1 - Use of social media, social networks and qualitative approaches as innovative ways to collect and enrich travel data

Salon Estérel

Workshop chair

Liz AMPT, Concepts of Change, Australia

Tomas RUIZ, Universitat Politècnica de València, School of Civil Engineering, Transport Department

Description

This workshop explores a wide range of examples of ways to enrich travel data. These include social media related approaches such as using content and locational analysis of Twitter, Facebook and Trip Advisor and methods to link social media data with people's stage in life cycle. There are also examples of qualitative data collected after GPS type data has been gathered, examples of using social networks to find a sample when there is no sampling frame available, and other mixed methods approaches to address issues ranging from examining the propensity to transfer between modes and to assess the transport infrastructure.

Papers for oral presentation

- 34 - Ainhoa Serna, Tomas Ruiz, Jon Kepa Gerrikagoitia, Unai Bernabe and Rosa Arroyo.
Using Social Media to study Transport Demand
- 121 - Juan Antonio Carrasco and Paola Jirón.
Integrating insights from qualitative and quantitative methods to understand personal mobility strategies
- 137 - Chiara Calastri, Romain Crastes Dit Sourd and Stephane Hess.
We want it all: experiences from a survey seeking to capture social network structures, lifetime events and short term travel and activity planning
- 170 - Marcela Munizaga and Jacqueline Arriagada.
What information can be obtained from a public transport app?

Papers for poster presentation related to workshop

- 11 - Emmanuel Ravalet and Antoine Lohou.
Internet advertising to recruit respondents for a web-based survey on the mobility of teenagers. Effectiveness in five European countries
- 28 - Sergio Guidon, Michael Wicki, Kay Axhausen and Thomas Bernauer.
Explaining socially motivated travel with social network analysis
- 130 - Omar Alotaibi and Dimitris Potoglou.
When a Sampling Frame is Absent, Adopting a Social Network-Based Survey Tool in Riyadh City, Saudi Arabia
- 133 - Mario Cools.
Generalizing the results from Q-studies: a comparison of Talbott's Q block method, Brown's standardized factor index and the self-categorization in the context of the adoption of electric vehicles
- 140 - Floridea Di Ciommo, Francesca Pagliara and Maurizio De Crescenzo.
Inaccessibility index for exploring public transport needs in the Barcelona Metropolitan area.
- 144 - Leda Pereyra.
Mobility surveys targeted to study strategies and implications of transport safety on women's opportunities in Buenos Aires Metropolitan Region (RMBA)
- 153 - Alejandro Tudela, Juan Antonio Carrasco, Arnoldo Tapia and Fernanda Pacheco.
Studying the role of psychosocial factors on the propensity to transfer between transport modes
- 164 - Karen Lucas.
A mixed-methods approach for the social assessment of transport infrastructure projects

Workshop B2 - Behavioral changes in travel – Challenges and implications for their identification and measurement

Salon Fridolin-Simard A

Workshop chair

Bastian CHLOND, Karlsruhe Institute of Technology, Institute for Transport Studies

Christine EINSENMANN (WEISS), Karlsruhe Institute of Technology, Institute for Transport Studies

Description

Typically, transportation policy measures aim to motivate people to change their travel behavior (e.g. to use sustainable modes of transportation instead of a car). Furthermore, life events (e.g. birth of a child, retirement) often result in changes in travel behavior. On the other hand, structural processes (e.g. the exchange of differently car-socialized cohorts) might result in changes in travel volumes as well, but the underlying reasons for this cannot be regarded as behavioral changes.

Starting from this initial problem description the workshop aims first at a definition what a behavioral change means. Based on this definition methodological approaches will be discussed and distinguished from each other.

Within this workshop eight papers, which tackle changes in travel behavior, are presented and discussed. The objective of the workshop is the definition and evaluation of a methodological toolbox for the identification and measurement of behavioral changes.

Papers for oral presentation

- 63 - Sascha von Behren, Maike Puhe and Bastian Chlond.
Office relocation and changes in travel behavior: capturing the effects including the adaptation phase
- 70 - Mohsen Nazem, André Lomone, Alfred Ka Kee Chu and Timothy Spurr.
Analysis of travel pattern changes due to medium-term disruption on public transit networks using smart card data
- 99 - Rico Wittwer, Stefan Hubrich, Sebastian Wittig and Regine Gerike.
Time series analyses of travel behaviour for five 'car-peaked' European capital cities: methodological and behavioural insights

Papers for poster presentation related to workshop

- 30 - Nils Wuytens, Imre Keseru and Cathy Macharis.
Can participatory sensing provide a valid input for travel surveys: The FLAMENCO citizen observatory concept
- 44 - Makoto Chikaraishi, Akimasa Fujiwara and Junyi Zhang.
A non-randomized intervention study on the impacts of emerging transport modes on travel behavior: A semiparametric difference-in-differences approach
- 68 - Marie-José Olde Kalter, Lucas Harms, Karst Geurs and Lissy La Paix Puello.
Attitudes and travel behaviour: changing mode preferences and attitudes to change behaviour? A Mixture Latent Markov Class Analysis in the Netherlands
- 104 - Sascha von Behren, Bastian Chlond, Clotilde Minster, Johanna Esch, Marcel Hunecke and Peter Vortisch.
Assessing car-dependency: development of a comprehensive survey approach based on the concept of a travel skeleton
- 148 - Grzegorz Wielinski, Martin Trépanier, Catherine Morency and Khandker M. Nurul Habib.
Exploring membership use and adoption in a dual-mode carsharing setting through passive data streams

Workshop B3 - Passive and sensor data: potential and application

Salon Dupuis

Workshop chair

Doina OLARU, University of Western Australia, Australia

Alejandro TUDELA, Universidad de Concepción, Chile

Description

The type of data collected for transport modelling is dictated by the type of research question the modeler attempts to answer. In turn, the quality of the data will influence model results and their credibility. For decades, reliance has been on primary data collected via surveys and other more aggregated data methods including sensors, floating cars, and overall counts. These are costly, often insufficient to capture new mobility aspects, and surveys require participant engagement.

New methods, taking advantage of passively collected data have been increasingly considered as replacement or complement of the existing methods. Data from mobile phones, Wi-Fi scanners, cameras, Bluetooth devices, GPS trackers, as well as smart card data represent valuable sources of knowledge on travel patterns and use of transport networks.

The workshop includes three sub-themes:

- use of mobile network data for O-D matrix estimation, route choices, traffic and exposure to air pollutants;
- data mining techniques applied to smart card data to augment understanding of travel by public transport;
- combined kits (including automated cameras, activity tracking/fitness monitors, GPS) to collect data on daily patterns of activity.

A dominant feature of this workshop is the methodological change from hypothesis testing and verification, to discovery of knowledge through data-mining and visualization.

Papers for oral presentation

- 150 - Alejandro Tudela.
Obtaining public transport OD matrices from data collected using sensors installed in buses
- 162 - Catherine Morency, Martin Trépanier, Nicolas Saunier, Hubert Verreault and Jean-Simon Bourdeau.
The challenges of using 5 parallel passive data streams to report on a wide range of mobility options
- 169 - Takumi Ban, Toshiyuki Yamamoto and Tomotaka Usui.
Analysis on day-to-day variability of time-dependent origin-destination matrices by trip purpose with aggregated mobile phone location data

Papers for poster presentation related to workshop

- 5 - Teresa Harms, Doina Olaru, Brett Smith, Francesco Cangiano and Yuchao Sun.
New Data Collection Methods for Researching Travel Behaviour
- 38 - Takahiko Kusakabe, Hideki Yaginuma and Daisuke Fukuda.
Estimation of bus passengers' waiting time at a coach terminal with Wi-Fi MAC addresses
- 47 - Van Hieu Mai, Takahiro Kusakabe, Yoshiki Suga and Takashi Oguchi.
Travel time estimation in mixed traffic using Wi-Fi detector based data
- 59 - Viktoriya Kolarova, Tobias Kuhnimhof and Stefan Trommer.
Assessment of real-world vehicle data from electric vehicles – potentials and challenges
- 71 - Fearghal King and Mohamed Mahmoud.
An exploration of 'passive big data' sources to inform best practice travel time studies – Lessons learned from Metro Vancouver
- 106 - Patrick Bonnel, Mariem Fekih and Zbigniew Smoreda.
Origin-Destination estimation using mobile network probe data

Workshop B4 - Web-based: new insight to address main challenges

Salon des Sommets

Workshop chair

Caroline BAYART, Laboratoire de Sciences Actuarielle et Financière, Université Lyon 1, France

Andres MONZON, Transport Research Center-Politechnic University Madrid, Spain

Description

Survey response rates are decreasing over the world and travel surveys follow the same tendency. It becomes important to find new ways to encourage participation beyond the traditional expectation that people will respond to official surveys. One way to think about it is to transfer the respondent's burden to the questionnaire designer. The web is an interactive mode of data collection that offers to the respondents the possibility to choose a nice moment to complete the questionnaire and allows to make travel surveys more fun. Propose an on-line survey requires an auto-administrated questionnaire. That's why it's important to work on its attractiveness and its technical feasibility not to discourage potential respondents. The task is particularly complex with regard to the gathering of individual trips. As it is still not recommended to conduct an exclusive Web survey if the aim is to gather representative data from general population, many researches explore the combination of several survey modes and devices. One focus of the workshop is to determine under which conditions the use of the Web can increase data quality, especially when multiple media are employed to recruit respondents and collect data.

Papers for oral presentation

- 16 - Brittany Chung, Siva Srikuenthiran, Khandker Nurul Habib and Eric J. Miller.
The development of a Web Survey Builder (STASI): designing Household Travel Surveys for data accuracy and reduces response burden
- 37 - Andres Monzon, Andres Garcia-Martinez, Sara Hernandez, Andras Munckasy, and Guillermo Velazquez.
Improving mobility surveys quality and rate of responses at low cost by combining intercept and web questionnaire methods
- 56 - Rosa Arroyo, Tomás Ruiz, Lidón Mars and Ainhoa Serna.
Web-based survey to measuring social interactions, values, attitudes and travel behavior
- 87 - Toon Zijlstra, Krisje Wijgergangs and Sascha Hoogendoorn-Lanser.
Computer assisted web-interviewing with mixed-devices: a panel study perspective

Papers for poster presentation related to workshop

- 20 - Mailin Gaupp-Berghausen and Elisabeth Raser.
Evaluating different recruitment methods in a longitudinal survey: Findings from the pan-European PASTA project
- 82 - Henry Hernández-Vega, Diana Jiménez-Romero and Mónica Gutiérrez-Barboza.
Electronic Transportation Surveys at the Universidad de Costa Rica: Nesting Many Purposes with One Tool
- 90 - Sophie Roux, Barbara Christian and Jimmy Armoogum.
Profile of computer-assisted web interviewing (CAWI) respondents

Workshop B5 - Dealing with immobility and survey non-response

Salon Masson

Workshop chair

Jean-Loup MADRE, IFSTTAR, France

Karen LUCAS, Institute for Transport Studies, Leeds, United Kingdom

Description

This workshop will focus on the two separate but often related issues of immobility and non-response in travel surveys. It will involve developing best practice standards for dealing with non-response biases in the analysis of travel survey data, for item non-response as well as for unit non-response. A particular case of unit non-response is soft refusal (i.e. people declaring that they stayed at home in order to escape from a long description of their trips), which causes an over-estimation of immobility, leading to major biases in the estimation of totals for the whole population (e.g. number of trips, car traffic, GHG emissions, etc.). Thus, different features of survey design will be considered, for instance how to improve survey design in order to capture under-represented population groups, such as slum dwellers, young people and other survey shy populations.

Papers for oral presentation

- 53 - Mathijs de Haas, Eline Scheepers and Sascha Hoogendoorn-Lanser.
Identifying different types of observed immobility within longitudinal travel surveys
- 109 - Gregory D Erhardt and Louis Rizzo.
Evaluating the Biases and Sample Size Implications of Multi-Day GPS-Enabled Household Travel Surveys
- 113 - Bruna Pizzol, Bianca Bianchi Alves, Mariana Abrantes Giannotti, Orlando Strambi, Renato Arbex and Luiz Raphael Bruni.
Travel survey tools and methods: challenges on surveys at slums
- 136 - Mark Bradley, Elizabeth Greene, Greg Spitz, Matthew Coogan and Nancy McGuckin. The Millennial Dilemma: Changes in Travel Behavior or Changes in Survey Behavior?

Papers for poster presentation related to workshop

- 51 - Mathijs de Haas, Raymond Hoogendoorn, Eline Scheepers and Sascha Hoogendoorn-Lanser.
Traveling Mode Choice Modeling from Cross-Sectional Survey and Panel Data: The Inclusion of Initial Non-response

Workshop B6 - Increasing survey participation levels without changing travel behavior

Salon Grenier

Workshop chair

Stacey BRICKA, Consultant, USA

Stephen GREAVES, Institute of Transport and Logistics Studies, The University of Sydney, Australia

Description

The evolution of travel survey methods has been closely linked to technological advances. To some extent, new technologies help make the data collection process more efficient and effective in terms of obtaining better quality data. At the same time, the newer technologies challenge us to not just improve processes but to explore and develop even better ways of collecting travel data, a prime example being the gamification of travel surveys. The introduction of gamification concepts to travel surveys is showing the potential of improving the actual survey experience and anticipated to lead to improved response rates and data quality. Another concept that newer technology affords us are new options for improving participation through incentives. From the use of physical and virtual (on-line) gift cards to offering drawings for higher ticket items, new approaches for incentivizing participants can also improve survey results. The purpose of this workshop is to explore advances in gamification and incentives to identify how to balance improving participation levels and data quality without changing travel behavior.

Papers for oral presentation

- 2 - Diego Alvarez, Greg Wellman, Ivan Kuo and Nancy McGuckin.
Lessons Learned in a Gamified Stated Response Survey
- 52 - Eline Scheepers and Sascha Hoogendoorn-Lanser.
State-of-the-art of incentive strategies – Implications for longitudinal travel surveys
- 86 - Nina Verzosa, Stephen Greaves, Richard Ellison, Adrian Ellison and Mark Davis.
Eliciting preferences for 'gamified' travel surveys: a best-worst approach

Papers for poster presentation related to workshop

- 143 - Adam Rosenfield, John Attanucci and Jinhua Zhao.
Small Nudges, Big Data: Evaluating the Impact of MIT Commuting Benefits Program
- 116 - Zachary Patterson.
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Workshop B7 - Data Fusion: Needs and Challenges in a New Transportation Data Landscape

Salon du Nord

Workshop chair

Chandra BHAT, The University of Texas at Austin, USA

Elisabetta CHERCHI, Newcastle University, United Kingdom

Description

This workshop will examine data capture mechanisms and methods to fuse data as we enter into an era of active as well as passive survey data collection mechanisms. The emphasis will be on how different data sources can be merged to fill “holes” in individual data sources as well as address concerns of representativeness in individual data sources. Examples of multiple-source data collections in the actual field will be reviewed. The workshop will harness the collective experience of leading survey analysts to forge a pathway forward in this fast-developing and exciting area of multiple, mixed, and heterogeneous data sources.

Papers for oral presentation

- 19 - Tim Hilgert, Sascha Von Beren, Nadine Kostorz, Martin Kagerbauer and Peter Vortisch.
Does travel behavior of people using mobility apps differ? Findings from a market analysis in Germany
- 93 - Richard Ellison and Robin Lovelace.
Augmenting travel surveys with Big Data
- 69 - Pierre-Leo Bourbonnais and Catherine Morency.
A Robust Datawarehouse as a Requirement to the Increasing Quantity and Complexity of Travel Survey Data
- 176 - Mehdi Katranji, Guilhem Sanmarty, Sami Kraiem, Laurent Moalic, Alexandre Caminada and Fouad Hadj Selem.
Inferring human mobility patterns from census data

Papers for poster presentation related to workshop

- 31 - Tobias Kuhnimhof and Christine Weiss.
Vehicle cost imputation in travel surveys: Gaining insight into the fundamentals of (auto-) mobility choices
- 149 - Byron Chigoy, Ed Hard, Michael Martin and Lisa Green.
Passive Data: The Other 50% of the Work

Workshop B8 - Surveys on long distance travel and other rare events

Salon Exécutif

Workshop chair

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Description

Ongoing globalization, growing international collaboration as well as the development of dynamic corporate and social networks entail a steady increase of long-distance travel. Collecting comprehensive reliable data on long-distance travel is challenging as respective trips are highly heterogeneous and unevenly distributed among the population. In most cases they are non-routine trips, and often have an international dimension.

The objective of this workshop is to exchange ideas about innovative approaches for collecting data on long-distance trips or to combine existing data sources from transport and other fields such as tourism in order to quantify the different segments of long-distance travel.

Contributions from surveys on further rare travel activities are welcome as similarities with long-distance travel surveys can be expected.

Papers for oral presentation

- 62 - Claudia Nobis, Ursula Pfefferkorn and Angelika Schulz.
Long-distance travel in Germany: modular analysis and methodological comparison of available microdata
- 119 - Lisa Aultman-Hall, Jeffrey Lamondia, Hannah Ullman and Madeline Suender.
Surveying Social Network Geography to Model Long-distance Travel
- 154 - Linda Christensen.
Consideration on a method to analyse long distance travelling when collecting only data about the latest journey
- 167 - Fabio Rendina, Myriam Maumy-Bertrand and Jimmy Armoogum.
Estimation of tourism mobility by indirect sampling

Papers for poster presentation related to workshop

- 128 - Rebekah Straub Anderson, Elizabeth Greene, Chloe Ritter, Leah Flake and Gregory Giaimo.
Long-Distance Smartphone-Based Travel Survey in Ohio

Papers for poster presentation not related to a workshop

- 43 - Nobuhiro Sanko
Trade-off between survey frequency and sample size for forecasting travel demand: a preliminary study using cross-sectional data from three time points
- 73 - Sander Van Cranenburgh and Michiel Bliemer
An information theoretic-based method to make big data tiny
- [80 - Md Sami Hasnine, Islam Kamel](#) and [Khandker Nurul Habib](#)
Using Google Map to Impute Transportation Level-of-Service Attributes: Application in Mode and Departure Time Choice Modelling

These posters will be presented in the B poster session.