The Relationship of Electronic Reference & the Development of Distance Education Programs

Starr Hoffman
University of North Texas
QQML. May 27, 2010
Chania, Crete, Greece
current research question:
- were electronic reference services provided in response to distance education needs?

research questions still in-progress:
- did distance education evolve in response to the presence of electronic reference?
- are distance learning and/or electronic reference best predicted by technological progress (as indicated by the passage of time), or by other factors?
- is the presence or absence of electronic reference affected by:
  - library budget
  - size of library staff
NCES (National Center for Education Statistics)

http://nces.ed.gov/

U.S. government agency

measures education statistics at all levels

K – 12 (primary, secondary)

higher education
NCES IPEDS

- IPEDS = Integrated Postsecondary Education Data System
- survey of higher education institutions
- administered annually
- consistently tracked distance learning from 2002 - 2008
NCES ALS

ALS = Academic Libraries Survey

survey of academic libraries

administered every 2 years

available from 1998 - 2008
combining the datasets

- selection of institutional data downloaded:
  - eligibility for federal financial aid (Title IV)
  - 50 U.S. states
  - open to the public
  - primary focus is post-secondary education
  - resulting download = 1,733 institutions

- after downloading, combined the two datasets:
  - sorted by UNIT-ID
    - UNIT-ID = unique identifier assigned by NCES
    - used this identifier to manually combine data for each institution that appeared both in IPEDS and ALS
    - institutions that appeared in only one of the surveys were deleted
refining the sample

refined the data by limiting:

- by sector:
  - 4-year public institutions
  - 4-year private non-profit institutions
  - (excluded for-profits)
- degrees granted: at least Bachelor’s
- institution has a library or is affiliated with a library
- institution listed as “active” during all surveyed years
- degree-granting institutions
- 50 U.S. states
- nationally or regionally accredited
after data clean-up, 1,256 institutions in sample
(reduced from 1,733 in the original IPEDS download)

downloaded 55 variables
used 17 variables in this analyses
the remaining variables will be used in future analyses

annual library budget
number of librarians
total library staff size
(and others)
key variables

- **electronic reference:**
  - measured by ALS
  - variable in dataset = **LIBREFYN**

- **distance learning**
  - measured by IPEDS
  - special learning opportunities:
    - “distance learning opportunities (e-learning)”
  - variable in dataset = **ic_[year]_slo3**
correlation matrix (Pearson r’s)

<table>
<thead>
<tr>
<th></th>
<th>‘02 distance learning</th>
<th>‘04 distance learning</th>
<th>‘06 distance learning</th>
<th>‘08 distance learning</th>
<th>‘02 e-ref</th>
<th>‘04 e-ref</th>
<th>‘06 e-ref</th>
<th>‘08 e-ref</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘02 distance learning</td>
<td>1</td>
<td>.881</td>
<td>.784</td>
<td>.686</td>
<td>.158</td>
<td>.166</td>
<td>.130</td>
<td>.068</td>
</tr>
<tr>
<td>‘04 distance learning</td>
<td>.881</td>
<td>1</td>
<td>.865</td>
<td>.756</td>
<td>.156</td>
<td>.168</td>
<td>.124</td>
<td>.085</td>
</tr>
<tr>
<td>‘06 distance learning</td>
<td>.784</td>
<td>.865</td>
<td>1</td>
<td>.880</td>
<td>.118</td>
<td>.146</td>
<td>.092</td>
<td>.058</td>
</tr>
<tr>
<td>‘08 distance learning</td>
<td>.686</td>
<td>.756</td>
<td>.880</td>
<td>1</td>
<td>.092</td>
<td>.110</td>
<td>.077</td>
<td>.049</td>
</tr>
<tr>
<td>‘02 e-ref</td>
<td>.158</td>
<td>.156</td>
<td>.118</td>
<td>.092</td>
<td>1</td>
<td>.537</td>
<td>.437</td>
<td>.358</td>
</tr>
<tr>
<td>‘04 e-ref</td>
<td>.166</td>
<td>.168</td>
<td>.146</td>
<td>.110</td>
<td>.537</td>
<td>1</td>
<td>.566</td>
<td>.452</td>
</tr>
<tr>
<td>‘06 e-ref</td>
<td>.130</td>
<td>.124</td>
<td>.092</td>
<td>.077</td>
<td>.437</td>
<td>.566</td>
<td>1</td>
<td>.550</td>
</tr>
<tr>
<td>‘08 e-ref</td>
<td>.068</td>
<td>.085</td>
<td>.058</td>
<td>.049</td>
<td>.358</td>
<td>.452</td>
<td>.550</td>
<td>1</td>
</tr>
</tbody>
</table>
dependent variable: 2008 distance learning opportunities

predictors (independent variables):

- model 1:
  - (3 predictors)

- model 2:
  - model 1 + presence of e-reference services for each year
  - (7 predictors)

- model 3:
  - model 2 + Carnegie classification, Land Grant institution, institutional control (public, private), highest degree offered, level of highest degree, FT enrollment, total enrollment, institutional size, sector
  - (16 predictors)
For the dependent variable: distance learning opportunities in 2008...

- Best predictor = previous offering of the same opportunities (presence or absence of distance learning opportunities in previous years)
- In the 2nd model, electronic reference adds to the model’s predictive strength, but not much
- The 3rd model of 16 variables adds more predictive strength, but distance learning appears to be the strongest predictor
what does this mean? how is it useful?

- electronic reference is weakly correlated with distance learning

  - in response to research question #1:
    - no, it does not appear that electronic reference services (email, online chat) were provided in response to distance education needs
    - it seems likely that e-reference developed as a technological modification of a traditional service for traditional library users

- therefore, we should not expect that e-reference necessarily fulfills the needs of distance learners

  - e-reference is a passive service (users must actively seek help)
  - do distance learners need a more active service?
further planned statistical analyses

- additional research questions
  - did distance education evolve in response to the presence of electronic reference?
  - are distance learning and/or electronic reference best predicted by technological progress (as indicated by the passage of time)?
  - is the presence or absence of electronic reference affected by the library budget or by the size of the library staff?

- code data to reveal time-to-event as an additional variable

- expand years of study to 1998 – 2008
  - survey questions varied
  - may require more data manipulation to match variables robustly across years

- increase # of variables considered, to seek better predictors
any questions?

Starr Hoffman, MLS, MA
- Librarian for Digital Collections
- Government Documents Department
- UNT Libraries
- PhD Student, Higher Education, UNT
- starr.hoffman@unt.edu

find my presentations & CV here:
- http://geekyartistlibrarian.wordpress.com