

## **Does Size Matter? The Effect of Resource Base on Faculty Service Quality Perceptions in Academic Libraries**

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### **Abstract**

We explore whether the relative size of an academic library's resource base, as indicated by the Carnegie classification of the library's parent institution, impacts faculty perceptions of library service quality. Using results from the 2006 administration of the LibQUAL+® survey, the study tests for statistically significant differences between research universities and masters-level universities in terms of faculty minimum, perceived, desired and adequacy gap scores for each of the three LibQUAL+® service dimensions (Information Control, Library as Place, and Affect of Service). Findings suggest that university type does impact expectations and perceptions of service quality, but does not impact ratings of service adequacy, the extent to which faculty perceive that a library meets their expectations.

### **Introduction**

The current study tests for differences in faculty perceptions of library service quality between two types of academic libraries: those at large research universities and those at master's-level colleges and universities. Our intention is to determine whether the relative size of an academic library's funding level, as indicated by the Carnegie classification of its parent institution, matters to faculty perceptions of library service quality, as reflected in LibQUAL+® data. Our primary motivation for conducting this study was to seek evidence that larger funding allocations translate into higher faculty perceptions of library service quality, as such evidence might be useful fodder for library administrators to use in future funding requests to the central administrations of their parent institutions.

The LibQUAL+® literature includes little in terms of comparisons between different types of academic libraries. In a fundamental grounding document for the LibQUAL+® instrument<sup>1</sup>, Cook compared user groups within Association of Research Libraries (ARL) and non-ARL institutions to see whether types of users differed in their perceptions of each service quality dimension identified by LibQUAL+®. She found small but significant differences between user groups for both types of institutions, and the patterns seemed slightly different for each institution type. Among institutions with ARL libraries, the largest difference among user groups was for the Library as Place dimension, whereas for non-ARL institutions, the largest differences among user groups was in the Affect of Service dimension. As Cook's primary research focus was not on finding differences between institution types, she did not explicitly test to see whether these seemingly divergent patterns between ARL and non-ARL libraries were statistically significant.

A second factor motivating us to question whether there might be variation across different types of academic libraries surfaced some years ago when one of this paper's authors, Fred Heath, and his colleagues at Texas A&M, were grounding and validating the LibQUAL+® instrument. Focusing on adequacy gap scores, they noted an interesting clustering of these scores for ARL and non-ARL libraries. Adequacy gaps provide a useful indicator of how well an academic library is meeting or failing to meet users' expectations. An adequacy gap is calculated as the difference between a user's minimum expectation and perceived level of service quality for a given survey item. A negative adequacy gap score indicates that a user's

perceived level of service quality falls below minimum expectations. When Heath and his colleagues observed the adequacy gap scores for ARL and non-ARL libraries, they saw that ARL libraries seemed to cluster together with larger faculty adequacy gap scores than those for non-ARL libraries.

At the time, these potential differences in adequacy gap scores were not examined for statistical significance; yet the perceived pattern raised some interesting questions. Should a significant difference between these types of libraries exist, would it be due to the fact that many of the faculty served by these non-ARL libraries earned their degrees at large research institutions with ARL libraries, which are usually better resourced than their non-ARL counterparts? Were faculty expectations for library service quality created during the doctoral research process at institutions with better-resourced ARL libraries being transported to these non-ARL institutions with smaller resource bases? Were these faculty members transferring their expectations and frustrations with library services to their graduates students and undergraduates at these smaller non-ARL libraries? Were these smaller libraries being placed at a relative disadvantage in terms of perceived service adequacy by expectations created during their faculty's training?

Building on the work of Cook and the team at Texas A&M, the current study tests for significant differences across different types of academic libraries within the LibQUAL+® data, specifically focusing on faculty perceptions of library service quality at large research vs. masters-level colleges universities.

## Methods

### Sample

The sample for this analysis was taken from the 2006 LibQUAL+® survey administration, North American protocol, American English version. "Basic" Carnegie classifications for the parent universities of participating academic libraries were used to define research and masters-level.<sup>2</sup> For the purposes of the study, a research library is defined as one located at a Carnegie RU/VH or RU/H institution. These universities have a high or very high research activity; representative examples include Columbia University, Clemson University, and the University of Texas at Austin. A masters-level library is defined, for the purposes of the study, to be an academic library located at a

Carnegie Masters L or M institution. These are institutions with larger and medium masters-granting programs; representative examples include Humboldt State University, Gonzaga University, and the University of Texas at San Antonio. For research libraries our sample included fifty-six libraries with 8,215 faculty members surveyed. For masters-level academic libraries, our sample included sixty-six libraries with 5,664 faculty members surveyed.

### Measures

LibQUAL+® is a set of services constructed in response to the Association of Research Libraries (ARL) New Measures Initiative. It is an assessment tool for collecting and analyzing customer perceptions of service quality in three areas: Affect of Service (questions in this category relate to the attitudes and abilities of employees when assisting others), Library as Place (questions in this category relate to the library facilities and use of space), and Information Control (questions in this category focus on collection breadth and scope, the ability of respondents to find information on their own, and the Libraries success in providing information).<sup>3</sup>

The survey consists of twenty-two service statements and a comment box. Respondents are asked to rate each service indicator on three levels (the minimum level of quality that is acceptable, the desired level of quality, and the current perceived level of service quality) using a Likert scale of 1-9. As noted above, adequacy gaps are calculated as the difference between perceived and minimum scores.

### Analysis

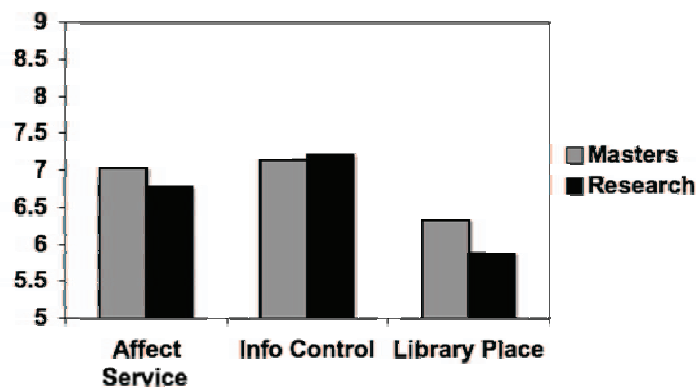
We accessed summary data for each school; that is, the average faculty minimum, perceived, desired, and adequacy scores for each dimension. For each type of rating, we conducted a separate analysis of variance (ANOVA), containing the between-subjects factor of Institution Type (Master's vs. Research) and the within-subjects factor of Dimension of Service (Affect of Service, Library as a Place, and Information Control). Rating types (minimum, perceived, desired, and adequacy) were treated as separate dependent variables; because adequacy is calculated from minimum and perceived scores, it was not appropriate to include all four outcomes in a multivariate ANOVA. In each analysis, we focused on the main effect of Institution, and the interaction between Dimension and Institution (using Hotelling's *F*). If the main

effect of Institution is significant, then the two types of institution differ significantly in terms of faculty ratings on the set of dimensions. If the interaction is significant, then the two types of institution differ in varied ways across the three dimensions; for example, the groups may differ strongly in one dimension while not differing in another dimension. If the interaction was significant for a particular type of rating, we conducted follow-up pairwise comparisons to determine which dimensions differed significantly between institution types. Mean ratings for each dimension at each type of institution are presented in Figures 1 through 4.

## Results

*Minimum ratings.* The two types of institutions differed significantly in their overall ratings,  $F(1, 120) = 32.23, p < 0.001$ , and in the patterns of those ratings across dimensions,  $F(2, 119) = 61.76, p < 0.001$ . Pairwise comparisons indicated that Master's institution faculty had significantly higher minimal expectations of Affect of Service ( $p < 0.001$ ) and Library as Place ( $p < 0.001$ ) than did Research faculty, while Research faculty had higher expectations in terms of Information Control ( $p < 0.05$ ).

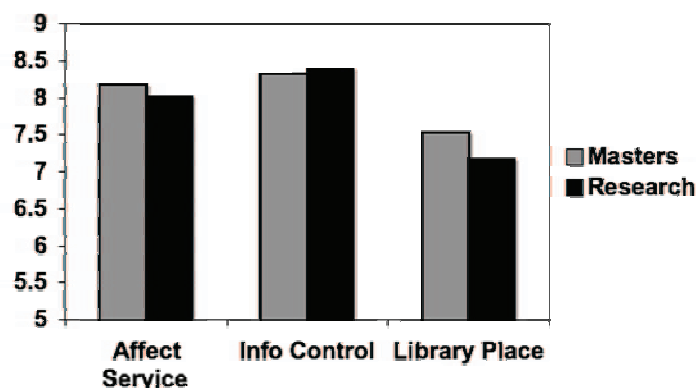
**Figure 1. Faculty minimum ratings for each level of service quality.**



*Desired ratings.* Typically, desired expectations follow the same pattern as minimum expectations, and our study proved no exception. Overall tests were significant for both the main,  $F(1, 120) = 38.12, p < 0.001$ , and interaction,  $F(2, 119) = 54.87, p < 0.001$ , effects; and pairwise comparisons showed

higher expectations for Master's than Research faculty in Affect of Service ( $p < 0.001$ ) and Library as a Place ( $p < 0.001$ ), but lower expectations for Master's than Research faculty in Information Control ( $p < 0.001$ ).

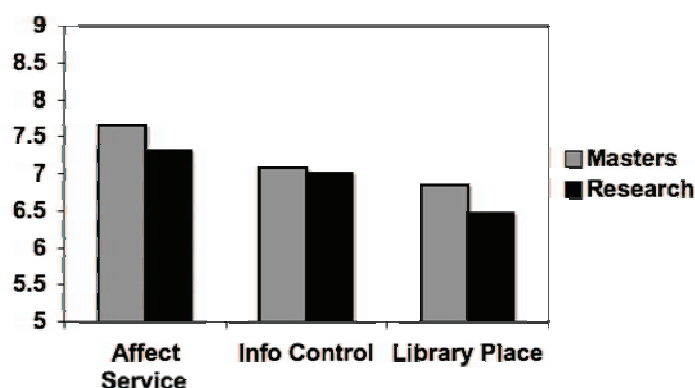
**Figure 2. Faculty desired ratings for each level of service quality.**



*Perceived ratings.* For perceived scores, results were again significant for the main effect of Institution,  $F(1, 120) = 14.89, p < 0.001$ , and its interaction with Dimension,  $F(2, 119) = 20.15, p < 0.001$ . Again Master's faculty gave higher ratings

than Research faculty in terms of Affect of Service ( $p < 0.001$ ) and Library as a Place ( $p < 0.001$ ); however, there were no differences between institution types in terms of faculty perception of Information Control service quality.

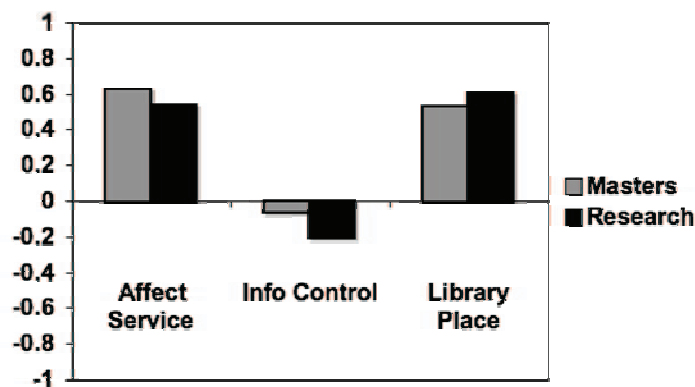
**Figure 3. Faculty perceived ratings for each level of service quality.**



*Adequacy gaps.* Faculty within the two types of institutions did not differ in terms of overall adequacy gaps,  $F(1, 120) = 0.50, n.s.$  Although the interaction was significant,  $F(2, 119) = 3.40, p < 0.05$ ,

follow-up pairwise comparisons indicated no significant differences between the institution types in terms of any of the three adequacy gaps.

**Figure 4. Faculty adequacy gaps for each level of service quality.**



### Discussion

Our analysis indicated higher minimum, perceived, and desired ratings of service quality for faculty members at masters-level institutions for the Affect of Service and Library as Place dimensions than for their research-level counterparts. These results might reflect the relatively high priority many academic libraries at smaller masters-level institutions place on services focusing on teaching and learning—often supported by “high touch,” user-centered services and physical environments.

It seems as though faculty at these smaller institutions have higher expectations for services focused on teaching and learning relative to their colleagues at research universities, and that libraries at these smaller institutions are doing a relatively good job meeting faculty expectations.

In contrast, faculty members at research institutions had higher minimum and desired ratings for the Information Control dimension. These results might reflect the intense pressures placed on faculty by the promotion and tenure

processes in the research university environment. In order to support their research programs, faculty at research institutions show an insatiable desire for scholarly communications, as well as high expectations for easy access to research information on their own terms.

While the analysis did find variation in faculty ratings between the two institution types, the differences detailed above tend to balance each other out. In terms of meeting faculty expectations across the three service dimensions, we found no statistically significant differences in adequacy means among faculty respondents from research and masters-level institutions. It appears that the relative size of an academic library's resource base, at least in terms of our rough research or masters-level classification, has no discernable effect on the library's ability to meet faculty expectations of service quality. Thus, context—higher expectations for research faculty for collections and their ability to navigate those collections on their own terms, as well as higher expectations for faculty at masters-level institutions for user-centered services and facilities—seems to matter more to faculty ratings of library service adequacy than does the relative size of funding allocations.

Contrary to our expectations, we see no evidence that faculty members bring their service expectations to employing institutions from the environments at which they were trained. Rather, faculty expectations are probably more substantially influenced by the context of their current employing institutions. When a freshly minted PhD recipient leaves the research institution where she earned her doctorate and begins a career at a masters-level institution, her expectations of library collections and services probably evolve to match the expectations placed on her at the new institution. Similarly, if the new faculty member moves on to another research institution, her expectations for library services evolve within the context of the research-intensive environment at that institution.

Another possible explanation for the lack of difference in adequacy gaps between the two types of institutions is the size of large research universities. While research libraries receive larger

funding allocations, they are forced to spread those allocations across a broader range of programs and larger populations of faculty and graduate students than are their masters-level counterparts. Thus any expected effect in increasing a research library's ability to meet faculty expectations with a larger funding allocation is possibly attenuated by the need to stretch the larger allocation across a broader and more diverse research program.

Though we found no indication that the rough size of an academic library's resource base matters in terms of meeting faculty expectations, the results do not imply that increased funding for individual libraries will not have a positive effect on a library's ability to meet user service expectations. Additional funding used to purchase an oft-requested journal backfile or to hire an additional instruction librarian or educational technologist is certainly liable to improve perceptions of how an academic library is meeting needs and to increase faculty perceptions of service adequacy within that library's operating context. However, it may be that the differences in expectations placed on faculty members at these two institution types are more important factors in driving their expectations and judgments of service adequacy than the relative size of the funding allocated to the libraries that serve them.

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## Endnotes

1. C.C. Cook, "A Mixed-methods Approach to the Identification and Measurement of Academic Library Service Quality Constructs: LibQUAL+® (Ph.D. diss., Texas A&M University, 2001), 230-5.
2. The Carnegie Foundation for the Advancement of Teaching, "The Carnegie Classification of Institutions of Higher Education™," <http://www.carnegiefoundation.org/classifications>.
3. Association of Research Libraries, "LibQUAL+®: Charting Library Service Quality," <http://www.libqual.org>.