Assessing the Utility of 2006-2010 CTPP Data

presented to

ACS Data Users Conference
Alexandria, Virginia
May 11-12, 2017

presented by

Cemal Ayvalik, Cambridge Systematics, Inc.

Penelope Weinberger, AASHTO

Kevin Tierney, Bird's Hill Research

Objectives

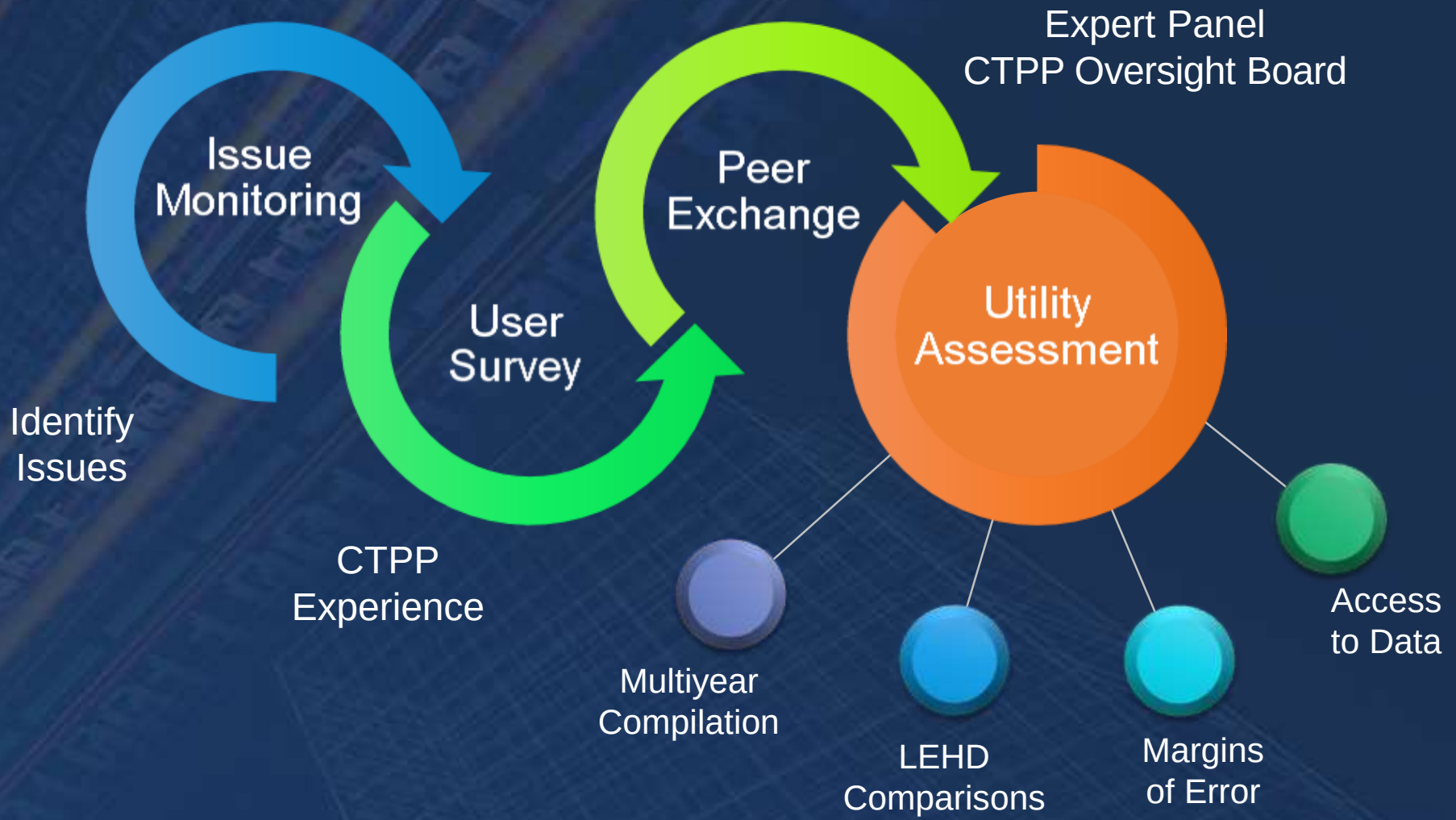
Develop a list of common and unique applications of CTPP data

Assess common issues encountered and remedies implemented

Suggest solutions, including future research and/or resource development

Inform decision-making for future products

Key Steps


Expert Panel
CTPP Oversight Board
Issue Monitoring
Peer Exchange
User Survey
Utility Assessment
Identify Issues
CTPP Experience
Multiyear Compilation
LEHD Comparisons
Margins of Error
Access to Data

Step 1
Issue Monitoring

- Focused review of recently published media
- Findings were used to identify focus areas
- Initial findings pointed to
  - » Small area workplace allocation problems
  - » Workplace geocoding issues
  - » Small sample size challenges
  - » Disclosure-proofing data perturbation concerns

Step 2
User Survey

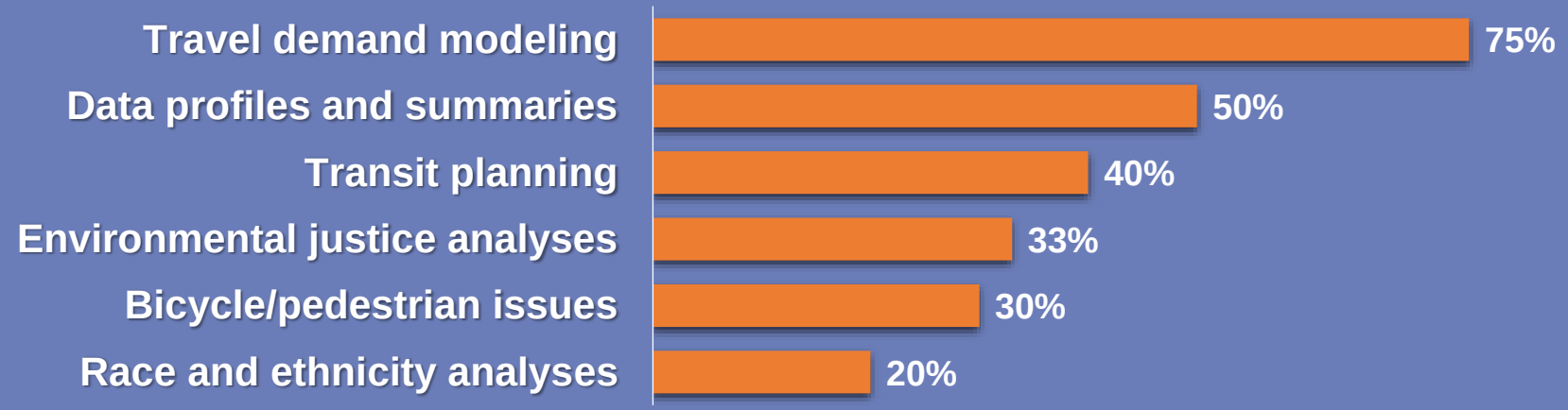
- A web survey – September 2014
- 202 respondents
  - » Nearly 63 percent – hands-on experience
  - » 80 percent – good understanding of the Census ACS data collection processes
  - » Users of the CTPP – the program provide value (75 percent)
  - » Non-users – indicated circumstantial reasons for not having used the CTPP

Step 2
User Survey (continued)

- 60 percent of users relied on other data sources in addition to the CTPP data for the analysis.
- About 50 percent recently used the dataset for market analysis, another 30 percent for modeling.

- The key reasons for concern
  - » Questions about data accuracy
  - » Sample sizes issues for small areas
  - » Multiyear data accumulation concerns
  - » Additional cross-tabulations needs
  - » Software issues

Most Common Uses of the CTPP



Step 3
Peer Exchange

- Round table discussion with 16 participants from various sectors
- The key considerations included
  - Data content
  - Geographic delineation
  - Multiyear data accumulation
  - Margins of error
  - Data perturbation
  - Data dissemination and training
  - Future planning of CTPP data products
- In-depth interviews AASHTO CTPP Oversight Board

3.1 – Data Content

- Different delineation of workplace data (multiple job holders, more relevant definition of part and full-time)
- More three-way residence and workplace tabulations
- Added-value tabulations such as commute distances
- Concerns with the data quality and timely release
- Unforeseen consequences since the smaller CTPP will be less flexible than previous iterations

3.2 – Geographic Delineation

- Small area data are essential for travel flow analyses
- Flow data at the most detailed geographic level possible, and demographic/socioeconomic tabulations at a more aggregate geography
- Oversight Board respondents preferred Census tracts over TAZs due to data quality concerns associated with challenges for Census Bureau to process custom geographies.

3.3 – Multiyear Data Accumulation

- A five-year frequency is an improvement over the former decennial based products, and should be continued
- Multiyear accumulation complicates analysis
- Most users treated them as point estimate data
- Problematic for regions that are rapidly changing
- Currency of the data is essential

3.4 – Margins of Error

- 90 percent – understand the concept, but roughly half use the CTPP data without accounting for those
- Experts use of margins of error
  - » To evaluate the reasonableness of the estimates qualitatively
  - » To decide which geographic level of detail to use
- Analysts could use guidance on the presentation of data with margins of error

3.5 – Data Perturbation

- Some understanding of the general methods of disclosure proofing, but not a strong one
- Most of the respondents prefer CTPP with disclosure proofed tabulations to CTPP data with suppressed values
- Practical analysis of raw and disclosure proofed data
- For the most part, expert users have been using the perturbed “B” tables without hesitation

3.6 – Dissemination and Training

- Only 25 percent are regular users of the CTPP software
- Software offers great value, but needs improvement
  - » Automated Programming Interface (API) capability
  - » Keyword search capability to allow users to identify table ids
  - » Improved map-based capabilities e.g., geographic aggregation
  - » Improved flow data visualization
- In-person classes most effective and have a “marketing” value
- Training needed on “uses of” CTPP data

Recommendations

Long-Term Census ACS Improvements

- Second Jobs
- Better Information on cellphone availability
- New modes (ridesourcing) and sub travel modes (access/egress to transit)

More Multiway SE Tables and Flow Tabulations

- Age, gender
- Employment, occupation, earnings
- School enrollment
- Internet access/use

Value-Added Enhancements to CTPP

- Help users access multiple data sets,
- Supplement with travel distance data
- Facilitate data fusion with other sources (LEHD/LODES and NHTS)

Conclusions

- Awareness of challenges with smaller samples and multiyear accumulation
- The five-year data offer benefits over the decennial data
- Small geography data most preferred
- MOEs rarely incorporated in analysis but used as a quality measure
- Perturbed data generally welcomed – avoid “missing” estimates
- The online software tool is capable and comprehensive with many features – steep learning curve
- Diversity of training opportunities was very appealing
- Research on comparison, integration, and fusion of CTPP with other flow data is needed

Q&A

CTPP

AASHTO
THE VOICE OF TRANSPORTATION

CAMBRIDGE SYSTEMATICS