Title: ***Utah Water Survey: Perceptions and Concerns about Water Issues in Utah***

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Abstract

These data represent responses from nearly 6,000 adults to a short survey self-administered on a tablet in front of grocery stores across urban areas in Utah between fall 2014 to summer 2015. Adults were approached randomly and invited to respond to a 3-minute questionnaire on perceptions and concerns about water issues in the state. Approximately 42% of those approached completed the survey. The data are anonymous and available as a public dataset at http://data.iutahepscor.org/surveys/. The data also served as the basis for the development of an open-source web-based survey data viewer as reported in Jones et al. (in press).

Specifications

Subject area	*Sociology, Psychology, Political Science, Communications*
More specific subject area	*Water Perceptions and Concerns*
Type of data	*Survey data*
How data was acquired	*Survey of adults intercepted as they entered grocery stores in urban areas in Utah between September 2014 and August 2015.*
Data format	*Raw data in csv format*
Experimental factors	*None*
Experimental features	*Grocery stores were selected for data collection to represent the diversity of urban communities in Utah. Data were collected over multiple days of the week and times of day to ensure a cross-section of the shopping adult population.*
Data source location	*Cache, Davis, Iron, Salt Lake, Utah, Washington, and Weber counties, Utah.*
Data accessibility	*Data is in a public repository: The iUTAH Data Publication System. http://repository.iutahepscor.org/dataset/utah-water-survey-perceptions-and-concerns-about-water-issues-in-utah*

Value of the data

- The data provide a rich resource for exploring social and geographic predictors of variability in public perceptions and concerns about water issues.
- The data and instrument can be used in research methods courses to teach basic principles of scientific social science data collection and methods of analysis.
- The data and instrument provide a baseline that could be replicated or adapted and extended in other regions or across time.

Data

This dataset includes responses to a structured survey instrument ('UtahiPadWaterSurvey.pdf') designed to capture perceptions and concerns about water issues from adults in Utah as well as demographic information. The objectives of the survey were to document how a representative cross-section of Utah's adult population thinks about water issues. The results are located in the file 'ViewerCombinedData090415.csv' and associated metadata describing response codes is located in the file 'iUTAHPublicInterveptSurveyMetadata.csv'.

Experimental Design, Materials and Methods

The iUTAH Utah Water Survey was implemented by participating researchers and students from six Utah institutions of higher education and one high school. The project is part of a major National Science Foundation award to the state of Utah under the Experimental Program to Stimulate Competitive Research (EPSCoR). The Innovative Urban Transitions in Aridregion Hydro-sustainability (iUTAH) project is a major five-year research, education and outreach effort designed to explore connections between people, water, and the environment to enhance quality of life in Utah (www.iutahepscor.org).

The survey was designed to take less than 3 minutes to complete and included three core blocks of questions: perceptions of the adequacy of local water supplies, perceptions of the quality of local water resources, and concern about a range of water and non-water issues. A number of additional questions captured information about respondents' familiarity with water cost, lawn-watering behaviors, participation in water based recreation, demographic attributes, and the zipcode where the respondent lives. These additional questions allow researchers to explore social, demographic, and geographic drivers of perceptions and concerns about water issues. The complete survey instrument is included as a supplemental, electronic appendix to this manuscript.

The survey was administered by trained teams of undergraduate students, who used systematic sampling procedures to approach adults entering grocery stores across a wide range of urban communities in Utah. Grocery stores were selected as data collection sites because nearly all households shop for food at least once a week. Permission to collect data was obtained from store managers. Stores were selected to ensure geographic coverage across most of the major urban centers in the 7 largest counties in the state (representing over 85% of the state's population). A diverse set of grocery store types were included, including local outlets for regional and national grocery store chains, superstores, natural or specialty grocery stores, and locally owned grocery chains.

At each data collection site, the team set up an information display on a table outside of a door of a major grocery store. Whenever their iPad tablet was not being used by a respondent, field workers were trained to approach the next adult crossing an imaginary line outside of the door. They quickly introduced themselves and the research project, and asked respondents if they would complete the survey before entering the store. A separate field worker counted the total population of men and women entering the store to provide an estimate of the gender composition of the people from whom the sample was drawn.

Sampled adults were asked to complete the survey on electronic tablet computers using Qualtrics Offline Survey Application Software (http://www.qualtrics.com/). Data collection at each location was conducted over several days of the week and times of day to ensure representation of the shopping public. A total of 6-10 hours of data collection were conducted at each location.

The data reported here are from surveys implemented at 30 stores between September 2014 and August 2015 across all major urban counties in Utah. Over 15,000 adults were approached, providing 5,998 useable responses (a 41.2% response rate after eliminating responses from people under age 18 and non-Utah residents). The proportion of respondents who were female (53%) closely mirrors the percentage of adults entering the stores during the data collection periods, providing confidence that there is not a strong response bias. This survey was designed to contain no personally identifiable information, so publicly sharing the results would not reveal the identity of individual respondents.

Data were uploaded to the Qualtrics server from the tablets at the end of each day of fieldwork. Responses missing more than half of the variables and Ineligible respondents (people under 18 years of age or living in zipcodes outside of Utah) were deleted from the survey dataset. The data have been used to develop a web-based 'survey data viewer' (data.iutahepscor.org/surveys), and to support a growing number of undergraduate research projects, including several poster and oral presentations at regional or national meetings.

The dataset includes 33 variables. The variable names, variable labels, and value labels are listed in Table 1 below (also included in the file iUTAHPublicInterceptSurveyMetadata.csv).

Table 1: Variable Metadata.

Variable	VariableLabel	SubVariableLabel	ValueLabels
City	City where Data Collected		
Q2a	Agreement that Water Supply is Adequate	To Meet CURRENT Needs	1=Strongly Disagree; 3= Neither Agree nor Disagree; 5=Strongly Agree
Q2b	Agreement that Water Supply is Adequate	To Meet FUTURE Needs	1=Strongly Disagree; 3= Neither Agree nor Disagree; 5=Strongly Agree
Q3a	Water Quality Rating	Current Drinking Water Supply	1 = very bad; 3 = neither good nor bad; 5 = very good; 6 = not sure
Q3b	Water Quality Rating	Groundwater Beneath Community	1 = very bad; 3 = neither good nor bad; 5 = very good; 6 = not sure

Q3c	Water Quality Rating	Nearby Mountain Rivers and Lakes	1 = very bad; 3 = neither good nor bad; 5 = very good; 6 = not sure
Q3d	Water Quality Rating	Downstream Streams and Rivers	1 = very bad; 3 = neither good nor bad; 5 = very good; 6 = not sure
Q4a	Concern Rating	Water Shortages	1= Not at all concerned; 5= Very Concerned
Q4b	Concern Rating	Flooding	1= Not at all concerned; 5= Very Concerned
Q4c	Concern Rating	Poor Water Quality	1= Not at all concerned; 5= Very Concerned
Q4d	Concern Rating	High Cost of Water	1= Not at all concerned; 5= Very Concerned
Q4e	Concern Rating	Deteriorating Water Infrastructure	1= Not at all concerned; 5= Very Concerned
Q4f	Concern Rating	Air Pollution	1= Not at all concerned; 5= Very Concerned
Q4g	Concern Rating	Traffic Congestion	1= Not at all concerned; 5= Very Concerned
Q4h	Concern Rating	Loss of Open Space	1= Not at all concerned; 5= Very Concerned
Q4i	Concern Rating	Population Growth	1= Not at all concerned; 5= Very Concerned
Q4j	Concern Rating	Climate Change	1= Not at all concerned; 5= Very Concerned
Q5	Familiarity with How Much Household Spends on Water Each Month		1= Not at all familiar; 5= Very familiar
Q6	Has Lawn at Residence		1= Yes; 2= No
Q7	Person Responsible for Watering Lawn		1= Me or someone else in my household; 2= Landlord; 3= Our homeowner or condominium association; 4= A hired private company; 5= Other
Q8a	Participation in Water Activities	Boating	1= Never; 2= Rarely; 3= Sometimes; 4= Often; 5= Unsure
Q8b	Participation in Water Activities	Fishing	1= Never; 2= Rarely; 3= Sometimes; 4= Often
Q8c	Participation in Water Activities	Snow Sports	1= Never; 2= Rarely; 3= Sometimes; 4= Often
Q8d	Participation in Water Activities	Hiking near Water	1= Never; 2= Rarely; 3= Sometimes; 4= Often
Q8e	Participation in Water Activities	Gardening	1= Never; 2= Rarely; 3= Sometimes; 4= Often
Q9	Originally from Utah		1= Yes; 2= No
Q10	Satisfaction with Overall Quality of Life		1= Very Dissatisfied; 5= Very satisfied
Q11	Owns or Rents Home		1= Own; 2 = Rent

Q12	Has Ties to Farming	1= Yes; 2 = No
Q13	Sex of Respondent	1= Female; 2 = Male
Q14	Age of Respondent	1=18 to 29; 2=30 to 39; 3=40 to 49; 4=50 to 59; 5=60 and over
Q15	Highest Level of Formal Schooling	1= Some High School or High School Diploma/GED; 2= Some College and/or Vocational School; 3= 4 Year College Degree; 4= Graduate Degree
Q16	Zipcode where respondent lives	

Acknowledgements

This research was supported by NSF EPSCoR cooperative agreement IIA- 1208732 awarded to Utah State University, as part of the State of Utah EPSCoR Research Infrastructure Improvement Award. Any opinions, findings, and conclusions or recommendations expressed are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

References

Jones, A.S., Horsburgh, J.S., Jackson-Smith, D., Ramírez, M., Flint, C.G., Caraballo, J., *in press*. A Web-based, Interactive Visualization Tool for Social Environmental Survey Data. Submitted to: Environmental Modelling and Software.