

STATISTICS & MEASUREMENT

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RESHAPING ARL STATISTICS TO CAPTURE THE NEW ENVIRONMENT

The *ARL Statistics 2005–06* describe a familiar picture for research libraries in North America. The rising cost of serials is outpacing general inflation, the cost of monographs is hovering close to inflation, and salaries are increasing moderately more quickly than inflation.¹ The numbers of reference and circulation transactions have fallen from their levels of 10 years ago,² but more users participated in instructional services offered by the library.³ Librarians are becoming more involved in the instructional process and are increasingly an integral part of the teaching and learning infrastructure at their institutions.

Historically, the perceived strength of a research library has been manifested in the size of its research collection—number of volumes held, volumes added, and serial subscriptions have been key indicators of quality as well as quantity in the eyes of some stakeholders. In a world where the basic unit of research information was the printed scholarly monograph or the printed scholarly journal, it was a plausible notion that the more you have of these things the better equipped you may be in supporting high-quality research. One could argue that this is still the case. However, with the introduction of digital information and the dramatic changes in the nature of content, measuring the size of library collections cannot be what it used to be.

For example, in 2005–06, ARL libraries spent 43% of their materials budget on electronic resources—a total of \$431 million out of \$1.1 billion. This measure indicates the quantity and complexity that libraries are dealing with, but ultimately these figures cannot offer much when it comes to describing the quality of research, teaching, and learning at an institution. We need new measures to do this. ARL is beginning to address this need with important changes and additions to the ARL Statistics.

From Serial Subscriptions to Serial Titles

The unit cost of a serial subscription that ARL has tracked becomes relatively uninformative in a world where research libraries are increasingly offering access to the same serial title via multiple subscriptions and interfaces. The impact of electronic publishing on research library investment in serials was one of the forces behind a recommendation to move away from tracking serial subscriptions and towards tracking serial titles.⁴ The *ARL Statistics 2005–06* is the last time ARL will publish a unit cost for serial subscriptions.

The ARL Statistics and Assessment Committee determined that a new way of counting serials based on titles rather than subscriptions would better reflect the true scope of the serial content provided by research libraries and recommended that ARL transform the serial counts from subscriptions into titles. With the revised definitions for survey year 2006–07, ARL libraries are now asked to report unduplicated counts of serial titles. Dual-format titles will be reported as electronic-only in the *ARL Statistics 2006–07*, reflecting the current transition from print to electronic formats.⁵

The process of deriving serials title counts was tested over the period of a year and, although not perfect, it is feasible and practical in the short-term and much more meaningful in the long-term. ARL reported extensively on the testing done at Texas A&M

University and a detailed process for implementation is documented in the ARL Statistics Webcast, which is available on the ARL Web

site.⁶ Issues have emerged related to ISSN standardization practices, serials with no ISSN assignments, branch and department libraries that are independent from one another and hard to deduplicate, and difficulties regarding the implementation of new procedures. Collaborative discussion on how to address such issues is taking place through postings on the Library Assessment Blog⁷ and during in-person conversations at ARL Survey Coordinators workshops and meetings. ARL also provides an ARL Statistics FAQ online to help member libraries move into the new paradigm of counting serials.⁸

From Collections to Expenditures

In an environment where collections are morphing into terabytes, petabytes, exabytes, zettabytes, and yottabytes of information, it is questionable whether the units of volumes held, volumes added, and serial subscriptions can continue to offer the utility they had in the past. The challenge of measuring collections in new ways gave rise to the work of the ARL Task Force on New Ways of Measuring Collections.⁹ During its two-year investigation (see chronology sidebar), the task force systematically collected qualitative feedback through one-on-one interviews with each ARL library director and, during the second year of its operation, the task force deployed two top researchers in qualitative and quantitative methodologies, Yvonna Lincoln and Bruce Thompson. Two reports were produced for the ARL community: “Research Libraries as Knowledge Producers: A Shifting Context for Policy and Funding,”¹⁰ documenting the results of the qualitative inquiry, and “Some Alternative Quantitative Library Activity Descriptions/Statistics that Supplement the ARL

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CHRONOLOGY OF NEW WAYS OF MEASURING COLLECTIONS

December 2004

ARL established Task Force on New Ways of Measuring Collections, charged with articulating issues associated with the ARL Statistics and proposing changes to how ARL measures research library collections.

May 2005

Preliminary report on task force's work presented at ARL Business Meeting. Report based, in part, on interviews of 100 ARL library directors conducted by members of the task force chaired by Brinley Franklin (University of Connecticut).

October 2005

During ARL Membership Meeting, task force forwarded recommendations to ARL Board of Directors, who approved the following actions:

1. Revisit the foundations of the ARL statistics collected for membership purposes to determine if there are new ways of describing research library collections.
2. Simultaneously, develop a profile of the characteristics of a contemporary research library that could serve to complement other measures of library collections.
3. Then, determine/develop new meaningful measures to augment current ones to support the profile of a research library.

February 2006

ARL engaged Bruce Thompson and Yvonna Lincoln of Texas A&M University to conduct research projects to carry out recommendations 1 and 2, respectively.

October 2006

Thompson and Lincoln reported their research findings at ARL Membership Meeting.

February 2007

Board, task force, and Statistics and Assessment Committee chaired by Colleen Cook (Texas A&M) adopted Action Agenda for New Ways of Measuring Collections.

May 2007

Statistics and Assessment Committee proposed: calculating Expenditures-Focused Index for past three years and making it publicly available, changing serials definitions from subscriptions to titles, eliminating limited use questions and modifying ARL Supplementary Statistics, and initiating qualitative data gathering to develop profiles of member libraries.

October 2007

ARL published past three years of Expenditures-Focused Index (see <http://www.arl.org/stats/index/>).

October–December 2007

ARL offered training to explain changes in ARL Statistics instructions. ARL invited each Statistics and Assessment Committee member to submit a qualitative description of their library for review in spring 2008.

Logarithmic Index,"¹¹ documenting the results of the quantitative inquiry. Based on these reports, the task force forwarded a set of recommendations to the ARL Board of Directors that formed the following action agenda for the ARL Statistics and Assessment Committee during 2007:

1. Reserve use of the current Membership Criteria Index for those occasions when it is needed for consideration of membership issues.
2. Implement an Expenditures-Focused Index.
3. Use the new Expenditures-Focused Index for any public reports, such as in the *Chronicle of Higher Education*.
4. Begin to develop a Services-Based Index that combines the following three factors: collections, services, and collaborative relationships.
5. Revise definitions for collections-related data categories currently collected and experiment with a variety of new measures, including usage data, strength of collections, and service quality measures to develop a richer set of variables for potential inclusion in the three-factor Services-Based Index (see above).
6. Collect qualitative data to develop a profile of ARL member libraries.

The issue of fluctuating rankings in the ARL Membership Criteria Index previously published in the *Chronicle of Higher Education* gave rise to the systematic investigation of the nature of the five variables included in this Index: volumes held, volumes added (gross), serial subscriptions, total expenditures, and professional staff plus support staff. Through the quantitative analysis performed on the existing variables, alternative approaches were proposed. The first implementation was the development of an ARL Expenditures-Focused Index composed of four variables: total expenditures, expenditures for library materials, expenditures for professional salaries, and total professional staff plus support staff. For the first time this year, the *Chronicle of Higher Education* published the new ARL Expenditures-Focused Index.

The Expenditures-Focused Index calculates principal component scores and the analysis is based on all university member libraries' data (as compared with the Membership Criteria Index, which is based on the 34 founding members of the Association). The Expenditures-Focused Index is a summary measure of relative size of the investment made by ARL university members' parent institutions in their libraries. It has been calculated retrospectively beginning with data from 2002–03.¹²

Although similar to the ARL Membership Criteria Index in reflecting the investments made in research libraries, the ARL Expenditures-Focused Index is less affected by the rapidly changing context of library collections.

Developing New Indicators

The new Expenditures-Focused Index is only the first step in reshaping ARL statistics. ARL's historical descriptive statistics are being re-examined and adjusted to reflect the changing context of collection access and ownership.

The ARL Statistics and Assessment Committee is currently engaged in developing new quantitative and qualitative indicators and indices to describe research library collections and services and their contribution to research, teaching, and learning. In particular, the notion of a three-factor index describing collections, services, and collaborative relations is a viable proposed construct as tested with the existing variables. Yet more work is needed to develop robust variables that withstand the passing of time and allow us to describe the nature of libraries into the future. For example, collaborative relations currently are being measured with two variables: interlibrary borrowing and lending. Other new ways of sharing information like consortial purchasing, collaborative remote storage, and collaborative purchasing have emerged. We have a challenge in how we measure such concepts.

Key aspects of collaborative relations may be described only in qualitative terms in the future. For example, in the recently published commemorative volume of ARL's 75th anniversary, *Celebrating Research*, the editors include library overviews and profiles for the rare and special collections available for use in research libraries.¹³ The ARL Statistics and Assessment Committee members are moving forward with the challenge of constructing profiles for entire research libraries and rendering them as succinct descriptions that will be analyzed to determine the elements of standardized ways for measuring research libraries in both qualitative and quantitative terms.

The complexity of research libraries in the digital future is hard for us to capture in the beginning of the 21st century. We seek to define new ways for describing research libraries that will have the enduring value that has historically characterized the ARL Statistics.

For more information about the ARL Statistics or to download the data files or a PDF of the publication, visit <http://www.arl.org/stats/arlstat/>. To order print copies of the publication, send e-mail to ARL_Publications_pubs@arl.org.

- ¹ From 1985–86 through 2005–06, selected annual average percent increases were as follows: 7.5% annual rise in expenditures on serials, 5.3% annual rise in unit cost of serials, 3.1% annual rise in monograph expenditures, and 2.9% annual rise in unit cost of monographs. Over the same period, salary expenditures rose 4.5% annually and the Consumer Price Index rose 3.1% annually.
- ² The median number of reference transactions in 2005–06 was 67,697, as opposed to 155,336 in 1995–96, based on data received from 79 libraries. The median number of circulation transactions in 2005–06 was 466,403, as opposed to 560,244 in 1995–96, based on data received from 80 libraries.
- ³ The median number of presentations in an ARL library was 833 and 13,051 participants in 2005–06, as opposed to 719 presentations and 8,410 participants in 1995–96. These figures are based on 84 libraries reporting the number of presentations and 82 libraries reporting the number of participants in those presentations.
- ⁴ Martha Kyrillidou, "The Impact of Electronic Publishing in Tracking Research Library Investments in Serials," *ARL: A Bimonthly Report*, no. 249 (December 2006): 6–7, <http://www.arl.org/bm~doc/arlbr249serials.pdf>.
- ⁵ Richard K. Johnson and Judy Luther, "The E-Only Tipping Point for Journals" (Washington DC: ARL, 2007), http://www.arl.org/bm~doc/Electronic_Transition.pdf; Karla Hahn, "The State of the Large Publisher Bundle: Findings from an ARL Member Survey," *ARL: A Bimonthly Report*, no. 245 (April 2006): 1–6, <http://www.arl.org/bm~doc/arlbr245bundle.pdf>.
- ⁶ ARL Statistics Webcast, http://www.arl.org/arldocs/stats/statsevents/stats_webcast/120407ARL_final.html.
- ⁷ Library Assessment Blog, <http://libraryassessment.info/?cat=28>.
- ⁸ ARL Statistics FAQ, http://www.arl.org/bm~doc/statsfaq_dec3.pdf.
- ⁹ Task Force on New Ways of Measuring Collections, <http://www.arl.org/stats/aboutstats/tfnewways.shtml>.
- ¹⁰ Yvonna Lincoln, "Research Libraries as Knowledge Producers: A Shifting Context for Policy and Funding" (Washington DC: ARL, 2006), <http://www.arl.org/bm~doc/lincoln.pdf>.
- ¹¹ Bruce Thompson, "Some Alternative Quantitative Library Activity Descriptions/Statistics that Supplement the ARL Logarithmic Index" (Washington DC: ARL, 2006), http://www.arl.org/bm~doc/bruce_3mk.pdf.
- ¹² ARL Index, <http://www.arl.org/stats/index/>.
- ¹³ Philip N. Cronenwett, Kevin Osborn, Samuel A. Streit, eds., *Celebrating Research: Rare and Special Collections from the Membership of the Association of Research Libraries* (Washington DC: ARL, 2007), <http://www.celebratingresearch.org/>.

THE E-ONLY TIPPING POINT FOR JOURNALS

In December 2007, ARL published "The E-only Tipping Point for Journals: What's Ahead in the Print-to-Electronic Transition Zone," by Richard K. Johnson and Judy Luther. ARL commissioned the report to examine the issues associated with the migration from dual-format publishing toward e-only publication of journals.

The authors analyze librarian and publisher perspectives on format migration, considering drivers toward e-only publishing and barriers to change.

The report is available for free download from the ARL Web site at http://www.arl.org/bm~doc/Electronic_Transition.pdf.