Canada Lite: impact of LibQUAL+® Lite on the members of the LibQUAL+® Canada Consortium

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Abstract

This paper assesses the impact of the new LibQUAL+® Lite survey format implemented in 2010 as experienced by the members of the LibQUAL+® Canada Consortium. LibQUAL+®'s largest consortium did the survey with 53 academic libraries in 2007 and 47 academic members in 2010. This paper will compare the consortium's completion rate, proportion of valid surveys, and mean aggregate scores between the 2007 and 2010 LibQUAL+® surveys. The paper will also offer an assessment of LibQUAL+® Lite and its value for the libraries in the province of Quebec, Canada's francophone province.

The bi-lingual nature of the consortium presented LibQUAL+® with a number of challenges in 2007. This paper will see how well these challenges have been met.

Background

This paper focuses on the impact of the changes to the LibQUAL+® survey, implemented fully in 2010, on the participants in the 2010 LibQUAL+® Canada Consortium. The 2007 LibQUAL+® Canada Consortium was an historic achievement in the development of library assessment practice in Canada. As the largest ever LibQUAL+® consortium, with 53 participants covering the majority of Canada's university libraries, the LibQUAL+® Canada Consortium had taken a very large first step in collecting service quality data for benchmarking on a national and regional level.

While the vast majority of participants agreed that they wanted to participate again in the survey as part of the Consortium[i], they also concurred on the need for some key changes that would improve the experience for Canadian academic libraries. These suggested improvements were reported in a paper presented at the 2008 Library Assessment Conference.[ii] The major suggested changes were:

1. **Alternative, Briefer LibQUAL+® Surveys.** The length of the full survey services as a potential deterrents both to respondents and to librarians who must review, analyze and act on the results. Shorter surveys, perhaps focusing on specific service dimensions, may make more effective use of staff resources and provide more timely feedback on program and service changes. Increasingly, libraries will have to use new channels and approaches for delivering surveys to spam-weary patrons and users who rely increasingly on mobile communication devices. LibQUAL+® will have to adapt accordingly if it is to remain relevant.

2. **Standardised User Categories.** Like the standardized discipline groups that a participating library may link to its own set of local disciplines, LibQUAL+® should allow for a fully customizable set of user types linkable to a set of standard user categories. This approach would allow libraries to define their own set of user classifications without necessarily having to negotiate the addition of yet another completely new LibQUAL+® Demographic.

3. **Language of Survey Questions.** Having to deal with a bilingual Consortial environment, revealed a significant limitation in the design of the LibQUAL+® program which ARL is committed to addressing.

While a participating library can elect to take the survey in more than one language, there was no direct program link between the library's corresponding survey questions in the chosen languages. This meant that there was no automatic link between the local or optional questions in English and the equivalent French. English members of the Consortium were able to select the consortium's package of optional question in English by simply selecting the Consortial package when configuring their survey. However, for a member library to select the French version of the same questions, the library had to choose them individually from the list and know which individual French language questions corresponded to the consortium's package of English optional questions. The consortium had to compile and post a table of equivalents for all of the English and corresponding French optional questions. The latter was complicated by the fact that ARL's lists of French and English optional questions did not correlate and the numbering of the in both lists changed from the previous year as new questions were added.

Because the corresponding questions in both languages are not linked in the system, the original consortial report generated by ARL's program could only provide separate aggregate scores for the French language and English language surveys. To generate total aggregate scores of the survey results from both languages, ARL had to regenerate the Consortium's report notebooks manually which, as expected, took much longer than the machine generated reports and had to be corrected a few times.

A majority of 2007 participants also preferred to repeat the Consortial survey in three years time.[iii]

2010 LibQUAL+® Canada Consortium

The Canadian Association of Research Libraries (CARL) agreed to sponsor the Consortium again in 2010. While there were fewer total participants in the 2010 Consortial survey (47 vs 53 in 2007), there were only two fewer academic members. 43 of the 47 2010 members were universities and 4 members were community colleges (**Table 1.**). Eight 2010 members had not participated in the 2007 survey while ten 2007 members were unable to participate in the 2010 Consortial survey. The 2007 government library participants decided that a standard LibQUAL+® survey did not meet their specialised needs and opted out in 2010. Two other universities and four other community colleges are planning to participate in the survey as members of the consortium in the second LibQUAL+® 2010 session.

The 2010 LibQUAL+® Canada Consortium continued the strongly multi-lingual character of the 2007 consortium, including 8 French-language universities and another 7 offering the survey in both English and French. More than 40% of all university respondents took the French-language survey (**Table 4**).

LibQUAL+® 2010 Changes

Members were pleased to see the Consortium's major wish list for improvements reflected in both the 2010 survey registration process and the format.

- **Shorter Survey Format**

  After much discussion within the Consortium, ¾ of all members decided to choose the Lite survey[iv], with one university and one community college opting for both formats. As more members of the consortium announced that they were opting of the Lite format, some of the members who may have been uncertain, as to the format, chose the Lite survey. The desire to compare their results with peer institutions was certainly a motivating factor. Of the French-language universities, 7 of 8 chose the Lite format. Overall, 80% of total respondents took the Lite survey, rising to 94% in the case of the French language surveys. Most of the libraries that opted for the long form were concerned about new variables that might affect comparison with their earlier LibQUAL+® surveys. Another concern discussed on the Consortium's listserv was the possible loss of granularity in analyzing the results when tracking particular questions or survey dimensions across multiple surveys, e.g. Library as Place and "*Library that you use most often*." More than half of the participating libraries, 25 or 53%, are research libraries (CARL members).

  A survey of Consortium members planned for the fall of 2010 will test the anecdotal information in this paragraph, derived from the LibQUAL+® Canada Discussion List. In the case of libraries who have taken the LibQUAL+® survey in past years, the member survey will also report individual member valuation of the Lite survey results compared to their past full survey results.

- **Language of Survey Questions**

  The biggest changes in 2010 survey structure were to consolidate key data elements. Prior to 2010, if a library elected to do the survey in more than one language, they were assigned a separate institution id, even though there already was a language field in the survey. Similarly, language variants for user groups, such as graduate students, had separate codes and translations of survey questions had no links to the English original. Consequently, libraries doing the survey in more than one language and multilingual consortia such as LibQUAL® Canada could not get consolidated survey results for both languages without contracting with ARL for custom reports.

  In the 2010 survey, each registered participant is assigned a single institution ID, a single user group code for each corresponding group and the survey questions in each language are linked. All results from an institution or a consortium can be consolidated quite easily into one results set in the standard notebook.

  With 2010, LibQUAL+®'s new interface made registration for our bi-lingual consortium and for French language and bi-lingual member libraries much easier and more efficient. Our French language members were able to automatically select the French language version of the Consortial local questions package, during registration, instead of having to select them individually from the whole list of local questions, in 2007 because the consortium's package of English and French local questions were not linked.

LibQUAL+® Full vs Lite – Consortial Results

"LibQUAL+® Lite minimizes the response burden on individual survey participants, lessens overall the amount of person-costs expended in creating service quality information, and improves response rates, without sacrificing score integrity." [v]

1. Purpose of Study

a. To assess the expected benefits in using the Lite format

b. To assess any possible differences between the full and Lite format of the survey to ascertain whether the format might be a significant variable in comparing 2010 results with previous results for the LibQUAL+® Canada Consortium.

c. To assess whether there were notable differences between the English and French-language results. French language students and faculty face unique challenges in learning and research within a North American academic context.

d. To assess the possible impact of the Lite format on granularity of analysis

2. Design/Methodology/Approach

a. Analyze the raw Consortial data sets for 2010 and 2007 using SPSS.

b. The SPSS data sets received from ARL were not identical. The original 2007 data set required some changes to allow for comparison with the 2010 results The key differences that had to be adjusted were discussed above under **LibQUAL+® 2010 Changes.**

c. To maximize comparison of like institutions, the study focuses on a single institution type, "University or College," since it represented the vast majority of Consortial members in both 2007 and 2010

d. The study focuses only on the university's primary clients: faculty, graduate and undergraduate students.

e. The authors looked at three factors, the completion rate, the valid survey rate, and the variation by language as a potential indicator of the difference between LibQUAL+® + in 2007 and 2010. In order to compare these two populations, the authors examined each factor in three stages; 2007 full vs. 2010 full, 2010 full vs. 2010 Lite, and 2010 Lite vs. 2007 full. Since the data set represents two survey formats in 2010, the authors use the notation of "07f" to indicate 2007 full, "10f " to indicate 2010 full, and "10t" to indicate 2010 Lite. To ascertain statistical significance in differences between 2007 and 2010 mean aggregate scores, the authors applied Z tests for the comparison of the proportions (completion rate, valid survey rate, groups by language type) and T-tests for the comparison of the mean scores. Cohen's D test was applied to check the effect size.

f. In calculating the **completion rate**[1], the authors included both valid and invalid surveys.

g. In calculating the **Valid survey**[2] rate, authors included only complete surveys.

3. Findings

a. Completed Surveys

For the most part[3], this analysis confirms the findings in studies performed to date by Colleen Cook, Bruce Thompson and Martha Kyrillidou[vi] with a large increase in completion rate for the 2010 Lite format, 61.7%, compared to the 2007 results, 48.8%. It is interesting to note that the completion rate of the full format, 54.3% in 2010 was also significantly higher than 48.8% In the 2007(**Table 2**). This factor points to other possible variables as having notable impact on the higher 2010 completion rates, such as more local experience and more effective local marketing for libraries that had taken part in the 2007 survey.

b. Valid Surveys

The consortium was also interested in seeing what impact the format of the survey had on the quality and dependability of the overall surveys. With the analysis of the data sets by 2007 full vs. 2010 full, 2010 full vs. 2010 Lite, and 2010 Lite vs. 2007 full formats, the authors were to infer that the valid survey rate is higher for the Lite format than the full format (**Table 2**).

While a bit less dramatic than the difference in the completion rates, there were still significant improvements in the ratio of valid surveys among the Consortium's 2010 Lite survey results, 57.9%, compared to the ration of valid surveys in the 2007, 46.7%, and 2010, 51.8%, full survey results (**Table 2**).

c. Language Variation

The authors compared the valid survey rate between English and French language responses in 2010 Lite and 2007 full. They compared English responses and French responses separately. The authors used "a" as a notation for language, "e" as English and "fr" as "French".

From **Table 7**, the authors concluded that there is a statistically significant difference in the valid survey rate between English and French respondents. In 2010 Lite version, French respondents showed a higher valid survey rate than English respondents while in 2007 English respondents

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[1] **Completed Survey**. The LibQUAL+® software monitors whether a given user has completed all items. On each of these items, in order to submit the survey successfully, users must provide a rating of (a) minimally-acceptable service, (b) desired service, and (c) perceived service or rate the item "not applicable" ("N/A"). In the data set supplied by ARL, the Completed variable = "1" for complete and "0" for incomplete.

[2] **Valid Surveys**. Long version of the survey containing more than 11 "N/A" responses and/or more than 9 logical inconsistencies and Lite versions containing more than 4 "N/A" responses and/or more than 3 logical inconsistencies. The Active variable = "1" for valid and "0" for invalid.

[3] Two Consortium members experienced higher completion rates in their previous full format LibQUAL+® surveys. See No. 4 below.

showed a higher valid survey rate. Thus, the authors could conclude that while there is no consistency in the valid response rate by the language, between 2010 Lite vs. 2007, 2010 Lite has a higher valid survey rate among both English and French respondents.

d. Mean Values – 2010 Lite vs 2007 Full Format

The authors acknowledge that there are limitations to the inferences that can be drawn from the data sets supplied by ARL, as opposed to experimental data in a controlled environment. While fully cognizant that many variables, beyond this study, may affect the mean aggregate scores of the Canadian survey participants, the authors wanted to analyze whether the survey format could be a contributing factor in the mean aggregate scores. The analyses of the 2010 and 2007 data were limited to the 24 libraries that participated in both surveys, further analyzed by user group and by language. The study did not attempt to delve further into the possible causes of such differences, if any.

e. The study indicates that the aggregate gap scores for the consortium are generally higher in 2010, for both full and Lite survey respondents, for undergraduate, graduate and faculty users (**Table 6**Error! Reference source not found.) and both English and French respondents (**Table 7**). **Table 6** indicates that some differences between the Lite and full format mean gap scores are statistically significant However, after applying Cohen's D test to check the Effect Size, these differences did not appear to be meaningful.

One notable fact is that while undergraduate mean scores show little differences between two years, both faculty and graduate students mean scores are generally higher in 2010 than 2007.

So, all things being equal, Canadian libraries should be able to choose between the two formats without concern that the format will impact on their overall results - beyond a likely increase in complete, valid surveys for the Lite format. Furthermore, with the Lite format, participating libraries can have more consistent data in the future by having possibly more participants.

f. Granularity

While the increased number of completed and valid surveys was valuable, there are some possible down sides to the Lite format. The reduced number of respondents for individual questions in the Lite survey may limit the library's ability to perform more granular analysis of some data in 2010. For Queen's University, this limitation was particularly evident in analyzing the Library as Place results. Each respondent was presented with only two questions from a service dimension with five total questions – compared to three of eight and three of nine in the other two dimensions. As a consequence, the Lite survey yielded too few total responses in the Library as Place service dimension to produce reliable analysis for individual campus libraries at Queen's, other than the largest ones in 2010. Among the smaller campus libraries was the Education Library, very highly regarded by the faculty and students in the Faculty of Education. Education respondents had consistently recorded among the highest Adequacy Gap scores, at Queen's, in 2004 and 2007 across all three service dimensions. In the 2010 survey results, their aggregate Library as Place Adequacy Gap score was one of the lowest on campus – despite

continued high praise among the survey comments from Education students and faculty and continued enhancement to the physical library during the past few years (**Figure 1**).

Figure 1

	2010	**2007**	**2004**
Education Library LP Mean Adequacy Gap	0.31	0.90	1.00
Queen's LP Mean Adequacy Gap	0.74	0.89	0.82

McGill University offers another similar example below.

4. McGill University

McGill University's results presented something of an anomaly compared with the Consortial finding presented in the paper. McGill was one of the 2010 Consortium members that opted for the Lite survey format. While McGill was not a participant in the 2007 Canadian Consortium, they did carry out a full version of the survey in 2008. McGill also has a long record of LibQUAL+® use, having carried out its first LibQUAL+® survey in 2001.

At McGill, the 2010 survey completion rate was lower than in 2008 when the full-format LibQUAL+® survey was last administered (**Figure 2**). Given the consistency of the increase in the completion rate across the Consortium, this is a surprising result. Only one other university member of the Consortium experienced a similar decline in 2010 Lite format completion rate.

Figure 2

	McGill: Complete Surveys			
	2010 - Lite		2008 - Full	
Complete	N	% of total	N	% of total
no	1709	52.5	902	44.6
yes	1544	47.45	1122	55.4

Highlighting the introduction of a shorter version (Lite) of the survey in the email invitation to potential participants was likely a main cause of a substantial increase (61%) in the number of participants who actually opened the survey. However, there was no comparable gain in the completion rate, as was seen elsewhere. Sample size for the two years compared in this study was analogous. The only change was the addition of 545 faculty to the faculty sample in 2010. The undergraduate and graduate samples remained the same at 5000 and 3250 respectively.

Speculation about the causes would be just that: speculation. But it does indicate that the completion rate advantage of administering a Lite survey can be sidelined by other, likely strong factors.

Another Granularity Issue.

In analyzing past LibQUAL+® surveys, McGill largely focused on responses to individual questions. The survey results usually had sufficient responses for a reasonable analysis of each question at the level of the nine 'Faculty-level' Libraries. With the Lite version this is no longer the case. There were too few responses for question-level analysis, except for the three largest libraries.

This is a considerable loss of information. For example, in the 2010 Lite survey, one of McGill's mid-size libraries generated a negative mean Adequacy Gap score of -0.43 in response to the question "Quiet space for individual activities" based on 21 responses. In 2008, this library's mean Adequacy Gap score for that question was 0.33, based on 69 responses. Such sizeable swings in scores had not occurred in previous years. Can such a swing be interpreted as meaningful, or are useful analyses at the individual question level with LibQUAL+® Lite unreliable except for large populations?

The potential loss in granularity will be a consideration in McGill's decision about whether to use the full or Lite format in the future.

4. Originality/Value

This paper is the first large-scale Canadian study of the new LibQUAL+® system implemented in full production for the 2010 Session I survey. The study assesses the major changes, recommended in the final report of the 2007 LibQUAL+® Canada Consortium, and their impact on the 2010 LibQUAL+® Canada Consortium, most notably the introduction of the LibQUAL+® Lite format. The results of the study may help Canadian academic libraries decide how they might use LibQUAL+® in the future.

Tables Appendix

Table 1.

Total LibQUAL+® Canada Members 2010		Full	Lite	Total
Universities	Count	11	33	43*
	% of Protocol	84.6	91.7	
	% of Total Cases	23.4	70.2	91.5*
Community Colleges	Count	2	3	4*
	% of Protocol	15.4	8.3	
	% of Total Cases	4.3	6.4	8.5*
Total *(by Survey Protocol)*	Count	13	36	47*
	% of Protocol	100	100	
	% of Total Cases	27.7	76.6	100*

∗ 1 university & 1 community college opted for both Long and Lite.

Table 2

Analysis of Complete & Valid Surveys by Format						
	Comparison	Valid Survey Rate	Hypothesis	Z value	P value	Conclusion
Complete Surveys	2007 Full 2010 Full	48.8% 54.3%	H0c : μ07f=μ10f H1c: μ07f≠ μ10f	13.24	.01	Reject Null: H0c
	2010 Full 2010 Lite	54.3% 61.7%	H0c : μ10f=μ10 H1c: μ10f≠ μ10t	17.603	.01	Reject Null: H0c
	2010 Lite 2007 Full	61.7% 48.8%	H0c : μ10t=μ07f H1c: μ10t≠ μ07f	51.44	.01	Reject Null: H0c
Valid Surveys	2007 Full 2010 Full	46.7% 51.8%	H0v : μ07f=μ10f H1v: μ07f≠ μ10f	12.06	.01	Reject Null:H0v
	2010 Full 2010 Lite	51.8% 57.9%	H0v : μ10f=μ10t, H1v: μ10f≠ μ10t	14.398	.01	Reject Null:H0v
	2010 Lite 2007 Full	57.9% 46.7%	H0v : μ10t=μ07f H1v: μ10t≠ μ07f	44.258	.01	Reject Null:H0v

Table 3

Consortium - Completed Surveys		2010		2007	
Full or Lite	Met criteria for survey completion	N	% of Total	N	% of Total
Full	Incomplete	7,728	45.7%	47,167	51.2%
	Complete	9,196	54.3%	44,957	48.8%
	Total	16,924	100.0%	92,124	100.0%
Lite	Incomplete	26,132	38.3%		
	Complete	42,173	61.7%		
	Total	68,305	100.0%		
Total	Incomplete	33,860	39.7%	47,167	51.2%
	Complete	51,369	60.3%	44,957	48.8%
	Total	85,229	100.0%	92,124	100.0%

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Table 4

Completed Surveys by Language	**2010 - Lite**		**2007 - Full**	
Language	N	% of Total Languages	N	% of Total Languages
English (American)	40,819	59.8%	67,124	72.9%
French (Canada)	27,486	40.3%	25,000	27.1%
Total	68,305	100%	92,124	100%

Table 5

Survey Analysis by Format and Language							
	Year /Format	**Comparison**	**Valid Survey Rate**	**Hypothesis**	**Z value**	**P value**	**Conclusion**
A	2010 Lite	English French	56.2% 59.0%	H0a : µ10e,t=µ10f,t H1a: µ10e,t ≠ µ10f,t	7.234	.01	Reject Null: H0a
	2007 Full	English	47.9%	H0a : µ07e,f=µ07fr,f H1a: µ07e,f ≠ µ07fr,f	12.300	.01	Reject Null: H0a
		French	43.5%				
B	English	2007 full 2010 Lite	47.9% 56.2%	H0a : µ07e,f=µ07e,t H1a: µ07e,f ≠ µ07e,t	34.331	.01	Reject Null: H0a
	French	2007 full	43.5%	H0a : µ07f,f=µ07f,f H1a: µ07e,f ≠ µ07fr,f	20.754	.01	Reject Null: H0a

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Table 6

Version		Undergraduate mean score					Graduate Mean Scores					Faculty Mean Scores				
2007 FULL + 2010 Lite		**N**	**Mean**	**Std.D.**	**T**	**P**	**N**	**Mean**	**Std.D**	**T score**	**P**	**N**	**Mean**	**Std.D.**	**T**	**P**
Average Desired	2010	20627	7.804	1.024	4.394	0.000	9159	7.852	1.011	5.558	.000	3309	7.529	1.203	3.133	.002
	2007	20900	7.755	1.273			6753	7.749	1.312			4630	7.424	1.637		
Average Minimum	2010	20627	6.479	1.303	3.804	0.000	9159	6.627	1.279	6.230	.000	3309	6.472	1.351	3.917	.000
	2007	20900	6.427	1.458			6753	6.491	1.458			4630	6.335	1.646		
Average Perceived	2010	20627	6.902	1.166	11.242	0.000	9159	6.940	1.128	10.240	.000	3309	6.783	1.199	8.264	.000
	2007	20900	6.763	1.337			6753	6.738	1.356			4630	6.509	1.610		
Adequacy Gap	2010	20627	0.423	1.422	6.270	0.000	9159	0.314	1.424	2.957	.003	3309	0.311	1.469	4.279	.000
	2007	20900	0.336	1.399			6753	0.247	1.363			4630	0.174	1.359		
Superiority Gap	2010	20627	-0.903	1.215	7.695	0.000	9159	-0.911	1.225	5.194	.000	3309	-0.747	1.376	5.770	.000
	2007	20900	-0.991	1.131			6753	-1.011	1.155			4630	-0.915	1.210		
2007 full + 2010 full		**N**	**Mean**	**Std.D.**	**T**	**P**	**N**	**Mean**	**Std.D**	**T score**	**P**	**N**	**Mean**	**Std.D.**	**T**	**P**
Average Desired	2010	6194	7.884	0.951	7.388	0.000	1532	7.935	0.940	5.243	.000	871	7.915	0.921	8.583	.000
	2007	20900	7.755	1.273			6753	7.749	1.312			4630	7.424	1.637		
Average Minimum	2010	6194	6.543	1.290	5.663	0.000	1532	6.717	1.270	5.616	.000	871	6.824	1.240	8.320	.000
	2007	20900	6.427	1.458			6753	6.491	1.458			4630	6.335	1.646		
Average Perceived	2010	6194	6.930	1.127	8.903	0.000	1532	6.918	1.108	4.833	.000	871	7.073	1.133	9.886	.000
	2007	20900	6.763	1.337			6753	6.738	1.356			4630	6.509	1.610		
Adequacy Gap	2010	6194	0.386	1.411	2.452	0.014	1532	0.201	1.320	-1.244	.214	871	0.249	1.405	1.465	.143
	2007	20900	0.336	1.399			6753	0.247	1.363			4630	0.174	1.359		
Superiority Gap	2010	6194	-0.954	1.163	2.452	0.023	1532	-1.017	1.167	-.183	.855	871	-0.841	1.232	1.626	.104
	2007	20900	-0.991	1.131			6753	-1.011	1.155			4630	-0.915	1.376		
2010 Full or Lite		**N**	**Mean**	**Std.D.**	**T**	**P**	**N**	**Mean**	**Std.D**	**T score**	**P**	**N**	**Mean**	**Std.D.**	**T**	**P**
Average Desired	Full	6194	7.884	0.951	5.426	0.000	1532	7.935	0.940	3.015	.003	871	7.915	0.921	8.799	.000
	Lite	20627	7.804	1.024			9159	7.852	1.011			3309	7.529	1.203		
Average Minimum	Full	6194	6.543	1.290	3.462	0.000	1532	6.717	1.270	2.587	.010	871	6.824	1.240	6.954	.000
	Lite	20627	6.479	1.303			9159	6.627	1.279			3309	6.472	1.351		
Average Perceived	Full	6194	6.930	1.127	1.668	0.000	1532	6.918	1.108	-.729	.466	871	7.073	1.133	6.435	.000
	Lite	20627	6.902	1.166			9159	6.940	1.128			3309	6.783	1.199		
Adequacy Gap	Full	6194	0.386	1.411	-1.793	0.269	1532	0.201	1.320	-2.907	.004	871	0.249	1.405	-1.105	.269
	Lite	20627	0.423	1.422			9159	0.314	1.424			3309	0.311	1.469		
Superiority Gap	Full	6194	-0.954	1.163	-2.938	0.065	1532	-1.017	1.167	-3.146	.002	871	-0.841	1.405	-1.845	.065
	Lite	20627	-0.903	1.215			9159	-0.911	1.225			3309	-0.747	1.469		

Figures in red are not statistically significant based on T-testing

Tables Appendix

Table 7

English Language Means Scores					French Language Mean Scores		
	2007 + 2010 Lite	**N**	**Mean**	**Std. Deviation**	**N**	**Mean**	**Std. Deviation**
Average Desired	2010 Lite	20351	7.6887	1.11178	12744	7.9515	.90018
	2007 Full	26560	7.6967	1.34702	5723	7.7492	1.33155
Average Minimum	2010 Lite	20351	6.4234	1.33585	12744	6.6712	1.23288
	2007 Full	26560	6.4072	1.49433	5723	6.5197	1.45144
Average Perceived	2010 Lite	20351	6.7701	1.17497	12744	7.1083	1.10348
	2007 Full	26560	6.7050	1.38367	5723	6.7978	1.39576
Adequacy Gap	2010 Lite	20351	.3468	1.45279	12744	.4371	1.38748
	2007 Full	26560	.2978	1.39300	5723	.2782	1.36064
Superiority Gap	2010 Lite	20351	-.9185	1.28517	12744	-.8432	1.15024
	2007 Full	26560	-.9917	1.15071	5723	-.9514	1.13623
	2007 + 2010 full	**N**	**Mean**	**Std. Deviation**	**N**	**Mean**	**Std. Deviation**
Average Desired	2010 Full	7683	7.8879	.95347	914	7.9625	.87731
	2007 Full	26560	7.6967	1.34702	5723	7.7492	1.33155
Average Minimum	2010 Full	7683	6.5707	1.28510	914	6.8717	1.25317
	2007 Full	26560	6.4072	1.49433	5723	6.5197	1.45144
Average Perceived	2010 Full	7683	6.8974	1.12600	914	7.3168	1.04704
	2007 Full	26560	6.7050	1.38367	5723	6.7978	1.39576
Adequacy Gap	2010 Full	7683	.3267	1.39070	914	.4451	1.44021
	2007 Full	26560	.2978	1.39300	5723	.2782	1.36064
Superiority Gap	2010 Full	7683	-.9905	1.17230	914	-.6457	1.11839
	2007 Full	26560	-.9917	1.15071	5723	-.9514	1.13623
	2010 Full or Lite	**N**	**Mean**	**Std. Deviation**	**N**	**Mean**	**Std. Deviation**
Average Desired	Full	7683	7.8879	.95347	914	7.9625	.87731
	Lite	20351	7.6887	1.11178	12744	7.9515	.90018
Average Minimum	Full	7683	6.5707	1.28510	914	6.8717	1.25317
	Lite	20351	6.4234	1.33585	12744	6.6712	1.23288
Average Perceived	Full	7683	6.8974	1.12600	914	7.3168	1.04704
	Lite	20351	6.7701	1.17497	12744	7.1083	1.10348
Adequacy Gap	Full	7683	.3267	1.39070	914	.4451	1.44021
	Lite	20351	.3468	1.45279	12744	.4371	1.38748
Superiority Gap	Full	7683	-.9905	1.17230	914	-.6457	1.11839
	Lite	20351	-.9185	1.28517	12744	-.8432	1.15024

Figures in red are not statistically significant based on T-testing

Tables Appendix

EndNotes

[i] Kalb, Sam, "LibQUAL Canada Survey," 11/07/07, http://library.queensu.ca/webir/canlibqual/consortial_survey/SurveySummary.html.

[ii] Kalb, Sam, "Bench-marking on a national scale: the 2007 LibQUAL Canada experience" (paper presented at the 2008 Library Assessment Conference, Seattle, Washington, August. 2009, p.323-330): http://hdl.handle.net/1974/1416.

[iii] Kalb, Sam, "LibQUAL Canada Survey," 11/07/07, http://library.queensu.ca/webir/canlibqual/consortial_survey/SurveySummary.html

[iv] LibQUAL+® Canada, "From LibQUAL™ to LibQUAL+™ Lite", http://library.queensu.ca/webir/canlibqual/libqual-lite.htm.

[v] Bruce Thompson, Martha Kyrillidou, and Colleen Cook, "*Does using item sampling methods in library service quality assessment compromise data integrity?: A LibQUAL+®® Lite study*," (Paper presented at the 2nd Qualitative and Quantitative Methods in Libraries (QQML 2010) International Conference, Chania (Crete), Greece, May 27, 2010), p.8.

[vi] Bruce Thompson, Martha Kyrillidou, and Colleen Cook, "LibQUAL+® Lite", http://www.libqual.org/about/about_lq/LQ_lite.