How Does Regional Transportation Governance & Capacity Impact Investment Outcomes: Creating a Robust Dataset for MPO Research

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To address multimodality at the megaregion level, we first have to examine how it is formulated at the most basic regional planning entity: the MPO.

Metropolitan Planning Organizations (MPOs) approve billions in federal and state transportation spending in U.S. metro regions each year.

Federal law provides for significant latitude in how MPOs are structured and governed. Practical realities also mean that MPOs have different technical capacities.

How do MPO governance and capacity impact transportation investment outcomes? How can we study questions in this vein?
1973 Highway Act
Requires MPOs that include elected officials

3C Beginnings

1973
MPOs formalize & peak

1973: Federal Aid Highway Act
MPOs required in areas > 50,000 residents; include local elected officials; TIP
Broadening of Board Membership

1977

2010

MPOs (%) with Board Seat for this Participant
Transit Research Questions

Across the 400+ MPOs in the U.S., what are the different ways that MPO boards provide transit operators with voting representation?

How common is it for transit agencies to have a direct voting seat on MPO boards?

When transit operators have a voting board seat, is the MPO more likely to flex highway dollars to transit?
Database Creation Process

- Used an iterative process to determine relevant variables
- Narrowed variables down based on prioritizing consistency
  - Yes/No
  - Drop down categories
  - Limited open-ended responses
  - Created links to documentation for additional context
- Peer reviewed evaluated information and to ensure uniform response
- Random sort of MPOs based on population
Sources

- MPO Websites
- MPO and Transportation Policy Board Bylaws
- MoU's
- LRTPs (Long Range Transportation Plan)
- Travel Demand Modelling documentation
- Other regional plans
- Statewide travel demand models
- Email the MPO in cases of missing information
Information Categories

- General Information/Statistics
- Governance Variables
- Committee/Sub committee/ Task Force
- Travel Demand Model Variables
Database: A sneak peak

Currently 41 complete with another 61 in some stage of review
Information Categories

- General Information/Statistics
  - Location, Multistate
  - Population, Designation Year

- Governance Variables
  - Number of voting members on policy boards
  - Number of transit/airport voting representation

- Committee/Sub committee/ Task Force
  - Airport; Ped/Bike; Transit

- Travel Demand Model Variables
  - Type of model; modes considered
### Preliminary Statistics - governance & committees

Based on 41 MPOs (~10%), 3-5 from each 10th percentile

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg Voting Members:</td>
<td>15.6</td>
<td></td>
</tr>
<tr>
<td>Weighted Avg Voting Members:</td>
<td>24.5</td>
<td></td>
</tr>
<tr>
<td>MPO's Has Voting Transit Representation</td>
<td>13</td>
<td>32%</td>
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<tr>
<td>Airport Committees</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Pedestrian or Bicycle Committees</td>
<td>9</td>
<td>22%</td>
</tr>
<tr>
<td>Transit Committees</td>
<td>2</td>
<td>5%</td>
</tr>
</tbody>
</table>
Preliminary Statistics

- **voting board size**
  - Graph showing the relationship between MPO population (2010) and voting board size.

- **transit %**
  - Graph showing the relationship between MPO population (2010) and percentage of transit votes.
Preliminary Statistics - Travel Demand Modelling

The diagram illustrates the distribution of various travel demand modeling approaches used by different Metropolitan Planning Organizations (MPOs). The x-axis represents different modeling approaches, while the y-axis shows the number of MPOs (MPO’s) using each approach. The approaches include:

- Maintained own TDM model
- Activity-based model
- Simple Growth Model
- Four-step model
- Unknown
- Automobile only
- Consider bike or ped
- Transit mode choice
- Transit assignment
- Freight assignment

The chart shows a distribution with a significant peak for the Four-step model, followed by a smaller number of MPOs using each of the other approaches.
Next Steps

How will information be used?

- Database completion
- Combine database with airport, transit, and funding datasources
- Determine trends with regards to megaregions
Example Hypothesis

$ \text{flexed to transit in MSA} =

f(\text{direct voting seat for transit on MPO board } [Y/N], \text{ controls: transit ridership, regional population, highway vehicle miles traveled (VMT)})$
ISTEA-Era and beyond
Broadens MPO participation

1962
3C Beginnings

1963

1969
MPOs formalize & peak

1973

1991
ISTEA

2012
MAP-21

1991: Intermodal Surface Transportation Efficiency Act (ISTEA)
Public participation. STP & CMAQ suballocations. AQ conformity. Fiscal constraint.

2012: Moving Ahead for Progress (MAP-21)
Requires transit representation on large-MPO policy boards.
Questions and Discussion

Thank you!