

Recent Changes to Reference Services in Academic Libraries and Their Relationship to
Perceived Quality: Results of a National Survey

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Abstract

A national survey of academic librarians was conducted to examine relationships among reference service staffing changes, reference service innovations, adoption of reference technology, library type and size, and service quality. Analysis of the 606 response sets reveals trends toward reduced use of librarians and increased use of student staff at in-person service points, widespread increases in appointment-based and self-service reference, intensive efforts to reduce demand for reference by improving library instruction, and general improvements in reference service quality. Factors strongly associated with decreases or increases in quality are discussed in detail and implications for reference managers are provided.

Keywords: reference services, academic libraries, staffing models, trends, technology, innovations, quality

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Introduction

As change has become a constant in higher education, many academic libraries have found themselves reexamining their traditional triad of public services: access, reference, and instruction. These changes are necessary as a matter of keeping up with changes in campus climate and strategic plans, and the quickly evolving nature of the information creation, dissemination, and consumption cycle.

Typically, these expansions or changes in services are not met with a commensurate increase in budgets or staffing. For example, there has been a raft of service point consolidations and an increased reliance on lower paid staff for provision of reference and access services. Intriguingly, few, if any academic libraries have lowered their expectations for the quality of these services (Knibbe-Haanstra, 2008; Tyckoson, 2012).

As academic libraries' reference desk service models continue to evolve, it becomes even more vital to examine the reasons underlying the changes, explore how libraries determine what needs to be changed, and identify effective innovations that are outperforming traditional reference service models. This paper examines these issues via three main research questions. First, are libraries reducing the use of highly trained staff for front line reference? Secondly, what strategies have libraries employed to ensure quality of reference services? Tangentially, do these strategies differ based on whether the library has reduced the use of highly trained staff for front line reference? Finally, how do the characteristics of a library such as size or presence/absence of faculty status for librarians relate to perception of reference service quality?

Literature Review

There is a vast body of literature from the past two decades describing profound changes to reference services at academic libraries. While no changes are universally applicable, there are several well-documented developments worthy of note. These include changes in the volume and nature of patrons' information needs, modifications to the array of channels through which reference services are offered, alterations in the staffing patterns for in-person and virtual services, and the adoption of innovative technologies to improve convenience and efficiency of virtual services. Though a few case studies and small-scale investigations offer insight into the relationships among these phenomena (such as which give rise to which and which co-occur), the majority of the accounts are only descriptive. A principal motivation of the present study was to identify associations and uncover potential causal relationships among these documented trends.

Reference Service Trends in Academic Libraries

Reference services in academic libraries are often hybrids, combining aspects of the past with popular movements of the present and innovations at the leading edge of the future. Simmons (2015) notes that information intermediation in reference services falls into a mix of “traditional, reactive methods of providing service” and “service models that are proactive and decentralized” (p. 130). In their overview of emerging research services in academic libraries, Gibson and Mandernach (2013) express the diversity of reference services as a combination of the generic and the specialized. Several other dichotomies that are readily apparent in recent overviews of reference services include impersonal vs. personal, just-in-time vs. just-in-case, basic vs. advanced, and instructional vs. non-instructional (Forbes & Bowers, 2015; Hirsh, 2015; Saunders, Rozaklis, & Abels, 2015). These dimensions of variation are manifestations of libraries' attempts to respond to several trends elaborated below.

Decline in reference questions. Many overviews of reference services begin with the observation that there has been a pronounced decline in the number of reference questions being fielded at academic libraries. Perhaps the most cited statistic is the 50% decline from 1994 to 2008 extracted from data from the National Center for Education Statistics by the American Library Association's Office of Research and Statistics (2008). A number of case studies show similar declines in various measures of reference activity. For example, Peters (2015) reports that Central Michigan University saw a 49% decrease in transactions at their reference desk between 2003-2004 and 2012-2013. It is important to note, however, that not all libraries are reporting declines. Banks & Pracht (2008) conducted a survey of 101 libraries serving institutions with between 5,000 and 15,000 students. While 50% of their respondents reported a decline in reference transactions, 25 % reported an increase.

In addition to an overall decline in questions, some note a decline in the proportion of questions that are sufficiently difficult to require expert help. Several studies have shown that the number of "real" reference questions are declining (LeMaistre, Embry, VanZandt, & Bailey, 2012), and that many can in fact be answered by a well-trained employee without a library degree (Ryan, 2008).

Increase in online reference services. Banks & Pracht (2008) note an increasing "focus on the Internet, and more emphasis on the development of Web-based services and online databases that transfer much of the reference activity to the end user" (p. 54). Stevens (2013) also highlights the rise of online reference, explaining that, "since 2005, libraries have continued to see the growth of online reference services, from consortial services like QuestionPoint to advanced FAQ, texting, and email services provided by companies like SpringShare (e.g., LibAnswers)" (p. 203). Stevens (2013) further asserts that,

It is now the norm for many librarians to answer email reference questions from home at night and on the weekends when the reference desk and indeed the physical library is closed, expanding our services into the virtual realm and away from the library building and a specific desk. (p. 207)

The most recent library summary data from the National Center for Education Statistics provide ample support for these contentions (Phan, Hardesty, & Hug, 2014). Analysis of responses from the more than 3,200 institutions providing data showed heavy adoption of several services, especially among academic libraries serving institutions with an FTE greater than 20,000. Among those libraries, 97.1% offered reference by e-mail, 63.2% by chat reference through a commercial service, 79.4% by chat reference through instant messaging, and 74.3% by text messaging.

Calls for eliminating or de-emphasizing reference desks. The increased emphasis on online reference service has resulted in a de-emphasis of the physical reference desk. Freides (1983) and Stevens (2013) suggest that reference desks dissuade patrons from asking robust questions and can unwittingly cultivate the notion that the library does not provide substantive reference assistance. Freides (1983) and Stevens (2013) also note that the time and talent of professional reference librarians are often wasted on transactions that are routine or trivial in nature. Others have recognized the need for liaison librarians to spend more time on individual consultations and the creation of instructional materials that anticipate reference needs, rather than passively waiting for students to approach them at the reference desk (Jaguszewski & Williams, 2013). Some libraries have responded to decreasing numbers of reference questions, budget pressures, and increased instructional demands on librarians by adopting tiered reference models (Tyckoson, 2012). Brandeis University, for example, implemented an information desk

staffed by students who answered basic questions and referred more involved questions to reference librarians staffing a research consultation office (Massey-Burzio, 1992).

It is important to note that not all libraries have been removing librarians from reference desks or embracing tiered models. A significant number have continued to emphasize in-person help by a professional reference librarian at a dedicated service point. Brunsting (2008), for example, conducted a survey of mid-size libraries in 2006 and found that nearly 63% of the 261 responding libraries reported that they staff their reference services only with librarians. Poparad (2015) identified several reasons for maintaining librarians for front line service including improving responsiveness to patron's needs, and enhancing quality of service.

Concerns about Quality

With the aforementioned changes to reference service models come assertions about the poor quality of some aspect of the library's current service profile and subsequent claims that one or more adaptations will overcome the quality deficit. A number of the calls for tiered service models have been based on the desire to provide librarians with more time to focus on the specialized needs of advanced researchers (Stevens, 2013). Some libraries have invoked tiered models in the hope that librarians would spend more time creating instructional materials and giving lessons (Jaguszewski & Williams, 2013), thereby providing what Steven Bell (2007) refers to as "pre-emptive reference" (p. 2).

Both opponents and supporters of tiered models have identified the same predominant concern about these models. Thelma Freides (1983) expresses this concern well: "The weakness of the arrangement is that while relieving the librarians' burdens, it almost certainly depresses the quality of the library's response to whatever proportion of questions it is that really needs

professional attention" (p. 460). Thirty-two years later, Saunders, Rozaklis, & Abels (2015), state much the same:

Many and academic and public librarians are reluctant to shift to a research consultation model, often fearing that it will undermine reference services and that users will not be properly referred by paraprofessionals or that they simply will not use the service. (p. 37)

While some assert that these problems can be overcome through greater attention to training (Ryan, 2008), others note that despite training, the percentage of questions referred to librarians has remained low (Peters, 2015). A few librarians claim that even if quality deficits at the front line of reference service cannot be overcome, tiered reference is advisable due to the advantages gained when librarians are freed from the desk (Bell, 2007; Summerhill, 1994).

Innovations to Address Quality Deficits

This review of the literature suggests that the cornerstones of many, if not most, academic libraries' efforts to enhance reference service quality have been training initiatives, implementation of chat or IM reference, and adoption of tiered service models. However, many reference managers are looking beyond these three more common efforts, and have identified a range of innovative services that strive to maintain quality while increasing their staff's flexibility.

Augmented chat reference. Reference interactions through chat or IM can often be greatly enhanced by using canned messages to improve speed and consistency and by employing software to send images or short screencasts (Bright, Askew, & Driver, 2015). Patrons' awareness of the opportunity to chat can be significantly improved by employing proactive chat technology, which Saunders, Rozaklis, and Abels (2015) define as:

trigger initiated chat [that] relies on predetermined conditions to commence proactive interaction with a website visitor, such as the amount of time spent on the website or the number of pages viewed, specific areas of the website viewed, the search terms or search channels used that led to the visit, or the location of the website visitor. (p. 78)

FAQs. In an effort to provide patrons with anytime, anywhere access to basic information about how to overcome common barriers, many libraries have created searchable, online collections of answers to frequently asked questions. Beyond delivering answers at the point-of-need, some implementations (e.g., Springshare's LibAnswers) have made it easy for librarians to both identify unanswered questions posed by patrons and add an answer to the set of FAQs (Dworak & Moore, 2015; Stevens, 2013). Jones, Kayongo, and Scofield (2009) provided evidence suggesting that FAQ implementations have become relatively widespread at least in large libraries: their review of the websites of 112 ARL institutions found that 54% had a FAQ service.

New areas of expertise. A number of academic libraries have expanded the purview of their reference services to extend beyond the traditional focus on skills necessary to conduct literature reviews and organize information sources. Examples of enhanced research support include grant support, basic data management, and embedding information literacy into the curriculum (Gibson & Mandernach, 2013). Courtney and Courtney (2015) urge libraries to expand their vision of reference even further, noting that, "reference staff can easily be the de facto experts in publication tools for blogs, wikis, and online book monograph platforms, GIS, text analysis, visualization, and other developing technologies" (p. 10).

Pre-emptive reference. Many librarians are making online systems more user-friendly by delivering pre-packaged guidance to help patrons overcome obstacles. Examples include

course guides, screencasts, widgets for library web pages, and blogging (Jaguszewski & Williams, 2013; LeMaistre et al., 2012).

Roving reference. Academic libraries have long offered in-person assistance in the library at points other than a designated service location or an office (Tyckoson, 2012). Often this service has taken the form of librarian or staff walk-throughs of heavily trafficked locations where patrons often encounter obstacles to success. Wilkinson (2015) describes several benefits to these “roving reference” services including reaching individuals who do not know that they can approach a reference desk for help, enhancing patron’s perceptions of librarians, and delivering point-of-need assistance. Some libraries have implemented in-person reference services in locations other than library spaces. Spaces where services are being offered have included coffee shops, student unions, computer labs, academic buildings, and residence halls (Saunders, Rozaklis, & Abels, 2015; Simmons, 2015).

Social networking. While most librarian discussions of social networking have revolved around opportunities to market collections, events, and services, some librarians have recognized that many of the platforms can be used to deliver reference services. Bright, Askew, and Driver (2015) note that reference librarians can interact with users through Facebook, Twitter, YouTube, and blogs.

Social question and answer service. Deng and Zhang (2015) state that many users of Yahoo! Answers and other social question and answer platforms pose questions about library research. Their analysis of the content of those questions and the answers provided, revealed that several were answered by librarians. This is perhaps not surprising since the “Slam the Boards” movement has been actively encouraging reference librarians to make their presence known in

these public platforms (Kearns, 2012). In theory, libraries or groups of libraries could host and run their own social answer services.

Relationships Among Trends and Innovations

The literature of reference service trends and innovations consists largely of case studies documenting service or technology implementations and reviews that address general trends related to a discrete argument or type of service. There are very few large-scale examinations of the constellation of strategies libraries are using to meet their patrons' needs. Similarly, there are few, if any, attempts to identify which innovations tend to co-occur, which tend to precipitate which, or which combinations are most successful.

LeMaistre et al. (2012) conducted one of the few studies that took a holistic look at reference services from more than one institution. Their observations of reference work and analyses of reference transcripts from ten libraries in Texas led them to identify three general patterns in the way reference services have adapted to advances in technology. The large 4-year academic libraries they studied responded by reinventing roles for their librarians. The small 4-year academic libraries resisted change and continued to center their reference services around a desk staffed by librarians. The 2-year academic libraries saw the focus of their in-person services drift from research support to technology troubleshooting but did not respond to the change. Their study did not, however, focus on a temporal sequence of innovations at the 4-year academic libraries, leaving questions about which combinations were most effective for their librarians and their patrons.

A key question many reference managers might face is what to do when reference librarians are removed from front line services. With limited resources, should a manager focus on training for students and paraprofessionals, on embedding the wisdom of librarians in FAQs

and learning objects, on ensuring that librarians devote ample time to appointments and on call shifts, or on efforts to meet patrons at their point of need? Which combination yields the best results? While the literature contains many inspirations, it affords little in the way of evidence-based wisdom. A primary goal of the present study is to fill this gap in the literature.

Methods

Participants

The survey was sent to approximately 12,000 librarians who subscribe to the following electronic mailing lists. Of the 606 total respondents, 420 fully completed the survey. In order to reach a range of academic public services librarians the survey was distributed to the following email lists: ili-L (an information literacy instruction mailing list from the Association of College and Research Libraries (ACRL)), coll-lib (a mailing list for the ACRL's College Libraries section), libref-l (a mailing list focusing on the discussion of reference issues), and rusa-l (the email list for the Reference & User Services Association).

The survey required respondents to indicate the type of library in which they work; 553 individuals responded to this question. Respondents selecting "nonacademic" (n=1) were directed to the end of the survey. Of the remaining respondents, 79% (n=439) selected "four-year academic library", 16% (n=86) selected "two-year academic," and 5% (n=27) selected the "other academic library" option. This distribution is shown in figure 1.

The survey also identified respondents' level of participation in reference services at their libraries. Of the 415 individuals who responded to this question, 35% (n=146) indicated that they work an average of six to ten hours a week at a reference desk. This was followed closely by those responding that they work between one and five hours at a reference desk (25%; n=104). A

small percentage, 17% (n=69), replied that they work over 20 hours at a reference desk in a typical week.

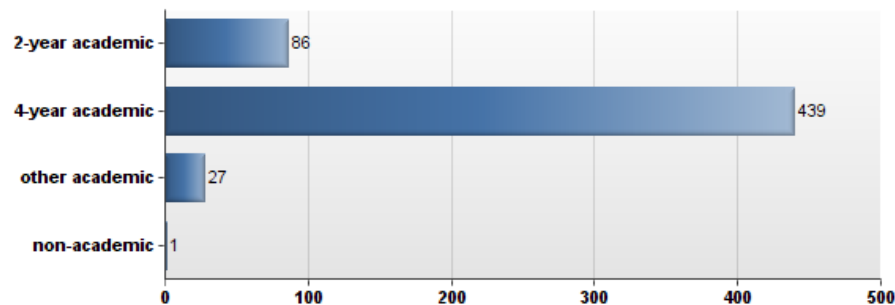


Figure 1. At what type of library do you work?

Respondents were also asked to indicate what reference-related roles they fill at their library. Over 92% (n=374) of those responding to this question indicated that they staff the reference desk in some capacity. Many also replied that they are responsible for evaluating or coordinating reference services: 68% (n=277) help with planning reference services and 57% (n=234) help with the evaluation of services. Over half of the respondents (59%; n=241) reported that they help with training related to reference services.

Procedure

Potential participants received an invitation to engage in the research project via the electronic mailing lists described above. The invitation included an informed consent form, an explanation of the survey, a statement of the goal of the project, and a hyperlink to the survey. The survey, which was administered through Qualtrics, contained 19 questions consisting of a mix of multiple choice, yes/no, ranking, and open-ended questions. Upon completion of the survey, participants were presented with a message thanking them for their time. The survey remained open throughout September and October, 2014.

As an incentive for completing the survey participants were presented with the option to enter a drawing for one of three \$25 Amazon gift cards (provided out of personal funds of the co-investigators). Only respondents that chose to record their email addresses in the survey were entered into the drawing. In order to protect respondents' confidentiality, all identifying information was stripped from responses before analysis, leaving no way to tie responses to a particular email address. All other responses were completely anonymous.

The survey instrument was approved by the Institutional Review Boards of both Kansas State University and Wichita State University, which were the authors' institutions at the time of survey distribution.

Results and Discussion

The three research questions were addressed through quantitative analyses of responses to multiple-choice and Likert-scale items and qualitative analyses of responses to open-ended items.

Are libraries reducing the use of highly trained staff for front line reference?

The survey asked respondents to indicate the extent to which several aspects of reference staffing had changed in their library over the past two years. One of those aspects was "the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points." Of the 447 individuals who responded to this question 12.8% (n=57) answered "decreased greatly," 28.4% (n=127) answered "decreased slightly," 42.1% (n=188) answered "no change," 11% (n=49) answered "increased slightly," and 5.8% (n=26) answered "increased greatly." Overall, 41.2% (n=184) reported a decrease in the past two years in the number of hours employees with an MLS (or equivalent) provide reference services at in-person service points. This distribution is shown in figure 2.

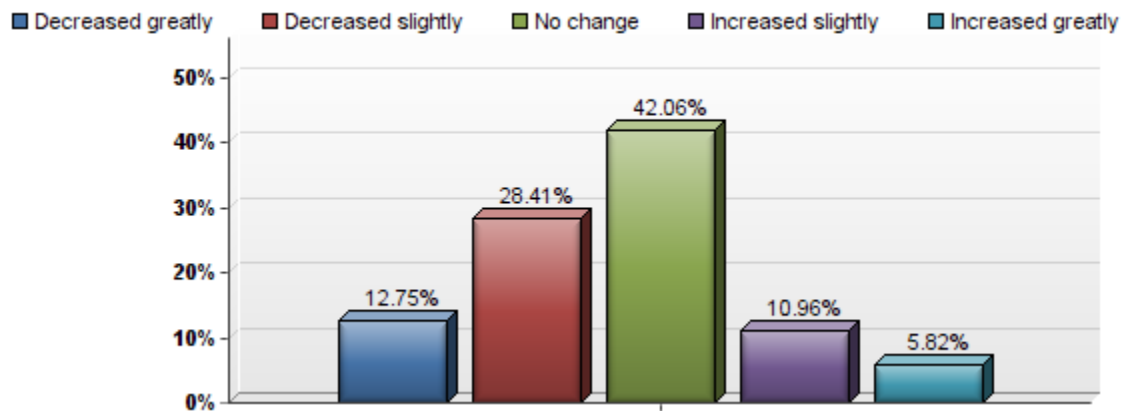


Figure 2. Over the past two years what is the extent to which there has been a change in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points?

Respondents were also asked to indicate changes over the past two years to “the number of hours that employees with an MLS (or equivalent) work IM or chat shifts.” Out of the 438 individuals who responded to this question, 4.1% (n=18) answered “decreased greatly,” 9.1% (n=40) answered “decreased slightly,” 53.9% (n=236) answered “no change,” 23.1% (n=101) answered “increased slightly,” 9.8% (n=43) answered “increased greatly”. Overall, 13.2% reported a decrease in the past two years in the number of hours employees with an MLS (or equivalent) work IM or chat shifts, while 32.9% reported an increase in those hours. This distribution is shown in figure 3.

The answer to this research question depends on whether IM or chat service is considered front-line reference. If it is not, then the survey provides strong evidence that most academic libraries are reducing the allocation of highly trained staff to frontline reference. If it is, then the evidence suggests that there has not been a significant increase or decrease.

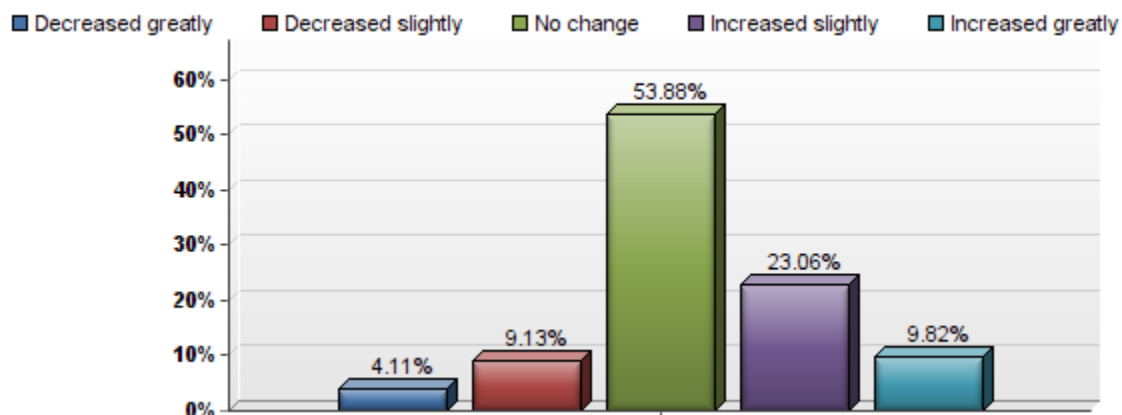


Figure 3. Over the past two years what is the extent to which there has been a change in the number of hours that employees with an MLS (or equivalent) work IM or chat shifts?

What strategies have libraries employed to ensure quality of reference services? Do they differ based on whether the library has reduced the use of highly trained staff for front line reference?

Changes to reference services. The survey included several items designed to provide an answer to this question. One of these asked respondents to indicate which of five listed changes to reference services had taken place in their library in the last two years. Of the 329 respondents who answered this question, 60% (n=196) selected “there had been an increase in the number of appointments patrons make with employees who hold an MLS (or equivalent);” 54% (n=177) selected “the library has developed one or more FAQs addressing common reference questions;” 39% (n=129) selected “methods for patrons to request appointments with an employee who has an MLS (or equivalent) have been established;” 15% (n=48) selected “the library has joined a cooperative reference service (a service that allows patrons to ask questions of staff from other libraries);” and 6% (n=19) selected “the library has developed methods enabling other patrons to help answer questions posed by patrons (e.g., a blog for reference questions).”

Changes to instructional services or collections. A similar question asked respondents to indicate which of five listed changes to instructional services and collections had taken place in their library in the last two years. Of the 433 respondents who answered this question, 74% (n=322) selected “the library has implemented or enhanced a pre-existing implementation of library class or topic guides;” 70% (n=302) selected “the library has increased the number and/or quality of instructional sessions it offers;” 68% (n=295) selected “the library has expanded its collection of online reference content;” 65% (n=282) selected “the library has implemented or enhanced its online information literacy videos/tutorials;” and 63% (n=271) selected “the library has implemented or enhanced a pre-existing implementation of a Web-scale discovery tool (e.g., Primo, Summon, EDS, Worldcat Local).”

Changes to student staffing at in-person service points. Respondents were asked to indicate the extent to which the number of hours student employees provide reference service at in-person service points had changed in their library over the past two years. Of the 433 individuals who replied to this question, 5% (n=20) reported a great decrease or a slight decrease, 65% (n=283) reported no change, 22% (n=94) reported a slight increase, and 8% (n=36) reported a great increase. This distribution is shown in figure 4.

This pattern of responses was significantly different among the 56 respondents who also indicated that their library had had a great decrease in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points. Of those 56 respondents, 41% (n=23) reported a great increase over the past two years in the number of hours student employees provide reference assistance at in-person service points; 21% (n=12) reported a slight increase, 38% (n=21) reported no change, and no respondents reported a decrease. This distribution is shown in figure 5.

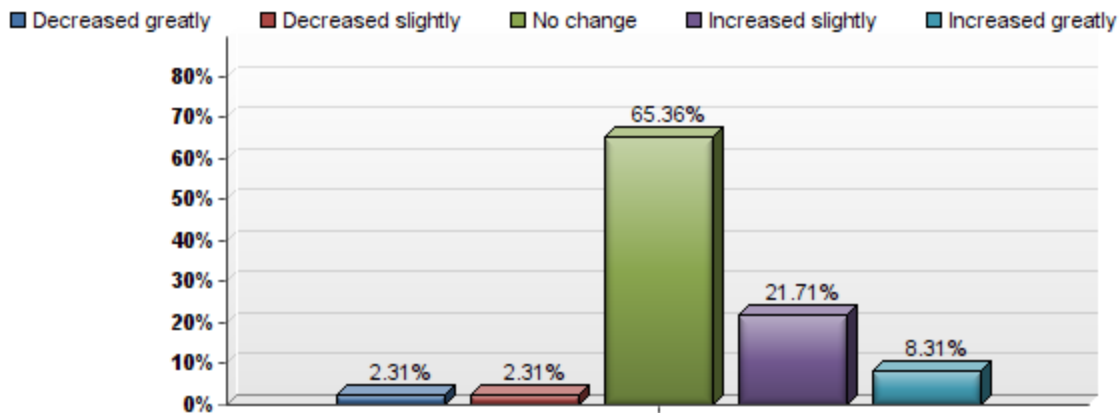


Figure 4. Over the past two years what is the extent to which there has been a change in the number of hours that student employees provide reference assistance at in-person service points? All responses.

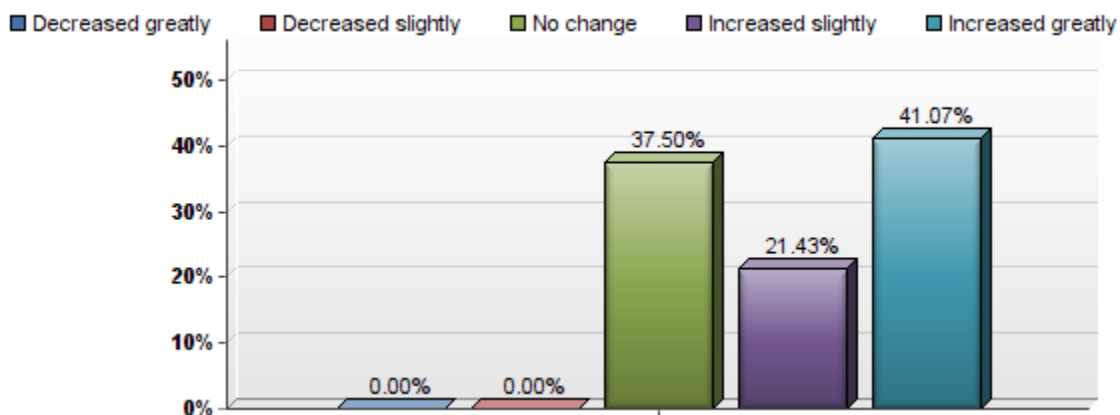


Figure 5. Over the past two years what is the extent to which there has been a change in the number of hours that student employees provide reference assistance at in-person service points? Responses from those indicating that their library had had a great decrease over the past two years in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points.

Chi-Square statistical analysis shows that there is a statistically significant relationship ($X^2(139, N= 433) = 0.00, p = .05$) between the variables of change in the number of student employee hours and a change in the number of MLS holder hours at in-person reference service points.

Changes to the quality of training for students who staff in-person service points.

Respondents were asked to indicate the extent to which the quality of training for student employees provide reference service at in-person service points had changed in their library over the past two years. Of the 429 individuals who replied to this question, 5% (n=23) reported a great decrease or a slight decrease, 61% (n=263) (65.36%) reported no change, 24% (n=105) reported a slight increase, and 9% (n=38) reported a great increase. This distribution is shown in figure 6.

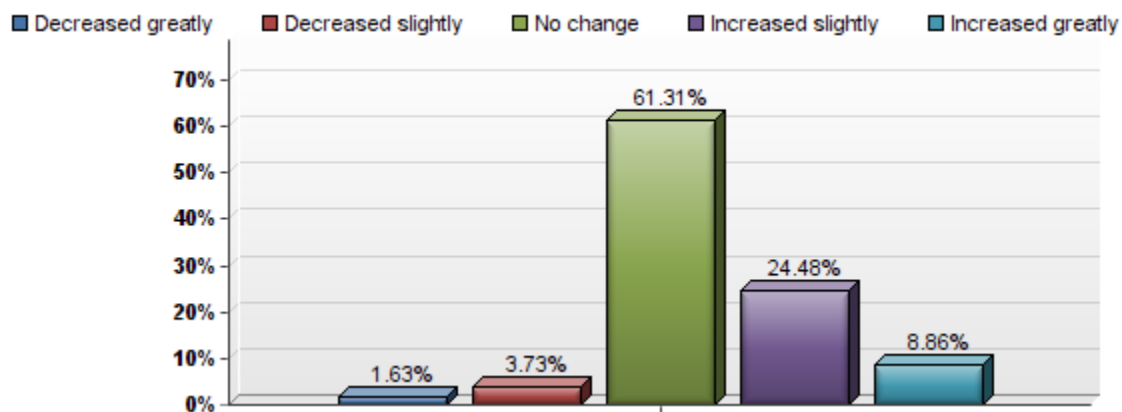


Figure 6. Over the past two years what is the extent to which there has been a change in the quality of training provided to student employees who provide reference assistance at in-person service points?

Again, the pattern of responses was significantly different among the 56 respondents who also indicated that their library had had a great decrease in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points. Of those 56 respondents, 25% (n=14) reported a great increase over the past two years in the quality of training for student employees, 23% (n=13) reported a slight increase, 39% (n=22) reported no change, 9% (n=5) reported a slight decrease, and 4% (n=2) reported a great decrease. This distribution is shown in figure 7.

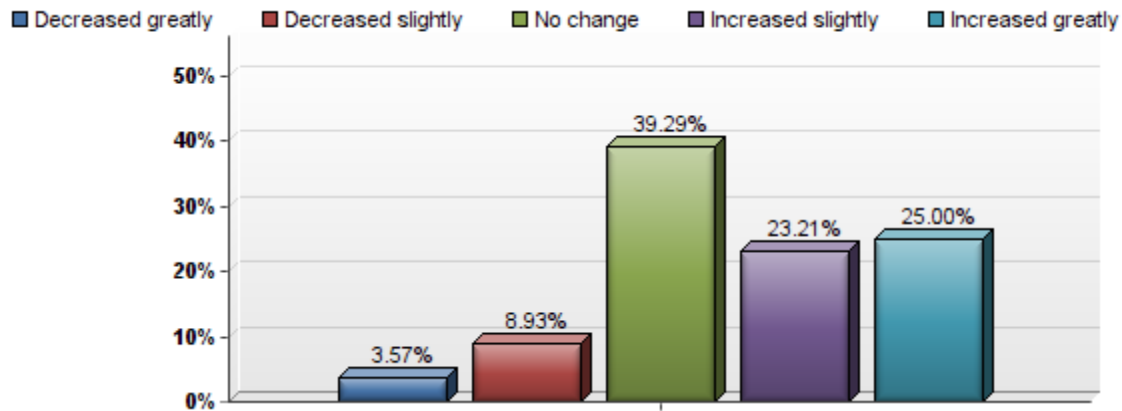


Figure 7. Over the past two years what is the extent to which there has been a change in the quality of training provided to student employees who provide reference assistance at in-person service points? Responses from those indicating that their library had had a great decrease over the past two years in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points.

The pattern of responses was also significantly different among the 36 respondents who also indicated that over the past two years their library had had a great increase in the number of hours student employees provide reference service at in-person service points. Of those 36 respondents, 36% (n=13) reported a great increase in the quality of student training, 19% (n=7) reported a slight increase, 31% (n=11) reported no change, 11% (n=4) reported a slight decrease, and 3% (n=1) reported a great decrease. This distribution is shown in figure 8.

Chi-Square statistical analysis shows that there is a statistically significant relationship ($X^2(16, N = 429) = 0.00, p = .05$) between the variables of change in quality of training for student employees and the change in the number of hours employees with an MLS (or equivalent) provide reference assistance at in-person service points. Chi-Square statistical analysis also shows a statistically significant relationship ($X^2(16, N = 429) = 0.00, p = .05$) between the variables of change in the quality of training for student employees and the change

in the number of hours student employees provide reference assistance at in-person service points.

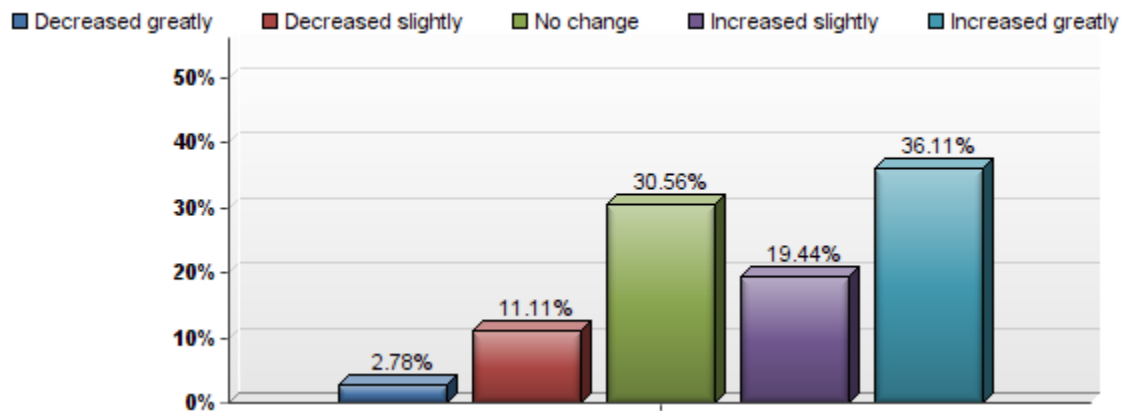


Figure 8. Over the past two years what is the extent to which there has been a change in the quality of training provided to student employees who provide reference assistance at in-person service points? Responses from those indicating that their library had had a great increase over the past two years in the number of hours that student employees provide reference assistance at in-person service points.

Quality of reference services. The survey included an item asking respondents to select one of five listed answers for the question, “to what extent do you think the quality of your library’s current set of reference services has changed over the past two years?” Of the 447 individuals who answered this question, 12% (n=53) selected “increased greatly,” 41% (n=183) selected “increased slightly,” 39% (n=175) selected “stayed about the same,” 7% (n=30) selected “decreased slightly,” and 1% (n=6) selected “decreased greatly.” This distribution is shown in figure 9.

The pattern of responses was significantly different among the 26 respondents who also indicated a great increase over the past two years in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points. Of those 26 respondents, 62% (n=16) reported that the quality of their library’s set of reference services had

greatly increased over the past two years, 31% (n=8) reported that it had slightly increased, 4% (n=1) reported no change, 4% (n=1) reported that it had slightly decreased, and no one reported that it had greatly decreased. Chi-Square statistical analysis shows that there is a statistically significant relationship ($X^2(16, N = 445) = 0.00, p = .05$) between the variables of change in quality of a library's current set of reference services and the change in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points.

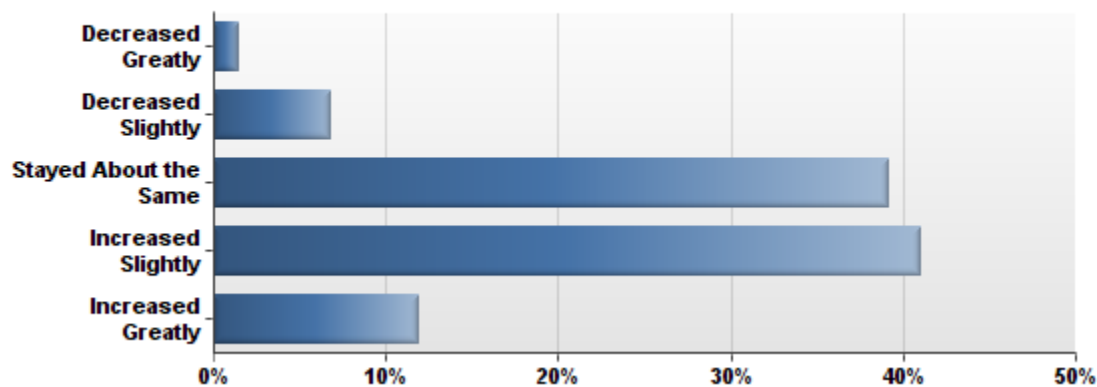


Figure 9. To what extent do you think the quality of your library's current set of reference services has changed over the past two years?

The survey also included an item asking respondents to select one of five listed answers for the question, "to what extent do you like or dislike your library's current set of reference services?" Of the 443 individuals who answered this question, 29% (n=128) selected "like very much," 29% (n=130) selected "like slightly," 19% (n=82) selected "neither like nor dislike" 20% (n=87) selected "dislike slightly," and 4% (n=16) selected "dislike greatly." This distribution is shown in figure 10.

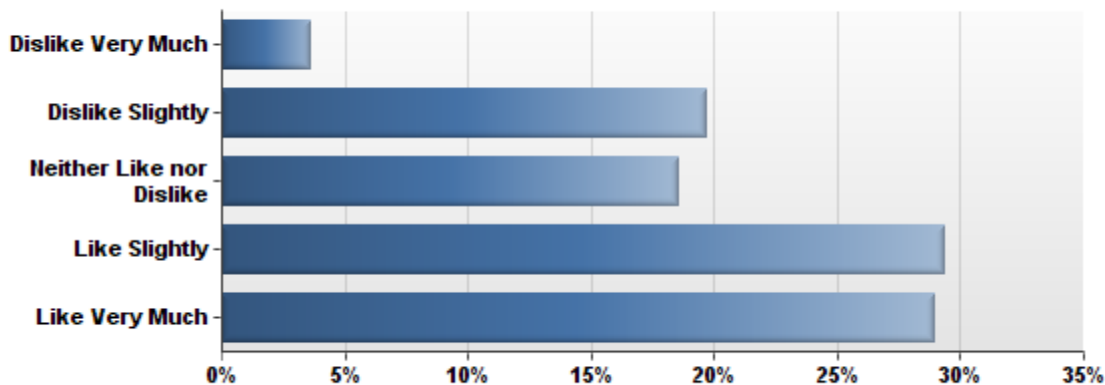


Figure 10. To what extent do you like or dislike your library's current set of reference services? All respondents.

The pattern of responses was significantly different among the 56 respondents who also indicated that their library had had a great decrease in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points. Of those 56 respondents, 20% (n=11) selected “like very much,” 25% (n=14) selected “like slightly,” 11% (n=6) selected “neither like nor dislike,” 36% (n=20) selected “dislike slightly,” and 9% (n=5) selected “dislike greatly.” This distribution is shown in figure 11.

Chi-Square statistical analysis shows that there is a statistically significant relationship ($X^2(16, N = 440) = 0.00, p = .05$) between the variables of like/dislike for reference services and change in number of hours employees with an MLS (or equivalent) provide reference assistance at in-person service points.

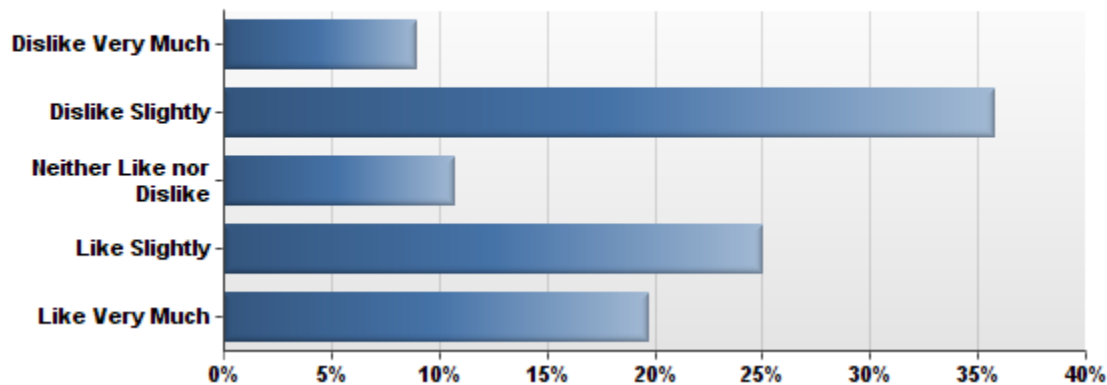


Figure 11. To what extent do you like or dislike your library's current set of reference services? Responses from those indicating that their library had had a great decrease over the past two years in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points.

Qualitative analysis. To augment the insights gleaned from responses to Likert scales, the survey also provided respondents with the opportunity to explain what they think accounts for the changes in quality of reference services and to elaborate on their declaration of liking or disliking their library's set of reference services. An examination of the way these responses vary among individuals who provide different ratings of reference service quality or declare different levels of liking for their library's reference services provides additional insights into what aspects of a libraries' service offerings matter to reference and how much they matter.

Explaining changes in the quality of reference services. Almost all of the individuals (242 of 272) who reported a decrease or increase in quality of their library's reference services over the past two years provided an explanation. The majority (24 of 34) of the explanations provided by those reporting a decrease in quality specifically mentioned reductions in staffing for reference. Fifteen of those explanations specifically identified reductions in the use of MLS-

holding librarians at in-person service points. The only other reason identified by more than four individuals was insufficient skills of non-MLS staff at reference service points.

The most frequent reason among the 208 explanations provided by those who reported an increase in quality was an increase in staffing for reference. This was mentioned by 37 individuals. Eighteen of those 37 specifically identified increases in the use of MLS-holding librarians. Other frequently mentioned reasons for increased quality included (in order of frequency): more or better instruction sessions; addition of or improvements to a chat service; addition of or improvements to a consultation or appointment service; improvements in the library's collection; more or better online learning objects (e.g., LibGuides or tutorials); more or better promotion efforts; good leadership; better training of reference personnel; staffing changes; and more service hours.

Explaining liking or disliking reference services. The majority (88 of 103) of the individuals who stated that they disliked their library's reference services provided an explanation. The most frequently mentioned reason was that the nature of the questions being presented at the reference desk does not warrant allocation of staff time. This reason was given by 16 individuals. The following statement is indicative of the content and tone of many of their comments:

“The majority of the questions we actually receive at the Research Help Desk are related to (because of proximity) technology - printing/printers, the scanner, staplers - and I wish we would better utilize student workers for simple stuff like this/triage, and more focus on actual reference work or MLS staff, meeting with students with research questions in a less ‘drive-through’ like way.”

Other frequently mentioned reasons included (in order of frequency): a need to implement or expand chat services; a need for more staff or services; a need to be more innovative; a need to use social media for reference, a need to better promote reference; and a need to expand reference service hours.

Slightly less than half (107 of 255) of the individuals who stated that they like their library's reference services provided an explanation. Interestingly, most of the reasons given by those who only slightly like their services were explanations for why they did not report a higher level of liking. Among those 60 explanations, the most frequently mentioned was a need for more staff. This reason was given by 11 individuals. Among them was the following statement:

“We are a small staff and have way too much work to do. We do our best to juggle instruction, reference desk coverage, workshops, and various committees but find ourselves with too much work and too little time. We would like to devote more time to reference services but just do not have the staffing. We do a good job considering our workload.”

Other reasons frequently mentioned by this group were a general need to improve, a need to better promote services, and a need to implement or expand chat services.

The reasons given by those who reported that they like their library's reference services very much were more positive in tone. Among those 47 explanations, the most frequently mentioned was that the library offers a good variety of ways to obtain help. Others frequently mentioned by this group were that they have MLS-holding librarians at the desk, and that their library provides high quality services.

Discussion. From the responses to the survey, it is clear that academic libraries have been making concerted efforts to maintain the quality of their reference services even as they have

been removing employees with an MLS (or equivalent) from in-person reference services. Overall, libraries are relying more on student employees to provide in-person reference assistance and are improving the quality of the training they provide to those employees. Many libraries are placing greater emphasis on appointments with librarians and are implementing FAQs to enable greater levels of self-service for their patrons. A few libraries have recently joined cooperatives or begun to crowd-source reference. Academic libraries are also investing heavily in efforts to enhance in-person and online instruction and to enhance patron's access to find high-quality information.

This frenetic pace of change seems to have been generally well received by reference librarians employed at these libraries. Overall, more than half (53%) reported that the quality of their library's reference services had increased over the past two years. A similar percentage (59%) stated that they like their library's current set of reference services. These percentages far exceeded those at the other end of the spectrum: only 8% asserted that the quality of the services had decreased while 24% stated that they dislike their library's reference services. The large discrepancy between the percent declaring dislike and the percent identifying quality decreases suggests that while there have been many improvements to quality, there is still great room for improvement.

There are significant relationships between these two measures of quality (perceived change and liking/disliking) and changes to the number of hours that employees with an MLS (or equivalent) provide reference services at in-person service point. When asked if in the past two years their library had reduced the number of hours that employees with an MLS (or equivalent) provide reference services at in-person service points. Respondents who answered in the affirmative were more likely to report that the quality of their library's reference services had

declined in the same amount of time than to report that the quality had increased. They were also more likely to report disliking their library's current set of reference services. The converse was also true: those answering that in the past two years their library had increased the number of hours that employees with an MLS or equivalent provided reference service at in-person service points were more likely to report that the quality of their library's reference services had increased in the past two years. They were also more likely to report liking rather than disliking their library's current set of reference services.

Respondents' open-ended explanations for their perceptions of the degree to which their library's reference services had changed in the past two years and for their declaration of the degree of their like or dislike for their library's reference services echoed the quantitative results. The observed pattern of explanations for perceptions of degree of change in quality suggests that the availability of highly trained reference staff is strongly related to quality of reference service. Decreases in quality were almost entirely attributed to decrements in staffing or training. Although improvements in quality were attributed to a broad array of factors, increases in staffing by MLS-holding librarians was commonly mentioned.

These open-ended explanations also suggest that retention of MLS librarians for front line services may only be effective at enhancing or maintaining quality if the MLS librarians are actively engaged in providing research help during their shifts. Many respondents expressed frustration with service models requiring librarians to answer a large number of directional and technology questions. Importantly, though, none of the respondents indicated that provision of research help at frontline service points was in and of itself a problem. Conversely, complete removal of librarians from frontline service was a frequently expressed complaint among respondents who disliked or only slightly liked their reference services.

While many of the libraries that reduced allocations of MLS-holding librarians to in-person reference undoubtedly took several proactive steps to ensure that the quality of their reference services remained high, this study's quantitative results suggest that those efforts were deemed inadequate by reference librarians. The data shows specifically that neither increasing the allocation of student employees to in-person reference nor increasing the quality of the training provided to those students compensated for reducing allocations of MLS-holding librarians to in-person reference. It would, of course, be illuminating to examine the extent to which patrons' perceptions of quality at these libraries coincide with the librarians' perceptions.

Again, respondents' open-ended comments are revealing. They suggest that respondents see heavy use of reference services as central to quality. This conclusion follows from three observations. First, two of the most frequently expressed complaints about their library's current set of reference services were lack of promotion of those services and lack of adopting technologies that make it easier for patrons to access help. Second, the most frequently mentioned reason for liking a set of reference services was variety. A number of those comments noted that variety was important because the library could meet the needs of individuals with varying preferences for obtaining help and with varying levels of need. Third, among those who noted that their library needed to improve training for students or support staff, nearly all identified the problem as a lack of referrals, rather than as a lack of ability to answer questions. If respondents judge reference service quality largely on the extent to which they see the services being used, it follows that some innovations which may increase quality from the patron's point of view (e.g., an FAQ or greater access to online learning objects), may not be deemed sufficient by librarians.

How do the characteristics of a library such as size or presence/absence of faculty status for librarians relate to perception of reference service quality?

Chi-Square statistical analyses were performed to test the relationships among characteristics of a respondent's library and their reports of the extent to which the quality of their library's reference services had changed over the past two years. A statistically significant relationship exists ($X^2(16, N = 414) = 0.01, p = .05$) between the reported change in quality of a library's reference services and number of full-time library employees working in that library. Closer examination of this relationship reveals that those respondents from libraries with few full-time employees were more likely to report an increase in quality than were respondents from libraries with many full-time employees. Neither the relationship between faculty status and reported change in quality ($X^2(12, N = 415) = 0.42, p = .05$) nor the relationship between faculty status and extent of liking/disliking reference services ($X^2(12, N = 415) = 0.26, p = .05$) are statistically significant.

The direction of the relationship between library size (in terms of number of full-time employees) and reported change in quality of reference services is intriguing. While some might argue that libraries with greater numbers of full-time employees would see greater increases in quality due simply to a greater abundance of resources, our data clearly contradict this hypothesis. It appears that smaller libraries are buffered from decreases in quality simply because it is less likely that they will experience reductions in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points. Chi-Square statistical analysis shows a significant relationship between the number of full-time library employees in a library and reported change in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points ($X^2(16, N = 414) = 0.00, p$

= .05). Inspection of the relationship reveals that libraries with many full-time library employees (31 or more) were more likely than those with few full-time library employees (15 or less) to see a reduction in the number of hours that employees with an MLS (or equivalent) provide reference assistance at in-person service points. Not surprisingly, there is also a significant relationship between the number of full-time library employees in a library and reported change in the number of hours student employees hours providing reference assistance at in-person reference points ($X^2(16, N = 401) = 0.04, p = .05$). Those libraries with many full-time library employees were more likely than those libraries with few full-time employees to report increases in the number of hours student employees provide reference assistance at in-person reference points.

Recommendations and Conclusion

This investigation revealed that academic libraries are continuing to change their staffing models for in-person reference service points. Within the past two years, significantly more academic libraries have reduced the allocation of MLS-holding librarians at in-person reference points than have increased this allocation. Over this same time period, significantly more academic libraries have increased the allocation of student employees for in-person reference than have decreased this allocation. These changes have coincided with a general increase in attention paid to training student reference employees. This constellation of changes echoes those described by Gremmels (2013). The survey results also showed that academic libraries are placing a strong emphasis on making librarians' wisdom more accessible through in-person appointments and through online resources such as LibGuides, tutorials, and FAQs. This constitutes strong confirmation of trends recognized by Jaguszewski and Williams (2013) and by LeMaistre et al. (2012).

According to the survey's respondents, these changes have typically corresponded with improved reference service quality and suites of services that are "liked" by reference librarians. These judgments are significantly related to reported changes in the number of hours that employees with an MLS (or equivalent) provide reference service at in-person reference points. Respondents from libraries that have greatly reduced the use of MLS-holding librarians at in-person reference points tended to dislike the library's reference services and tended to note a decrease in reference quality. The comments provided by respondents expressed this relationship even more robustly: a lack of MLS-holding staff for reference was by far the most frequently reason cited for poor quality services.

The power of this relationship helps explain the one significant relationship revealed between characteristics of a library and perceptions of reference service quality. Respondents from libraries with few full-time employees were more likely to report that their library's reference services had increased in quality in the past two years than were respondents from libraries with many full-time employees. It seems likely that libraries with few full-time employees were buffered from declines in perceived quality simply because reductions in MLS-holding staff for in-person reference would likely be lesser in quantity than it would be in libraries with more full-time employees. This hypothesis warrants additional study.

A key question reference managers must ask themselves is what they can do to improve reference librarians' perceptions of reference service quality even as they reduce allocations of MLS-holding librarians. The survey comments suggest that the most likely solution would involve promoting more conspicuous use of reference services - perhaps by increasing numbers of appointment consultations or by implementing roving reference. These comments also make it

clear that a response limited to innovations in self service will not compensate for removal of MLS-holding librarians, at least in the view of librarians involved in this study.

Where dislike of reference services and perceptions of reduced quality were strongly associated with one cause - reductions in allocations of MLS-holding staff - the recipe for well-liked and improved services appears to be much more varied according to respondents' comments. While allocation of MLS-holding staff is a part of the equation, it is not the only part. Also important are improved information literacy programs; greater access to reference personnel, especially through online chat and one-on-one appointments; provision of knowledge in forms that can be accessed anywhere, anytime, such as LibGuides and tutorials; better promotion of reference services; engaged and proactive leadership; and enhancements to library collections.

One additional observation of note here is that perceptions of what libraries need to do to maintain quality may be influenced by a perceived need to stay current with trends that are in vogue at other libraries. Among the comments there were frequent mentions of the need to implement chat services or to use social media for reference or to implement a convenient way for patrons to make appointments with librarians. Seldom did those comments identify a reason for the need for those technologies or services, though. And, interestingly, there were almost no comments that expressed a desire for an as yet unknown technology or service to solve a known need. For instance, no one noted something like a way to deliver up-to-date, highly relevant research suggestions in a way that patrons can access anytime from anywhere. This lack of identifying the need to solve problems or meet information needs suggests that many librarians' judgments of quality may be comparative rather than based on objective measures of efficacy or impact.

The correspondence between this study's quantitative and qualitative results strongly suggests that reductions in staffing are causing lower perceived quality. It is vital to remember, however, that the observed relationships may reflect underlying causal connections, but they may also be due to relationships with other unidentified variables. For example, logic dictates that perceived changes over a two-year period would be heavily influenced by the nature of the services and level of quality at the beginning of the two-year period. To more fully understand how staffing changes relate to changes in quality and which coinciding technological or service innovations are or are not effective in moderating those changes it would, therefore, be useful to repeat this survey and include a series of items that enable respondents to fully describe what their services were like two years ago, what changes occurred in the interim, and what their services are like now. Even more useful, though, would be a longitudinal study in which the same respondents are surveyed multiple times and asked each time to describe their services, relate changes that have taken place since the last time they were surveyed, and describe their and patrons' perceptions of the quality of the services. Armed with data from such a research protocol, reference managers would be able to adroitly and confidently chart a course to a future of higher-quality services.

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