

Library Assessment Conference 2016

Getting More from LibQual+ Data:

Using Open Source Tools for Data Analysis and Visualization

Supplement 1: Performing a subsequent inferential analysis of LibQual+ data

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Butler University Libraries administered the LibQual+ survey for the first time as part of the 2015 cohort. While the results data of the LibQual+ core and supplemental questions were reported in a robust report, a subsequent inferential analysis of the branch and demographic data by LibQual+ was cost prohibitive. Julie Miller, Dean of Libraries, administered the survey and was aware that we had access to all of the LibQual+ raw data. She approached Library Associate Andrew Welp, whose educational background includes a Master's degree in Information Science, whether he might be able to do an in-house analysis of the branch and demographic data. After some discussion, Miller posited the initial research questions that would guide the subsequent inferential analysis and visualization of the data:

1. Are there significant differences in responses based on the preferred library (Irwin Library and the Ruth Lilly Science Library)?
2. Are there significant differences in responses based on demographics?
Demographic characteristics include:
 - Sex
 - Age
 - User group (e.g, undergraduate student, graduate student, faculty)
 - Discipline

Welp conducted inferential analysis of the data based on the preceding research questions using two popular statistical analysis software products: SPSS and SAS University Edition. In an effort to be as cost effective as possible, he used a free trial of SPSS for the initial analysis due to familiarity with the product, its features, and output formats. When the trial period of SPSS ended, Andrew chose another tool, SAS University Edition to finish the analyses. The university edition of the SAS software suite enables a single user to install a vmware instance of SAS that, when properly installed, allows SAS to run in any standard web browser free of charge.

These software suites, while free, were adequate to perform the proper analyses of the data.

Based on the research questions, the nonparametric Spearman's Rho Rank Order test was selected to observe correlation based on the established variables. This test was chosen because the data were inherently ordinal (in order of position in a list) and, because of convenience sampling, normal distribution couldn't be assured. Therefore, the Spearman's Rho, because of its ability to handle dichotomous and ordinal data was chosen as opposed to more prominent correlation coefficients, such as Pearson's R.

The performed inferential analysis revealed several significant but weak correlations between demographics, particularly in regard to age, suggesting that responses were relatively consistent across surveyed demographic groups.

As the LibQual+ data were collected to support the library's planning and assessment processes, the results were broad and were more in-line with exploratory methodology. Therefore, hypothesis testing has not been performed as of this time.