Web-based Educational Systems

Instructional Architect (IA)

- A tool for collecting and reusing online learning resources
- Utah-based
- Outreach program in New York and Michigan

Exploratorium Learning Resources Collection (ELRC)

- A digital library of over 700 science activities and instructional resources
- Based on a hands-on museum in California

Highlights

- Collect geo-referenced data for two web-based educational systems.
- Map geo-referenced data with public demographic datasets.
- Conduct statistical analyses of these relationships to highlight significance predictor variables.

Procedure

1. Track web metrics using Google Analytics.
2. Collect geo-referenced visits data.
3. Join and map geo-referenced data with public demographic datasets.
4. Analyze the association between the two.

Mappings Data

- Number of school districts
- Median family income

Visits from the Contiguous US

- Both groups were successful in local dissemination activities.
- The ELRC also showed more widespread U.S. visitors.

Statistical Analysis

- Used negative binomial regression to account for skewed data.
- Dependent Variable:
  - Number of visits
- Three independent variables:
  - Population
  - Number of school districts
  - Per capita income

<table>
<thead>
<tr>
<th>Population</th>
<th>School districts</th>
<th>Per capita income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wald chi-square</td>
<td>p-value</td>
<td>Wald chi-square</td>
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<td>IA</td>
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<tr>
<td>ELRC</td>
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- Population density significantly predicted number of online visitors.
- Per capita income also significantly predicted number of online visitors. This may be a function of the amount of resources (e.g., computers) available in the local schools and communities.