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### Undergraduate Student Success and Library Use: A Multimethod Approach

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# Undergraduate Student Success and Library Use: A Multimethod Approach

## Overview:

How libraries affect student success has become an increasingly important question to many academic librarians. To investigate this phenomenon, we explored student success via two approaches in this multimethod study: 1) through individual student interviews to capture the student voice; and 2) through hierarchical linear and logistic modeling of institutional data to capture the institutional perspective. Through the qualitative component, students articulated how they define success and how the library contributes to their success, especially in terms of providing a sense of belonging and facilitating the work of a community of scholars. The quantitative data provides additional context by demonstrating a small positive correlation between use of library resources and student persistence, further highlighting the community building impact of the libraries.

## Methods: Quantitative

This quantitative analysis used student demographic, academic, and library use data for all degree-seeking undergraduates enrolled at UNC in the fall 2017 semester. Library use was measured by physical item checkout, use of library computers, instruction sessions attended, and research consultations. The control variable were first-generation status, gender, Pell grant eligibility, pre-fall GPA, underrepresented minority status, student class, housing status, participation in a TRIO program, and participation in UNIV 101 were the control variables. For fall 2017 new first time students we used the student's high school GPA and the most recent transfer institution GPA for transfer students. We coded dummy variables for the categorical variables so that 1 indicated presence of the attribute and 0 indicated absence. For the student classification variable, the three other levels were contrasted against senior classification.

The demographic use analysis of library services offered insight into who used the library, so we delved deeper. Using SPSS (v. 25), we ran hierarchical regression models using library resource and service use to explain persistence to and cumulative GPA in spring 2018. Step 1 included all the control variables and in the various step 2s, we added in the library use variables. The outcome variables were whether the student persisted in the logistic model and their spring cumulative GPA in the linear model.

## Research Questions:

- \* How does use of specific library services correlate to persistence for undergraduate students?
  - \* Is there a positive correlation between the number of uses of library services and academic achievement for undergraduate students?
  - \* How does use of library services correlate to academic achievement for undergraduate students?
- The study evolved to include a qualitative piece that addresses the following additional research questions:
- \* How do students define academic success?
  - \* What role can or does the library play in student academic success?

## Qualitative

For the qualitative component of our study, we conducted 17 face-to-face, semistructured interviews with current UNC undergraduate students. The interview questions centered on if, how, and why the students used the library. The only criterion that students had to meet to participate was to be a current undergraduate student. The only demographic information gathered was their year in school and their area of study. We made the decision not to gather other demographic factors, such as race, gender, or Pell-grant eligibility to protect the privacy of the small sample size. The interview participants represented a variety of majors and academic levels.

To analyze the 17 student interviews, we used a qualitative, inductive coding method to identify major themes. With student consent, we recorded audio of the interviews and used the program Temi to transcribe audio to text to assist with analysis. We developed a thematic analysis process to capture the essence of the students' answers to our interview questions that mapped to the overarching purpose of our study. To ensure our data analysis was sensitive to our interviewees' feelings and experiences, we used a combination of Descriptive and In Vivo coding techniques that incorporated students' words and researcher-developed terms. We then sorted each code into larger thematic groups.

## Findings: Quantitative

The quantitative data demonstrates that at the macro level, University Libraries has a positive correlation with improved student success. The data shows a clear connection between library use and an increase in the probability of persisting to the next year. However, the link to an improved GPA is minimal, but looking at how our students define academic success and their focus on building knowledge and developing a growth mindset, we are not discouraged by the GPA results.

TABLE 1.  
Hierarchical Logistic Regression Coefficients for Three Library Service and Resource Use Models Explaining Persistence (N=9006)

	Step 1				Step 2: Individual Services and Resources				Step 2: Number of Distinct Services				Step 2: Number of Instruction Received			
	B	S.E.	Wald	OR	B	S.E.	Wald	OR	B	S.E.	Wald	OR	B	S.E.	Wald	OR
Under Represented Minority	-.13	.07	3.95	.88*	-.18	.07	7.26	.84**	-.19	.07	7.98	.83**	-.13	.07	3.94	.88*
First Generation	-.30	.06	22.46	.74***	-.28	.06	19.95	.75***	-.28	.06	19.83	.75***	-.29	.06	21.27	.75***
Freshman	-1.69	.10	291.13	.19***	-1.87	.10	333.64	.16***	-1.87	.10	338.06	.15***	-1.80	.10	324.36	.17***
Sophomore	-.72	.10	50.56	.49***	-.90	.10	75.56	.41***	-.92	.10	79.13	.40***	-.75	.10	55.23	.47***
Junior	-.36	.10	11.61	.70**	-.45	.11	18.38	.64***	-.46	.11	19.05	.63***	-.36	.11	11.96	.70**
Pre-Fall Cumulative GPA	.42	.04	91.88	1.52***	.42	.05	85.40	1.52***	.43	.05	94.14	1.54***	.41	.04	84.62	1.50***
Univ Housing	.19	.07	6.63	1.21*	.06	.08	.66	1.06	.08	.08	1.34	1.09	.16	.08	4.81	1.18*
TRIO	2.24	.59	14.31	9.40***	1.71	.60	8.28	5.55**	1.73	.60	8.44	5.62**	1.93	.59	10.60	6.90**
Checked Out at Least One Book					.81	.09	85.39	2.24***								
Logged in to a Computer at Least Once					.40	.06	42.29	1.50***								
Participated in at Least one Instruction Session					.64	.07	82.53	1.89***								
Received at Least One Research Consult					.68	.61	1.24	1.97								
Number of Distinct Services									.58	.04	231.52	1.78***				
Number of Instruction Sessions Participated in													.26	.03	57.22	1.30***
Constant	1.28	.16	63.88	3.58***	.91	.17	29.46	2.48***	.81	.17	24.27	2.25***	1.26	.16	63.40	3.51***

\*p<.05; \*\*p<.01; \*\*\*p<.001

*Students who have attended an instruction session have an 89% higher probability of persisting – that number increases by 30% with each session attended.*

*Students who check out at least one item from the library have a 124% higher probability of persisting.*

## Implications:

The strength of this study is that it explores the role the library plays in student success at two levels. At the institutional level, we conclude University Libraries at UNC does have a positive correlation with improved student success. The quantitative data shows a clear connection between library use and an increase in the probability of persisting to the next year, suggesting the community building impact of the libraries. The qualitative data, which allows us to examine the role the library plays at an individual level, demonstrates the library's role as an academic community center and the critical importance of the library as an academic place. Our findings indicate that the libraries contribute to student success in terms of helping students progress in their knowledge and persist as university students.

## Qualitative

From our interviews, we learned that students hold strong and varying opinions about the library. They overwhelmingly value the library as a distinct place on campus. We identified four major themes regarding the perceived role of the library in students' academic achievement: space; people; place; and resources and services.

- \* **Space: Tasks Determine Destination in the Library** This theme focused on the physical space of the library. Students particularly noted the rectilinear layout of Michener Library, study rooms, and the variety of furniture types available.
- \* **People: Sometimes a Distraction, but Can Offer Help and Comfort**

For this theme, students discussed both library employees and library users. Specifically, interviewees acknowledged the "helpful" employees, underutilized librarians, and the "social environment" of Michener.

- \* **Place: The Library is a Place People Know and Want to Be** Building off both the Space and People themes, this theme focused on the library as place for the academic community. Some students referred to Michener as their "safe space" while others noted a desire for more community-oriented programming.
- \* **Resources and Services: The Library Has What You Need to Get Things Done**

Lastly, this theme explored the resources and services offered by the libraries. Students mentioned the benefit of having access to electronic resources, laptops for check-out, and expensive software packages.

*“Everyone knows where it is, you have everything you need, so if you have a group project you go, hey, let’s just meet at Michener Library and use the computers.”*

## What's Next?

We anticipate the findings of this study will have significant impacts on decision making in the University Libraries in terms of how we can increasingly contribute to our students' articulated sense of belonging when they use the library, which in turn impacts their academic success in the form of persistence. This research will have the potential to inform future steps to improve student academic success in terms of our programming, pedagogical decisions, material and equipment purchases, outreach and marketing priorities, and project planning. After all, improving services for students to help them succeed was the main driver of this study.

## Research Team:

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**Angela Rockwell**, Data Analyst and Report Writer, Office of Institutional Reporting and Analysis Services  
**Jayne Blodgett**, Interim Dean of Libraries, University Libraries



*“I really like coming here [Michener Library] because it’s an area specifically for focus, so I don’t have the same distractions as I do at home and just the overall feel makes me stay more productive”*