TRB ABJ80 Statistical Methods

Linda Ng Boyle, ABJ80 Chair
Tuesday, Jan 13, 2015, 8:00-12:00 pm

Agenda

- 8:00 to 8:10 am: Introductions

- 8:10 to 8:15 am: 2014 Meeting Minutes,
  Mid-year Meeting Minutes (*Birsen Donmez*)

- 8:15 to 8:20 am: Committee Rotation & Membership Updates

- 8:20 to 8:30 am: Workshops/Sessions Sponsored
  & Co-Sponsored by ABJ80 for 2015
  (*Linda Boyle, Naveen Eluru*)

Committee Membership

- Membership rotation: 2014
- Balance of disciplines & geographic region
- Appropriate balance of employer types, affiliations
- Appropriate representation of the various modes
- Proper consideration of women and minorities
- No more than one member from any single organization
- No more than membership on two committees
- Appropriate representation from state DOTs

Membership Roster

- 28 members (chair included)
  - 6 International members
- 4 "young" members (35 years or younger)
- 2 state DOTs

Activities

- Secretary: *Bob Scopatz*
- Committee Research Coordinators:
  - *Karin Bauer, Thomas Jonsson*
- Paper Review Chair: *Panos Anastasopoulos*
- Best Paper Review:
  - *Peter Savolainen, Carol Flannagan, Jonathan Aguero-Valverde, Bo Lan*
- TRB Data Contest:
  - *Naveen Eluru* [with Anuj Sharma & Nadia Gkritza)
- Triennial Strategic Plan: *David Reinke*
- Social Media: *Mazharul [Shimul] Haque*

Agenda

8:20 to 8:30 am Workshops/Sessions Sponsored and Co-Sponsored by ABJ80 for 2015 (*Linda Boyle, Naveen Eluru*)

- Workshop: Driving Simulators/Naturalistic Studies (Sunday, 9-12)

- TRB Data Contest (Sunday: 1:30-4:30)

- Transportation Statistics Interest Group (TSIG)

- Tribute to Matthew Karlaftis (Sunday at 5 pm)

- Poster Session (Monday)

TRB Data Contest (22 submissions)

- Best Paper in SAFETY
  Examining the Safety Impacts of Narrow Lane Widths on Urban/ Suburban Arterials, *by Barrette,…, Savolainen, Iowa State U*

- Honorable Mention Safety Area
  Quantifying Impacts of Narrow Lane Widths on Arterials Roads, *by Sun, Yu, Ombao, UC Irvine*

- Best Paper Travel Behavior Area
  Household-Level Vehicle Resources Allocation Model for Analyzing Short Term Vehicle Use Decisions *by Paleti, Old Dominion U.*

- Best Student Paper
  The Relationship between Road Safety and Lane Width: Analysis using Propensity Scores, *by Vincent, U. Michigan*

2016 TRB Data Competition

- We are seeking a dataset for the 2016 TRB competition. Things to consider:
  – Manageability: Only a subset of a larger dataset is needed if fairly large
  – Broad reaching: Would be good to have different types of datasets (trucking, pedestrian, bicyclists, etc.), but ONLY one is needed
  – Co-sponsorship: ABJ70 will be a co-sponsor
  – "Call center": Need someone to help answer queries from the people who are considering a submission

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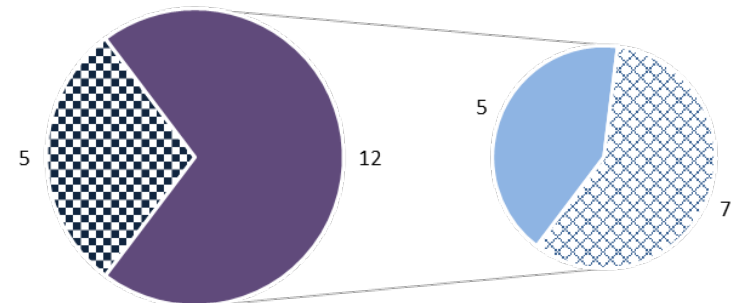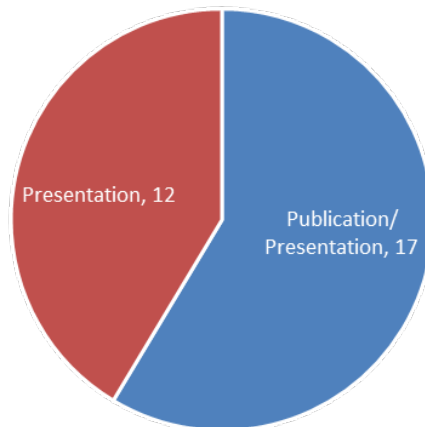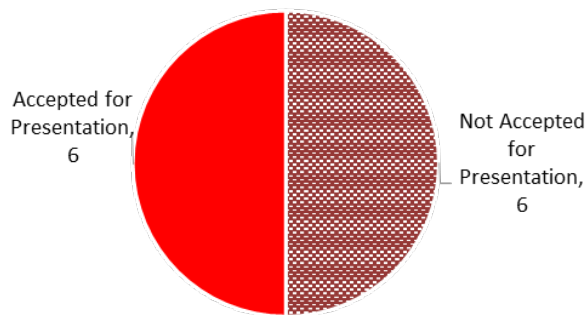- Poster Session (Monday)

Paper Review Process

8:30 to 8:45 am Paper review process, statistics,
and identification of issues
(*Panos Anastasopoulos*)

Paper Review Process

Received 29 papers:

- 17 papers submitted for publication/presentation
  - 5 papers recommended for publication
  - 10 papers accepted for presentation
- 12 papers submitted for presentation only
  - 6 papers accepted for presentation

- In total:
  - 18 papers accepted for presentation
  - 5 papers recommended for publication

Accepted for Presentation, 6

Not Accepted for Presentation, 6

Presentation, 12

Publication/Presentation, 17

5

12

5

7

- Accepted for Presentation
- Not Accepted for Presentation
- Recommended for Publication
- Not Recommended for Publication

Paper Review Process

- Received 29 papers
- Requested 143 reviews: 127 sent by deadline
  - 85.8% response rate
  - 4.4 reviews per paper

- THANK YOU!

Thank You to ABJ80 Reviewers!

Amr Kandil	Gary Davis	Lindsay Lucas	SeyedAta Nahidi
Anuj Sharma	Gordon Lovegrove	Mark Brackstone	Si Qi XIE
Bhagwant Persaud	Gudmundur Ulfarsson	Md Tawfiq Sarwar	Simon Washington
Bidisha Ghosh	Helai Huang	Md. Mazharul Haque	Srinivas Peeta
Billy Williams	Jianming Ma	Michael Pawlovich	Srinivas Reddy Geedipally
Birsen Donmez	John Haddock	Mohamed Abdel-Aty	Tarek Sayed
Bo Lan	John Milton	Mohammed Quddus	Thomas Jonsson
Carol Flannagan	Jonathan Aguero-Valverde	Mokbul Khan	Venkata Duddu
Chandra Bhat	Jonathan Wood	Nang Ngai Sze	Venky Shankar
Cynthia Augustine	Jorge Prozzi	Naveen Eluru	Xiaokun (Cara) Wang
David Reinke	Kara Kockelman	Nima Golshani	Ximiao Jiang
Dominique Lord	Karin Bauer	Panagiotis Anastasopoulos	Yajie Zou
Eleni Vlahogianni	Karl Kim	Paul Jovanis	Yiyi Wang
Feng Guo	Konstantina Gkritza	Peter Savolainen	Zhirui Ye
Frank Gross	Kun-Feng Wu	Priyanka Alluri	
Fred Mannering	Linda Boyle	Robert Scopatz	

Best 2014 ABJ80 Paper Award

Best Paper Award Committee:
- Jonathan Aquero-Valverde, Universidad de Costa Rica
- Jenny Guarino, US DOT - BTS
- Kun-Feng (Ken) Wu, National Chiao Tung University
- Panagiotis (Panos) Ch. Anastasopoulos, SUNY-Buffalo

Thank You, Best Paper Award Committee!

Best 2014 ABJ80 Paper Award

Criteria:

- Overall Top Contender
- Novelty of approach
- Contribution to the existing/current body of knowledge
- Potential impact

Best 2014 ABJ80 Paper Award

14-3462: "Improved computational framework for efficient probabilistic inference of damage in truss structures based on vibration measurements"

Wei Zheng, Jinlei Shen, Jianguo Wang

Improving TRB Manuscript Reviews

- Reviewing TRB papers is the main obligation of committee members and friends
- Maintains quality of the conference

Contact Chair/Review Coordinator if.

- Inadequately qualified or lack time to judge fairly
- Potential conflict of interest or personal bias
- Know it was presented elsewhere OR know it is under review at another journal
- Have convincing evidence that a manuscript contains plagiarized material or falsified research data
- Paper exceeds word + figure limit by a large amount
- Writing quality is poor: unable to understand what was done
- Paper contains overt commercialism
- REMEMBER: All manuscripts and reviews should NOT be shared and must be treated as confidential

Please NOTE

- It is okay to reject a paper
- Your grading/rankings should be consistent with the comments.
  - Say a paper is great in comments, but give 1's and 2's for each category
  - Say a paper should be rejected, but give 4's and 5's
- USE the Comments to the Chair. This is private and VERY HELPFUL.
  - You want to be polite to authors, but always tell the chair any concerns you may have
  - May note that the issues with paper are not related to ranking

Briefing on Autonomous Vehicle

- *(Jeff Blackburn)*

New Social Media PERSON!

- *Mazharul [Shimul] Haque*

- ABJ80 LinkedIn Site
- Website: http://trbstats.weebly.com/
- Twitter site

Agenda

- 9:15 to 9:30 am ABJ80 Triennial Strategic Plan (*Linda Boyle*)

  The ABJ80 Committee is concerned with the appropriate application of statistical methods in the field of transportation. The committee serves as a resource on statistical matters for all TRB committees and related committees for the National Academies; fosters understanding and use of statistics through dissemination of educational activities; and identifies and fosters research needed in statistics within the transportation community.

Agenda

- TRB Circular on Analytical Tools for Transportation Researchers and Practitioners (*Linda Boyle*)
- New direction?

TRB Circular

- Volunteers/chapter authors from 2014 meeting
    - Gord Lovegrove (UBC)
    - Linda Boyle (UW)
    - Feng Guo (VT)
    - Birsen Donmez (U. Toronto)
    - Mary Bertola (US DOT)
    - Karin Bauer
    - Mehdi Nassipour
    - Billy Williams
    - Promod Chandhok
    - David Reinke
    - Raul Avelar
    - Carol Flannagan
    - Jonathan
    - Anuj Sharma

TRB Circular: Statistics for Transportation Practitioners (How to Avoid Common Errors)

Background (original)

Objective: This TRB circular is intended to be a beginner's statistics tutorial for transportation state agencies, graduate students, and researchers. It will flag common errors, and how to avoid them. It will illustrate concepts via transportation case studies. Each chapter will use the TRB author guide.

TRB Circular: Statistics for Transportation Practitioners ~~(How to Avoid Common Errors)~~

Background

Objective: This TRB circular is a compilation of papers based on past EDUCATIONAL workshops sponsored by the Statistical Methods committee (ABJ80). It is intended to provide transportation state agencies, graduate students, and researchers insights on commonly asked statistics questions. Each chapter will use the TRB author guide.

Proposed Outline (original)

Preface/Motivation:

Each chapter will include case studies from transportation

Chapter headings:

1. Types of Transportation Data

2. Data collection typically seen in the transportation field

3. Data cleaning: issues specific to transportation data

4. Describing and visualizing transportation data

5. The impact of small samples in transportation research

6. Sampling distributions commonly used in transportation analyses

7. Elementary Inferential stats, basic comparison tests

8. Regression Techniques (Model adequacy, specification errors)

9. Interpreting your results

10. Experimental Design (e.g., Driving Simulator Studies)

11. Common Definitions/Glossary

Proposed Outline (revision)

Chapter Topics:

1. Handling Missing Data (Gaurav Mehta)
2. Sampling Weights (Promod, Priyanka)
3. Ensuring Data Quality: What Are the Pitfalls and How Can We Overcome Them? (Bob Scopatz, Thomas J.)
4. Bayesian Statistics (Jonthan, Gord, Bo Lan)
5. Time Series Modeling (Birsen Donmez, Deo)
6. Traditional Statistics vs Artificial Intelligence (Anuj, Naveen, Ramana Duddu)
7. Statistical Challenges with Naturalistic Data (Carol F., Karin B., Ken Wu, Mohamed Ahmed)
8. Spatial (Ghazan Khan, Yiyi Wang, Matt Volovski, Lise Hensdill)

Appendix can include TRB Data Contest data sets, codes, etc.

And relevant textbooks

Agenda

9:40 to 9:50 am (floating)

TRB initiatives and Data Section News (Bernardo Kleiner)

Agenda

9:50 to 10:00 am: Research needs statements
(*Karin Bauer, Thomas Jonsson*)

Current projects:

- SHRP 2 (Karin Bauer, Thomas Jonsson)

- ~~ITE Trip Generation (Yiyi Wang, David Reinke)~~

Agenda

10:10 to 10:25 am: Future Committee Activities and Sessions (Need a volunteer)

- Proposed sessions (for 2015)
  - Big Data/Data Analytics in Transportation (Feng Guo, Karin Bauer will coordinate)
    - What do we mean by big data, How different disciplines view big data?
    - What are the statistical challenges?
    - Industry link (e.g, Toyota and connected vehicles; Citrex)
  - Bootstrapping Methods (Linda will coordinate)
    - When can you use it
    - When should you be using it
  - Crash severity modeling: dealing with specification issues (TRB Contest Data; Naveen and Thomas J to coordinate)
    - Different degrees of underreporting
- Proposed for beyond 2015
  - Text mining
    - Using Twitter and Facebook data for studying transportation issues
    - Activity and location analysis

Agenda

10:15 to 10:25 am: JSM (Feng Guo needs to submit by Jan 15, 2015)

- Joint Statistical Meeting, SEATTLE, WA, Aug 8-13, 2015
  - Invited Papers in Transportation Statistics
  - Coordination with TSIG
    (Transportation Statistics Interest Group)
  - ABJ80 Mid-year meeting

LAST AGENDA ITEM

- 10:25 to 10:30 am: Call to Audience/relevant activities of other committees, conferences, etc.