PERFORMANCE MEASURES

1. Critique of Fielding’s approach
2. Structure of performance measures
Critique of Performance Measures

- Limited by availability of NTD data
  - focused on cost and efficiency
  - little data on quality and effectiveness
- Resulting measures place too much emphasis on cost efficiency and too little on cost-effectiveness
- Make it too easy for the manager to ignore the market and service quality
- Do not contribute effectively to the hypothetical roles for measures
### Performance Measure Examples

<table>
<thead>
<tr>
<th>Measure</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Miles / Maintenance Employees</td>
<td>many possible interpretations without control for maintenance effectiveness</td>
</tr>
<tr>
<td>Revenue / Operating Expense</td>
<td>if local area favors low fares, does this mean poor performance?</td>
</tr>
<tr>
<td>Passengers / Rev Veh Hour</td>
<td>very high values may imply very congested vehicles; is this good performance?</td>
</tr>
</tbody>
</table>
Critique of Peer Group Comparisons

• Peers and/or measures need to recognize impacts of non-NTD differences such as:
  -- cost of living
  -- urban structure
  -- auto ownership

• Peers should be defined uniquely for each agency
• Peers might be defined differently for different types of measure
Basic premises:

- each indicator should measure something unique
- a subset of indicators should fully describe some dimension of the system
- subsets of indicators should cover all important dimensions
- indicators can be grouped and nested
- for two systems to be compared along one dimension, they need not be similar in all other dimensions
Level 1: Aggregate Performance Indicators

- Deficit/Pass
- Cost/Pass
  - Service Production Cost/Veh Hr
  - Service Utilization Pass/Veh Hr
- (-)
- Rev/Pass

\[
\text{Deficit/Pass} = \frac{\text{Service Production Cost/Veh Hr}}{-} - \frac{\text{Service Utilization Pass/Veh Hr}}{\text{Cost/Pass}}
\]
Level 2: Cost

General:

Cost/Veh Hr

By Function:
1. Operations
2. Maintenance
3. Administration

By Object Class:
A. Labor
B. Materials
C. Services

Develop separate relationships and indicators for all interesting combinations of Functions (1-3) and Object Class (A-C)
Level 2: Cost (cont'd)

Specific: 1A. Operations-Labor

Cost/Veh Hr

Operating Labor Hrs
\[
\frac{\text{Opr Hrs}}{\text{Platform Hrs}} \times \frac{\text{Platform Hrs}}{\text{Veh Hrs}} \times \frac{\text{Non-op Hrs of Op Labor}}{\text{Veh Hrs}}
\]

Effective Wage Rate

\[
\times \frac{\text{Veh Hrs}}{\text{Veh Hrs}} \times \frac{\text{Veh Hrs}}{\text{Veh Hrs}} \times \frac{\text{Veh Hrs}}{\text{Veh Hrs}}
\]

Product of:
- base wage
- seniority factor
- premiums factor
- guarantees factor
- fringe benefit factors
Level 2: Utilization

Pass/Veh Hr

\( \text{utilization} \)

\[
\frac{\text{Revenue Veh Mile}}{\text{Veh Hrs}}
\]

\[
\text{Rev Veh Hrs} \quad \frac{\text{Veh Hrs}}{\text{Veh Hrs}}
\]

\[
(\text{deadheading & layover time})
\]

or

\[
\frac{\text{Rev Veh Miles}}{\text{Veh Miles}}
\]

\[
(\ast)
\]

\[
\frac{\text{Miles/Hr}}{\text{in service}}
\]

\[
\ast
\]

\[
\frac{\text{Veh Miles}}{\text{Veh Hrs}}
\]

\[
(\ast)
\]

Pass/Rev Veh Mile

\[
\frac{\text{Pass Miles}}{\text{Veh Miles}}
\]

\[
\text{Veh Miles} \quad \frac{\text{load factor}}{\text{Veh Hrs}}
\]

\[
\frac{\text{Pass Miles}}{\text{Pass}}
\]

\[
(\ast)
\]

\[
\text{Places} \quad \frac{\text{Vehicles}}{\text{speed}}
\]

\[
\ast
\]

\[
\text{vehicle capacity}
\]

or

\[
\text{Places} \quad \frac{\text{Pass Miles}}{\text{Place Miles}}
\]

\[
\ast
\]

\[
\text{occupancy}
\]