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An Exploratory Study of the Perceptions of Library Faculty and Patrons on Library Resources

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Abstract

Traditionally, a library has been defined by four aspects: its collection of books, the building that houses them, the librarians who are experts in retrieving this stored and cataloged information, and the patrons who are the end users of library services. Moving to the future, information systems will play a larger role within the library as physical collections will be circumvented by digital ones. With the growth of digital content, circulation of print material is in decline, and gate counters are showing a trend of decreased traffic. To address these issues academic and public libraries are trying to reinvent themselves both in physical and digital offerings. For example, libraries have added computer labs and teaching spaces, and they are expanding into mobile development, cloud sourcing, semantic library web, and online education. Unfortunately, these changes do not guarantee patrons will use library services. This study seeks to investigate the differences in librarian and patron perspectives on the physical and digital resources housed in the library's information systems. 2x2 factorial design was used on six constructs: system quality, information quality, context quality, user satisfaction, perceived benefit, and intent to use. The results showed that both librarians and patrons felt the utilization of the library building was the best overall indicator of the quality of a library. In addition, both groups felt closing a library would have a detrimental impact on the community. One interesting result that was the patrons indicated they viewed the storing of books as the most important service while the librarians favored buying access to online resources and technology. This suggests public perception of libraries is remaining static and based on an outdated view that libraries are only warehouses of physical books. Library Information Systems will play an ever increasing role in the future of libraries and the communities that they support, but only if they properly marketed.

Keywords: academic library, higher education, semantic library web, library space, user groups

1. INTRODUCTION

Prior research on the topic of the future of academic libraries only looked to fellow librarians for input. Up until the end of the 20th century, libraries told patrons what they had in their collection, and if the library did not have it or could not acquire it through an inter-library loan service, then it did not exist from the patrons' perspective.

With the proliferation of digital resources and broadband internet access, patrons have become more knowledgeable and if the library does not have what they want, then they can and often do go elsewhere. Thus, academic libraries are facing an ongoing change in user needs and expectations of information services. In addition, the perception of libraries and their staff have changed from being viewed as gatekeepers of information to just another option to access it.

When considering how library services and resources are perceived the question of how a library should measure success in a digital world is raised. In addition to counting books checked out, number of reference transactions, and gate counters, libraries are now measuring the count of digital articles/journals accessed or downloaded, the number of library website visitors, and the number of online librarian-patron interactions.

To stay relevant, libraries must continue to evolve to meet their patrons' needs and continue to offer the resources they find valuable. Often there is a dichotomous difference between what the patrons and the library faculty and staff perceive as an important resource.

This paper reports on the resources patrons find important and what the library group deems significant. This is key as financial resources are limited, choices need to be made, and future directions planned. As public libraries are facing dwindling and scare resources, academic libraries are responsible to set the pace and future trends. Information systems are increasingly becoming a critical and cornerstone of an academic library. The future of the library is not in stacks of books but in reimagining library spaces and improving on digital content via the library's information systems.

To guide our work, we ask two overarching research questions:

- If a patron believes that libraries have value and contribute to their community, is that a good indicator that they will use their library and its information system to locate resources?
- Is physically visiting a library a good indicator as to whether a patron will use a library's online resources?

The rest of the paper is as follows. First is review of relevant literature followed by an explanation of research methodology. Next is a reporting of survey results. The article concludes with a discussion of limitations and future research.

2. LITERATURE REVIEW

Libraries are in a constant struggle between increasing costs, old preconceptions, and perceived value by the patrons. The increase of the digital age also calls into question the quality of library services. The following is a brief literature of past library definitions, perceived patron value, and quality.

Defining a library

Traditionally, a library's identity has been tied to the kind of collection that it holds, and intuitively, people see libraries as a collection of books. Many patrons view the building as "the library" and not the resources and information that is held there. As collections increasingly go digital, the bond between users and the physical library will diminish (Sennyey, 2009). However, the environment that houses the collection is just as important as the information itself. The same is true for a digital environment where a well-designed webpage instills confidence in the information or services that it provides

Challenges facing the Library

In 2004, Brewer, Hook, Welburn-Simmons, and Williams believed that 1) higher education institutions would face a significant long-term budget decrease, 2) scholarly journals would continue to increase in subscription costs, and 3) there will be a need to raise salaries to hire qualified librarians.

In 2004, historical data showed that libraries have faced increasing costs of scholarly information with annual inflation rates of 6 – 12%, and shortages of trained librarians has led to increased costs of recruitment and retention (Brewer, 2004). These challenges hold true today where academic libraries continue to face

stagnant budgets but increased expenditures on subscription costs and salaries.

Creating large stocks of physical books does not create value externally where it once did in the 20th century. With circulation of print materials in decline, libraries are moving physical books to long-term storage in high-density locations. This availability of open space has allowed many academic libraries to house other departments such as coffee shops, writing centers, and student support centers. Gayton (2008) warned that if the activities of non-library organizations are not closely coordinated with those of the library, then the library could be at risk of becoming another office or classroom building. Furthermore, if the public views libraries as synonymous with physical books then moving all the books to high-density storage facilities off site could be detrimental to the library's identity.

The transition of information from print to electronic is being followed by the transition from purchased to open access content. Over time, this means that the library's collection of purchased materials, in both print and electronic formats, could be less important.

Patron perception

User's perceptions of library resources are influenced by where they use a resource and how they find it. (Sennyey, 2009). Kiran wrote that traditionally, the quality of an academic library has been described in terms of its collection and measured by the size of its holding and the counts of its use, i.e. number of visitors and number of items checked out. However, researchers in library usage and service are now looking at information needs, users' wants and perceptions of library services to define the quality of a library.

A 2005 OCLC environmental study found that users perceive libraries as a source of physical books but turn elsewhere when they desire digital information. The study found that Google has become the default digital library for most users (Perceptions of libraries and information resources: a report to the OCLC membership, 2005). The underlying reason for this is people navigate to and discover things on the internet using Google or another search engine. A paradox for libraries is that as they increase their digital collections, these resources will be discoverable by search engines and the library's overall importance will decrease from the patron's perspective (Sennyey, 2009).

The plight of academic libraries is rooted in the idea that to the public they are little more than storage facilities for print material. However, Gayton (2008) argued that patrons come to the library not just for the intellectual resources but also for space in which they engage those resources. Gayton (2008) believed they come for and value the "communal" experience of seeing and being seen by others engaged in the same serious studious activity.

Measuring quality

Sapp and Gilmour (2002) wrote that the measures of quality of research libraries should transcend the traditional counting of volumes and instead look at their ability to match user needs with relevant information. Until recently, the status of a research library was defined by the extent of its collection. Now with the flood of information available online and the value of the physical book diminishing, it is necessary to ask what the users' needs are and how are they changing. This then can provide context for reconsidering library services and collections (Gilmour, 2003). Historically, a library, public and/or academic, has been described in terms of its collection and measured by the size of its holdings. Today, a library's value is determined by how successfully patrons have access to needed information, regardless of format and location of the resource. Connecting patrons to the information they need is the fundamental objective of libraries (Nitecki, 1996).

3. RESEARCH METHODOLGY

This study sought to add to previous studies regarding patrons, and library faculty and staff perspectives on the physical and digital resources of the library. The method of investigation was an online survey in which participants were asked to answer questions on a 5 –point Likert scale or in rank order.

Survey questions were developed based on information discovered from the literature review, and also adapted from Wu & Wang 2006 (Wang, 2006). The survey measured six constructs: 1) system quality, 2) information quality, 3) context quality, 4) user satisfaction, 5) perceived benefit, and 6) intention to use.

Two groups of respondents were surveyed, library employees and non-library employees (patrons) and were related to the constructs of two library styles, physical and digital. In order to analyze the data, we create a 2x2 factorial design (Delaney & Maxwell, 2004) and conducted a multi-variate analysis of variance

(Hair, 2010). It was administered online using Qualtrics, and the estimated survey duration was 10 - 15 minutes.

One of the main intentions of the study was to measure the differences in perspectives between the two groups. This study utilized six different constructs, which are listed below and are as follows:

1. **SYSTEM QUALITY** - measured if the physical library was easy to user, user friendly, and had attractive features.
2. **INFORMATION QUALITY -** was the information available at a suitable time, was the information meaningful, and did the library make it easy to create documents
3. **CONTEXT QUALITY –** Did the physical library provide a complete knowledge portal with link to information sources for more detail
4. **USER SATISFACTION –** asked if the respondent was satisfied with knowledge and information needs, efficiency, effectiveness, and overall satisfaction.
5. **PERCEIVED BENEFIT –** would or does the library help in acquiring new knowledge or innovative ideas, accomplish tasks more efficiently, enhance quality of work, or job performance.
6. **INTENTION TO USE –** would the respondent use the library to make decisions, record knowledge, communicate knowledge

4. RESULTS AND DISCUSSION

An email invitation was sent out to approximately 55 library faculty and staff members, and Amazon Mechanical Turk was utilized for the non-library patron group. Of the 55 faculty invitations, 41 usable responses were collected for a response rate of 74.5%. The study received 32 participants to represent the non-library patron group.

The demographic questions from the survey showed that the library group is on average older than the non-library group. The library group had ten responses for the 45 - 54 age range, and seventeen out of the thirty-one respondents described themselves as 45 years old or older. The non-library group had eleven responses for the 25 - 34 age range, and twenty-seven responses out of thirty for 44 and younger.

The differences between genders were minimal. The library group responded as having eighteen females and thirteen males, while the non-library responded as having fourteen females and sixteen males. Twenty-two individuals in the library group and twenty-seven in the non-library reported "white" as their ethnicity. The non-library employee (patron) group had six individuals with an associate degree; thirteen with a bachelor's degree, and the remainder had some college or responded that they had a high school education.

For questions Lib6 - Lib13 listed in Appendix A, an Independent Samples T-Test was used. This test compares the means of the two independent groups in order to determine whether there is statistical evidence that the association population means are significantly different.

This answers the question as to whether the difference between the means is statistically significant or whether the difference is due to sampling error. Two difference variances are obtained: Equal variances assumed, and Equal variances not assumed. Levene's Test for Homogeneity of Variances was then used to determine which variance to use. If the significance is < .05, then Equal variances not assumed was used. If the significance is > .05, then Equal variances assumed was used.

The P-value listed in the "Sig (2-tailed)" column was then inspected. If the P-value was > .05 then the results fail to reject the null hypothesis and the difference is due to chance. If the P-value was < .05 then the results allow you to reject the null hypothesis ("SPSS Tutorials: Independent Samples t Test," 2018).

The results for question Lib6 are displayed in graph form in Figure 1 and are statistically significant. See Figure 2 for the T-test results for question Lib6.

This shows the data on how often survey takers physically visit a library with the non-library group indicating that they predominately never or almost never physically visit a library. The results for the library group are as expected in that they very often physically visit a library.

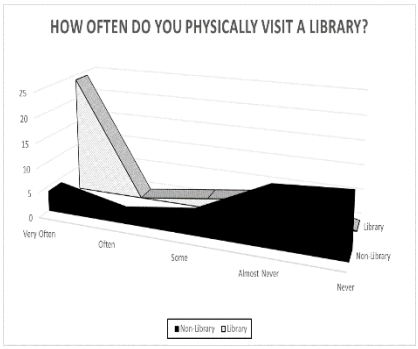

Figure 1: How often do you visit a library?

Independent Samples Test										
		Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the Difference Lower	Interval of the Difference Upper
Lib6	Equal variances not assumed			-6.949	53.735	0.000	-2.260	0.325	-2.912	-1.608

Figure 2: T-Test results for "How often you visit a library?"

The results for question Lib7 are displayed as a graph in Figure 3 and the T-test results are shown in Figure 4. The library group visits a library website on a much more regular basis than the non-library group.

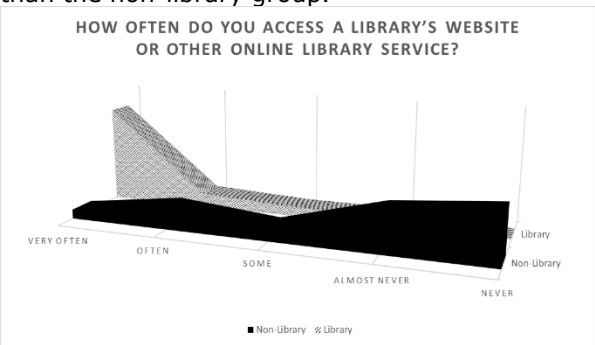

Figure 3: How often do you access a library's website?

Independent Samples Test										
		Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the Difference Lower	Interval of the Difference Upper
Lib7	Equal variances not assumed			-7.662	52.151	0.000	-2.269	0.296	-2.863	-1.675

Figure 4: T-Test results for How often do you access a library's website?

The results for question Lib8 are shown as a graph in Figure 5 and the T-test results are shown in Figure 6. Figure 5 supports the data shown in Figure 3 that the non-library group never or almost never visits a library's website to initially search for digital information. Search engine usage is high for the non-library employee (patron) group and for the library employee group.

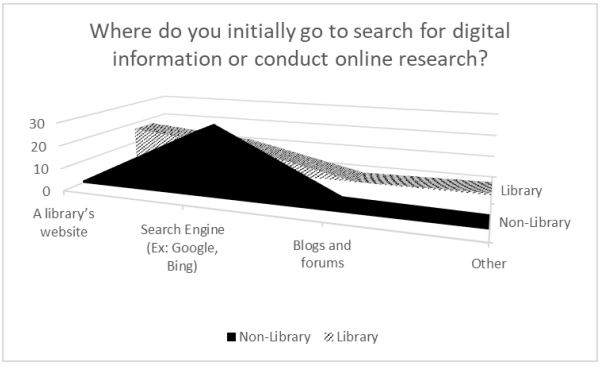

Figure 5: Initial search for digital information

Independent Samples Test										
		Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the Difference Lower	Interval of the Difference Upper
Lib8	Equal variances not assumed			3.950	39.082	0.000	0.516	0.131	0.252	0.780

Figure 6: T-test results for Initial search for digital information

The results from questions Lib9, Lib10, Lib11, and Lib12 were not statistically significant and are not shown. The results from question Lib13 were significant and are shown as a graph in Figure 7 and the T-test results are shown in Figure 8.

Both groups agreed that shutting down a library would have a high impact. This indicates that although the non-library employee (patron) group may not visit a library physically or digitally as indicated in Figure 1 and 3 respectively, they still believe that the library provides value to the community or organization.

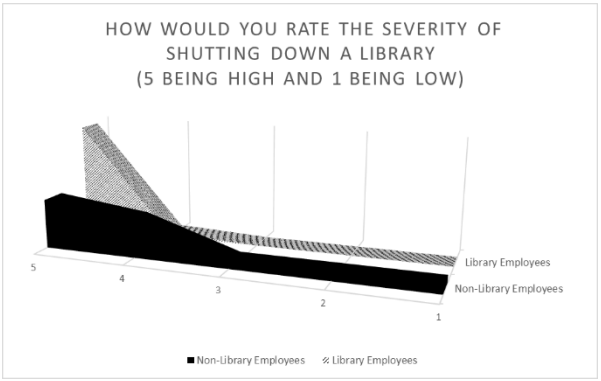

Figure 7: Severity of shutting down a library.

Independent Samples Test										
		Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the Lower	Interval of the Upper
Lib13	Equal variances not assumed			-4.105	29.233	0.000	-0.932	0.227	-1.396	-0.468

Figure 8: T-test results for Severity of shutting down a library

Results of our analysis showed that there are significant differences primarily between the library employee group and non-library employee (patron) group with little significant differences between perceptions of physical and digital libraries.

A summary can be viewed in Table 1. Following recommendations by Hair (2010), we report on the Wilks Lambda. For the Library and Non-library groups, System Quality was significant with $F = 5.344$, $p<0.001$, Wilk's $\lambda = 0.873$. Information quality was significant with $F = 3.182$, $p<0.05$, Wilk's $\lambda = 0.895$.

Context Quality and User satisfaction revealed no significant difference. Perceived benefit was significant with $F = 5.056$, $p<0.001$, Wilk's $\lambda = 0.843$.

Finally, intent to use was significant with $F = 2.843$, $p<0.05$, Wilk's $\lambda = 0.884$. The differences between perceptions of the physical and digital library were not as strong with weak support only for information quality with $F = 2.194$, $p<0.1$, Wilk's $\lambda = 0.925$.

	Library vs Non-Library	Physical vs Digital Lit
System Quality	Significant (p< 0.01)	Not Significant
Information Quality	Significant (p< 0.05)	Significant (p< 0
Context Quality	Not Significant	Not Significant
User Satisfaction	Not Significant	Not Significant
Perceived Benefit	Significant (p<0.01)	Not Significant
Intent to Use	Significant (p< 0.05)	Not Significant

Table 1 – Summary of Statistical Analysis of 2X2 Factorial Design

5. CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

This work examined perceptions of physical and digital libraries from the perspectives of library employee and non-library employees (patrons). It was found that both groups believe "the" library adds value to their community regardless of whether they visit it themselves. Based on the responses, the researchers hypothesize that if a person doesn't physically visit a library then it's likely that they won't use the library's online resources as well. This hypothesis encompasses how they search for information on the internet and whether they use a library's online catalog.

From the statistical analysis of the data, a 2x2 factorial design was used on six constructs: system quality, information quality, context quality, user satisfaction, perceived benefit, and intent to use. We found significant differences in the library employee and non-library employee (patrons) groups on system quality, information quality, perceived benefit, and intention to use. Additionally, a significant difference was found among physical and digital libraries only on information quality. The library group responses indicate that they value the resources and services that a library offers more strongly than the non-library employee (patron) group.

The findings of this study are interesting though they are based on a small sample size. In addition, the library group's response may not be representative of all universities. Further research should be conducted to see if there are differences due to size of the university and Carnegie Mellon ranking.

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APPENDIX A

Lib6. How often do you physically visit a library?
Scale (1-5, with 1 being very often and 5 being never)

Lib7. How often do you access a library's website or other online library services?
Scale (1-5, with 1 being very often and 5 being never)

Lib8. Where do you initially go to search for digital information or conduct online research?
A library's website
- Search Engine (Ex: Google, Bing)
- Blogs and forums
- Other (write in response)

Lib9. How strongly do you feel that print material should be digitized and retired?
Scale 1-5 (1 strong feeling and 5 no feeling)

Lib10. How strongly do you feel that libraries should focus their attention on providing information not easily accessed via the web?
Scale 1-5 (1 being high focus and 5 being no focus)

Lib11. How strongly do you feel that libraries should have quiet space/floors?
Scale 1-5 (1 strong feeling and 5 no feeling)

Lib12. How do you prefer to read?
- Physical/hard copy
- Digital (backlight)
- Digital (non-backlight)
- Audiobooks
- I don't have a preference
- I don't read on a regular basis

Lib13. How would you rate the severity of shutting down a library (academic or community)?
Scale 1-5 (1 being high, 5 being low)