

# Business Students' Perception Of University Library Service Quality And Satisfaction

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## ABSTRACT

*The main purpose of this study is to examine the college students' perception of library services, and to what extent the quality of library services influences students' satisfaction. The findings depict the relationship between academic libraries and their users in today's digital world and identify critical factors that may sustain a viable library-user relationship on campus.*

**Keywords:** Library Service Quality; Digital Technology; Academic Libraries

## INTRODUCTION

In today's society, many media users are starting to appreciate the online service channel. The traditional offline media of library services have also changed into online counterparts such as Internet-based inter-library-loan services. However, the development of digital technology brings both opportunities and challenges to academic libraries. Rovito (2010) notes, "present-day academic libraries are now expected to compete with commercial service providers such as Google" (p. 146). Advocates of technology believe that the Internet (e.g., online database) removes time and geographic constraints. Thus, the appropriate use of digital technology would enable academic libraries to strengthen their connection with the patrons. Opponents, however, argue that college students may rely on Google scholars and other online search engines for learning-related information, which raises a growing concern that "the physical library is no longer so essential to the educational experience" (Gardner & Eng, 2005, pp. 405-406). In other words, the ubiquitous Internet availability delineates the relationship between college students and their academic library. Given that "the skills and competencies to search for, access and evaluate information, and build knowledge are regarded as cornerstones in the teaching-learning process" (Pinto, Fernández-Marcial, & Gómez-Camarero, 2010, p. 71), a better understanding of college students' perceptions of academic library services would help librarians better meet the learning needs of today's technology-savvy college students.

## LITERATURE REVIEW

Technology plays an essential role in higher education in general, and in the academic library in particular. With the emergence of Web 2.0, librarians are promoting social software programs (e.g., Facebook, Pinterest, and social bookmarking web sites) as cost-effective ways to reach their patrons (Epperson & Leffler, 2009; Heradio et al., 2013). Meanwhile, Bakti, and Sumaedi (2013) investigated the relationship between library customer loyalty, service quality, and customer satisfaction in a university library service in Indonesia. This research reveals that service quality has a direct effect on customer satisfaction which, in turn, influences library customer loyalty. Interestingly, service quality does not have a significant direct effect on customer loyalty in a library service. Recently, Heradio et al. (2013) provided a literature review of the quality evaluation of DLs (digital libraries) based on users' perceptions which contributes to bring together previously disparate streams of work to help shed light on this thriving area.

California State University-Sacramento implemented a laptop rental program to increase the overall library user traffic and to aid students' use of academic resources (Gu, 2011). After implementation of the laptop loan program, with 180 wireless laptops put into circulation, feedback solicited through a survey accessible from the laptop loan program website was generally positive.

Parasuraman, Zeithaml, and Berry (1988) developed a generic instrument named SERVQUAL to measure service quality from the customers' viewpoint, where each survey item is used first to measure users' expectations about the service quality being accessed and again is used to capture users' perceptions about the service quality. The "difference scores" between users' expectation and perception of service are then calculated to gauge the underlying service quality. It is important to note that the "gap model" of service quality is said to govern five dimensions:

- Tangibility: physical facilities, equipment, and appearance of personnel
- Reliability: the degree to which the service provider keeps promise and performs with the best interests of the customers at heart
- Responsiveness: the willingness of the service providers to provide service targeted to customer's specific needs
- Assurance: knowledge of service providers and their ability to convey trust and confidence
- Empathy: the caring and customized attention the firm provides its customers

Although the originally proposed number of service quality dimensions is five, the number of dimensions found in most SERVQUAL replications in the context of library service is three. For example, Nitecki (1996) suggested a three-factor structure of SERVQUAL while Cook and Thompson (2000) reported a three-factor structure, but each of the factors is associated with a slightly different set of items reported in Nitecki's (1996) work. As a result, Cook and Thompson (2000) concluded, "direct comparisons of scores on five dimensions across the three frames of reference might be misleading" (p. 251).

To address the increasing pressure to meet library patrons' needs in the academic library, librarians should adopt a consistent system that can reflect a quick, accurate view of library services. Given that the SERVQUAL scale was developed more than twenty years ago; it can serve as a point of departure when we search for a diagnostic tool to measure service quality.

Notably, the SERVQUAL scale has been scrutinized and criticized by several researchers such as Cronin and Taylor (1992), Buttle (1996), Cronin, Brady, and Hult (2000), and Coulthard (2004). The main criticisms of SERVQUAL focus on its theoretical paradigm (e.g., Buttle, 1996) and argue that there is little evidence that customers gauge service quality in terms of the service gap between expectations and perceptions. The operationalization of the survey instrument (e.g., Cronin & Taylor, 1992) finds that the performance-based instrument (i.e., SERVPERF) outperforms the SERVQUAL scale across a number of industries. It appears that the SERVPERF scale has been adopted more frequently than the SERVQUAL scale by researchers in recent literature (Olorunniwo & Hsu, 2006), perhaps due to the relatively simple structure of SERVPERF (in which respondents only need to answer the questions once) and its seemingly superior characteristics. However, several recent studies carried out on academic libraries have pointed out that the dimensions of both gap-based (SERVQUAL) and performance-only (SERVPERF) construct would not necessarily replicate the originally proposed five service quality dimensions. For example, Landrum and Prybutok (2004) conducted an exploratory factor analysis on the student survey responses at two U.S. Army Corps of Engineers libraries (n = 385) and they concluded that "the best model of library service quality is a 3-factor model consisting of tangibles, reliability, and a single factor composed of items from responsiveness, assurance, and empathy" (p. 635). Interestingly, the same two authors and two additional collaborators (Landrum, Prybutok, Zhuang, & Peak, 2009) used the same survey responses (n = 385) from two U.S. Army Corps of Engineers libraries, but they arbitrarily took the five-dimension SERVPERF structure for granted in their empirical work this time. Landrum et al. (2009) stated that "the literature contains multiple instances where researchers have chosen three, four, and five of the SERVPERF dimensions to investigate performance service quality" (p. 21) and their empirical analysis identified reliability and responsiveness as two relatively more important service quality dimensions than the remaining three dimensions this time. It appears that there is no consensus regarding the number of SERVPERF dimensions in the context of library service research even within the same research team. Thus, the lack of conventional wisdom on the factor structure of the SERVPERF motivates us to empirically revisit the dimensionality of academic library service quality in a digital era.

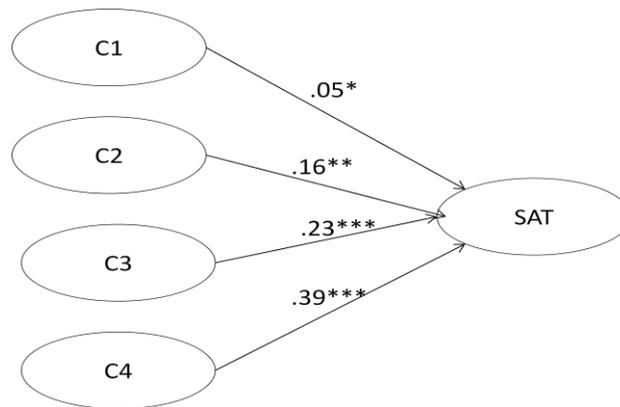
Customer satisfaction has been recognized as an important marketing metric. Satisfied customers are more likely to become advocates for the organization in the future. Although the relationship between service quality and satisfaction has been widely explored in commercial services (e.g., banks, hotels, retailers), a notable gap exists in the library services literature in explaining this relationship. Because a preponderant evidence of empirical research results supports the notion that service quality is the antecedent of satisfaction (cf., Cronin, Brady, & Hult, 2000; Olorunniwo & Hsu, 2006), we investigate which service quality dimension would be of higher impact on users' satisfaction in this study.

## **INSTRUMENT DEVELOPMENT**

Previously published measures were used with appropriate adaptation for the context in the survey. Lapierre (1996) observed that service quality research is critically dependent on the quality of the operational measures. We agree with Nitecki (1996) in that "a measure of library quality based solely on collections has become obsolete" (p. 182), but we argue that a measure of library quality like the SERVPERF adopted by Landrum et al. (2009) is equally incomplete without assessing the library's collections. Thus, the same 21 SERVPERF questions (i.e., Q1 to Q21 in Table 1) reported in the appendix of Landrum et al.'s (2009) study and a few additional indicators (i.e., Q22-Q24) were used to measure library service quality. Patrons' satisfaction toward the library services was measured in terms of students' perception toward the library. A four-item satisfaction scale employed in Olorunniwo and Hsu (2006) was revised and used in this study. Specifically, these items read "Based on all of my experience, I am satisfied with my campus library," "Compared with other academic libraries in other similar-size state universities, I am satisfied with my campus library," "I feel that my experience with my campus library has been enjoyable," and "I think I did the right thing when I chose to use my campus library's services." Each of the latent factors (i.e., the to-be-found service quality dimensions and satisfaction) is measured by a set of question items, observed by survey questions to library users on a 7-point Likert-type scale, ranging from strongly disagree (1) to strongly agree (7).

## **METHODOLOGY**

An exploratory factor analysis was used to investigate the underlying library service quality factor structure. Subsequently, the structural equation modeling PLS (partial least squares) was employed to examine the relationship between the library service quality dimensions and patrons' (students) satisfaction. The PLS technique with the bootstrapping option was employed to examine the research model (see Figure 1). PLS is a statistical tool that has been designed to deal with multiple regression problems where the sample size is limited, the correlations between the predictor variables are relatively high, and with missing data. Although an updated viewpoint regarding sample size is that PLS path modeling is not a panacea for research projects with a small sample size, PLS does serve as an appropriate technique for many research situations such as complex research models with sample sizes that would be relatively too small for covariance-based structural equation modeling techniques (Marcoulides & Saunders, 2006). Heseler, Ringle, and Sinkovics (2009) found that "PLS has been used by a growing number of researchers from various disciplines" (p. 277) which include strategic management, management information systems, e-business, organizational behavior, marketing, and consumer behavior. Thus, this study adopts the PLS technique in assessing the relationship between service quality and user satisfaction in the academic library. The Warp PLS (version 2.0) was used as the analytical tool for the estimation of the structural equation model. Coefficient alphas and composite reliability are used to assess the scale reliability while the average variance extracted (AVE's), R-squares, and the directional signs and size of the path coefficients are used to assess the performance of the structural model.



**Figure 1: The Research Model**

Note: \* indicates a significance level at  $p < .10$ , \*\* indicates a significance level at  $p < .05$ , and \*\*\* indicates a significance level at  $p < .01$ .

**EMPIRICAL FINDINGS**

The survey focuses on college students’ perception of campus library services and the students’ library usage behavior. Respondents were asked to indicate how they perceived library service quality and their level of satisfaction toward the campus library by answering an online survey posted on the qualtrics.com website. Our convenient sample yielded a total of 161 useable questionnaires answered by college students enrolled in an AACSB accredited college of business in a university located in the Midwest region of the United States. Specifically, students in a few Marketing and Accounting classes were invited to answer the survey online (qualtrics.com) and the participants (134 undergraduate business students and 27 MBA students) were rewarded with small class credits if they completed the online survey within an open ten-day period. Ninety-six respondents were men and sixty respondents were women, along with five respondents who did not report their gender.

An exploratory factor analysis (EFA) was first employed to identify the underlying dimensionality of service quality in the academic library. Specifically, both the screen test and the Kaiser (1960) eigenvalue-one criterion were used to identify the number of factors. Since Q5 (the library offers convenient hours of operation) became a single-item factor, which is against the main purpose of EFA (i.e., variable deduction), the item Q5 was deleted and the remaining items were subject to EFA again. This procedure resulted in a four-factor solution, rotated by a Direct Oblimin algorithm (i.e., an oblique rotation) using IBM-SPSS. As Table 1 shows, no indicator showed a significant loading (factor loading higher than + 0.4) on more than one factor, and this indicates that the EFA outcome provides a pure measure of each service quality dimension.

**Table 1: The Measurement Model: Exploratory Factor Analysis**

	Component			
	C1	C2	C3	C4
Q19: Staff who have the users’ best interests at heart	.853			
Q20: Staff who deal with users in a caring fashion	.823			
Q21: Staff who understand the needs of users	.784			
Q14: Courteous staff	.773			
Q18: Giving users individual attention	.770			
Q15: Staff who instill confidence in users	.760			
Q17: Staff (librarians) who have the knowledge to answer users’ questions	.671			
Q12: Willing to help users	.604		-.351	
Q13: Readiness to respond to users’ requests	.600			
Q16: Making users feel secure in their transactions with the library	.550			
Q23: Adequacy of journal subscriptions (hard copies)		.837		
Q22: Adequacy of library holdings (books)		.817		
Q24: Adequacy of online resources and subscriptions		.802		
Q9: Providing service at the promised time			-.853	
Q10: Keeping users informed about when services will be preformed/finished			-.814	

Table 1 cont.

Q8: Performing service right the first time					-.717
Q6: Providing service as promised					-.669
Q7: Dependability in handling users' service problems					-.574
Q11: Prompt service to users					-.491
Q2: Visually appealing facilities					.829
Q4: Visually appealing and clear documentation, such as library signs, handouts, and brochures.					.736
Q1: Modern equipment					.665
Q3: Neat, professionally appearing staff (librarians)	.388				.596
Cumulative % of variance explained	47.30	56.16	63.13	68.24	
Coefficient alphas	.933	.901	.899	.778	
Composite reliability	.944	.904	.924	.859	

Note: C1 (Responsiveness, assurance), C2 (Adequacy of collections), C3 (Reliabilities), C4 (Tangibles). Extraction Method: Principal Component Analysis with Oblimin Rotation.

The first factor (C1) corresponds to a combination of responsiveness and assurance; the second factor (C2) reflects the level of adequacy related to library's collections; the third factor (C3) indicates the reliability dimension of library service quality, and the fourth factor (C4) addressed the tangibility dimension. The coefficient alpha values are .93, .90, .90, .78, and .85 for C1, C2, C3, C4, and the satisfaction, respectively. As the values of coefficient alpha were all higher than the .70 cutoff point, all scales had an acceptable internal consistency.

Subsequently, we conducted a partial least squares (PLS) analysis on the same sample to examine the impacts of the empirically identified four service quality dimensions on the satisfaction construct. Table 2 reports the descriptive statistics and pairwise correlations among the service quality dimensions and satisfaction. The discriminant validity (i.e., the degree to which items of constructs are distinct) was empirically assessed by using the variance-extracted test. Discriminant validity is said to be satisfied if the amount of variance extracted by the items measuring each construct is larger than the variance shared between measures of two different constructs (e.g., between C1 and C2). Empirical results (see Table 2) showed that the discriminant validity is achieved in this study (as the value of AVE shown in the diagonal of Table 2 are larger than the squared correlation between a particular construct and other related constructs).

Table 2: Descriptive Statistics and Intercorrelations among Service Quality and Satisfaction

	C1	C2	C3	C4	SAT
<b>C1</b>	.63				
<b>C2</b>	.49	.84			
<b>C3</b>	.69	.57	.67		
<b>C4</b>	.56	.55	.53	.61	
<b>SAT</b>	.49	.51	.57	.62	.71
<b>Mean</b>	5.84	5.64	5.15	5.75	5.53
<b>S.D.</b>	.78	.77	.86	.98	.89

Average variances extracted (AVE's) are shown on diagonal.

Interestingly, although all service quality dimensions showed significant and positive impacts on user satisfaction at the .10 significance level, our empirical findings revealed that the most important service quality dimension is tangibility (physical facilities, equipment, and appearance of personnel). Tangibility is followed by reliability (the degree to which the service provider keeps promises and performs with the best interests of the customers at heart), the level of adequacy related to library's collections, and the factor corresponding to a combination of responsiveness (the willingness of the service providers to provide service targeted to customer's specific needs) and assurance (knowledge of service providers and their ability to convey trust and confidence).

## DISCUSSION

According to Culley (2013), an acquisitions librarian at the University of Southern Mississippi, the most dramatic and ongoing change in libraries is the shift to electronic format for books, journals, and sound or video recording materials. As Bakti and Sumaedi (2013) suggested, library management has to ensure its patrons'

satisfaction and, hopefully, turn satisfied customers into loyal customers. The current study echoes Culley's (2013) opinion and examines the underlying dimensions of college students' perceived service quality of their campus library. In addition, this study also links service quality to satisfaction by examining the relative importance among various library service quality dimensions. Empirical findings suggest that three service quality factors (i.e., intangible and reliable attributes; reliable and responsiveness; and library collections on physical books and online resources) positively and significantly affects library patrons' level of satisfaction at .05 significance level, while the remaining factor (i.e., empathy) influences satisfaction at .10 significance level.

The results of this study agrees with Kostagiolas' (2012) study, which proposes that reliability analysis for improving the performance of libraries and information services has become increasingly crucial. Factor C3, asking for students' perception toward the library's ability to provide good customer service in providing timely responses to their questions and needs and getting it right the first time, reflects the reliability dimension and has a relatively large impact on satisfaction. On the other hand, Factor C4, asking for students' perception toward library's visually appealing attractiveness in terms of modern equipment and professional appearing staff, has the largest impact on customer satisfaction. Factor C1 and Factor C2 reflects librarians' personal courtesy and whether the library has adequate holdings, and they both influence customer satisfaction too. These research outcomes are generally consistent with the findings reported by Hallberg and Sipos-Zackrisson (2010), who suggested that the potential for improving service quality of the Swedish library sector is related to the strength of its market orientation and to its ability to change the librarian's role. They suggested that the market orientation of the library services, customer orientation, together with a change to a retail-experienced librarian role, are actions identified for improving library customer value.

Finally, Pedramnia, Modiramani, and Ghanbarabadi (2012) analyzed academic libraries' service quality using the LibQUAL scale, and they found that the "information control" dimension, and appropriate working hours; classification system for searching and accessing to information and appropriate time for loaning resources are significant outcomes. This result is similar to Factor C3, which asked students about the library's ability to provide good customer service in providing timely responses to their questions and needs and getting it right the first time. To sum up, although the push for electronic access allows libraries to have instant access for patrons on or off campus, and helps address the problem of shelving space within the library, the quality of service provided by the library is both a crucial and an inevitable issue. The empirical results depict several up-to-date values perceived by both academic and non academic users for future construction of library.

## **IMPLICATIONS**

In alignment with our findings where the most important service quality dimension was tangibility (physical facilities, equipment, and appearance of personnel) followed by reliability (provider keeps promises and performs with the best interests of the customer at heart), responsiveness (the willingness of the service providers to provide service targeted to customer's specific needs) and assurance (knowledge of service providers and their ability to convey trust and confidence); the authors have seen their institutional library recently respond to these service quality dimensions in the following ways:

- Recent renovation with emphasis on increasing space for group study sessions, DVD checkout, bestselling books section, laptop computer check-out, group presentation rooms equipped with computers and video recording cameras that allow student to develop video presentations, more banks of computers for general access along with labs for group learning of how to use the library's on-line resources (and yes, limited free photocopying).
- Reference librarians have office hours in buildings outside the library where students and faculty have more convenient access to their services. These same librarians provide faculty consulting services on how best to access library resources. They build websites for instructors' courses to lead students to on-line resources and provide "how to" templates that assist the students in using the website features. Websites involving accounting, marketing, business, tax or legal research greatly benefit students who now have these additional resources. This website development is provided for on-campus or on-line courses.

## LIMITATIONS

In our age of a digital society with almost fingertip access to information one might often hear students joking with other students about where is the library? Students typically have an orientation session with the library staff yet one might wonder if they ever return to the library. How much the students interact with the library may limit the generalizability of our findings.

This study specifically looks at students' perceptions of the library while leaving out other constituents such as faculty, community, and online users. Future studies could examine faculty, academic staffs, and community members' perception toward academic libraries and expand service quality factors that might capture the responses from these new constituencies.

## CONCLUSIONS

If campus libraries can allocate their limited resources to be more relevant to the current student population, specifically in the areas of staff professionalism, customer service, modern equipment and facilities while strategically expanding their on-campus and online holdings, then service quality for students will improve in the end and student users are more likely to utilize the library's offerings. Perhaps, down the road, these present library users will become future donors who can help support future libraries to be relevant and useful.

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