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STABILITY OF LIBRARY SERVICE QUALITY BENCHMARKING NORMS ACROSS TIME AND COHORTS: A LibQUAL+™ STUDY

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Abstract. LibQUAL+™ is a web-administered library service quality assessment protocol that has been used around the world in hundreds of different types of libraries. Data have been collected from almost 500,000 library users. The protocol has been used in several language variations. The purpose of the present study is to characterize the stability of LibQUAL+™ score norms across both time and various user cohorts. Library staff may place more confidence in benchmarking conclusions if the stability of the score norms can be demonstrated.

Introduction

LibQUAL+™ is a web-administered library service quality assessment protocol (Cook, Heath, Kyrillidou & Webster, 2002; Cook, Heath, B. Thompson & R.L. Thompson, 2001a, 2001b; Cook, Heath, Thompson & Webster, 2003; Snyder, 2002) that has been used at hundreds of different types of libraries, including, but not limited to, public libraries, community college libraries, law libraries, health science libraries, and university research libraries. Data have been collected from almost 500,000 library users. The protocol has been used in several language variations (Kyrillidou, Cook & Thompson, 2005) in the United States, Canada, Australia, Egypt, England, France, Ireland, Scotland, Sweden, the Netherlands, South Africa, and the United Arab Emirates.

Three Primary Components

LibQUAL+™ consists of three primary components. First, the current protocol consists of 22 core survey items yielding scores on each item, scores on each of three scales (i.e., Service Affect, Information Control, and Library as Place), and a total score. All of these scores (i.e., item, scale, and total) are scaled in the same metric, 1 to 9, with 9 being the highest rating, so that scores can be compared (e.g., item with item, item with scale, scale with total) apples-to-apples.

Second, LibQUAL+™ also consists of a box in which survey participants provide open-ended comments. These comments are a critical component of LibQUAL+™, because ~40% of all survey participants use the box to flesh out their concerns as library users, and to provide constructive and specific suggestions for library improvement.

Third, LibQUAL+™ consists of a set of more than 100 ancillary items (Thompson, Cook & Kyrillidou, in press) from which libraries may select 5 additional items. This option allows library decision-makers to collect quantitative data focusing more on local concerns, in addition to benchmarking using the 22 core items completed by all survey participants.

Two LibQUAL+™ Literatures

LibQUAL+™ is based on many of the same precepts as the SERVQUAL protocol (Parasuraman, Zeithaml & Berry, 1985, 1994), which was developed for use in evaluating perceived service quality in the for-profit business sector (Cook & Thompson, 2000a, 2000b). SERVQUAL has been the basis of more than 100 dissertations and 1,000 journal articles. Thus, LibQUAL+™ in very real sense developmentally "stands on the shoulders of giants." Like SERVQUAL, LibQUAL+™ is a "total market survey," which is one of the 11 ways of listening to users elaborated by Len Berry (1995).

However, LibQUAL+™ items and scaling were carefully regrounded for use in library settings in a series of qualitative studies of library users' needs and perceptions (Cook & Heath, 2001), documented in detail by Cook (2002b). Thus, LibQUAL+™ measures library service quality perceptions from within the users' perspectives.

Although SERVQUAL has been both widely used and hugely influential, recent GOOGLE searches have yielded even more hits for LibQUAL+™ than for SERVQUAL, perhaps reflecting LibQUAL+™'s widespread use at so many libraries around the world. And roughly 50 refereed journal articles have been published on LibQUAL+™.

The LibQUAL+™ articles can be disaggregated into roughly two equal-sized literatures. These articles have been published in virtually all the library science journals, including *College and Research Libraries* (Cook, Heath & Thompson, 2001), *IFLA Journal* (Cook, Heath, B. Thompson & R.L. Thompson, 2001a), *Journal of Academic Librarianship* (Thompson, Cook & Kyrillidou, 2005), *Journal of Library Administration* (Heath, Kyrillidou & Askew, 2004), *Library Administration & Management* (Snyder, 2002), *Library Quarterly* (Thompson, Cook & Heath, 2003b), *Library Trends* (Cook & Thompson, 2001), *Performance Measurement and Metrics* (Thompson, Cook & Heath, 2000), and *portal* (Cook, Heath & Thompson, 2003).

The first LibQUAL+™ journal article literature involves reports by librarians about how they have used the protocol to improve service quality within their libraries. One set of articles was edited by Cook (2002a), and a second set of these articles were presented by Heath, Kyrillidou and Askew (2004).

The second LibQUAL+™ literature involves studies investigating the integrity and meaning of LibQUAL+™ scores, including studies of score reliability (Cook, Heath, R.L. Thompson & B. Thompson, 2001; B. Thompson, Cook & R.L. Thompson, 2002) and score validity (Heath, Cook, Kyrillidou & Thompson, 2002; Thompson, Cook & Heath, 2001). Several studies in this literature have involved sophisticated statistical methods, including structural equation modeling (Thompson, Cook & Heath, 2003a), reliability generalization (Thompson & Cook, 2002), taxonomic analysis (Arnau, Thompson & Cook, 2001), and latent trait item response theory analysis (Wei, Thompson & Cook, 2005).

LibQUAL+™ Norms

One important feature of LibQUAL+™ is the capacity to use LibQUAL+™ scores for institutional benchmarking. Libraries may select peer institutions from among other protocol participants, compare scores across institutions, identify peer institutions with superior performance, and then identify and emulate the practices at the peer institutions.

Score norms are one vehicle for such benchmarking. The use of LibQUAL+™ norms has been explained in Cook, Heath and Thompson (2002). Score norms allow the conversion of a library's mean (i.e., average) scores into percentile ranks (see Thompson, 1993), which indicate what percentage of either (a) individual protocol respondents, or (b) institutions, generated lower LibQUAL+™ scores.

Norms and Benchmarking

Norms tell us how scores "stack up" within a particular user group. For example, on the 1-to-9 ("9" is highest) scale, users might provide a mean "perceived" rating of 6.5 on an item, "complete run of journal titles."

A total market survey administered to hundreds of thousands of users, as is LibQUAL+™, affords the unique opportunity to ask normative questions such as, "How does a mean 'perceived' score of 6.5 stack up among all individual users who completed the survey?", or "How does a mean 'perceived' score of 6.5 stack up among all institutions at which users completed the survey?" For

example, if 70% of 100,000 individual users generated "perceived" ratings lower than 6.5, 6.5 might not be so bad.

Only norms give us insight into this comparative, benchmarking perspective. And a local user-satisfaction survey (as against a total market survey) can never give us this insight!

Common Misconception Regarding Norms

An unfortunate and incorrect misconception is that norms make value statements. Norms do not make value statements! Norms make factual statements. If you are a forest ranger, and you earn \$25,000 a year, a norms table might inform you of the fact that you make less money than 85% of the adults in the United States.

But if you love the outdoors, you do not care very much about money, and you are very service-oriented, this piece of fact might not be relevant to you. Or, in the context of your values, you might interpret this fact as being quite satisfactory.

Purpose of the Present Study

For several years, both (a) individual and (b) institutional score norms have been published for certain types of users (e.g., undergraduate students, postgraduate students, faculty) and certain types of libraries (e.g., major research libraries, medical school libraries). These norms conversion tables are reported at:

<http://www.coe.tamu.edu/~bthompson/libq2005.htm>

<http://www.coe.tamu.edu/~bthompson/libq2004.htm>

<http://www.coe.tamu.edu/~bthompson/libq03b.htm>

<http://www.coe.tamu.edu/~bthompson/libq2003.htm>

<http://www.coe.tamu.edu/~bthompson/libq2002.htm>

<http://www.coe.tamu.edu/~bthompson/servnorm.htm>

The several hundred thousand LibQUAL+TM user surveys collected during the last five years provide an ample basis for intriguing comparisons of the norms tables across years, language versions, and user groups.

The purpose of the present study was to characterize the stability of LibQUAL+TM score norms across both time and various user cohorts. Library staff may place more confidence in benchmarking conclusions if the stability of the score norms can be demonstrated. Specifically, we conducted the study to address the following research questions:

1. How stable are LibQUAL+TM total and scale (i.e., Service Affect, Information Control, and Library as Place) score norms across selected years, and selected language versions (i.e., American English, British English)?
2. How stable are LibQUAL+TM total score norms across selected years and selected language versions (i.e., American English, British English) for undergraduate students versus faculty?

Results

The various LibQUAL+TM norms conversions tables provide the capacity to convert an institution's score means into percentile ranks ranging from the 1st percentile to the 99th percentile. Here we computed Pearson product-moment correlations of the percentile scores for each of the 99 percentile ranks for various pairs of percentile scores (e.g., American English 2001 total scores correlated with American English 2003 total scores). As Thompson (2006) explained, the Pearson *r* addresses two questions:

1. To what degree do the two variables order the rows of data in the same order?, and
2. To what degree do the two variables have the same shape (i.e., skewness and kurtosis)?

The Pearson *r* has a maximum value of +1, and reaches that limit, only when the two variables order the data in exactly the same rank order, and also have identical distribution shapes.

To address the study's first research question, Table 1 presents the Pearson *r* values for LibQUAL+TM total scores across selected years and two of the language versions. Tables 2 through 4 present related results for each of the three LibQUAL+TM scale scores (i.e., Service Affect, Information Control, and Library as Place).

To address the study's second research question, Pearson r values were computed for Lib-QUAL+TM total scores across selected years and two of the language versions for different role groups. These results are presented for undergraduate students and faculty in Tables 5 and 6.

Table 1. Pearson Correlation Coefficients for LibQUAL+™ Total Percentile Scores Across Two Language Versions and Five Years ('01 to '05)

Sample/ Variable	Variable				
	AmEng_01	AmEng_02	AmEng03a	BrEng_03	AmEng03b
n	16,918	63,285	93,550	6,853	93,550
v	25	25	25	25	22
AmEng_01	1.0000				
AmEng_02	.9823	1.0000			
AmEng03a	.9996	.9819	1.0000		
BrEng_03	.9998	.9827	.9994	1.0000	
AmEng03b	.9995	.9818	1.0000	.9993	1.0000
AmEng_04	.9998	.9825	.9996	.9998	.9995
BrEng_04	.9993	.9822	.9983	.9995	.9982
AmEng_05	.9996	.9819	.9999	.9994	.9998
BrEng_05	.9989	.9825	.9980	.9994	.9978

Sample/ Variable	AmEng 04		BrEng 04		AmEng 05		BrEng 05	
	AmEng 04	BrEng 04	AmEng 05	BrEng 05	AmEng 05	BrEng 05	AmEng 05	BrEng 05
n	24,980	15,860	61,991	12,503				
v	22	22	22	22				
AmEng_01								
AmEng_02								
AmEng03a								
BrEng_03								
AmEng03b								
AmEng_04	1.0000							
BrEng_04	.9994	1.0000						
AmEng_05	.9997	.9986	1.0000					
BrEng_05	.9992	.9998	.9982	1.0000				

Note. "AmEng" = American English; "BrEng" = British English. The 2003 year marked a transition from a 25-item to a 22-item version of LibQUAL+™, and that year norms were reported for both the longer and the new, shorter version of the protocol. Years are indicated as the last two digits of the variable names.

In 2005, for the first time, given substantial antipodal participation by libraries in the southern hemisphere (e.g., South Africa, Australia), LibQUAL+™ began to implemented each year in two sessions. Here, for 2005, only the first session data were available at writing.

Table 2. Pearson Correlation Coefficients for LibQUAL+™ Service Affect Percentile Scores Across Years for American English

Sample/ Variable	Year			
	2001	2003	2004	2005
$\frac{n}{v}$	16,918 9	93,413 9	24,980 9	61,991 9
\bar{X}	2001	2003	2004	2005
	1.0000			
	.9988	1.0000		
	.9989	.9991	1.0000	
	.9989	.9994	.9993	1.0000

Note. In 2005, for the first time, given substantial antipodal participation by libraries in the southern hemisphere (e.g., South Africa, Australia), LibQUAL+™ began to implemented each year in two sessions. Here, for 2005, only the first session data were available at writing.

Table 3. Pearson Correlation Coefficients for LibQUAL+™ Personal Control ('01, '03), Information Access ('01, '03), and Information Control ('03 to '05) Percentile Scores Across Years for American English

Sample/ Variable	Variable			
	PersCo01	PersCo03	InfoAc01	InfoAc03
$\frac{n}{v}$	16,918 6	93,548 6	16,918 5	93,530 5
\bar{X}	PersCo01	PersCo03	InfoAc01	InfoAc03
	1.0000			
	.9982	1.0000		
	.9977	.9978	1.0000	
	.9985	.9985	.9981	1.0000
	.9987	.9989	.9986	.9990
	.9986	.9986	.9988	.9989
	.9987	.9991	.9985	.9991

Sample/ Variable	Variable		
	InfoCo03	InfoCo04	InfoCo05
$\frac{n}{v}$	93,267 8	24,980 8	61,991 8
\bar{X}	InfoCo03	InfoCo04	InfoCo05
	1.0000		
	.9994	1.0000	
	.9996	.9992	1.0000

Note. "PersCo" = Personal Control; "InfoAc" = Information Access; "InfoCo" = Information Control. In 2003, the 6 items on the Personal Control scale and the 5 items on the Information Access scale merged to form the new, 8-item Information Control scale, and that transitional year norms were reported for all three scales.

In 2005, for the first time, given substantial antipodal participation by libraries in the southern hemisphere (e.g., South Africa, Australia), LibQUAL+™ began to implemented each year in two sessions. Here, for 2005, only the first session data were available at writing.

Table 4. Pearson Correlation Coefficients for LibQUAL+™ Library as Place Percentile Scores Across Years for American English

Sample/ Variable	Year			
	2001	2003	2004	2005
\bar{n}	16,918	92,850	24,980	61,991
\bar{v}	5	5	5	5
2001	1.0000			
2003	.9967	1.0000		
2004	.9969	.9977	1.0000	
2005	.9934	.9977	.9962	1.0000

Note. In 2005, for the first time, given substantial antipodal participation by libraries in the southern hemisphere (e.g., South Africa, Australia), LibQUAL+™ began to implemented each year in two sessions. Here, for 2005, only the first session data were available at writing.

Table 5. Pearson Correlation Coefficients for LibQUAL+™ Total Percentile Scores for Undergraduate Students Across Two Language Versions and Five Years ('01 to '05)

Sample/ Variable	Variable					
	AmEng_01	AmEng_02	AmEng_03	AmEng_04	BrEng_04	AmEng_05
\bar{n}	5,154	26,483	49,262	10,342	10,702	38,952
\bar{v}	25	25	25	22	22	22
AmEng_01	1.0000					
AmEng_02	.9993	1.0000				
AmEng_03	.9951	.9952	1.0000			
AmEng_04	.9987	.9989	.9950	1.0000		
BrEng_04	.9985	.9987	.9942	.9978	1.0000	
AmEng_05	.9992	.9993	.9957	.9989	.9978	1.0000

Note. "AmEng" = American English; "BrEng" = British English. The 2003 year marked a transition from the 25-item to a 22-item version of LibQUAL+™, and that year norms were reported for both the longer and the new, shorter version of the protocol.

In 2005, for the first time, given substantial antipodal participation by libraries in the southern hemisphere (e.g., South Africa, Australia), LibQUAL+™ began to implemented each year in two sessions. Here, for 2005, only the first session data were available at writing.

Table 6. Pearson Correlation Coefficients for LibQUAL+™ Total_Percentile Scores for Faculty Across Two Language Versions and Five Years ('01 to '05)

Sample/ Variable	Variable					
	AmEng_01	AmEng_02	AmEng_03	AmEng_04	BrEng_04	AmEng_05
n	4,420	19,067	22,360	5,410	1,783	8,903
v	25	25	25	22	22	22
AmEng_01	1.0000					
AmEng_02	.9996	1.0000				
AmEng_03	.9986	.9992	1.0000			
AmEng_04	.9990	.9997	.9995	1.0000		
BrEng_04	.9983	.9994	.9986	.9995	1.0000	
AmEng_05	.9979	.9987	.9998	.9993	.9983	1.0000

Note. "AmEng" = American English; "BrEng" = British English. The 2003 year marked a transition from the 25-item to a 22-item version of LibQUAL+™, and that year norms were reported for both the longer and the new, shorter version of the protocol.

In 2005, for the first time, given substantial antipodal participation by libraries in the southern hemisphere (e.g., South Africa, Australia), LibQUAL+™ began to be implemented each year in two sessions. Here, for 2005, only the first session data were available at writing.

Discussion

The purpose of the present study was to explore the stability of LibQUAL+™ norms across both selected years and user groups. We could have made additional comparisons, using even more years, or more user groups (e.g., postgraduate students). However, as reflected in the results reported in Tables 1 through 6, given norms (e.g., total score norms, scale score norms, undergraduate student norms) are incredibly stable. Thus, additional comparisons seem unnecessary.

The norms tables were stable, even though we dropped three items from the protocol, and changed scales, in 2003! And the norms were stable even across language variations in item wording.

Of course, the present results should not be read as implying that scores for individual libraries are necessarily stable from year to year. The stability of norms tables and of institutional LibQUAL+™ scores are completely unrelated issues.

Implications

The present results suggest that renorming the scores, by creating year-specific norms conversion tables, is unnecessary. Indeed, the use of any of the norms tables, from any of the years, appears reasonable.

Of course, expensive standardized tests are only normed roughly every 10 years. We have always recognized that norming on a more frequent, annual basis, as we have done to date, may be overkill.

Creating Norms Dynamically

Furthermore, the ultimate norms tables would be norms created uniquely, by given libraries, by selecting their own peer institutions, and only these, to create personalized norms tables. Such personalized norms tables allow benchmarking only within the library community of most interest at a given library. The capacity to create exactly these individualized norms, dynamically "on the fly," is a feature recently added to the LibQUAL+TM software webpages.

LibQUAL+TM has brought together hundreds of libraries from all over the world in a community dedicated to improving library service quality. One benefit of the community's large size is that this not-for-profit operation housed within the Association for Research Libraries can be self-sustaining at only modest cost to individual participating libraries, given the efficiencies and cost benefits of economies of large scale.

In psychology, Jourard (1971) suggested that we only come to know ourselves through the vehicle of knowing others. In libraries, also, the more we know others, the more we come to know about ourselves. The breadth of the LibQUAL+TM community not only makes the protocol affordable, but also creates the unique opportunity to know ourselves better through the vehicle of normative benchmarking with peer institutions.

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