GETTING MORE FROM LIBQUAL+ DATA: USING OPEN SOURCE TOOLS FOR DATA ANALYSIS AND VISUALIZATION

1. CLEANING UP THE DATA

team member: **Andrew Welp**
role: Statistical analyst and number cruncher

The first step in this process was cleaning up the raw data provided to us by LibQual+. The raw data were provided to library personnel in .xls format and were manually cleaned up in order to provide clarity for analysis as the raw data were necessarily coded alphanumerically in order for collection of the data. These codes were manually replaced with their actual labels for human analysis.

tools: Excel

2. ASKING RESEARCH QUESTIONS

team members: **Julie Miller**, Andrew Welp
role: Dean of Libraries and big picture thinker

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 included:
   - **sex**
   - **age**
   - **user group** (e.g. undergraduate student, graduate student, faculty)
   - **discipline**

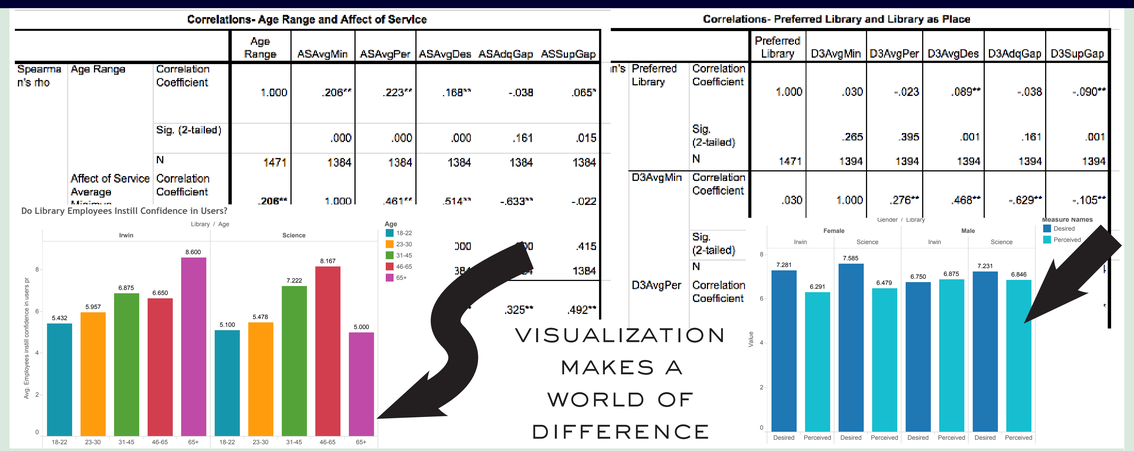
3. SELECTING & APPLYING STATISTICAL TOOLS

team member: **Laura Menard**, Andrew Welp, Franny Gaede
role: Visualization wrangler and Tableau wizard

A trial of SPSS and the University Edition of SAS were used to conduct inferential analysis of the data for no cost.

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.

tools: Excel, SPSS, SAS



Correlations- Age Range and Affect of Service

			Age Range	ASAvgMin	ASAvgPer	ASAvgDes	ASAdqGap	ASSupGap
Spearman's rho	Age Range	Correlation Coefficient	1.000	.206**	.223**	.168**	-.038	.065*
		Sig. (2-tailed)		.000	.000	.000	.161	.015
		N	1471	1384	1384	1384	1384	1384
	Affect of Service Average	Correlation Coefficient	.206**	1.000	.461**	.514**	-.633**	-.022
		Sig. (2-tailed)	.000		.000	.000	.000	.415
		N	1384	1384	1384	1384	1384	1384
	Minimum	Correlation Coefficient	.223**	.461**	1.000	.325**	.492**	[illegible]

Correlations- Preferred Library and Library as Place

			Preferred Library	D3AvgMin	D3AvgPer	D3AvgDes	D3AdqGap	D3SupGap
Spearman's rho	Preferred Library	Correlation Coefficient	1.000	.030	-.023	.089**	-.038	-.090**
		Sig. (2-tailed)		.265	.395	.001	.161	.001
		N	1471	1394	1394	1394	1394	1394
	D3AvgMin	Correlation Coefficient	.030	1.000	.276**	.468**	-.629**	-.105**
		Sig. (2-tailed)	.265		.000	.000	.000	.000
		N	1394	1394	1394	1394	1394	1394
	D3AvgPer	Correlation Coefficient	.023	.276**	1.000	.325**	.492**	[illegible]

VISUALIZATION MAKES A WORLD OF DIFFERENCE

AFFECT OF SERVICE

confidence

Faculty are confident in library employees, while undergraduates aren't concerned.

knowledge

Undergraduates aren't sure what to make of librarians' knowledge, but faculty and staff perceive employees as knowledgable.

dependability

The Science Library is perceived as very dependable, particularly by faculty.

LIBRARY AS PLACE

inspiration

Female respondents were more desirous of an inspirational space than their male counterparts.

getaway

Respondents in computer science and engineering were particularly interested in the library-as-getaway.

group vs. individual space

Male respondents are much more interested in individual space than group working space.

INFORMATION CONTROL

print materials

Nearly all respondents were uninterested in expanding print material holdings.

eresources

Younger users are more satisfied with the libraries' electronic holdings.

research tools

Across disciplines and user groups, researchers would like more tools that enable them to work independently.

LIBRARY SERVICES

hours

Unsurprisingly, students would like more hours at both libraries. Faculty are content.

catalog

Humanities respondents see the most room for improvement in the catalog. Communication and journalism folks are pretty happy with it as is.

equipment

Science library users have a higher level of expectation for modern equipment, but are also more satisfied overall.

4. PLAN & IMPLEMENT VISUALIZATION

team members: **Franny Gaede**, Laura Menard
role: Visualization wrangler and designer

We looked at several options, and after weighing some costs and benefits, selected two high-quality and cost-effective visualization applications:

- Tableau
- Keynote

Tableau is free, relatively easy to learn, and allows users to harness the platform for everything from basic to advanced visual analytics. Keynote was then used to turn our Tableau visualizations into an infographic.

tools: Keynote, Tableau

5. INTEGRATION INTO STRATEGIC PLANNING

team members: All

The faculty and staff of Butler University Libraries meet annually to review progress toward goals based on assessment reports and to identify new or continuing initiatives in support of the five strategic priorities and seven goals of the 2013-16 strategic plan.

In our planning retreat in August 2015, we reviewed both quantitative and qualitative LibQual+ results to inform the planning discussion. Five of the resulting 26 initiatives developed for the 2015-16 academic year were based on LibQual+ findings and response themes.

6. CLOSING THE LOOP & NEXT STEPS

team members: All

Here are two strategic initiatives developed using LibQual+ data, the actions taken as of August 2016, and results/next steps

15-16 Initiative	Action(s) Taken	Results/Next Step(s)
Assess user interface and improve usability of electronic resources.	The library web site was migrated from Embraco to Drupal and redesigned based on best practices. Enhancement request for sorting A-Z journal availability placed with OCLC.	Usability testing testing to determine both accuracy and ease of use based on site revision and enhancement.
Communicate findings from the LibQual+ survey to primary constituent groups (e.g., students, faculty, & administrators).	Presented LibQual+ data to Butler Student Government Association representatives, Provost's Advisory Council members, and building design planning group for Science Library renovation.	SGA agreed to fund furniture and other improvements for a new quiet study area in basement of Irwin Library. Decision to emphasize quiet study space in Science Library renovation.

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