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# Visualizing Local Data: The Ithaka S+R Survey at UNLV

Starr Hoffman and Ashley Hall  
University of Nevada, Las Vegas, USA

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## Abstract

In the fall of 2015, the UNLV Libraries decided to use Ithaka S+R's local version of the US Faculty Survey, as well as their newly-designed local surveys for graduate and undergraduate students. Initial reports, while insightful, were too lengthy and challenging to interpret. The Assessment Unit chose to visualize the results in Tableau to make the results more digestible and simpler to navigate. By incorporating various filter options (such as faculty rank and academic department), results were also customizable. The resulting information helped the UNLV Libraries make decisions about how to support student and faculty research as well as explore emerging service areas.

## Introduction

For the past two decades, the university libraries at the University of Nevada, Las Vegas, have regularly administered a user survey. The popular LibQUAL+ instrument was used in 2004, 2006, and 2009. In 2012, the libraries created and rigorously tested a custom survey with the help of the institution's Canon Survey Center. The advantage of this survey over the LibQUAL+ instrument was its customized attention to UNLV strategic goals and its brevity—particularly at a large institution whose faculty and students suffer from survey fatigue. In 2015, the libraries decided to use the local version of the Ithaka S+R Survey for faculty, graduate students, and undergraduates. While the Ithaka survey provides only minimal data on user satisfaction with collections and services, its wealth of information on the research practices of students and faculty was tightly tied to the UNLV Libraries' strategic initiatives for developing and re-packaging research services.

The administration of this survey coincided with both the libraries' recent choice of Tableau Desktop as a visualization tool, and the hiring of a new head of planning and assessment. Thus, the Assessment Unit (consisting of the data analyst, a student worker, and the new head) decided to analyze and visualize the entirety of the Ithaka survey in Tableau. This

enabled filtering of the data by college and school, increasing its usefulness for the liaison librarians and others.

## Ithaka Survey: From Interest to Deployment

Multiple factors went into the UNLV Libraries' decision to implement the Ithaka surveys, including: the positive reputation of Ithaka S+R, the in-depth research-related questions of all three surveys, as well as the level of customer support available for implementation. Customer support was of particular importance, as Ithaka S+R's knowledge and expertise in survey administration could be an asset in overcoming the response rate challenges of previous surveys. While the UNLV Libraries was very pleased with the quality of insightful data in the 2012 custom survey, the response rate was still lower than desired (16% for faculty and staff, 13% for graduate students, and 7% for undergraduates). Ithaka S+R had a well-organized and detailed implementation plan, included a schedule for survey deployment and reminders, provided survey incentives, and managed the data so that it could be anonymous for library staff. This convinced the Libraries' Survey Implementation Team that deployment and implementation would be a smooth process, resulting in significant response rate improvements over previous years.

## Deployment Process

Once the UNLV Libraries decided to use the Ithaka S+R survey, deployment was a straightforward process. There were few technical issues and those that did come up were handled quickly. The main complaint from survey takers was the length of time it took to adequately answer all of the survey questions. Some of this length was due to the decision to add optional question modules beyond the core questionnaire. In retrospect, these added modules, which may have negatively impacted survey respondents' experience and increased the number of incomplete responses, did not provide particularly compelling data to warrant the additional length. This feedback was valuable;

in future surveys, length of the survey will be more heavily scrutinized.

## Results

The Ithaka survey had better response rates than the previous four user surveys administered by the UNLV Libraries, as seen in the table below:

Survey	Year	Population		
		Faculty/Staff	Graduate	Undergraduate
LibQUAL+	2004	10.31%	5.62%	1.07%
	2006	5.34%	1.19%	0.42%
	2009	11.75%	6.14%	3.09%
Custom Local Survey	2012	16.29%	12.87%	6.80%
Ithaka	2015	21.37%	16.13%	11.41%

Higher response rates for Ithaka were likely due to increased visibility and valuable incentives (Apple Watches, UNLV Dining Dollars, and gift bags with UNLV Libraries-branded items). The personalization of e-mail invitations and reminders, as well as increased reminder e-mails, may have heightened interest in and awareness of the survey. Finally, there was aggressive promotion of the survey within the UNLV Libraries and elsewhere on campus via signs, table tents, and events in which students were encouraged to fill out the survey in person at the libraries via designated computer stations.

The Ithaka survey was broken down into multiple modules for each demographic. For undergraduate and graduate students, this included Higher Education Outcomes, Coursework and Academics, Role of the Library, Library Space Planning, Undergraduate/Graduate Research, Demographic Questions, and selected modules that applied only to each demographic. For the faculty survey, the UNLV Libraries explored the Core National Questionnaire and demographic questions as well as the following optional modules: *data preservation and management*, *scholarly communication*, and *market research*. Findings were mixed, but a few common themes did emerge across all populations.

### Role of the Library

All populations felt that the UNLV Libraries' funding of resources was of significant importance. Eighty-four percent of undergraduate students, 91 percent of graduate students, and 90 percent of faculty ranked this collection development function as either a five or a six on a six-point scale.

There are also similarities across all populations in the question, "Which of the following starting points did you use to begin your research?" All three populations regularly used both the library catalog and a general-purpose search engine as a starting point for their research. Thirty-two percent of faculty, 32 percent of graduate students, and 35 percent of undergraduate students started their research on the library website while 30 percent of faculty, 23 percent of graduate students, and 38 percent of undergraduate students used a general-purpose search engine.

### Teaching and Information Literacy Skills

All populations felt that it was the responsibility of the library to support student learning by helping students develop their research skills. Seventy-five percent of faculty rated this library function as a six or higher on a scale from one to ten. Similarly, 55 percent of graduate students and 89 percent of undergraduate students agreed that research skill support was the responsibility of the library (based on a seven-point strongly agree–strongly disagree scale).

### Ithaka Results and Decision Making

The final data resulting from Ithaka has been useful in several regards. First, the information about faculty and students' view of the importance of collection resources helps with collection development and budget justification. In addition, this finding encourages further analysis of collection use statistics, to ensure the collection is useful and tailored to the UNLV Libraries' specific users' needs.

Second, research practices have informed the development and revision of research support services, which are currently under way. With faculty and graduate students using the library's website only slightly more often than a general purpose search engine, and undergraduate students using it less, a further analysis of possible causes for this is warranted. Website usability studies as well as research workshops for students emphasizing the library website's search function could increase use. Discovering the needs and expectations of our faculty in particular has helped us locate gaps in campus support and to prioritize services accordingly.

Third, the data strongly indicated that both faculty and students value the role of librarians in developing students' research skills. This supports ongoing provision of library instruction across the UNLV curriculum. The response by both graduate and undergraduate students indicates that such instruction is valuable at all levels, not only in first-year seminar courses.

This information has also been useful for our liaison librarians, as they have gained new insight about how students and faculty locate and use information. Additionally, they learned more about the disciplinary-specific research practices of the faculty that they represent. An unexpected benefit of this data has been its usefulness in informing accreditation reports for various colleges and schools.

### **Sharing the Data: Problem**

Sharing the survey data was an immediate challenge upon receiving it from Ithaka S+R. The survey questions themselves were lengthy—the resulting report of findings was exceptionally long. These reports were nearly impossible for library faculty and staff, let alone interested parties outside the libraries, to meaningfully digest. Thus, easy-to-navigate data and quickly understandable results became a top priority for the Assessment Unit.

### **Tableau**

At the time of Ithaka deployment, the UNLV Libraries had begun to utilize Tableau for data reporting. Tableau's powerful visualization features seemed a viable solution for creating more meaningful Ithaka reports. Visualization of the Ithaka results proved useful in multiple ways: (1) it allowed consumers of the data to quickly view

results of multiple questions visually, as opposed to having to read through lengthy conclusions, (2) it allowed users to filter results by multiple metrics including demographic data, a useful feature as departments and leaders try to make sense of the information relevant to them, and (3) the new platform elicited excitement as it was a welcome change from standard narrative reports.

When visualizing the Ithaka data, the Assessment Unit first identified how library staff might utilize the results and then identified ways that Tableau could facilitate exploration of those results to meet specific needs.

### **How Can Ithaka Results Be Used?**

The following short list was used to start the Ithaka dashboard design process:

1. Library liaisons use results to inform their work with their respective academic departments.
2. Library leadership use results to inform strategic planning.
3. Library staff uses results to plan new services.
4. Library collections department uses results to inform collection development.

### **Tableau Solutions**

The following dashboard design elements were chosen to meet the needs of users seeking to complete the above tasks.

1. Include filter options for liaisons enabling them to view results by college and department.
2. Group Ithaka questions into categories that correspond with the UNLV Libraries' Strategic Plan.
3. Group Ithaka questions into categories that correspond to library working committees.
4. Group Ithaka questions into categories that pertain to collections and include filters enabling customized analysis.

### **Ithaka Dashboards**

Once the Assessment Unit created a basic plan and outline of the dashboards, the data analyst cleaned and reshaped the data. Preparing survey data for Tableau is complex, since the tool was designed primarily for use with quantitative (count and financial) data. Leaving the full text of both question and response in the data (as opposed to coding the responses) simplified the labeling process within Tableau. In order to use demographic data as filters, this data was moved into a separate data sheet. Survey questions, with the exception of demographic

questions, needed to be reshaped since Tableau requires that each row of data include one question and one response, thus duplicating respondent IDs on multiple rows. This varies from the typical SPSS format, in which each column represents a question (usually the label) and contains a corresponding response, and each row corresponds to a single respondent. Survey questions were visualized using a variety of charts and graphs including standard bar charts, stacked bar charts, data tables, and tree maps. Filter options included class/faculty rank, age range, gender, college, department, and faculty's primary responsibility (research, teaching, or both). Care was taken to ensure that response rates were high enough within filtered categories so as to not identify respondents. To reduce this chance, demographic filters were removed when fewer than five individuals responded to a given question.

### **Ithaka Dashboards: Sharing Results**

Once the Assessment Unit and the dean of the UNLV Libraries approved the Ithaka dashboards, results were presented to library faculty and staff in an open forum in which they were able to explore the dashboards via Tableau Reader. This unscripted forum allowed participants to explore the data independently and come to their own realizations and conclusions. Screenshots and full dashboards were shared with select individuals throughout the institution while executive summaries were shared with the entire university community. Full dashboards for all three surveys were uploaded to the UNLV Libraries' Tableau Server for anyone with access to view and explore.

### **Conclusions**

The use and implementation of the Ithaka surveys at the UNLV Libraries was deemed a success. This survey had higher response rates than previous user surveys implemented at the UNLV Libraries, few technical difficulties, and few individual complaints or challenges with the survey interface and material. The survey results provided valuable insight into faculty and student research practices, as well as some information about user satisfaction with collections and services. These results have already been used in decision making for the development of new research support services, and continue to provide valuable information to liaison librarians in particular.

By visualizing the Ithaka data via Tableau and grouping results into relevant categories, as well as incorporating various filter elements, consumers of the data were able to explore the results efficiently and in great depth. For example, staff interested only in questions related to data use and management were able to find all related questions grouped on a data use and management dashboard. Once on that dashboard, users were able to drill down into the data with filters to discover how individual colleges, departments, or respondent groups (faculty/student rank, age groups, etc.) answered specific questions. The resulting visualized report was found to be engaging and digestible, and ultimately more meaningful than typical narrative reports. Ultimately, both the survey content and the visual presentation generated excitement and enthusiasm, encouraging greater exploration and use of this data for decision making.

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