Factors that influence undergraduate information-seeking behavior and lead to success

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Abstract

From a survey we administered a survey to undergraduate students on their information seeking behavior, we identify variables that influence how students conduct their search for sources, what types of sources they select, and what attributes of their sources they value. These variables relate to both student demographics and actions that have been taken by instructors and library staff. With a more thorough understanding of students' information seeking process and its influences, we find opportunities for instructors and librarians to positively influence undergraduate information-seeking behavior.

Keywords: Information-seeking behavior; undergraduate students; library resources

1 Introduction

Convenience is found to be a primary factor that drives undergraduate information-seeking behavior, partially because resource evaluation is such a challenge for undergraduate students (Lee, H., 2008; Connaway et al., 2011; Taylor, 2012; Lee, J., 2012; Rempel, 2013). The volume of resources and complexity of library search tools lead many undergraduates to rely heavily on the familiar internet search engines for their information rather than on library subscription databases and electronic resources. Georgas (2014) found that students' search strategies reflected a limited grasp of how the search tools they were using fit into the larger information architecture. Georgas (2013) directly observed students conducting research and noted that when search tools took students to publisher interfaces hosting the library's subscription journals, the students failed to understand what kind of interface they were in and what types of content they would find there. Despite these observations, when students were asked to evaluate themselves, they revealed that they believed they possessed excellent research skills (Georgas (2014) and Georgas (2015)).

As students progress in their academic careers, they do not necessarily develop better research habits. Mbabu et al. (2012) found that despite having higher levels of learning and the being expected to have more sophisticated research skills, juniors and seniors had used the university's subscription databases proportionally less than freshmen and sophomores. Similarly, Callinan (2005) found that both first-year and final-year students struggled to use resources in the electronic environment and both groups indicated a desire to receive further instruction on finding journal articles in electronic databases.

Research shows that library use is related to student retention and, ultimately, success. Haddow (2013) compared number of resources borrowed and number of log-ins to authenticated resources between students that remained enrolled in college and students in the subsequent semester and students that later withdrew from college. She found that students who would be retained logged in more to authenticated resources and borrowed more from the library than students who would withdraw. Similarly, Soria et al. (2013) show that using library workstations and logging in to library databases were behaviors consistently and positively related to retention. That academic success is related to library use motivates the present study, as we seek to identify how some actions that university instructors and library staff have taken have influenced students use of library resources and their search process.

Little has been done to date investigated what causes students to decide to use or not use library resources. The purpose of our study is to get a deeper understanding of the undergraduate student information-seeking process from start to finish, and identify factors that

influence this behavior. We identify where students report starting their research, what resources they tend to use, attributes they report valuing in their sources, in what physical location they generally conduct their work, and whether they seek help from library staff. We consider a number of explanatory variables that may influence these information-seeking behavior variables, including demographic and academic variables and variables that librarians and instructors control.

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This study provides a detailed analysis of what affects undergraduate students' research process and where instructors and librarians can make a difference. Similar to existing literature, we found that students valued convenience and familiarity. While we found that students were using library electronic resources and databases, they use Internet resources such as Wikipedia to an equal extent. Interestingly, we found that students are physically in the library and that instructors and library staff can influence students to use library resources, if not as a starting point, then as an ending point. Our study finds that, despite being in the library space, undergraduate students do not report using library reference services. This study identifies an opportunity for instructors and librarians to positively impact undergraduate information-seeking behavior by making it easier or less-intimidating for students to use library reference staff, and in turn, helping them further develop their research skills and achieve success.

2 Information Seeking Behavior

We administered an electronic survey in Fall 2013 to undergraduate students at the University of Wisconsin - La Crosse which measured details about students' information seeking behavior, whether students' curriculum included encouragement or training in using library resources, students' perceived level of success using library resources, information on college major and academic progress, and demographic information. In total, 542 students responded to the survey, but non-responses to some individual questions led to smaller sample sizes in the analysis below.

The information seeking behavior of the students in our sample are similar to those in the studies cited above. A large fraction of students report using popular search engines for finding information for projects involving library research, however the library website and electronic databases are also very popular. Also, while many students report seeking scholarly

articles and placing value on the quality of the source, it is also very popular to depend on Wikipedia, blogs and other websites.

Table 1 describes where students begin their search process. It shows the percentage of students that report beginning with popular search engines and websites versus online library search tools such as the library website, library catalog, or electronic database. While a large fraction of students report beginning with Google.com and Wikipedia, almost as many students begin their search process with the library resources.

Table 1: Starting point for information seeking

Resource	Frequency	Relative Frequency
Library catalog, website, or electronic database	202	42%
Google.com	188	39%
Google Scholar	73	15%
Wikipedia	6	1%
Other	6	1%
Total Responses	476	

Using Google or Wikipedia may be an appropriate and comfortable starting point for students while they familiarize themselves with a topic, but we see evidence that many students eventually turn to library electronic databases.   Table 2 reports how often students use EBSCO and subject-specific databases when conducting research, whether or not the search began at this point. Students on average report high usage of the EBSCO electronic database in their search process.   The interpolated median[1] response for using EBSCO when conducting research was just below "most of the time" and approximately two-thirds of students report using EBSCO "always" or "most of the time." Subject-specific databases were less frequently used by students, with an interpolated median between "rarely" and "sometimes" with almost half of students reporting use at levels "rarely", "never", or "not sure."

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1   The interpolated median is a measure of measure of center appropriate for ordinal variables that is related to the median but offers more precision for ordinal variables with a small number of possible outcomes where many observations are exactly equal to the mean. It informs whether the distribution is more heavily weighted *strictly above* or *strictly below* the median value. Let M denote the standard median, n_L denote the number of observations strictly below the median, n_G denote the number of observations strictly below the median, and n_E denote the number of observations exactly equal to the median. The interpolated median is given by $IM = M + (n_L + n_G) / (2 n_E)$.

Table 2: Use Frequency for Library Electronic Databases

Attribute	Never / Not sure (1)	Rarely (2)	Sometimes (3)	Most of the time (4)	Always (5)	Interpolated Median	Total Responses
EBSCO	27 5%	29 6%	111 23%	122 46%	98 20%	3.84	487
Subject-Specific Databases	116 24%	121 25%	152 31%	77 16%	20 4%	2.53	495

The search tools students choose should be related to the type of content they seek, so we next explore how much students use scholarly articles, books, articles in the popular press, and possibly less reputable online sources such as Wikipedia and blog posts. Table 3 reports summary statistics on various types of sources, and is ordered by the median response for use frequency. Students report relying on scholarly articles most often; almost two-thirds of the students reported using scholarly articles "often" or "very often." Still, the next most frequently used source was, "Wikipedia, online blogs, and other websites," with more than one-third of students reporting relying on such sources "often" or "very often". This is followed in frequency by books (median response "sometimes"), and the type of source least frequently relied on is articles in popular press (median response "sometimes").

Table 3: Sources Students Use

Attribute	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Very Often (5)	Interpolated Median	Total Responses
Scholarly Articles	16 3%	42 9%	124 25%	164 33%	174 30%	3.89	493
Wikipedia, and similar	48 10%	133 27%	143 29%	126 25%	45 9%	2.96	495
Books	33 7%	125 25%	194 39%	101 20%	43 9%	2.96	496
Popular Press	55 11%	156 32%	171 35%	84 17%	28 6%	2.71	494

Students' decisions for search tools and types of sources they use should depend ultimately on what characteristics of the sources they value. That is, how much do students value peer-review, a source's reputation, an author's reputation, or immediate availability of a physical or electronic copy of a source? Table 4 describes how much students report valuing these and other attributes of a source. The table orders the attributes from highest valued to

lowest valued by the interpolated median. The responses likely suffer from some response-bias as students on average report valuing very highly almost all of the attributes presented to them in the survey. Still, the order is revealing. Most important to students is whether or not the subject is relevant (as any instructor or librarian would hope, but it is still curious to find as much as 2% of students do place a high value on relevancy). This is followed closely by whether electronic full text is available. Of least concern to students is whether physical copies are available. Taken together, this reveals that students' preference for a convenient online medium is considered more important than all other considerations except relevancy. Physical availability of resources housed in the library was considered least valuable to students. The next three least important attributes are peer review, author reputation, and source reputation.

Table 4: Attributes for Sources Students Value

Attribute	Not Important (1)	Somewhat Unimportant (2)	Neutral (3)	Somewhat Important (4)	Very Important (5)	Interpolated Median	Total
Relevant Subject	1 0%	0 0%	9 2%	84 19%	342 78%	4.86	436
Full Text Available	1 0%	11 3%	17 4%	132 30%	276 63%	4.71	437
Ability to Understand	2 0%	6 1%	16 4%	173 41%	224 53%	4.56	421
Recent Publication	4 1%	18 4%	19 5%	201 49%	166 41%	4.31	408
Peer Reviewed	6 2%	41 11%	62 16%	131 35%	138 37%	4.11	378
Author Reputation	5 1%	32 9%	56 15%	163 43%	120 32%	4.08	376
Source Reputation	4 1%	39 11%	76 21%	181 49%	70 19%	3.86	370
Physical Availability	52 14%	96 26%	71 19%	96 26%	57 15%	3.04	372

Since students have a high preference for electronically available full text and place little value on physical availability, it may be that students have a need or preference to conduct library research outside of the physical library. Both popular search engines and the library electronic databases are available online on and off campus. Still, there is a benefit to using the physical library: library staff members are on hand to help students navigate electronic databases, understand their sources, and even help find information on a particular topic. To determine if students are missing out on this opportunity, we investigate where students conduct

their research, how often they visit the library facility for research or other purposes, and whether they take advantage of the expertise of the library staff.

Table 5 describes where students report conducting most of their work involving library research. More than half of students report using the library most often, but this is followed by more than one-third of students working primarily in their residence, and a small fraction do their work in other locations. We also asked students how frequently they visit the library in person for any reason. Table 6 shows these responses, revealing that more than half of the students visit the library at least once per week.

Table 5: Where Students Conduct Most of Their Library Research

Location	Frequency	Relative Frequency
On-campus Library	316	58%
Residence	201	37%
Other off-campus building	14	3%
Other on-campus building	11	2%
Total responses	542	

Table 6: How Often do Students Visit the Library in a Typical Week

Response	Frequency	Relative Frequency
More than 4 times per week (5)	84	16%
2-3 times per week (4)	134	25%
Once per week (3)	83	15%
2-3 times per month (2)	135	25%
Once per month or less (1)	106	20%
Interpolated Median	2.86	
Total Responses	542	

A majority of students in our sample do use the library facility regularly and when working on projects involving library research. Table 7 reveals how often students seek assistance from reference desk librarians or library staff. We found that students generally do

not seek help from library staff. More than three-quarters of students report never or rarely ever ask for assistance; the interpolated median is just below the response "rarely."

Table 7: How Often Students Seek Assistance from Library Staff

Response	Frequency	Relative Frequency
Very Often (5)	6	1%
Often (4)	21	4%
Sometimes (3)	98	19%
Rarely (2)	244	47%
Never (1)	149	29%
Interpolated Median	1.95	
Total Responses	518	

These results suggest an opportunity for library staff and instructors to help students. Students reveal valuing a convenient electronic medium for information very highly while still regularly visiting the physical library where expertise assistance and physical resources are nearby and under utilized. Most students in our sample visit the library frequently but leave the library staff alone, focusing instead on the electronic resources that are available from any computer with an internet connection. There is an opportunity to encourage students to reach out to library staff to learn more about understanding what is peer review, how to identify source credibility and reputation, and how to use search tools effectively to find valuable sources.

We next turn to understanding factors that explain the information-seeking variables that we describe in this section.

3 Influences on Information Seeking Behavior

Libraries use a lot of resources subscribing to and maintaining peer reviewed journals and electronic databases and many instructors prefer their students use these types of sources and understand how to navigate through scholarly literature. Given that students commonly use both scholarly literature and less academic sources such as Wikipedia and that students commonly use both library electronic databases and popular web search engines, what influences information seeking behavior? We explore demographic and academic variables, and variables within instructors' and librarians' control. The latter can help inform instructors' and library staff policies and teaching strategies, and the former can identify sub-populations

where library staff and instructors can place more focus. In this section we will determine how these explanatory variables influence the variables in the previous section that describe student information seeking behavior.

3.1 Explanatory Variables

We consider the explanatory variables in Table 8. Three of these are decision variables, variables are related to decisions within instructors' and / or librarians' control. The first such variable, *Encourage*, is a binary variable that derives from a survey question that asked students how often their instructors encouraged them to use the library's electronic databases when assigning projects involving library research. Students could respond on a four-point scale ranging from 'Never' to 'Frequently.' Responses of 'Frequently' were given a score equal to 1.0 and all others equal to 0.0. More than two-thirds of students reported instructors frequently encouraged them to use this resource.

The variable *List* is also a measure of instructors' practices. This is a binary variable deriving from a survey question asking students how often instructors give them a reference list of articles and/or books that they can use as a starting point for projects or assignments involving library research. Again students could respond on a four-point scale ranging from 'Never' to 'Frequently.' Responses of 'Frequently' or 'Occasionally' were given a score equal to 1.0 and all others equal to 0.0. More than one-half of students reported that their instructors at least occasionally gave them reference lists for their assignments.

The last decision variable includes a common collaboration between library staff and instructors at UW-L where a library staff member gives a presentation to a class, during the regular class period, that is customized for the course or even for a particular assignment or project. One such collaboration exists in all sections of a freshman-level oral communications class that is required of all students. Early in every UW-L student's college career, he or she should have been exposed to at least one such presentation. Still, at the point in time when we conducted the survey, not all students had completed this class yet, and it's likely some students were missing from class on this day. The binary variable *ClassVisit* is equal to 1.0 if the student reported having attended a class with such a presentation and 0.0 otherwise. The survey reveals that 78% of students in our sample reported having attended such a presentation in at least one of their class.

Table 8: Explanatory Variables for Information Seeking Behavior

Variable	Scale	Description	Descriptive Statistic
Encourage	Binary	Equal to 1 if instructors frequently encourage students to use library electronic databases	Proportion = 68%
List	Binary	Equal to 1 if instructors frequently or occasionally give reading lists to students	Proportion = 51%
ClassVisit	Binary	Equal to 1 if a library staff member ever gave a presentation in any of a student's classes	Proportion = 78%
ColBus	Binary	Equal to 1 if a student's major is in the College of Business Administration	Proportion = 25%
ColSci	Binary	Equal to 1 if a student's major is the the College of Science and Health	Proportion = 39%
ACT	Interval	A student's score on the ACT college readiness exam.	Mean = 25.4
Age	Ratio	Student's age	Mean = 21.3
ParentEdu	Binary	Equal to 1 if the highest level of education by either student's parents includes at least a four year college degree	Proportion = 57%
Female	Binary	Equal to 1 if students indicated sex as female	Proportion = 70%
Nonwhite	Binary	Equal to 1 if student indicated any race besides White / Caucasian	Proportion = 5.7%

The next three explanatory variables in Table 8 capture academic information that may influence information seeking behavior. The binary variables *ColBus* and *ColSci* indicate whether a student's major or intended major is in the College of Business or the College of Science and Health. There is one other college at UW-L, which serves at the excluded category in the analysis below, the College of Liberal Studies. Coefficients on *ColBus* and *ColSci* indicate the relative difference in information seeking behavior of the students with majors in these colleges relative to students with a major in the College of Liberal Studies. The estimated impact these variables have on information seeking behavior are especially useful to instructors and library staff as they help identify subsets of the student population that may be in most need of intervention.

We account for students' previous academic ability with their score on the ACT college readiness exam which is taken prior to being admitted to UW-L. The variable *ACT* is equal to

the score students reported on the exam, and is given as an integer from 1-36, with higher scores indicating better test performance.

The remaining explanatory variables capture students' demographic information. The variable *Age* is the age of the student. It is not surprisingly highly correlated with year in school, and too much so for both variables to be included in the analysis below without multicolinearity problems. Including either variable on its own captures the combined effect that maturity and additional schooling has on information seeking behavior.

The effect that parents' level of education has on students' information seeking behavior is captured by *ParentEdu,* a binary variable equal to 1.0 if the highest level of education achieved by either parent or guardian is at least a four-year college degree. Just over half of the students in our sample report having at least one parent or guardian with a four-year college degree.

The final two variables are binary variables for sex (70% of respondents were female which is slightly larger than the student population) and race which is measured by an indicator that a student identifying most with a race other than White / Caucasian (approximately 6% of students selected another race, which is consistent with the student population).

3.2 Regression Analysis

We now turn to measuring the influence that these explanatory variables have on student information seeking behavior. We begin with where students begin their research process. We estimate a logistic regression with a binary dependent variable equal to 1.0 when students began their research process from a library or scholarly source including the university library website, one of the library electronic databases, or Google Scholar. The dependent variable is equal to 0.0 for other arguably less scholarly starting points such as Wikipedia or Google.com. Table 9 reports the results.

There are four significant explanatory variables explaining where students begin their research process: *List, ColBus, Female,* and *Nonwhite*. When instructors give students reference lists to help them begin their research process, students were less likely to start with the library website or electronic databases. Students with college of business majors were less likely that students with majors in the college of liberal studies to start with a scholarly search tool. Women were more likely than men to start with these academic search tools, as are non-white student (significant at the 10% level). The pseudo R-squared[2] value equal to approximately 4% indicates most of differences between students in their starting points are not

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2 McFadden's (1974) Pseudo R-squared = 1 – LogLik / NullLogLik, where *LogLik* is the log likelihood of the estimated regression equation and *NullLogLik* is the value of the log likelihood where the dependent variable is regressed only against an intercept.

explained by outside the independent variables in the model, but the highly significant likelihood ratio test indicates the variables are relevant in explaining the outcome variable.

Table 9: Logistic Regression Results
Dependent Variable: Scholarly Starting Point for Research Process

Variable	Coefficient	P-value
Constant	-0.69	0.626
Encourage	0.11	0.802
List	-0.43	0.038**
ClassVisit	0.03	0.902
ColBus	-0.47	0.078*
ColSci	-0.24	0.317
ACT	-0.02	0.681
Age	0.05	0.147
ParentEdu	-0.08	0.700
Female	0.67	0.004***
Nonwhite	1.04	0.073*
Likelihood Ratio Test	23.37	0.009***
Log Likelihood	-275.86	
Pseudo R-squared	0.041	
Sample size	423	

Notes: Dependent variable is equal to 1.0 if students started search process with a search tool that is academic in nature including the library's electronic databases, the library website, and Google Scholar.
*** Significant at 1% level, ** Significant at 5% level, * Significant at 1% level

We next explore what affects how often students use EBSCO and subject-specific databases for their research on a five point ordinal scale that ranged from 'never' to 'always'. We combine these two variables for into a single variable for electronic database use by taking the maximum of each student's response for EBSCO versus subject-specific databases. Because the dependent variable is measured on an ordinal scale, we estimate an ordered logit regression. The results are given in Table 10.

Table 10: Ordered Logit Regression - Frequency Using Library Electronic Databases

Variable	Coefficient	P-value
Encourage	1.65	0.000***
List	0.25	0.185
ClassVisit	0.72	0.001***
ColBus	-0.71	0.004***
ColSci	-0.55	0.011***
ACT	0.04	0.239
Age	0.01	0.790
ParentEdu	0.29	0.138
Female	0.45	0.034**
Nonwhite	0.3	0.540
Likelihood Ratio Test	56.32	0.000***
Log Likelihood	-515.70	
Pseudo R-squared	0.052	
Sample size	410	

Notes: Dependent variable is the frequency using EBSCO or subject specific databases
(maximum of the two) for assignments involving library research on the five point scale:
never, rarely, sometimes, most of the time, always.
*** Significant at 1% level, ** Significant at 5% level, * Significant at 1% level

Here we find significant statistical evidence that when instructors encourage students to use electronic databases, they use these more frequently. Interestingly, we fail to find significant statistical evidence that instructors giving students reference lists leads to any change in how frequently students use electronic databases, and in fact the coefficient is positive. This is in contrast to the finding above that giving students reference lists led to a decrease in use of scholarly search engines as students' as a starting point for their search process. The final variable within librarians' and instructors' control is also statistically significant and positive. When students were exposed to a presentation by a library staff member in their classes, they more frequently used the library electronic databases.

The coefficients on *ColBus and ColSci* are both statistically significant and negative which indicates students with liberal studies majors or intended majors more frequently use electronic databases than do students with business or science majors.

The likelihood ratio test and pseudo R-squared values are similar to the previous regression. The group of independent variables as a whole is relevant in explaining the

dependent variable, with approximately 5% of the variability in students use of electronic databases explained by the independent variables.

Table 11 reports ordered logistic regression results for the four dependent variables measuring how often students use various types of sources. The columns are ordered in the same manner as the rows in Table 3; columns are sorted left to right by median frequency students report using each sources, with more frequently used sources listed first.

Table 11: Ordered Logit Regressions - Sources Student Use

Variable	Scholarly Articles		Wikipedia and Similar		Books		Popular Press	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Encourage	1.192	0.002***	0.016	0.967	0.709	0.075*	0.132	0.728
List	-0.151	0.407	0.075	0.679	0.364	0.045**	0.142	0.439
ClassVisit	0.248	0.268	0.139	0.523	-0.278	0.206	-0.060	0.785
ColBus	-0.472	0.047**	0.850	0.000***	-0.675	0.005***	0.534	0.025***
ColSci	-0.475	0.025**	0.346	0.096*	-0.196	0.347	-0.340	0.103
ACT	0.148	0.005***	0.080	0.045**	0.055	0.149	0.089	0.018***
Age	0.008	0.774	-0.041	0.162	-0.009	0.765	-0.044	0.123
ParentEdu	-0.020	0.916	0.146	0.438	-0.069	0.719	-0.001	0.995
Female	0.308	0.150	0.021	0.920	0.055	0.792	0.399	0.055*
Nonwhite	-0.011	0.982	0.358	0.412	-0.081	0.864	-0.192	0.689
Likelihood Ratio Test	32.3	0.000***	22.2	0.014**	21.48	0.018**	27.61	0.002***
Log Likelihood	-565.71		-615.13		-590.59		-594.62	
Pseudo R-squared	0.027		0.018		0.018		0.023	
Sample size	406		404		408		407	

Notes: Dependent variable is the frequency using each type of source described in the column headings on the five point scale: never, rarely, sometimes, most of the time, always.
*** Significant at 1% level, ** Significant at 5% level, * Significant at 1% level

Of particular interest is whether the variables within instructors' and librarians' control is a significant predictor for how often students use each resource. The coefficient on the variable *Encourage* is statistically significantly and positive for two the dependent variables, S*cholarly articles* and B*ooks*. This indicates that instructors' encouragement to use library electronic resources is positively associated with students using scholarly articles and books more frequently in their research. The coefficient on *List* is statistically significant only for the dependent variable *Books.* If instructors want to particularly influence students to use the library's books in circulation, the positive coefficient on *List* identifies another effective nudge

instructors can give to students, to provide a list of useful references to the students, presumably one that includes books in the library's circulation.

The ordinal logit results concerning the lesser academic types of sources including popular press articles and Wikipedia, blogs, and similar websites reveal that business students are more likely to use such sources than students in the other colleges. Also ACT is statistically significant and positive. Perhaps surprisingly, students that performed better on their college entrance exam were more likely to use these types of sources.

In all ordered logit regressions, the likelihood ratio tests indicated the independent variables do help explain the outcome variables, but the pseudo R-squared values reveal that much of the variability in the frequency using each type of resource is explained by other variables not be included in the model.

Table 12: Ordered Logit Regressions - Attributes Student Value

	Relevant		Full Text Available		Ability to Understand		Recent	
Variable	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Encourage	0.407	0.407	-0.478	0.349	0.150	0.733	-0.110	0.809
List	-0.167	0.511	-0.285	0.181	0.116	0.577	0.290	0.157
ClassVisit	-0.052	0.864	0.201	0.436	0.208	0.397	0.437	0.083*
ColBus	-0.321	0.330	-0.523	0.053*	-0.175	0.514	0.425	0.116
ColSci	-0.360	0.234	0.034	0.894	0.090	0.708	0.055	0.816
ACT	-0.034	0.432	0.282	0.000***	-0.006	0.887	-0.028	0.479
Age	0.078	0.061*	0.021	0.533	-0.043	0.197	-0.077	0.020**
ParentEdu	0.139	0.598	0.137	0.539	-0.065	0.766	0.111	0.608
Female	0.744	0.006***	0.729	0.003***	0.742	0.002***	0.467	0.051*
Nonwhite	0.936	0.248	0.453	0.483	0.392	0.506	-0.014	0.980
Likelihood Ratio Test	18.29	0.050**	31.24	0.001***	17.63	0.062*	18.99	0.040**
Log Likelihood	-231.89		-342.10		-343.90		-377.04	
Pseudo R-squared[2]	0.038		0.044		0.025		0.025	
Sample size	391		391		375		365	
	Author Reputation		Peer Reviewed		Source Reputation		Physical Availability	
Variable	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Encourage	0.184	0.695	0.631	0.170	-0.081	0.870	0.062	0.890
List	0.077	0.704	0.552	0.006***	0.189	0.360	-0.044	0.825
ClassVisit	0.131	0.590	0.472	0.058*	-0.396	0.117	-0.485	0.044**
ColBus	0.281	0.296	-0.698	0.009***	0.669	0.016**	-0.360	0.158
ColSci	0.221	0.344	0.161	0.500	0.240	0.308	0.096	0.678
ACT	-0.097	0.105	0.087	0.114	0.017	0.679	0.035	0.375
Age	-0.022	0.503	-0.022	0.513	-0.070	0.037**	-0.128	0.000***
ParentEdu	-0.331	0.124	-0.309	0.146	-0.294	0.181	-0.302	0.152
Female	0.136	0.573	-0.297	0.205	0.962	0.000***	0.961	0.000***
Nonwhite	0.182	0.744	0.183	0.741	0.843	0.133	0.059	0.914
Likelihood Ratio Test	7.55	0.673	32.55	0.000***	35.28	0.000***	49.71	0.000***
Log Likelihood	-442.23		-454.58		-419.93		-515.60	
Pseudo R-squared[2]	0.008		0.035		0.041		0.046	
Sample size	335		336		330		331	

Notes: Dependent variable is the level of importance students report for sources' attributes that are described in the column headings on the five point scale: not at all important, somewhat important, neutral, somewhat important, and very important. *** Significant at 1% level, ** Significant at 5% level, * Significant at 1% level

Conclusion

Undergraduate students' information-seeking behavior is primarily influenced by convenience. Specifically, we found that students value electronic full-text availability of a resource over other qualities such as relevance and the reputability of a journal or author. The major finding of this study is undergraduate students' willingness to use the library space. While they frequent the library building, they do not report going to library staff for help in the research process. Further research is needed to determine why students are not seeking help from library staff. When instructors and librarians encourage students to use quality resources from their library, students may be more successful.

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