

Library Data and Student Success

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University of Minnesota
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Existing Measures

- Long history of measuring input, output, external perceptions of quality and satisfaction with library services
- Expenditures, staffing effects on retention
- Information literacy instruction
- Collections, facilities on enrollment decisions

...useful for management of library services, collections and resources but...


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Example

- Kuh and Gonyea's 2003
 - 300,000 students between 1984 and 2002 to the College Student Experiences Questionnaire
 - “library use does not appear to contribute directly to gains in information literacy and other desirable outcomes”

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Student retention

- Haddow and Joseph 2010  Curtin University
 - Curtin University (4661 students)
 - Loans, workstation logins, logins to e-resources used to determine “extent of library use” with enrollment and demographic
 - “retained students showed higher levels of loans, PC logins and e-resource logins”

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Using Swipe-card data

- Jones 2011
 - Georgia State University
 - Students, faculty, staff swipe before entering their library since 2002
 - Built analytics system to run queries
 - GPA, college, dorm, entry, ethnicity, gender, time, major, year in school, etc.



Library material usage

- Wong & Webb 2011
 - Hong Kong Baptist University (8,801 pairs of data)
 - Establish a mathematical correlation between student library material usage and cumulative GPA
 - Able to demonstrate impact on student learning



UK Library Impact Data Project

- 2010, University of Huddersfield
 - 700 courses (2005-2009)
 - 3 indicators of library usage (access to e-resources, book loans, access to the library)
- 2011, 8 UK institutions joined
 - 33,000 students, JISC funding
 - Grade, loans, e-resources accessed, times entered the library, school
- Focusing on non/low use and achievement



Call to Action

- Value of Academic Libraries:
A Comprehensive Research Review and Report (ACRL)
 - Assessment management systems
 - Develop systems to collect data on individual library user behavior
 - Record and increase library impact on student enrollment
 - Link libraries to improved student retention and graduation rates
 - Track library influences on increased student achievement
 - Demonstrate and develop library impact on student learning



Gym Bags and Mortarboards

- Student success measures
 - First Year Retention and 5 year graduation
- 5211 students in sample (2001)
- Tinto's 1975 model of social and academic integration
- "able to demonstrate that actual usage of CRFs (campus recreational facilities) does have a positive association with academic success, even while controlling for other important academic, financial, and social fit factors."

Department of Recreational Sports Webcam

UNIVERSITY RECREATION CENTER EXPANSION - 2012-03-13 09:18:45:70



This is a live view of the expansion construction located on the east bank of the University of Minnesota Twin Cities campus.

Layers of Data

Office of Institutional Research Performance Data
Term and Cum GPA, ACT score

Office of Institutional Research Demographics Data
College, Level, Major, Gender, Ethnicity, Age

Libraries Data (13 Access Points)
Circulation, Digital, Instruction, Reference, and Workstation

Layers of Data

Libraries Data (13 Access Points)
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A Word about Privacy

- In order to use OIR data, we must retain Internet ID
- For now, not aggregating anything about the library interaction other than count

This	But not this
Checked out X books	Titles
Attended X workshops	Which workshops
Reference interaction	Substance of interaction
Logged into library workstation	Date, location, duration
Used X digital resources of Y type	Which ones

Circulation

- Loans
 - Both new check-outs and renewals
 - Gathered by extracting data from Aleph transaction records
 - Internet ID and date of transaction
 - *About 45% = Renewal data*
- ILL Requests
 - Gathered by extracting data from ILLiad
 - ILLiad ID and date of transaction
 - *Not all IDs were U of M Internet IDs*

Digital

- Anytime someone logged into our digital resources with a U of M Internet ID
 - Database logins
 - E-Journal logins
 - E-Book logins
 - Website logins
- *Due to IP based authentication, we did not track on campus usage of databases, e-journals, and e-books*
 - Estimate - Missing 10-20% of our traffic
- This is only initial point of access, not actual usage

Reference

- Online reference transactions
 - Captured from QuestionPoint data
 - Some of the more difficult data to capture
 - *We did not capture ref desk traffic or research consultations*
- Peer Research consulting data
 - One-on-one assistance to develop research strategies
 - U of M student consultants

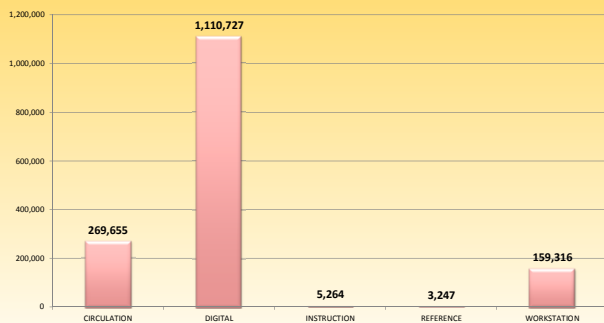
Instruction

- Workshop registrations
 - Captured by Drupal-based registration module
 - *Registration does not mean attendance*
- Intro to Libraries I workshop
- Intro to Libraries II workshop
- Course-integrated librarian instruction
 - Everyone registered for the course/section
 - *All students may not have been present*

Workstation

- U of M library workstation logins
 - Captured by Cybrarian application used to authenticate library users
 - *Does not include complete data from SMART Learning Commons*
- Reveals a flaw with regard to capturing “library as place”
 - Difficult to gather Internet IDs if students don't give them to us

Category Transactions



Library Data Layer

- 1,548,209 total transactions in all 5 categories
- 61,195 unique Internet IDs interacted with the Libraries in some identifiable way
- 37,674 people did something in only one of the five categories we measured
- 87 people did something in all five categories
- 9,324 people did only one of the 13 things we measured **and did it only once**

Questions we can't answer alone

- How many undergraduates used the library?
- How many graduate students?
- Do some colleges use the libraries more than others?
- How many potential users are there?
- Are students who use the libraries more successful?

OIR Demographics Layer

- Office of Institutional Research
 - OIR collects and analyzes data to provide information for institutional planning, policy formation, and decision-making
- Key library data numbers:
 - 1,548,209 total transactions in 5 categories
 - 61,195 unique Internet IDs

Layers of Data

Office of Institutional Research Demographics Data
College, Level, Major, Gender, Ethnicity, Age

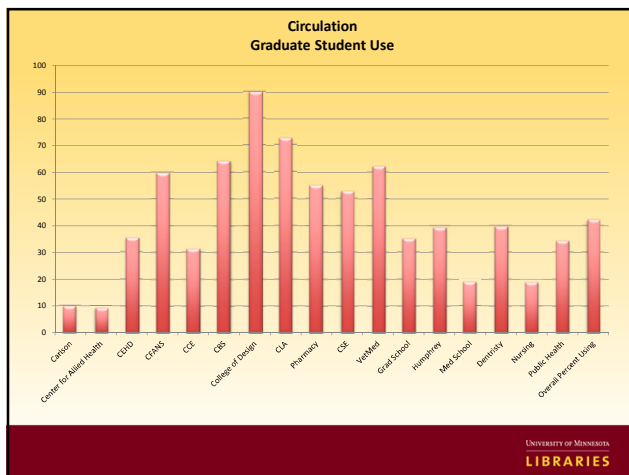
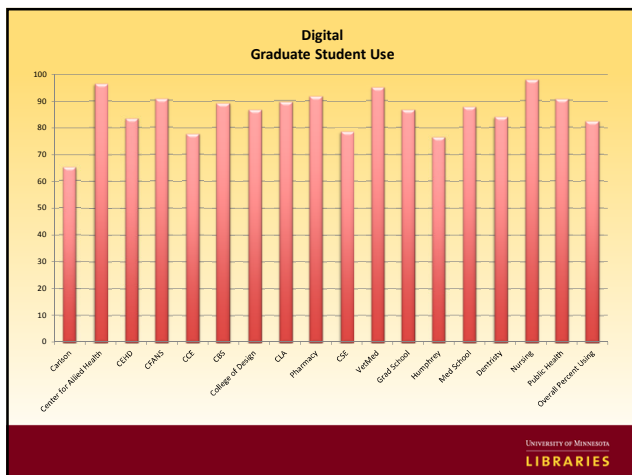
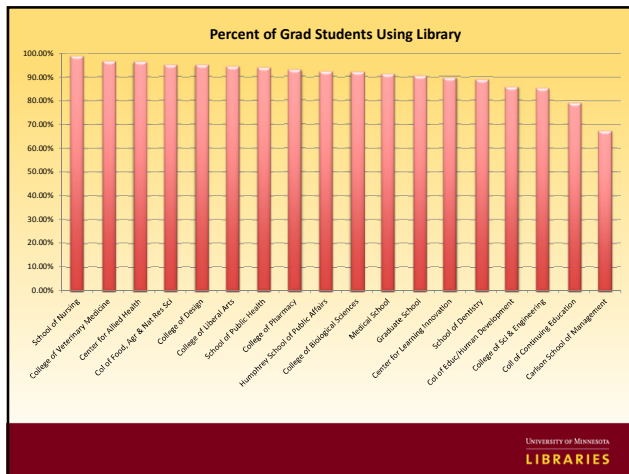
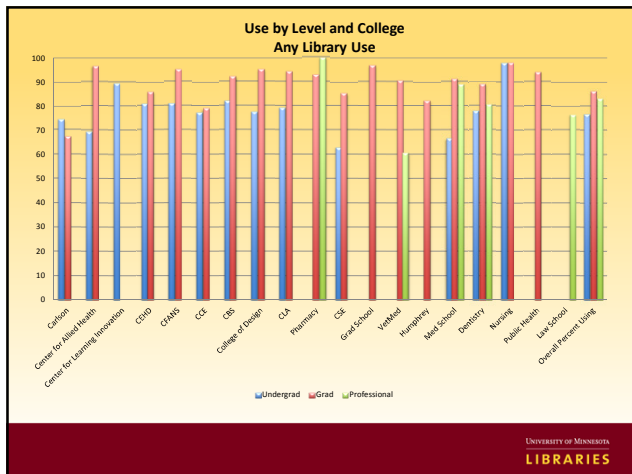
Libraries Data (13 Access Points)
Circulation, Digital, Instruction, Reference, and Workstation

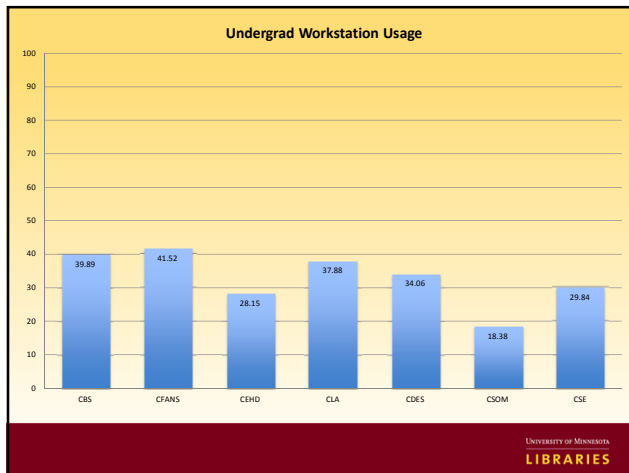
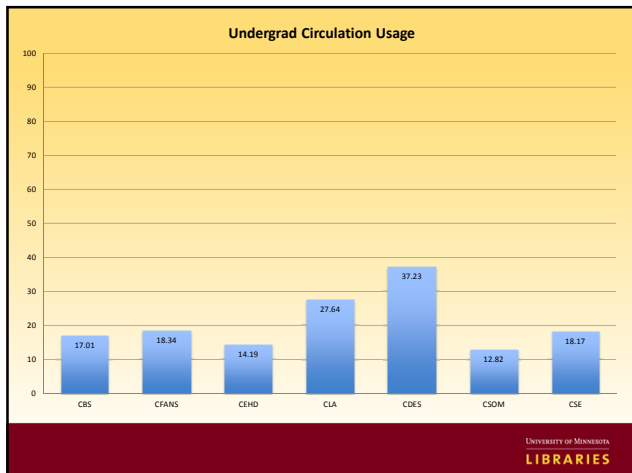
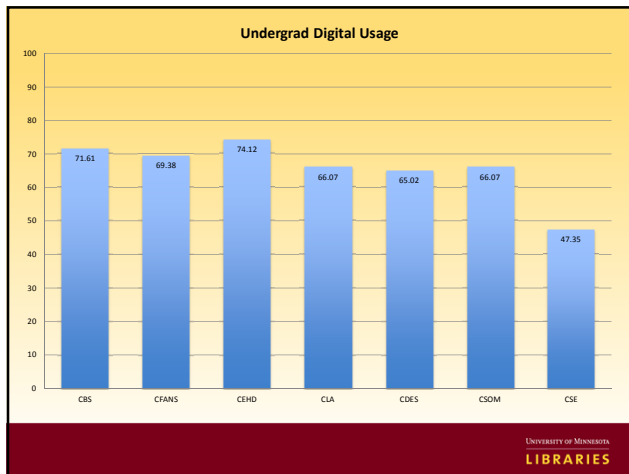
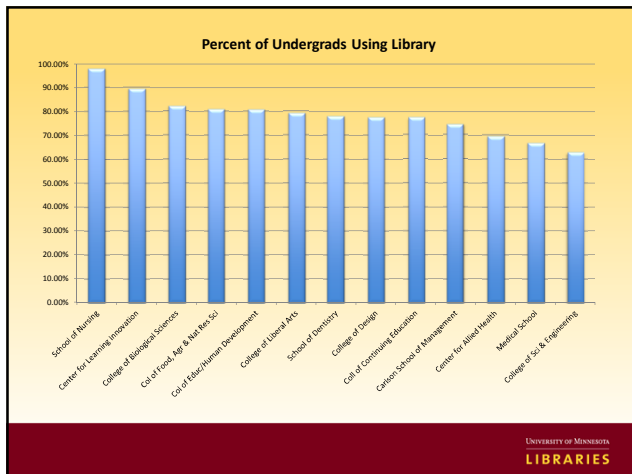
77%

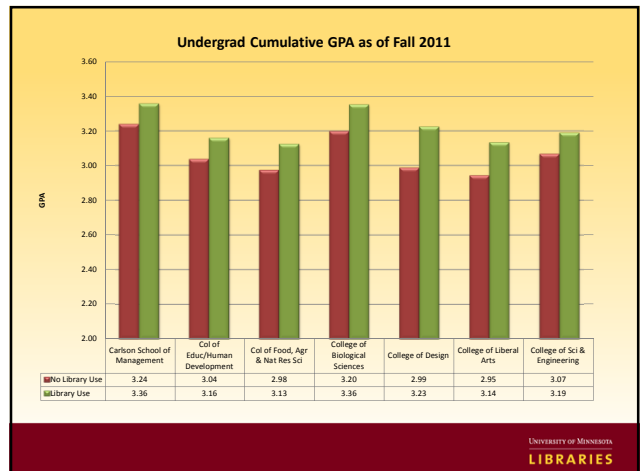
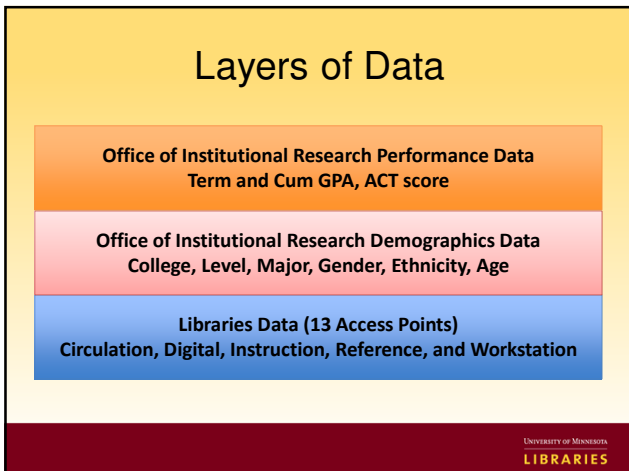
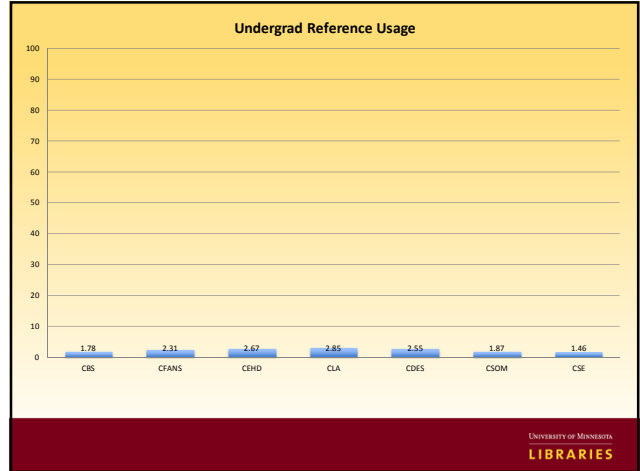
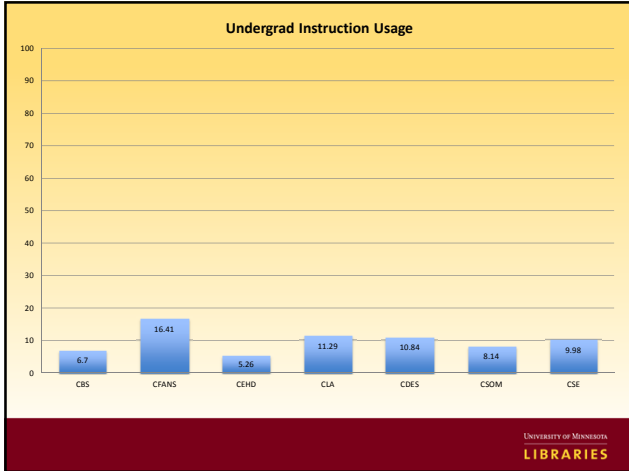
of Undergrads
made use of the Libraries
during the
Fall Semester 2011

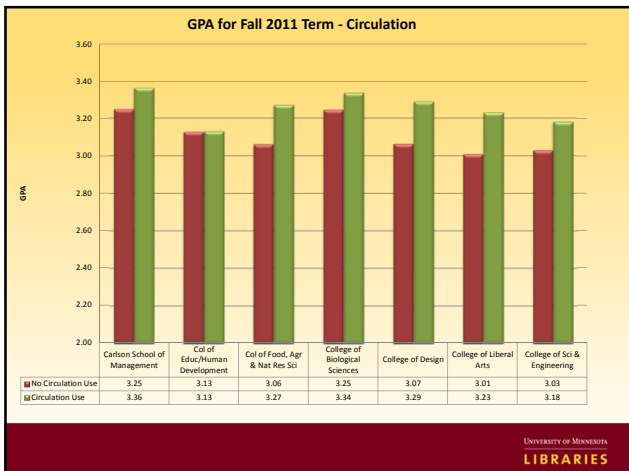
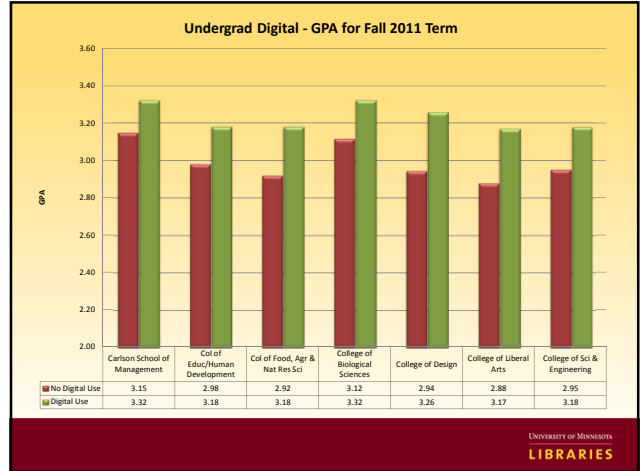
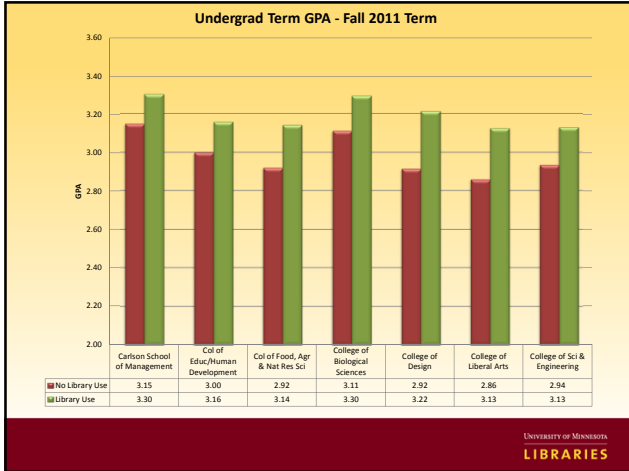
85%

of Grad Students
made use of the Libraries
during the
Fall Semester 2011
(including professional
schools)





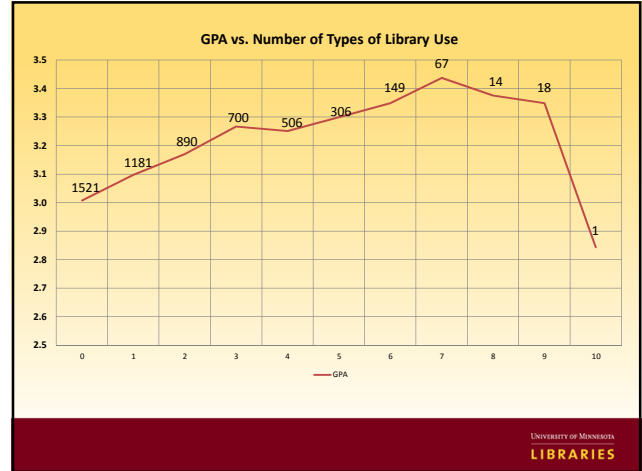
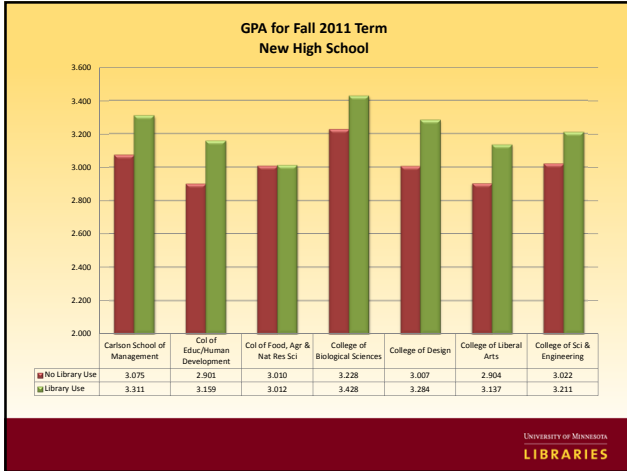




Inferential Analyses

- First-year students (non-transfer, $n = 5,368$)
- Examined two outcomes: first-semester grade point average and retention
- Many ways to slice the data:
 - Any use of the library
 - Type of library use
 - Frequency within type of library use

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First Analyses

- Measures:
 - Use of library (71.3%)
 - Demographics:
 - Gender (F = 47.8%)
 - Race/ethnicity (SOC= 18.4%)
 - Pell grant (22.3%)
 - Veteran status (.6%)
 - First-generation (25.9%)
 - College environment:
 - Freshmen seminar (27.8%)
 - Access to Success program (8.8%)
 - Dorm (85.2%)
 - Prior academics
 - ACT/SAT scores (M = 27.49)
 - AP credits (n = 3137, M = 8.73)
- Analyses:
 - Multiple linear regressions (gpa)
 - Logistic regression (retention)

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GPA Results

- Controlling for demographics, college environment, and academic variables:
 - Using the library one time was associated with a **.23 increase in students' gpa** holding other factors constant
 - A one-unit increase in *types of use* was associated with a **.07 increase in gpa**

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Additional GPA Results

- Controlling for the same variables, we examined using different types of sources at least once (dummy-coded):
 - Course integrated instruction: -.11
 - Database .14
 - Ejournal .10
 - Loan .11

Additional GPA Results

- Controlling for the same variables, we examined using different types of sources by frequency (so, a one-unit increase is associated with...):
 - Course integrated instruction: -.08
 - Database: .01
 - E-Journal: .004
 - Workstation: .006
 - Reference: .08
- *note: 12 outliers removed

Additional GPA Results

- Controlling for the same variables, we binned frequency for variables:
 - E-Journal 1-5: .17
 - E-Journal 6-10: .21
 - E-Journal 11-15: .23
 - E-Journal 16-20: .30
 - E-Journal 21-25: .31
 - E-journal over 25: .32

Retention Results

- Controlling for the same variables, we examined retention:
 - Students who used the library at least once were 1.54 times more likely to re-enroll
 - For every one-unit increase in the types of library use, students were 1.1 times more likely to re-enroll

Additional Retention Results

- Controlling for the same variables, we examined retention:
 - Students who had “Intro to Libraries 2” library instruction were 7.58 times more likely to re-enroll
 - A one-unit increase in database uses was associated with students being 1.03 times more likely to enroll

How

- Start Small
 - What are you collecting? What’s easy?
 - Loan, E-Resources, Workstation + ID
 - Maybe start with demographics
- Contact your “Office of Institutional Research”
 - Might be one person
- Or gain access yourself

How

- ACRL Value of Academic Libraries
 - <http://www.acrl.ala.org/value/>
- UK Library Impact Data Project study toolkit
 - <http://library.hud.ac.uk/blogs/projects/lidp/2011/09/28/library-impact-data-toolkit/>

Next steps

- More analysis by Libraries and OIR
- Keep going in the Spring Semester
 - Do we need more data and analysis going forward?
 - Do we collect the same data? Do we need to make an attempt to gather things we aren’t gathering now?

Questions?

Technical details? Contact us!

Resources

- ACRL Value of Academic Libraries: An initiative from the Association of College and Research Libraries, a division of the American Library Association.
<http://www.acrl.ala.org/value/>.
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