Research Proposal: The Impact of Precollege Library Patronage on First-Year Academic Library Engagement

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Introduction

Evidence suggests that engaging with academic libraries positively affects academic achievement (Allison, 2015; Crawford, 2015; Soria at al., 2017; Whitmire, 2001). The sooner students begin using the library, the earlier their academic journey can benefit from library resources. We also find that limited library experience can increase library anxiety (McPherson, 2015). In turn, library anxiety can become a barrier between the student and beneficial library resources. With this in mind, our research proposal sets up a plan to explore potential connections between precollege public library experiences and the use of academic libraries among first-year college students.

If a positive association is found, it could suggest that public library familiarity lowers library anxiety and encourages earlier academic library patronage among first-year college students. Someday, further exploration could evolve into improving academic library engagement by investing in efforts to increase precollege library patronage. But first, we will begin with the following research question.

Research Question

Does the level of precollege library patronage affect a first-year college student's academic library engagement? If so, in what ways?

Literature Review

Library Use and Impact on Academic Performance

Studies show there is a link between library use and academic performance. For instance, library use was lower in a population of students that left their university between freshman and junior years in school (Allison, 2015). Crawford (2015)

Additionally, investigations based around data from the Integrated Postsecondary Education Data System and the Academic Library Survey also support this retention link with libraries, showing that library expense per fulltime equivalent (FTE) was the highest correlating factor among all graduation rates, and also the second highest among retention rates (Crawford, 2015). Going hand in hand, other markers of academic success such as grade point average (GPA) are indicative of retention and correlate with academic library usage as well (Soira et al., 2017).

Soira et al. (2017) reviewed Academic library use and the variance it imparts on a student's GPA, college skills development, and engagement with academia and scholarship. It is worth noting that in their analysis, they considered precollege variables that can impact these things as well, such as precollege reading and writing skills, advanced placement (AP) credits, being a first-generation college student, and more. In short, Soira et al. (2017) confirmed that there was variance between these factors and library use that could not be explained by precollege variables:

> The results of the study suggest students' use of academic libraries explains a significant amount of variance in students' academic engagement, academic skills development, engagement in scholarship, and grade point average above and beyond the variance explained by precollege variables, demographic characteristics, and collegiate experiences (p. 20).

Although such connections may not be proof of a cause and effect, another study shows significant evidence of a correlation between library use and GPA among undergraduate and graduate students by examining relationships between GPA and

electronic full-text access and print circulation usage statistics (Allison, 2015). Even outside of the academic library, we find correlations with public library use and academic success. Children who rarely read for pleasure have a 4-18 point lower standardized test score (Conference Board, 2006, as cited by Bhatt, 2010). Bhatt (2010) reveals a link between public library use and reading time, showing that library use increases average daily reading time by 27 minutes, and also increases homework completion rates.

Factors Impacting Academic Library Engagement

In an exploration of demographic factors that impact a college student's rate of academic library use, high school library use was the third-ranked predictor of academic library use for all three years of the study (Whitmire, 2001) . Real-world benefits have also been recorded in studies of partnerships across an academic library, a public library, a regional library system, and a school district library system (Sarjeant-Jenkins & Walker, 2014). One finding was that such partnerships help raise awareness about services, which leads to an increase in library usage across the partners (Sarjeant-Jenkins & Walker, 2014). It could very well be that the high school library usage in Whitmire's (2001) study had an impact on academic library usage due to the raised awareness of what libraries have to offer, which might also lower levels of library anxiety.

Library anxiety is often seen as a barrier to library usage that results in poor academic performance (McPherson, 2015). However, the degree to which familiarity with high school and public library environments ease this anxiety is questionable.

McPherson (2015) found that in spite of around 70% of their population having school or public library membership, just under 51% reported having library anxiety, something he relates to ill-equipped school libraries. However, as shown in other research, even if the school library does have access to research databases, many freshmen still report relying on public web resources rather than using databases (Head, 2013). There is also no getting around the sheer difference in materials and resources, which can add to anxiety. First-year students show confusion on using the classification system (i.e. experience with Dewey versus Library of Congress in the academic library) and often comment on the major difference in the number of materials (Head, 2013).

Gap in Research

In sum, studies show a link between academic and public library use and academic success (Allison, 2015; Bhatt, 2010; Crawford, 2015; Soria et al., 2017). Some studies do suggest a link between precollege library use and academic library use (Whitmire, 2001) but others suggest that the differences are significant (Head, 2013) and that even with precollege library membership, students still experience library anxiety (McPherson, 2015). This proposed study will explore this topic deeper, trying to find whether data suggests a positive correlation between precollege library experience and academic library usage. As detailed further on, we will do this by examining factors such as resource use and anxiety levels via self-reported comfort levels.

Research Design and Method

Introduction

To discover relationships among variables, a researcher forms concepts from abstractions of observations and facts (Connaway & Radford, 2017). In this sense of the term, we will use quantitative methods to seek relationships across conceptual categories. We will establish a category of independent variables from survey data for cross tabulation analyses against dependent variables relating to academic library engagement. See Table 1 in the data analysis section for an example.

Anonymous Qualtrics surveys will be distributed online via email to the chosen sample during their first semester. We will collect non-identifying demographic data, ordinal scales for self-reporting comfort and confidence levels, and more granular library resource-use related questions. This method of using self-reported survey data for a comparison across these two categories of variables is the most cost-effective and inclusive method of exploring this topic.

Population and Sample

The sample population will be first-year college students at Ohio University. The population will include students from all campuses, including Athens, Lancaster, Chillicothe, Eastern, Zanesville, and Southern physical campuses, as well as eCampus distance learning students. Aside from filtering invitation recipients to only first-year students, no further sampling method will be employed. We will therefore conduct non-probability purposive sampling in the sense of first-year student selection, and within that population we will rely on an unrestricted self-selected sampling method.

To achieve this, mass email invitations will be sent to all first-year Ohio University students through the Ohio University Office of Information Technology (OIT). Doing so requires that we adhere to certain mass mailing, security, accessibility, and IRB requirements, which are included in Appendix A. Upon survey completion, participants will be invited to enter their name into a drawing for a free culinary services gift card. In the invitation email, we will explain that there will be two drawings a week out of all participants until the survey closes, which will span three weeks and amount to six winners in total. This will hopefully help spread word about the survey and counter issues of non-response bias creeping into our sample.

As you can see in Appendix C, the 2019 Ohio University first-year admission statistics show admission of first-year student to be at 19,843. By using Connaway and Radford's (2017) Table for Determining Sample Size from a Given Population, we determined that we must meet a quota of 377 participants to hit a degree of accuracy of 5% (p. 148). Although we are not seeking statistical inference due to our sampling method, we will use this as a guide for the ideal number of responses to hit.

Data Collection

Qualtrics survey software will be used to construct and distribute a descriptive survey to the population. All responses will be anonymous, with the entry for the coffee card incentive being a separate entry form that participants can only access once they complete the survey. In addition, Qualtrics' single-use survey invitation link feature will be used to minimize multiple submissions. As seen in Appendix B, the survey will collect some useful demographic data, gauge the frequency that participants used a library

before college, how often they use an academic library now, and their comfort levels of using library resources.

The survey invitations are scheduled to go out twice during fall semester. These email invitations are scheduled for week eight and 10 of the project timeline, which will be Monday, September 20, 2021 and Wednesday, October 6, 2021. The survey will tentatively remain open until Monday, October 17, 2021. The project timeline includes a phase for mid-course evaluation, which we will use to determine if additional survey invitations need to be sent or if the data is meeting our quota of 377 participants without further action. See Table 2 for the detailed work plan.

Data Preparation Before Analysis

The data will be stored in Qualtrics and exported for analysis in Excel. Weekly backups will be taken and stored locally. A simple numerical coding system will be employed in Qualtrics. There is no expectation that we will need to recode our data. However, we are leaving room in week 12 of our workplace just in case an issue presents itself after the survey closes.

Next, *t*he data will be cleaned, properly formatted, and given sortable headers to aid with the analysis phase. As detailed in our data analysis section, there will be multiple cross tabulations of conceptual categories as we look for associations. This will be an iterative analysis, so we will sort data categorically into separate sheets of an Excel workbook, save a master locally, and set up a working document structure in OneDrive so we can easily collaborate on the analysis phase.

Data Analysis

Once our data is categorized, we will use descriptive statistics to help uncover trends and patterns. In this stage, we will see if correlations exist between prior public library use and academic library use in this population sample, as well as investigate whether demographic data is an influencing factor.

This work will involve comparing two independent variable categories against one dependent variable category. One independent category relates to a student's level of precollege public library patronage, and the other relates to demographic data. The dependent variables will include from first-year college student's self-reported academic library engagement.

Table 1

Survey Variables Cross Tabulation Example

			Dependent Variable: How often do you visit the Academic Library? (Q9.)				
			Never	Not Regularly	Once a month	Once a week	Multiple times a wk.
Independent Variables:	Demographics: Primary Campus (Q3.)	Athens	--	--	--	--	--
		Chillicothe	--	--	--	--	--
		Lancaster	--	--	--	--	--
		Eastern	--	--	--	--	--
		Southern	--	--	--	--	--
		Zanzesville	--	--	--	--	--
		eCampus	--	--	--	--	--
	Public Library: Patronage Freq.(Q6.)	Never	--	--	--	--	--
		Not Regularly	--	--	--	--	--
		Once a month or so	--	--	--	--	--
		Once a week or so	--	--	--	--	--
		Multiple times a week	--	--	--	--	--

Note. This table is an example of how data from the Public Library Use and Demographics categories will be cross tabulated against variables from the Academic library Engagement category. See Appendix B for a full list of categorized survey questions, which are referenced here by question numbers Q9., Q3., and Q6.

Report Design

Introductory Section

The report will first feature a brief introductory narrative that explains our overall process. This will include background on the setting chosen and the context of the university and library itself. Statistics on how many first-year students attend Ohio University will be shared. In addition, library usage statistics will be used to illustrate the overall level of student engagement at the libraries. These statistics are readily available via RefAnalytics and LibInsight. Data analysis work on our behalf will be minimal.

Purpose

Following this, we will dedicate a section to outlining the reason behind the study. This section will leverage the findings and themes of our literature review and express the gap that we intend to fill with our research.

Methods

Next there will be a section explaining our methods in detail. Here, we will discuss the sample, survey instrument development, and data analysis process. We will also outline general data on how many surveys were sent and what the response rate was like based on the population.

Results

Following the methods section will be the full results. Results will include statistical tables and descriptive statistics, such as our cross tabulations. In addition, we will include descriptive static visualizations such as bar charts to help the reader visualize how the various demographics of our participants compare to one another.

Findings

After the results are presented in the report, we will turn to our findings. This is where we will take time to comment on what themes and correlations we found in the data. As we reveal each theme, we will share what we feel it implies while backing each up with data from the results section.

Conclusion

Our next-to-last section will be our concluding remarks. This will feature a cohesive takeaway from the study. Whereas we spend time in the prior section covering what the findings tell us individually, here we will share a unified message. This is also an opportunity for us to talk openly about our impressions and experience.

Recommendations for Further Research

Last will come recommendations for further research. It is our hope that this study will provide a strong foundation from which we can recommend further research.

Limitations of the Research

As with any quantitative study, there are contextual limitations on what the data can tell us. A call for additional research will be a mark of success for this study. One example of additional research might include a probability sampling methodology that

employs a quantitative and qualitative mixed-methods approach through which we can accurately capture the voice of the student, such as phenomenological interviews.

There is also an internal validity concern. Participation and non-response bias may skew results. Web surveys are self-administered questionnaires, and have a natural potential for high non-response rates (Bethlehem, 2010). In this particular research design, we risk students who have used the library being more apt to participate in the survey, whereas those unfamiliar with the library may not. The use of incentives can help, but we are fully aware of this risk.

Lastly, we must comment on using a non-probability sampling method. It is noted that in some cases, non-probability samples are appropriate, such as when the sample is the focus, and tend to be much cheaper to obtain (Connaway & Radford, 2017). We feel this is one of those occasions where a non-probability sampling method is suitable. This exploratory research is intended to lay groundwork for subsequent studies, so no inferential statistical analysis will take place; this is a pretest of sorts that will test the waters to see if this particular direction is worth investigating further. The final report will be fully transparent of this fact. We accept that the generalizability of our findings will be open to question and require further research to fully support any conclusions.

Work Plan

Table 2

Work Plan for Research Proposal

Weeks 1 - 3	• Develop survey instruments (ongoing for week 1-3) & incentive form • Establish working document structure for remote collaboration
	• Develop invitation email language • Secure participation incentive coffee shop gift cards
	• Begin mass email survey permission process • Work with IRB office on approval for study, continue as necessary
Weeks 4 - 7	• Run pilot of survey with upperclassmen volunteers, including a general feedback option • Check the data from the pilot surveys, recode Qualtrics if necessary
	• Review any feedback from volunteers and consider revisions • Finish preparing survey
	• Retest the survey after it is finalized • Obtain data on student enrollment and library usage • Begin final steps to schedule mass email invitations through the Office of Information Technology • Confirm IRB is ready to go

Weeks 8 - 11	• First email invitation on week eight • Make daily backups of response data (ongoing) • Draw and announce winners for culinary services gift cards, twice on week nine, ten, and eleven
	• Week 9, researchers meet for mid-course evaluation. Additional measures will be taken in week ten if participation rate is too low, such as soliciting participation from student groups and faculty encouragement
	• Second, “last chance” email invitation on week 10 • Solicit for more participation if needed, continue cleaning data
	• Begin working on pulling final report together, up through and including methods section

Weeks 12 - 15	• Survey closes at the top of week 12 • Clean data, recode if necessary once survey is fully closed • Categorize and generate descriptive statistics and package for review
	• Week 13 begins with a check of the data, then all researches take the descriptive statistics to review individually • Group discuss what the descriptive statistics are saying about the research question and determine associations
	• Weeks 14-15 are dedicated to finishing the report, which will be collaboratively constructed during the entire process

Note. This is a 15 week plan, with room for flexibility around the week nine mid-course evaluation. This plan must be initiated August 2, 2021 in order for it to stay on schedule.

Appendix A: OIT Mass Mailings Requirements

Note. Retrieved from https://www.ohio.edu/oit/services/email-calendar/mass-mailings

Overview

Bulk email sent to all faculty/staff/students or to specific subsets of the University community. This service also can be used to obtain an electronic file that contains employee directory information.

Features

- **Specific recipient groups**: Mass mailings can be directed to specific portions of the university community or to a list provided by the person requesting the mailing.
- **Test message**: A test version of the mailing will be sent to you for approval before the bulk version is sent.
- **Rich text**: Messages can be formatted with basic HTML.
- **Bulk Address Lists**: An electronic list that contains faculty and staff directory information, including name and campus address.

Best uses

- Ad hoc announcements that need to reach a large number of recipients: research study participant requests, major events, planning unit newsletters, etc.

Eligibility

- Current faculty, staff, and emeriti.
- Advisors of registered student organizations.

Security, Accessibility and IRB Requirements

Security Requirements

Because of the potential impact a mass mailing can have on the university community, emails sent through this service need to adhere to several basic IT security requirements. These requirements are designed to reduce recipient complaints and confusion, reinforce anti-phishing best practices and efficiently utilize campus resources:

1. The From and Reply-to email address must be an @ohio.edu address or the address of an approved business partner.

2. Links that collect information must point to an ohio.edu website or the website of an approved business partner.
3. Direct links to a login page, even if it is an OHIO login page, are not allowed.
4. Links to external sites are allowed for informational purposes, but they cannot be used to collect information from the recipient.
5. Links must be human-readable and identify the actual destination: No URL shorteners or QR Codes.
6. Unsolicited email attachments are a commonly used tool for sending malware, resulting in many users not trusting email that includes attachments. As such, attachments should be avoided.

Accessibility Requirements

Bulk emails should accommodate the following basic accessibility considerations:

1. The message must be composed in either plain-text or multipart plain-text/HTML.
2. All information conveyed by the message must be in the text, not embedded in images or other elements that are inaccessible by text-to-speech software.
3. All images in the message must include "alt" text that describes the image for low-vision recipients.

IRB Requirements

Recruitment materials for research projects involving human subjects must be reviewed and approved by the Institutional Review Board (IRB) before they can be sent.

- The message must include the project's IRB number in the body, e.g. 19-X-123.
- OIT will forward a test copy of the message to compliance@ohio.edu for approval prior to sending the message to your recipient list.
- If a message appears to be research related but does not include an IRB number, we may ask you to provide confirmation that the message is exempt from IRB approval.

How to request

Send an email to servicedesk@ohio.edu at least one week in advance with the following information. If you submit this information via attachment, please make sure the file size for each attachment is 5 MB or less.

Mass Mailings

- **Sender's address** - This address will appear in the "From" field of the mass mailing.

- **Subject** - This will appear in the "Subject" field of the mass mailing.
- **Message body** - Submit this as a Word document.
- **Recipients** - The group or groups of individuals who should receive the message.
- **Send date** - This should be at least 1 week from the date of your request.
- **Test email address** - We will send a test version of the mailing to this address for final copy approval.

Lists

- **Employee type** - faculty, administrative, classified, etc.
- **Campus** - You can specify one or more campuses
- **Criteria - Advanced search criteria to better define your list, e.g. planning unit, department, full/part time status, etc.**

Appendix B: Survey Questions and Categorization

Introduction

Thank you for considering to participate in our study! This survey will take approximately 10 minutes to complete. Our study is exploring different factors that impact your engagement with academic libraries.

The survey is entirely anonymous, and you participation is completely voluntary. If you have any questions, please feel free to reach out to Ryan Spellman rspellm1@kent.edu

To show our appreciation, once the survey is complete you will be invited to enter your name into a drawing for a $15.00 culinary services gift card, which can be used in any of the campus dining halls and cafes.

Survey Questions

Type	Question
Demographics	**Q1.)** What year did you graduate high school/obtain your GED? [Year Selection Dropdown Box]
Demographics	**Q2.)** What is your highest level of education? ☐ High School / GED ☐ Some college ☐ Associates Degree ☐ Undergraduate Degree ☐ Masters Degree
Demographics	**Q3.)** What is your primary campus? ☐ Athens ☐ Chillicothe ☐ Lancaster ☐ Eastern ☐ Southern ☐ Zanesville ☐ eCampus
Demographics	**Q4.)** Do you live on or off campus? ☐ On Campus ☐ Off Campus
Demographics	**Q5.)** Do you commute to campus? ☐ Yes [if yes, then display Q5b] ☐ No
Demographics	**Q5b.)** Approximately how far do you commute? [Distance scale selection]

Public Library Use	**Q6.)** On average, how often did you visit a public library before college? ☐ Never ☐ Not Regularly ☐ Once a month or so ☐ Once a week or so ☐ Multiple times a week
Public Library Use	**Q7.)** What electronic resources do you recall using through your public library before beginning college? Please select all that apply: ☐ eBooks ☐ Online Catalog to Find Books ☐ Streaming ☐ Films ☐ Newspapers ☐ Music ☐ Audio Books ☐ Other (w/ fill in the blank) ☐ None
Public Library Use	**Q8.)** What did you physically visit the public library for? Please select all that apply: ☐ Books for Research ☐ Books for Leisure ☐ Movies, Music, Video games and other media ☐ Internet Access ☐ Use library computers ☐ Study Space ☐ Attend Programs/Events ☐ Seeking help from staff ☐ Socialize ☐ Other (w/ fill in the blank) ☐ Never visited
Academic Library Engagement	**Q9.) On average, how often do you visit your academic library?** ☐ Never ☐ Not Regularly ☐ Once a month or so ☐ Once a week or so ☐ Multiple times a week
Academic Library Engagement	**Q10.)** Approximately when was the first time you visited the academic library or used any of its online resources on your own? (i.e. not as part of a tour group or class) ☐ Haven't visited yet ☐ First week of class ☐ Second week of class ☐ Third week of class ☐ Fourth week of class ☐ Fifth week of class ☐ Sixth week of class ☐ Seventh week of class ☐ Eighth week of class ☐ Ninth week of class ☐ Tenth week of class+ (Idea is to get survey responses before Thanksgiving break during fall semester)

Academic Library Engagement	**Q11.)** What electronic resources have you used through the academic library? Please select all that apply: ☐ eBooks ☐ Online Catalog to Find Books ☐ Streaming Films ☐ Newspapers ☐ Subject & Course Guides ☐ Live Chat ☐ Other (w/ fill in the blank) ☐ None
Academic Library Engagement	**Q12.)** Why have you physically visited the academic library? Please select all that apply: ☐ Books for Research ☐ Books for Leisure ☐ Movies, Music, Video games and other media ☐ Internet Access ☐ Use library computers ☐ Study Space ☐ Study Room ☐ Attend Programs/ Events ☐ Seeking help from staff ☐ Socialize ☐ Other (w/ fill in the blank) ☐ Never visited
Academic Library Engagement	**Q13.)** How likely are you to use the academic library resources (including print and online resources)? ☐ Very Unlikely ☐ Not Likely ☐ Unsure ☐ Likely ☐ Very Likely [Conditional: after rating display Q13]
Academic Library Engagement	**Q14.)** Please share a little about why you rated your likelihood of using the academic library as [rating from Q12]: [Essay Text Box]
Academic Library Engagement	**Q15.**) How will you rate your comfort level with finding the books you need at the academic library on your own? ☐ Very Uncomfortable ☐ Uncomfortable ☐ Neither Uncomfortable or Comfortable ☐ Comfortable ☐ Very Comfortable
Academic Library Engagement	**Q16.)** How will you rate your comfort level with finding electronic resources through the library website on your own? ☐ Very Uncomfortable ☐ Uncomfortable ☐ Neither Uncomfortable or Comfortable ☐ Comfortable ☐ Very Comfortable

Thank you page & incentive drawing option	**Q17.)** Thank you for your time! As a token of our appreciation, we want to offer to enter your name in a drawing for a culinary services gift card. We will do two drawings per week while the survey is still open – so tell your friends! Your name will not be connected to your survey data in any way. **Click here to be taken to the drawing entry form.**

Appendix C: Ohio University Admission Statistics, Fall 2013 - Fall 2019

Note. Retrieved from https://www.ohio.edu/instres/univ/FactBook2019.pdf

Ohio University Admission Statistics Fall 2013 - Fall 2019*

	2013	2014	2015	2016	2017	2018	2019	% Change 13-19	% Change 18-19
Athens Campus									
New First-Year									
Applied	20,765	20,934	21,000	20,623	26,243	23,385	24,179	16.4%	3.4%
Admitted	15,149	15,548	15,638	15,437	19,398	18,311	19,843	31.0%	8.4%
Enrolled	4,244	4,377	4,423	4,309	4,045	3,980	3,671	-13.5%	-7.8%
Graduate									
Applied	4,598	4,744	4,090	4,256	4,093	3,979	4,030	-12.4%	1.3%
Admitted	2,060	2,266	2,018	2,098	2,120	2,032	2,200	6.8%	8.3%
Enrolled	1,349	1,441	1,320	1,397	1,440	1,420	1,471	9.0%	3.6%
Regional Higher Ed.									
New First-Year									
Applied	2,923	2,812	2,745	2,811	2,851	2,718	2,842	-2.8%	4.6%
Admitted	2,582	2,477	2,427	2,518	2,555	2,478	2,622	1.5%	5.8%
Enrolled	1,555	1,497	1,380	1,428	1,280	1,195	1,070	-31.2%	-10.5%

*Admission statistics are based on information captured on the census date of the fall academic term each year.

Note: Beginning 2017, OHIO joined the Common Application.

Web Link for further information: https://www.ohio.edu/instres/student/admstats/index.html

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