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Library Users' Service Expectations:

A LibQUAL+® Study of the Range of What Users Will Tolerate

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Paper presented at the 7th Northumbria International Conference on Performance Measurement in Libraries and Information Services, Stellenbosch, South Africa, August 13, 2007.

Abstract

The purpose of our research was to explore how tolerant library users are with respect to the library services described in the 22 LibQUAL+® core items. The sample consisted of 297,158 LibQUAL+® participants from the years 2004, 2005, and 2006, who completed either the American English (n_{AE} = 227,808) or the British English (n_{BE} = 69,350) version of the protocol. Thus, we explored differences across (a) 3 years, (b) 2 sets of countries, and (c) 3 user groups (i.e., undergraduates, postgraduates, and faculty).

The *birth of LibQUAL+®* in the late 1990s has been detailed at: **<http://www.coe.tamu.edu/~bthompson/libbirth.htm>**. The *qualitative grounding* of the protocol within the mindset of library users has been documented by Cook and Heath (2001) and Cook (2002b). The *psychometric integrity* of protocol scores has been documented in numerous articles, including Thompson, Cook and Heath (2000, 2001), Cook and Thompson (2001), Cook, Heath, Thompson and Thompson (2001a, 2001b), and Cook, Heath and Thompson (2001). Librarians' *use of LibQUAL+® to improve library service quality* has been documented by Cook (2002a) and Heath, Kyrillidou and Askew (2004).

The LibQUAL+® protocol during 2007 will be completed (a) at the 1,000th institution (b) by the 1,000,000th library user. LibQUAL+® has been used in various libraries around the world (e.g., the United States, Canada, Australia, the United Kingdom [England, Scotland, Wales], France, Ireland, the Netherlands, Switzerland, Germany, Denmark, Finland, Norway, Sweden, Egypt, the United Arab Emirates, South Africa, and Hong Kong) for the very applied purpose of improving library service quality. Currently, the system supports 12 languages: Afrikaans, American English, British English, Chinese (Traditional), Danish, Dutch, Finnish, French (Canadian), French (European), German, Norwegian, and Swedish. The massive database created by the worldwide library community also has the unique value of characterizing library users' perceptions (a) across eight years and (b) across a variety of countries and library types.

In addition to (a) providing open-ended comments, which historically roughly 40% of participants do, and (b) rating five service quality items selected by institutions or consortia from an optional item pool consisting of more than 100 ancillary items, LibQUAL+® participants also (c) rate each of the 22 LibQUAL+® core items on a 1-to-9 scale (9 is highest) with respect to (a) perceived levels of actual service quality, (b) the minimally-acceptable level of service with respect to a given item, and (c) the desired level of service with respect to a given item. The difference between the desired rating and the minimally-acceptable rating for a given item is the "*zone of tolerance*" for that item (Cook, Heath & Thompson, 2003; Thompson, Cook & Heath, 2000).

Three Service Quality Interpretation Frameworks

When we obtain library service quality ratings data to inform our policy judgments, we must interpret what our ratings mean before we can make any decisions. If we only ask users to rate perceived service quality on a 1-to-9 scale, we might obtain, for example, a mean rating of 6.5 on an item or a set of items. But what does 6.5 mean? Is 6.5 bad, good, really good, or what? With only perception ratings, we can only say that the mean rating of 6.5 is greater than the rating scale midpoint of 5, so perhaps this result is somewhat positive. But essentially *we can so very little, if anything, about what perception data mean, when we collect only perception ratings*. Three interpretation frameworks may be invoked to contextualize ratings data, so that data can be interpreted, and

decisions may then be informed by data.

Zones of Tolerance. First, participants can be asked to provide ratings of desired levels of service quality, and minimally-acceptable levels of service, in addition to ratings of perceived service quality. The resulting zones of tolerance form a context for interpreting perceptions (Cook, Heath & Thompson, 2003; Thompson, Cook & Heath, 2000). Two items, both with mean perception ratings of 6.5, may have different zones of tolerance, and fall in different locations within their respective zones. For example, one 6.5 might fall near the top of its zone, while another might fall outside the zone, below the mean minimally-acceptable service quality rating.

We hope that perception ratings will approach, or even exceed, desired service quality. And we certainly do not perceptions to fall below minimally-acceptable service levels, especially on criteria that receive especially high desired ratings, and thus are deemed particularly important to users. Quite often, perceptions fall within the bottom third of the zones of tolerance.

Benchmarking. Second, libraries can interpret perception ratings by benchmarking the ratings against those of peer institutions. This process can be greatly facilitated by the use of score norm tables, as explained by Cook, Heath and Thompson (2002) and Thompson, Cook and Kyrillidou (2006). A mean rating of 6.5 has different interpretations when the mean rating at all peer institutions are above 7.0, and a different interpretation if the mean rating at all peer institutions is 6.0.

Benchmarking is not possible when conducting a local survey, because then peer institution data are unavailable. Conversely, in the LibQUAL+® context, because so many institutions (i.e., 1,000+) from all over the world have completed the protocol over the past eight years, numerous benchmarking comparisons are readily at hand!

Longitudinal Comparisons. Third, libraries can compare their perception ratings across time, longitudinally, if a given protocol has been completed periodically at a given institution. Afterall, because no one is more like you than you, longitudinal comparisons against oneself is the ultimate form of benchmarking. A mean rating of 6.5 suggests a positive trajectory of perceptions if ratings the previous year had a mean of 6.0, and the year before that of 5.5.

The LibQUAL+® protocol is **somewhat unique in that perception scores from the protocol can be interpreted using any or all combinations of the three interpretative frameworks.**

Three Quotations

Three quotations sum up the fundamental philosophical underpinnings of the LibQUAL+® protocol. First, as French philosopher and moralist François de La Rochefoucauld noted, "Il est plus nécessaire d'étudier les hommes que les livres"; in the digital information age, book and serial counts are unsuitable proxy measures of library quality. Second, within the service quality orientation, as the developers of SERVQUAL emphasized, a major premise is that "only customers judge quality; all other judgments are essentially irrelevant" (Zeithaml, Parasuraman, &

Berry, 1990, p. 16). Third, as library scholar and LibQUAL+® *bon vivant* Bruce Thompson (2006b) so wisely noted, "We only care about the things we measure" (p. 1). Thus, we do not seriously care about users' perceptions of service quality unless we listen actively to library users in various systematic ways.

Within the framework of the 11 ways of listening to customers enumerated by Berry (1995), LibQUAL+® is a *total market survey*. User-oriented libraries listen to users in multiple ways, to corroborate messages across different communication venues. Thus, LibQUAL+® is but one tool for listening within the library staff's arsenal of methods.

Purpose

The purpose of our research was to explore how tolerant library users are with respect to the library services described in the 22 LibQUAL+® core items. For example, users may highly desire a particular service, but tolerate fairly large deviations from desired performance or, alternatively, may not tolerate even small deviations from desired levels of service.

Second, we also sought to determine whether the tolerances are related to how highly desired are given library service indicators. For example, users may systematically least tolerate deviations from highly desired services, but may be quite tolerant of deviations from expectations on services that are deemed less salient. Conversely, the service tolerances of users may be unrelated to the priorities that users assign to different service quality indicators.

Third, we sought to determine whether user service quality tolerances appear to be stable over time, or fluctuate wildly and unpredictably from year to year. If tolerances are stable, librarians may be better situated to make improvement decisions within the context of stable user expectations.

Study Sample

The sample consisted of 297,158 LibQUAL+® participants from the years 2004, 2005, and 2006, who completed either the American English (n_{AE} = 227,808) or the British English (n_{BE} = 69,350) version of the protocol. Thus, we explored differences across (a) 3 years, (b) 2 sets of countries, and (c) 3 user groups (i.e., undergraduates, postgraduates, and faculty).

Table 1 presents the core item zone of tolerance widths, the rank orders of the widths, and the rank orders of the desired ratings, for the 22 core LibQUAL+® items for the 227,808 participants who completed the American English version of the protocol. Table 2 presents the same information for the 69,350 participants who completed the British English version of the protocol.

INSERT TABLES 1 AND 2 ABOUT HERE

Two different correlation coefficients were computed between the 22 zone widths across the three pairwise combinations (2004 with 2005, 2005 with 2006, and 2004 with 2006) of the three times

of measurement. Table 3 presents both Pearson r and Spearman rho correlations for these data.

INSERT TABLE 3 ABOUT HERE

The two correlation coefficients are sensitive to different aspects of the data. As Thompson (2006a) explained,

> the Pearson r asks the following two questions:
>
> 1. How well do the two variables order the cases in exactly the same (or the opposite) order?, and
> 2. To what extent do the two variables have the same shape? (p. 119)

Spearman's rho, on the other hand, exclusively addresses only the first question.

Discussion

These results suggest two conclusions with respect to the research questions that we posed. First, the zone-of-tolerance widths tended to be remarkably stable across time within user groups, for both the American and the English subgroups, as suggested by the Table 3 results.

That is, users' tolerances with respect to service quality indicators, be these tolerances big or small, tend to not change over time. This was true even when comparisons were made between the 2004 and the 2006 data. Most of the tabled correlation coefficients are nearly perfect!

Second, the widths of the zones were not uniformly narrower for items ranked either very high or very low in desirability, as reported in the Tables 1 and 2 rank orders for both item zone widths and item desirabilities. For example, the zones of tolerance for IC02, "making electronic resources accessible from home or office," tended to be among the widest, even though this item tended to be ranked quite highly across user groups and time with respect to desirability.

Thus, we cannot assume that because users extremely highly value an outcome, that users will necessarily not tolerate deviations from their expectations. Similarly, we cannot assume that simply because users do not extremely highly value an outcome, that users necessarily will tolerate deviations from their expectations. User tolerances depend on the service quality indicator itself, and not on how highly they value given library services. This finding reinforces the importance of actually measuring the zones of tolerance, along with perceptions, rather than merely assuming that tolerances are the same across items, or vary least for the most desired service quality indicators.

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Table 1
Zone Widths, Width Rank Orders, and Rank Orders of Desired Ratings for **American** Users Across Three User Groups and Three Years

	2004			2005			2006		
Item	Des. Rank	Zone	Zone Rank	Des. Rank	Zone	Zone Rank	Des. Rank	Zone	Zone Rank
American Undergraduates									
IC14	1	1.47	1	1	1.48	1	1	1.44	1
AS09	16	1.48	3	16	1.50	4	16	1.45	2
AS11	11	1.47	2	12	1.49	2	12	1.46	3
AS06	13	1.51	7	13	1.52	7	13	1.47	4
AS15	19	1.50	6	19	1.51	6	19	1.47	5
AS22	17	1.48	4	17	1.49	3	17	1.47	7
AS18	15	1.49	5	15	1.50	5	15	1.47	6
IC19	6	1.52	8	6	1.52	8	6	1.50	8
IC07	14	1.53	9	14	1.53	9	14	1.51	9
IC20	5	1.55	12	5	1.54	10	5	1.51	10
LP08	12	1.54	10	10	1.55	12	10	1.52	11
AS13	18	1.54	11	18	1.56	13	18	1.52	12
IC16	4	1.56	13	4	1.55	11	4	1.53	13
IC10	8	1.61	14	11	1.60	14	9	1.58	14
IC05	3	1.63	15	3	1.61	15	3	1.60	15
LP17	7	1.64	16	9	1.66	16	8	1.61	16
LP21	20	1.68	18	20	1.68	18	20	1.64	17
LP12	10	1.67	17	7	1.68	17	7	1.65	18
AS04	22	1.69	19	22	1.70	19	22	1.67	19
LP03	9	1.79	20	8	1.81	20	11	1.78	20
IC02	2	1.87	21	2	1.84	21	2	1.80	21
AS01	21	2.06	22	21	2.06	22	21	2.03	22
M		1.60			1.60			1.57	
Minimum		1.47			1.48			1.44	
Maximum		2.06			2.06			2.03	
American Graduate Students									
IC20	1	1.34	2	2	1.30	1	2	1.28	1
AS22	12	1.35	3	12	1.33	4	12	1.30	2
IC14	5	1.37	7	5	1.33	2	5	1.31	3
AS06	10	1.36	4	9	1.34	6	9	1.31	4
AS09	11	1.34	1	11	1.33	3	11	1.32	5
AS11	8	1.36	5	8	1.34	5	8	1.32	6
AS18	13	1.40	9	13	1.35	7	13	1.34	7
AS15	14	1.37	6	14	1.36	9	14	1.34	8
IC19	7	1.40	10	7	1.36	8	7	1.35	9
IC07	9	1.40	8	10	1.37	10	10	1.36	10
IC16	6	1.40	11	6	1.38	12	6	1.36	11
IC10	3	1.44	14	3	1.41	14	3	1.39	12
IC05	4	1.42	12	4	1.38	11	4	1.39	13
AS13	17	1.43	13	19	1.42	15	17	1.39	14

LP08	19	1.44	15	18	1.40	13	18	1.40	15
AS04	21	1.53	16	21	1.51	17	21	1.49	16
LP21	22	1.53	17	22	1.49	16	22	1.49	17
LP17	15	1.56	18	15	1.53	18	15	1.53	18
IC02	2	1.62	20	1	1.57	20	1	1.53	19
LP12	16	1.60	19	16	1.56	19	16	1.56	20
LP03	18	1.68	21	17	1.66	21	19	1.67	21
AS01	20	1.91	22	20	1.91	22	20	1.89	22
M		1.46			1.43			1.42	
Minimum		1.34			1.30			1.28	
Maximum		1.91			1.91			1.89	
American Faculty									
AS06	10	1.18	1	10	1.17	1	10	1.12	1
AS22	11	1.21	3	11	1.20	3	11	1.14	2
AS11	8	1.23	5	8	1.21	5	8	1.15	3
AS09	9	1.20	2	9	1.18	2	9	1.16	4
AS18	12	1.23	4	12	1.21	4	12	1.17	5
IC14	7	1.24	6	7	1.24	7	7	1.18	6
AS15	14	1.25	7	13	1.24	6	13	1.19	7
IC20	1	1.26	8	1	1.25	9	1	1.20	8
IC19	6	1.27	10	6	1.26	10	6	1.20	9
IC05	3	1.28	11	3	1.25	8	3	1.21	10
AS13	16	1.28	12	15	1.27	11	16	1.22	11
IC16	5	1.29	13	5	1.28	12	5	1.24	12
LP21	22	1.31	14	22	1.33	16	22	1.25	13
LP08	21	1.27	9	21	1.28	13	21	1.26	15
IC10	4	1.31	15	4	1.30	14	4	1.26	14
IC07	13	1.31	16	14	1.33	15	14	1.27	16
AS04	17	1.36	17	17	1.35	17	17	1.32	17
IC02	2	1.42	18	2	1.37	18	2	1.32	18
LP17	20	1.42	19	20	1.42	20	20	1.37	19
LP12	18	1.45	20	18	1.42	19	18	1.42	20
LP03	19	1.51	21	19	1.50	21	19	1.51	21
AS01	15	1.75	22	16	1.73	22	15	1.72	22
M		1.31			1.30			1.26	
Minimum		1.18			1.17			1.12	
Maximum		1.75			1.73			1.72	

Note. "Des. Rank" = rank order based on ratings of desired service levels on a given item.

Table 2
Zone Widths, Width Rank Orders, and Rank Orders of Desired Ratings for **British** Users Across Three User Groups and Three Years

	2004			2005			2006		
Item	Des. Rank	Zone	Zone Rank	Des. Rank	Zone	Zone Rank	Des. Rank	Zone	Zone Rank
British Undergraduates									
AS11	12	1.46	1	11	1.42	1	12	1.43	1
AS22	18	1.50	3	18	1.45	4	18	1.43	2
AS09	13	1.47	2	14	1.42	2	16	1.44	3
AS15	17	1.51	4	17	1.44	3	17	1.45	4
AS06	15	1.52	5	13	1.46	5	14	1.45	5
IC19	9	1.58	11	9	1.50	10	9	1.48	6
IC14	2	1.56	9	2	1.47	6	2	1.49	7
AS18	16	1.55	8	16	1.48	8	15	1.49	9
LP08	4	1.54	7	5	1.49	9	3	1.49	8
IC16	7	1.59	12	6	1.52	12	8	1.50	10
IC07	10	1.53	6	12	1.48	7	11	1.51	11
IC20	3	1.58	10	3	1.50	11	5	1.53	13
AS13	19	1.60	13	19	1.52	13	19	1.53	12
IC05	8	1.66	14	4	1.56	14	6	1.54	14
IC10	11	1.66	15	8	1.58	15	10	1.60	15
AS04	22	1.69	16	22	1.64	16	22	1.64	17
LP12	14	1.76	18	15	1.65	17	13	1.64	16
LP17	5	1.77	19	7	1.65	19	4	1.67	18
LP21	21	1.73	17	20	1.65	18	21	1.68	19
LP03	6	1.89	20	10	1.81	20	7	1.81	20
IC02	1	1.98	21	1	1.84	21	1	1.85	21
AS01	20	2.13	22	21	2.04	22	20	2.04	22
M		1.64			1.57			1.57	
Minimum		1.46			1.42			1.43	
Maximum		2.13			2.04			2.04	
British Postgraduates									
AS11	10	1.36	1	9	1.29	3	10	1.28	1
AS06	13	1.36	2	12	1.26	1	11	1.30	2
AS22	16	1.37	3	15	1.29	4	15	1.30	3
AS15	15	1.39	5	14	1.30	5	16	1.30	4
AS09	9	1.38	4	8	1.27	2	9	1.32	5
AS18	12	1.42	6	11	1.33	8	12	1.33	6
IC19	7	1.44	12	7	1.35	10	7	1.34	7
IC07	8	1.43	9	10	1.32	7	8	1.35	8
IC14	6	1.44	10	5	1.33	9	6	1.36	9
IC20	1	1.43	7	1	1.32	6	2	1.36	10
AS13	20	1.44	13	19	1.37	13	20	1.37	11
IC16	5	1.46	15	6	1.36	12	5	1.37	12
LP08	14	1.43	8	16	1.35	11	14	1.40	13
IC10	3	1.51	16	3	1.41	15	3	1.41	14

IC05	4	1.44	11	4	1.38	14	4	1.41	15
LP21	22	1.45	14	22	1.44	16	22	1.44	16
AS04	21	1.56	17	21	1.45	17	21	1.47	17
LP12	18	1.57	18	18	1.47	18	18	1.53	18
LP17	11	1.63	19	13	1.51	19	13	1.55	19
LP03	17	1.71	20	17	1.59	20	17	1.62	20
IC02	2	1.72	21	2	1.60	21	1	1.65	21
AS01	19	1.93	22	20	1.85	22	19	1.86	22
M		1.49			1.40			1.42	
Minimum		1.36			1.26			1.28	
Maximum		1.93			1.85			1.86	
British Faculty									
AS06	9	1.23	2	10	1.11	1	8	1.10	1
AS15	13	1.24	5	11	1.19	3	11	1.19	2
AS22	14	1.26	6	13	1.19	4	13	1.20	3
LP21	22	1.16	1	22	1.14	2	22	1.22	4
AS18	10	1.32	13	12	1.21	7	10	1.23	5
IC14	7	1.31	12	7	1.23	11	9	1.25	6
AS09	8	1.23	4	8	1.20	6	6	1.26	7
IC16	5	1.34	15	5	1.26	15	5	1.27	8
IC19	6	1.36	16	6	1.23	10	7	1.27	9
AS11	11	1.23	3	9	1.20	5	12	1.27	10
AS13	16	1.31	11	16	1.26	14	16	1.28	11
LP08	21	1.28	8	21	1.27	16	21	1.29	12
IC05	4	1.29	9	3	1.23	12	4	1.30	13
IC10	3	1.32	14	4	1.24	13	3	1.30	14
IC20	1	1.27	7	1	1.21	8	1	1.31	15
IC07	12	1.30	10	14	1.21	9	15	1.32	16
AS04	19	1.37	17	17	1.35	17	17	1.41	17
LP12	20	1.52	19	18	1.41	19	18	1.45	18
LP17	17	1.55	21	19	1.44	21	19	1.51	19
IC02	2	1.45	18	2	1.35	18	2	1.54	20
LP03	18	1.54	20	20	1.43	20	20	1.55	21
AS01	15	1.84	22	15	1.70	22	14	1.81	22
M		1.35			1.27			1.33	
Minimum		1.16			1.11			1.10	
Maximum		1.84			1.70			1.81	

Note. "Des. Rank" = rank order based on ratings of desired service levels on a given item.

Table 3
Correlations of Zone Widths and Rank Orders of Widths on the 22 LibQUAL+® Core Items Across Years and Subgroups

	Pearson *r*			Spearman *rho*		
Group	'04x'05	'05x'06	'04x'06	'04x'05	'05x'06	'04x'06
American						
Undergraduates	0.996	0.997	0.996	0.990	0.985	0.988
Graduate Studs	0.995	0.996	0.994	0.978	0.983	0.976
Faculty	0.992	0.991	0.989	0.987	0.986	0.975
British						
Undergraduates	0.993	0.994	0.988	0.988	0.964	0.962
Graduate Studs	0.984	0.988	0.986	0.967	0.964	0.951
Faculty	0.974	0.961	0.932	0.907	0.858	0.764