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Examining undergraduate students' priorities for academic library services and social media communication

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Abstract

Academic libraries can effectively plan and market their services by identifying the value users perceive in their services and in their social media communications about those services. This study reports on findings of a survey of 104 undergraduate students in information technology courses at a large research university. Results of an ordered logistic regression analysis indicated that students considered access to information and computer resources and study support services as the most important library services offered. Likewise, students perceived library social media postings related to operations updates, study support services, and events as the most useful. Future related research will investigate the needs and priorities for library services of other key user populations of academic libraries, such as graduate students and online students, to assemble service repertoires that are tailored to individual user groups. In addition, future research will examine whether and how libraries can use the analysis of users' engagement with a library's social media postings to inexpensively gauge the value they perceive in library services.

Introduction

Users are often among the first groups to conceive new, innovative uses of technology or develop workarounds to complete their changing work or engage in social activities (Gasser, 1986; Teece, 2007). Librarians must stay aligned with users' dynamic needs, innovative uses of information technologies and services, and perceived value of those services. This may help librarians identify new service opportunities and decide how to reconfigure and extend their existing service capabilities to support the new, changing needs and priorities of their key user groups. For instance, some academic libraries complement their existing digital library services with computational and text-mining capabilities to help their faculty and students integrate advanced content analysis methods into their research and teaching.¹

User-perceived value is usually assessed based on the perceived quality of a service or product received and the perceived sacrifice or price paid by the customer (Eggert & Ulaga, 2002; Zeithaml, 1988). Quality

¹ <http://er.educause.edu/articles/2016/5/the-hathitrust-research-center-exploring-the-full-text-frontier>

is generally defined as “fitness for use” (Wang & Strong, 1996). Quality is contextual and dynamic, and it changes with changes in time and space. Ultimately, the problem of quality control, and quality assessment for that matter, is the ability to connect a change in the quality of a service or product to a change in an activity outcome and the value of that activity outcome change. Ideally, the value of a library service should be evaluated by assessing the value of an activity outcome that used the service (Stvilia & Gasser, 2008). When multiple alternatives exist for the same type of service, quality-based selection of a product or service becomes a process of the consumer identifying an optimal service within a multidimensional search space where the dimensions are the quality criteria and the cost of using the service (Lesser et al., 1998). Because it has been difficult to assign a price value to library services (Nitecki, 1996), librarians have focused on determining the user-perceived quality of library services (Cook & Thompson, 2001). In addition, librarians have used indirect measures, such as the degree of use, to assess the value of a particular level of service quality (Oakleaf, 2010). Furthermore, the value of a quality change in a product is conditioned by the criticality or importance of that change to the activity(s) in which the product is used (Stvilia, 2006). The user-perceived importance of a library service can be thought of as a general, baseline priority the user assigns to the library service, which also takes into account any alternatives to which the user might have access. Hence, the user-perceived importance of a library service can be used as a general, subjective measure of the value of a service. Furthermore, a library resource or service can have different uses. Different user groups may engage in different sets of academic and social activities when using the same or different services (e.g., library space), may play different roles in the activities (Gardner & Eng, 2005; Lux, Snyder, & Boff, 2016; Oliveira, 2016), and, hence, may assign different priorities to those services.

Social media systems have become increasingly popular, and users are spending a growing amount of time using these systems to network, share information, learn, and engage in leisure activities (e.g., gaming). A recent Pew survey of social media use found that nearly 65% of American adults use some kind of social media and that young adults use social media pervasively. Ninety percent of adults ages 18 to 29 use social media (Perrin et al., 2015). Another survey from the Pew Center showed that 73% of Americans ages 16 and older would be willing to use an online Ask a Librarian-type service (Zickuhr, Rainie, & Purcell, 2013). Being aware of these trends, libraries try to promote and market their services to user populations through various social media platforms and the information and communication channels their users frequent (Chu & Du, 2013). However, users may not find all social media postings useful. One study found that users rated only 36% of Twitter postings as worth reading (André, Bernstein, & Luther, 2012). A different study of Facebook pages of 20 academic libraries found that less than 37% of postings on those pages had some user activity (e.g., likes or comments; Gerolimos, 2011). Librarians need to determine what type of social media communication is effective with and useful to their key user groups.

Problem Statement

Libraries create value for their target user groups by providing services to support their needs. The value of those services, however, is conditioned by the criticality of those needs. Users’ needs and priorities for academic library services are dynamic, and they change with changes in information technologies and the sets of academic and social activities in which users engage. Librarians need to determine how to allocate and reconfigure their limited resources to foster service innovations and to meet users’ dynamic needs and priorities for their services effectively. They need to continuously monitor how their key user groups prioritize the existing services and identify unmet or new needs and opportunities for library services (Esson, Stevenson, Gildea, & Roberts, 2012; Spalding & Wang, 2006).

Furthermore, a library may not meet the needs of its users if it lacks the appropriate services. Users also may not be aware of services the library offers, or they may not know how to use those services to support their academic or social activities (Nitecki, 1996). Hence, it is essential that academic libraries assess their users' awareness of their services and devise mechanisms to increase that awareness (Chu & Meulemans, 2008). This includes gaining a better understanding of what sorts of library communication with particular media types are useful to specific target user groups.

This study contributes to addressing the above needs by examining the following questions:

1. What is the perceived importance of different types of academic library services among undergraduate students?
2. What is the perceived importance of different types of social media communication from academic libraries among undergraduate students?

Literature Review

The value of services can be conceptualized and measured based on the benefits or quality received and the cost or sacrifice incurred (Zeithaml, 1988). Assessing service quality can be complex because it may include the use of multiple products as well as the process of service delivery (Parasuraman, Zeithaml, & Berry, 1985). In addition, the value of a change in product or service quality can be conditioned by the criticality of the change to the outcome of the activity(s) in which the service is used or the criticality of the need that motivates or incites that activity (Maslow, 1943; Stvilia, 2006). This also implies that the criticality or value of a service can be affected if the activity can be completed by an alternative service (Eggert & Ulaga, 2002).

Libraries provide value to their target groups through their services. The user-perceived benefits or the quality of those services may differ from one user group to another. Because libraries do not sell their services directly to their user groups, they may not be able to quantify the amount of sacrifice or the price their users are willing to pay for those services (Oakleaf, 2010). It has been difficult to estimate the price users are willing to pay for a library service, and use it to assess the value of that service. Therefore, academic libraries focus on the quality assessment part of the service value equation and conduct regular surveys to assess the user-perceived quality of library services (e.g., Cook & Thompson, 2001; Cook, Heath, Kyrrillidou, Thompson, & Roebuck, 2014).

To justify the cost of providing a service, a library should ideally be able to connect the use of the service to the outcome of an activity(s) that uses the service, and the value of that outcome. Librarians have been trying to capture possible traces of those relationships by identifying correlations between the use of library services and the outcomes of their user groups' academic and social activities. For instance, Goodall and Pattern (2011) found a positive correlation between students' use of printed and electronic resources in a library and their grades. Similarly, Stone and Ramsden (2013) reported statistically significant correlations among students' degree of E-resource use, library borrowing statistics, library gate entries, and academic attainment.

The literature also discusses the difference between customer satisfaction and customer-perceived value. Customer satisfaction is defined as an affective construct that reflects a customer's postpurchase perspective on a particular supplier's offerings. It is oriented toward existing customers. Customer-perceived value, on the other hand, is a cognitive construct. It can reflect both the customer's pre- and postpurchase perspectives and the offerings of both a particular supplier and its competitors. Customer-perceived value can be used to assess how the supplier's offerings can generate value and how the

supplier can strategize to retain existing customers and attract new ones. Thus, the supplier can use customer satisfaction to correct the customers' existing problems with the current service offerings, whereas it can use customer-perceived value for strategic planning (Eggert & Ulaga, 2002; Hernon & Nitecki, 2001).

Identifying users' needs and priorities for library services and determining when and how to communicate about and promote those services to users should be components of the strategic marketing plan of any library (Spalding & Wang, 2006). Oliveira (2016) found that students may have different preferences for different services or for components of individual services within a particular service category (e.g., study space preferences). Furthermore, academic libraries provide a dynamic set of services that evolve over time (Nitecki, 1996). They have been using modified versions of the SERVQUAL instrument (Parasuraman et al., 1985) to examine the user-perceived quality of their services. The SERVQUAL framework consists of five dimensions or constructs: tangibles, reliability, responsiveness, assurance, and empathy. Nitecki (1996) examined the user-perceived quality of three groups of services: interlibrary loan, reference, and graduate reserves. Cook and Thompson (2001) seem to have examined the quality of a library as space and the collection access services, based on the list of factors identified in their report. In a 2014 iteration of the same library survey, they substituted the name of the collection access scale with information control. Interestingly, individual libraries and consortia added local questions to the instrument that referred to some additional services, such as interlibrary loan and library instruction (Cook et al., 2014).

As with any other communication system, libraries can use Twitter and other social media systems for different communication purposes and activities. Stvilia and Gibradze (2014) analyzed the content of Twitter streams at six large academic libraries in the United States. Their analysis revealed nine content types, with the event and resource categories being the most frequent. The other categories were community building, operations updates, study support, Q&A, surveys, staff, and clubs. In addition, their analysis showed that tweets related to study support services and building and maintaining connections with the community were the most frequently retweeted and selected as favorites.

The study conducted by Del Bosque, Leif, and Skarl (2012) of Twitter use by 296 academic libraries identified seven content types in the libraries' Twitter streams: campus events, community events, hours, library events, responses to reference questions, links to outside sites, and resources. In a study by Cuddy, Graham, and Morton-Owens (2010) describing the implementation of a Twitter-based information service in a health sciences library, the authors identified five topics the library tweeted about: library facilities, resources, staff, services, and library and campus events. In addition, Thomas (2010) argued that Twitter could be used for community building and employee interaction in organizations, including libraries. Kim, Abels, and Yang (2012) identified 12 groups of users who retweeted academic library tweets, with university organizations and students being the most frequently retweeting groups.

The studies reviewed in this section provide important insights into the types of services provided by academic libraries, the quality dimensions used to assess those services, and the content categories of social media postings by academic libraries. However, there seems to be a dearth of research identifying the user-perceived importance or criticality of academic library services. Considering that academic libraries cannot directly charge their users for their services, the way libraries can assess the user-perceived value of library services is by assessing the user-perceived quality and importance of those services. Assessing the user-perceived value of academic library services is essential for effective strategic planning and marketing. Furthermore, to support and promote library services effectively, it is crucial to examine what types of communication with a particular type of media are important to users. This study contributes to addressing those needs.

Study Design

This study used a Qualtrics-based online survey to collect data. The design of the survey instrument was informed by the literature and, in particular, included the categories of academic library services developed in a prior study (Stvilia & Gibradze, 2014). The survey instrument was pretested for validity and readability with eight master's students and two undergraduate students in the College of Communication and Information at Florida State University. The finalized survey instrument was then administered to 120 undergraduate students recruited between September 2015 and May 2016 from three face to face information technology classes in the College of Communication and Information at Florida State University. The classes were chosen in a way that to obtain a balanced representation by different student seniority levels. The total number of students enrolled in the three classes was 159. Out of 120 submitted surveys 104 were found valid which resulted in a 65% response rate. To recruit participants, the researchers used announcements in classrooms and on class mailing lists. Before participating in the online survey, participants were asked to complete a consent form approved by the Human Subjects Committee of Florida State University. The form contained information about the project, including information about potential risks associated with participating in the data collection. Participants who completed the survey were given a small course credit.

Findings

One hundred four undergraduate students completed the survey. Forty-two percent of survey participants (44/104) were female and 55% (57/104) were male. Three participants declined to specify their gender. Regarding race, the majority (66/104) of participants were Caucasian (64%), 17 were African American (16%), 11 were Hispanic or Latino (11%), 3 self-identified as Asian, 1 was Native American, 3 defined themselves as multiracial, and 3 declined to answer the question. In terms of seniority level (status), 32% were sophomores, 34% were juniors, and 34% were seniors.

The first research question examined undergraduate students' priorities for four categories of library services: (1) access to information and computer resources, (2) study support services, (3) support for club meetings, and (4) Q&A services (see Table 1). In particular, participants were asked to rate the importance of each category on a 7-point Likert scale from extremely unimportant to extremely important. The library service categories were identified in an earlier related study of Twitter postings of academic libraries at six large public research universities in the United States (Stvilia & Gibradze, 2014).

The largest percentage of survey participants revealed that they used a library to study (90/104; 87%). Fifty-nine percent of participants used a library to access library catalogs, full-text databases, other information, or computer resources. Twenty-five percent of respondents indicated that they used a library to hold club meetings. Only 14% of participants specified that they used a library's Q&A services. Participants also mentioned using a library for printing and private, non-club-related meetings. When asked what additional services they would like see that were not included in the categories, many participants mentioned expanding access to the same services: having more study spaces, keeping the library open for longer hours, offering free coffee, and having a larger selection of snacks.

When asked about their priorities for the library service categories, participants, on average, rated the access to information and computer resources and study support services the highest ($M = 5.9$; $M = 5.9$) and rated support for club meetings the lowest ($M = 4.8$).

To identify relative importance rankings of service categories, the study regressed service category on service importance rating using an ordered logistic regression. The access to information and computer resources, which received the highest average importance ratings, was used as the baseline. The regression analysis confirmed that students valued Q&A services and support for club meetings significantly less than the baseline. That is, changing from the access to information and computer resources category (i.e., the baseline) to these categories significantly decreased the odds of receiving higher ratings. The regression analysis did not show a statistically significant difference in perceived importance ratings between the baseline and study support categories (see Table 1).

Table 1. Service types and students' importance ratings^a

Variable	Codes and definitions	Coefficient (SE)
Service category	1. Access to information and computer resources. This category includes access to traditional library research resources, such as catalogs, subscription article databases, and bibliographies. It also includes access to any software and computer resources provided by the library, including rentals of laptops and tablet computers.	Baseline
	2. Study support services. This category includes using a library as a study place and related support services, such as tutoring; stress management services, including bringing therapy dogs during finals week, distributing stress-relief balls, providing free yoga sessions, and organizing games and contests for students to destress between studies; providing students with noise-filtering earplugs; and distributing free snacks and water.	-0.22 (0.26)
	4. Q&A services. This category includes using both face-to-face and online library Q&A services (e.g., reference desk, Ask a Librarian service) to get answers to reference questions as well as questions related to interlibrary loans, course reserves, conditions inside the library building (e.g., temperature), the availability of computer equipment, the hours of operation, and information technology support.	-1.51 (0.26)**
	3. Support for club meetings. This category includes using a library to hold club meetings (e.g., book, robotics, cooking, and knitting clubs).	-1.65 (0.26)**

^aResults of the ordered logistic regression, in which the library service category was regressed on the service category importance rating (model fit likelihood ratio: $\chi^2 = 64.7$, $p < 0.0001$, number of observations = 416, pseudo $R^2 = 0.05$); ** $p < 0.001$. The access to information and computer resources was used as the baseline.

The second research question looked at the perceived importance to students of nine different categories of library social media postings. Participants were asked to rate the importance of each category on a 7-point Likert scale from extremely unimportant to extremely important. The categories of social media postings were identified in an earlier related study of Twitter postings by academic libraries at six large research public universities in the United States (Stvilia & Gibradze, 2014). Participants, on average, rated the operations updates category the highest ($M = 5.6$), followed by the study support ($M = 5.5$) and event ($M = 5.4$) categories. The survey and staff categories were rated the lowest ($M = 4.7$; $M = 4.4$).

To identify relative importance rankings of the categories of library social media communication, the study regressed posting category on category importance rating using an ordered logistic regression. The operations updates, which received the highest average importance ratings, was used as the baseline. The regression analysis confirmed that students found some categories of library social media communication more important than others. In particular, the analysis showed that importance ratings for the operations updates category were significantly higher than the ratings for all other categories, with the exception of the study support and event categories (see Table 2). That is, changing from the operations updates (i.e., the baseline) to the rest of the categories, with the exception of these two categories, significantly decreased the odds of receiving higher importance ratings.

Table 2. Categories of social media communication and students' importance ratings^a

Variable	Codes and definitions	Coefficient (SE)
Category of library social media communication	4. Operations updates. This category includes tweets providing status updates on the library, such as the hours of operation, power or network outages, air-conditioning or heating problems, or closing or opening of the building after some emergency. The category also includes tweets providing updates about library study areas to route students to less utilized study spaces.	Baseline
	5. Study support. This category includes tweets focused on promoting the library as a study location and providing information on various support services for students to utilize that place effectively. These include stress management services, such as bringing therapy dogs during finals week, distributing stress-relief balls, providing free yoga sessions, organizing games and contests for students to destress between studies, providing students with noise-filtering earplugs, and distributing free snacks and water.	-0.12 (0.25)
	1. Event. This category includes tweets about regular events, such as annual Red Cross blood drives, food drives, book sales, edible book and zine contests, and professional days (e.g., Librarian's Day). The category also includes tweets about book signings by faculty; the opening of a new library building; different art, archival, research, and engineering exhibit announcements; different workshops, classes, tours, and orientations carried out by the libraries; and different presentations and talks held across the campus.	-0.26 (0.25)
	3. Community building. This category includes general tweets promoting the library as a place to receive research support, study, or hang out and have fun. This category also includes tweets providing emotional support and congratulating students on various achievements (e.g., completing exams), as well as congratulating the library or a specific department for being recognized or achieving a high ranking in a national poll.	-0.64 (0.25)*
	2. Resources. This category includes tweets about traditional library research sources, such as catalogs, subscription article databases, bibliographies, and maps. The resource category also includes tweets about different publications (e.g., newsletters) and blogs maintained by the library, as well as references to information resources on the web that the tweeter found interesting or useful. In addition, this category encompasses tweets about software and computer resources provided by the library, including rentals of laptops and tablet computers.	-0.84 (0.25)**
	6. Q&A. The Q&A category includes responses to reference questions and questions related to interlibrary loans, course reserves, conditions inside the library building (e.g., temperature), the availability of computer equipment, the hours of operation, and information technology support.	-0.94 (0.25)**
	9. Club. The club category includes tweets related to different activity groups and clubs hosted by the libraries, such book, cooking, and knitting clubs.	-0.98 (0.25)**
	7. Survey. The survey category includes tweets intended to help recruit participants for various polls and surveys about library use, perceptions of current library services, and the need for new services. This category also includes tweets about recruiting volunteers to test the usability of a library website and the interfaces of other library systems.	-1.29 (0.25)**
8. Staff. The staff category includes tweets introducing and promoting librarians by announcing different honors and recognitions they have received. It also includes tweets about vacancies in the library and introductions of new hires.	-1.63 (0.26)**	

^aResults of the ordered logistic regression in which library social media posting category was regressed on category importance rating (model fit likelihood ratio: $\chi^2 = 73.3$, $p = 0.0001$, number of observations = 936, pseudo $R^2 = 0.02$); * $p < 0.01$; ** $p < 0.001$. The operational updates category was used as the baseline.

Discussion

The first research question investigated the perceived importance of or priorities for six types of library services. The findings of the study showed that students use a library most often for studying. Ninety percent of the study participants indicated that they used a library to study, compared with 59% for the next most frequently used service category: access to a library's information and computer resources. At the same time, however, the logistic regression analysis did not show a statistically significant difference in the importance ratings for these two categories. This result suggests that the frequency of use alone may not accurately capture the perceived value of a library service. Students may use the library as a study space more often, but they may equally highly value access to the library's catalogs and other research resources (see Table 1).

The second research question examined the perceived usefulness to students of nine types of social media postings by academic libraries. The analysis showed that students considered social media postings related to operations updates, study support, and events as the most important (see Table 2). The categories of social media postings used in this study were identified in an earlier related study of the Twitter streams of six large academic libraries (Stvilia & Gibradze, 2014). That study found statistically significant differences among the content categories of tweets for the number of favorites received. In particular, tweets related to study support services, building and maintaining connections with the community, resources, and events were the most frequently selected as favorites. Tweets related to Q&A, clubs, and staff were less frequently selected as favorites. A comparison of the findings of this study with those of the earlier study showed that in both studies, study support was one of the most important types of library social media communication. The studies also agreed on the importance rankings for Q&A-, club-, survey-, and staff-related postings. On average, participants in the present study rated these categories lower, and these categories were less frequently selected as favorites compared with other categories in the earlier study (see Figure 1).

There is a significant need to predict users' evaluations of product value and quality inexpensively by using indirect cues or markers (e.g., number of favorites received, web ratings; Jørgensen, Stvilia, & Wu, 2014; Stvilia, Gasser, Twidale, & Smith, 2007; Suh, Hong, Pirolli, & Chi, 2010). No statistically significant differences were found between the perceived importance ratings for the study support and operations updates categories and between the ratings for the survey and club categories (see Table 2). Thus, the level of agreement was 5/9 (56%) between the relative rankings from the 2014 study for the library social media posting categories by the average number of favorites received and the rankings from the present study for the average perceived importance of the same categories (see Figure 1). It is important to note that participants in the present study were undergraduate students enrolled in information technology courses from a single university, whereas tweets analyzed in the 2014 study were sampled from the Twitter streams of academic libraries at six universities. Furthermore, the member actions analyzed (i.e., retweets and favorites) were contributed by members of different populations, not only undergraduate students. A future, related study could further examine the feasibility of using an automated analysis of the social media streams of an academic library to predict the relative perceived importance of the library's social media communication, and ultimately, to predict the relative user-perceived value of its services.

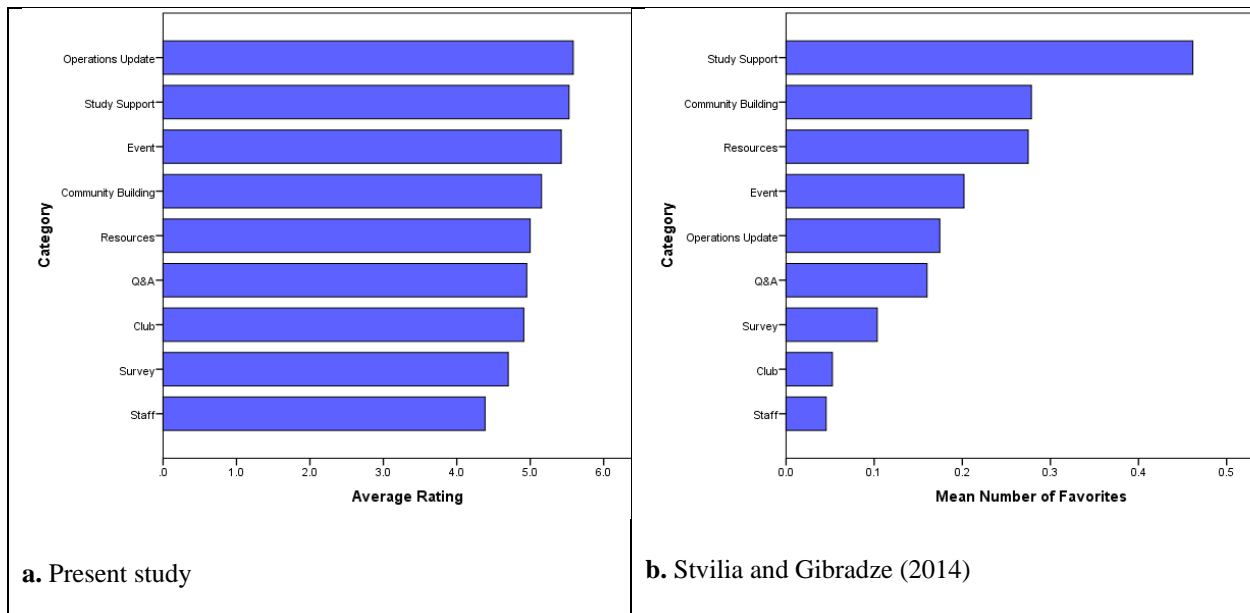


Fig. 1. Distributions of the average importance ratings and average number of favorites received by posting category.

The study has a limitation. Participants were recruited from an information technology program at a single university and its findings may not be generalized to undergraduate student population as a whole. At the same time, the findings reflect the priorities for academic library services of undergraduate students in that field of study (i.e., information technology) and can be generalized to similar groups of students at other institutions.

Conclusion

This research examined the perceived value to undergraduate students of academic library services and categories of library social media communication. The findings of this study will inform the planning and allocation of resources for library services. Future related research will investigate the needs for library services and the priorities assigned by other key user populations of academic libraries, such as graduate and online students, to assemble service repertoires that are tailored to individual user groups. In addition, future research will examine whether and how an analysis of users' engagement with a library's social media communication could be used to inexpensively gauge the user-perceived value of library services.

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