Survey Analysis with SuAVE

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- Spatial data integration
- Interoperability and data standards
- GIS and Geospatial Databases
- Information discovery across distributed sources
- Online analysis systems
- Survey data analysis
SuA\(\checkmark\)E

Survey Analysis via Visual Exploration

a new online system for visual analysis of surveys and image collections

http://suave.sdsc.edu
Survey analysis: many components! (1)

1. **What is a survey** (not just a questionnaire!)
2. **Guiding questions** (What exactly do you want to find out? And why? How will you use this info?) *don’t do it just because it is interesting. Also see if the research questions can be answered without surveys (other data, papers, ICPSR survey archive)*
3. **Institutional Review Board**: federally regulated, ethical compliance
4. **Sampling** from a population, and survey participants (different sampling schemes, bias adjustment, etc.)
   think about electoral surveys...
5. **Survey delivery methods**:
   in person, online, phone, mail, survey apps (but even the more expensive in-person surveys is not always a panacea)
Survey analysis: many components! (2)

6. **Writing good questions**, and selecting right types of questions. They should be understandable, in proper English. Avoid double-barreled questions. Questions should be specific.

7. **Survey design and logic** *(Demo of LimeSurvey)*
   *make it look simple!*

8. **Codebooks** and data dictionaries
   *Think about how you will process survey results!*

9. **Evaluating your survey** (pilots)
   *Always do this!!*

10. **Survey implementation** (invitations, distribution)
Survey analysis: many components! (3)

11. **Survey management** (response rates, incentives, reminders, etc.)
12. Managing the end of survey, including **data cleaning**, missing data adjustments, outlier detection, cross-validation, **reporting**, and **publishing** online (with PII removed)
13. **Survey analysis methods and software**, and reproducibility (eg visual analysis with SuAVE)
14. Other common survey analysis environments (**SAS, SPSS, Excel, SRA**)
15. **Sharing survey analytics and insights**, writing blogs etc. (with SuAVE)
Survey analysis: many components! (4)

16. **Survey data standards** (eg DDI)
17. **Examples** of surveys: National Election Survey Pilot, GSS, smaller surveys such as Tijuana health
18. **Surveys with multimedia** (with SuAVE)
19. **Data science** with survey data, using Jupyter notebooks (with SuAVE)
20. **Sources** of survey data: ICPSR, electionstudies, Census Bureau, Roper Center, iPoll, World Bank, NHANES, GESIS (in Europe), more.
SuAVE Capabilities

Applications in:
- Public Opinion Surveys
- Biology and Ecology
- Health Informatics
- Library Collections
- Geosciences
- Visual Arts
- Humanities
- Archaeology
- Urban Planning
- Organization Management
- Portfolio Analysis
SuAVE original purpose is to make survey analysis powerful, intuitive and fun!

- No learning curve
- Easy to publish data
- Extensible analysis
- Easy to tell your research story
Visual, Statistical, Cartographic Analysis

- Variable search
- List of questions: faceted browsing and text search
- Comment on patterns
- Share views
- Tutorials
- Metadata
- Data views:
  - Grid view
  - Bar chart
  - Cross-tab
  - QCA analysis
  - R connector

Counts and percentages, under different subsets
From Data Exploration to Machine Learning (and back)

Implementation of SDSC Data Science Hub:
Enabling interfaces (SuAVE)
Kubernetes containers (Jupyter)
Composable services (ML, analytics, etc.)
General service integration interfaces
Some examples

DEMO 3: How to publish a survey (in SuAVE v2)

http://suave2.sdsc.edu ➔ create an account

- Click “New Survey”
  - Upload a CSV file or link to a file. Give survey a name. Upload images and wait for email with link.
  - Edit a survey: define views to include, icons (if needed), dynamic text over items, etc.
  - Add survey metadata, make public (or not)
  - To share your survey - just copy the survey URL
- Manage surveys:
  - Personal survey gallery: http://suave2.sdsc.edu/gallery/<username>
  - See http://suave.sdsc.edu/tutorials (login as demo/workshop)
Invitation to explore

• If interested in surveys - try SuAVE!

• Write a blog!

• If interested in elections: load election surveys from electionstudies.org and do your own research

• If interested in other types of surveys - try SuAVE!