


The Research Literature of Academic Librarianship: A Comparison of *College & Research Libraries* and *Journal of Academic Librarianship*

Gregory A. Crawford

College & Research Libraries (C&RL) and the *Journal of Academic Librarianship* (JAL) are the two primary journals in the field of academic librarianship. This study examines articles appearing in C&RL and JAL so as to evaluate these journals on the basis of type of articles published, structure of the articles, types of statistics used, and data collection methods used. The results indicate that C&RL publishes significantly more research articles than does JAL. Other results show that surveys are the primary form of data collection and that descriptive statistics are used much more frequently than inferential statistics. The percentage of research articles included in these journals has increased since earlier studies.

henever the literature of academic librarianship is discussed, one often hears that the field lacks a good research base. Over time, many authors have called for more research to fill this gap.¹ In 1990, ALA published *Academic Libraries: Research Perspectives*, which examined both basic and applied research on academic librarianship.² The book also included two chapters that presented views on what research is needed by the field.³

The Association of College and Research Libraries (ACRL) has gone so far as to publish a list of desired topics for research on academic librarianship. In 1995, the ACRL College Libraries Section's Research for College Librarianship Committee presented its "Research Agenda for College Librarianship."⁴ The committee

developed a list of questions for which research related to college librarianship was needed. The goals of the document were "to identify research areas of specific interest to college librarianship," "to offer librarians and graduate students who are new to research an agenda for college librarianship," and "to provide examples of questions in each research area that are meaningful and that deal with the realities facing college librarianship."⁵ The agenda included twenty-nine specific research questions that the committee felt needed substantive research.

In a recent editorial in JAL, Peter Hernon and several members of the editorial board discussed research opportunities in the field of library and information science (LIS).⁶ The resulting issues included consortial arrangements, services,

Gregory A. Crawford is Head of Public Services in Heindel Library at Penn State Harrisburg; e-mail: gac2@psu.edu.

decision making, and the position of libraries within their larger environment. Many called for model building and both basic and applied research.

According to various rankings of journals in the field of LIS, the two journals that dominate the field of academic librarianship are *C&RL* and *JAL*.⁷ These journals have as one of their goals the dissemination of research that addresses problems in academic librarianship.

This article explores the research literature of academic librarianship by examining the nature of the articles included in *C&RL* and *JAL*. Specifically, it examines the type of articles published, the structure of the articles, the types of statistics used, and the data collection methods used.

Literature Review

Examinations of the LIS literature are abundant. Of special concern has been the nature of citation patterns among articles both within the field and in fields outside librarianship, the types of authorship of articles, the content of articles, and the statistical methods used by authors.

The relationship between journals in library and information science and communication has been examined in detail in a series of articles and chapters by Christine L. Borgman, Ronald E. Rice, and their colleagues.⁸ Their articles show that LIS, as a distinct field, cites other fields regularly, including communication. In contrast, other fields cite LIS only rarely.

The content of LIS research articles from thirty-seven journals also has been scrutinized by Kalervo Jarvelin and Pertti Vakkari.⁹ Their results showed that 54 percent of the articles could be classified as research articles, whereas 46 percent were professional articles (including reviews and bibliographies). Jarvelin and Vakkari found that the predominant areas of research, accounting for almost 60 percent of the research articles, were LIS activities and information storage and retrieval. In the articles they examined, three main

types of research strategies were used: survey, argumentation/criticism, and systems analysis and design. The combining of several data collection methods in one study was rare, as was the use of qualitative methods.

Lois Buttar studied the content of articles in sixteen LIS journals.¹⁰ She found that over 70 percent of the articles could be classed as "nonresearch." Surveys were the predominant method of collecting data, although documentary evidence for historical study, content analysis, and citation analysis also were used frequently. She did not examine the type of statistics employed.

Kathy B. Enger, Georgia Quirk, and Andrew J. Stewart researched the use of statistics in LIS articles.¹¹ They examined twenty-five core journals published in 1985 and found that academic librarians relied heavily on descriptive statistics, whereas library school faculty often used inferential statistics. They also discovered that less than 21 percent of the articles in the study used descriptive statistics, only 11 percent used inferential statistics, and almost 70 percent used no statistics at all. Barbara C. Brattin examined the types of quantitative methods used in LIS research.¹² Her study included articles from six journals, including *C&RL* (but not *JAL*). Of the 186 articles she studied, sixty-eight (37%) used descriptive statistics and only seventeen (9%) used inferential statistics. According to Brattin's data, the *Journal of the American Society for Information Science* had the highest percentage of "research" articles with 71 percent representing either empirical research or model building, whereas 50 percent of the articles in *C&RL* could be labeled as "research." In his statistical profile of *C&RL*, Paul Metz found that articles appearing in recent issues of the journal used quantitative methodologies more frequently, especially for the display of information, when compared to articles appearing in previous decades.¹³

Suhasini Kumar examined 312 articles from ten LIS journals, including *JAL*.¹⁴ Specifically, Kumar studied subject mat-

ter, authorship, and research methods used. Most articles (72%) were nonresearch based. Among the research articles, the most frequently used research method was the survey, accounting for 46 percent of the total methods used. Of the articles appearing in *JAL* during the time period studied, 80 percent were classified as nonresearch based.

A variety of articles have examined authorship characteristics of LIS articles. John Budd and Charles A. Seavey looked at the authorship of articles in thirty-six LIS journals over a five-year period.¹⁵ They found that the vast majority of authors contributed only one paper over the time period studied. In addition to article content, Buttar examined author gender, geographic location, occupation, and affiliation as well as the number of authors per paper for articles appearing in sixteen LIS journals.¹⁶ More recently, James L. Terry updated previous studies by Gloria S. Cline and Metz.¹⁷ He studied gender, institutional affiliation, and extent of coauthorship of articles appearing in *C&RL* for the years 1989–1994. Mickey Zemon and Alice Harrison Bahr studied authorship of articles appearing in both *C&RL* and *JAL* between 1986 and 1996.¹⁸ They also studied the motivation of publishing. Interestingly, more than half the respondents to their survey rated tenure as the least important motivating factor.

Methodology

This research sought to determine the differences, if any, between articles appearing in *College & Research Libraries* and the *Journal of Academic Librarianship*. The specific focus of the study was type of article (i.e., research or nonresearch), structure of the articles, presentation of graphic information, use of statistics, and data collection methods employed. According to its author instructions:

College & Research Libraries includes articles in all fields of interest and concern to academic and research libraries. Well-written manuscripts on

all aspects of academic and research librarianship will be considered. Manuscripts may include research studies, case studies, descriptive narratives of successful and unsuccessful ventures, thoughtful discussions of issues in librarianship, and other suitable subjects.¹⁹

JAL's guidelines for contributions states:

The *Journal of Academic Librarianship*, an international and refereed journal, publishes articles that focus on problems and issues germane to college and university libraries. *JAL* provides a forum for authors to present research findings and, where applicable, their practical applications and significance; analyze policies, practices, issues, and trends; speculate about the future of academic librarianship; and present analytical bibliographic essays and philosophical treatises.²⁰

Thus, both journals seek to publish a variety of articles, both research and nonresearch.

Both journals are published six times a year. For this study, articles appearing for two years (1996 and 1997) were analyzed. Table 1 provides a breakdown of the number of articles by year for each journal. Only regular peer-reviewed articles were included in the study. Regularly occurring features such as book reviews and columns were excluded from consideration. One issue of *JAL* (November 1997) was excluded from consideration because it was devoted to a symposium on geographic information systems and to regular columns and book reviews.

Each article was coded for type of article; presence of a literature review, methodology section, results section, discussion section, and conclusion section; use of tables, charts, or graphs; inclusion of a specified hypothesis, null hypothesis, significance level, independent and dependent variables, the study population, and the sampling method used; use of de-

TABLE 1

Number of Articles per Year	1996	1997	Total
College & Research Libraries	36	34	70
Journal of Academic Librarianship	28	26	54
Total	64	60	124

square test was not performed on these data due to the number of cells with a frequency of less than five. The predominant article type in *C&RL* is the quantitative

scriptive and inferential statistics; and type of data collection methodology.

The coding sheet was developing using previous studies of LIS article content and the *Publication Manual of the American Psychological Association*.²¹ The APA manual lists three major types of articles: empirical studies, review articles, and theoretical articles. The coding sheet provided space for a more detailed analysis of both empirical and review articles, and added coding for both opinion articles and "other" for articles that were difficult to classify. The APA manual also stresses the importance of the manuscript format and calls for specific sections to be included, especially the introduction, method, results, and discussion. Also included on the coding sheets were the literature review and the conclusion sections. In addition, the coding sheet provided space to list the type of descriptive statistics, inferential statistics, and data collection methodologies used in the articles examined.

For this research, the null hypothesis states that there is no difference between the two journals in the types of articles being published. All analyses were performed using SPSS/PC+ software. To test differences between the two journals, chi-square tests were used. A significance level of $\alpha = .05$ was established for determining the significance of any inferential statistics.

Results

College & Research Libraries and the *Journal of Academic Librarianship* have different patterns of article content, as shown in table 2. The chi-

empirical article, accounting for over 64 percent of articles published during the time period studied. The article type with the second highest total was the "other" category (14.3%). These articles included discussions of issues of importance to librarians, literature reviews to build models, and critiques and reviews of case studies.

In contrast, less than 25 percent of the articles in *JAL* were classified as quantitative empirical and the "other" category (29.6%) represented the predominant type of article published. Among these articles were how-to articles, project reports, and model and issue discussions. Opinion articles were a close third, accounting for over 20 percent of the articles published.

The preceding data were analyzed after reclassifying the articles into only two categories: research and nonresearch. The results show a significant difference between *JAL* and *C&RL* ($X^2 = 15.8, p < .001$). As shown in table 3, *C&RL* included eighteen nonresearch articles and fifty-two research articles, compared to *JAL* with thirty-three nonresearch articles and twenty-one research articles.

A literature review is considered to be

TABLE 2

Article Type	<i>C&RL</i>	<i>JAL</i>
Opinion	4	11
Empirical: Qualitative	2	5
Empirical: Quantitative	45	13
Empirical: Case study	5	3
Review: Trend	1	2
Review Policy	2	4
Review: Bibliographic	1	0
Other	10	16

a sine qua non of most research articles. According to the data generated by this study, however, a specific literature review is often missing from the articles in *C&RL* and *JAL*, although relevant literature may be reviewed in the introduction and throughout the article. Within *C&RL*, 46 percent of the articles included a specific literature review (often called something slightly different), whereas only 15 percent of articles in *JAL* included such a review. Thus, most of the articles in both journals lacked this "standard" feature (*C&RL*, 54%; *JAL*, 85%). The difference between the two journals was significant ($X^2 = 13.3$, $p < .001$).

The APA manual states that a separate method section is recommended. As with the literature review, there was a significant difference between *C&RL* and *JAL* ($X^2 = 19.3$, $p < .001$). *C&RL* articles were much more likely to include a methods section (66%) than were *JAL* articles (26%).

A results section is mandated according to the APA manual. Several articles in both journals combined the results section with the discussion section. Other articles used slightly different terminology for the results section (e.g., findings) but were coded as having a results section. As with the literature review and methods section, there was a significant difference between *C&RL* and *JAL* ($X^2 = 24.7$, $p < .001$). Most articles in *C&RL* (67%) contained a specific results section, compared to only 22 percent of the *JAL* articles.

The APA manual stresses the need for a discussion section. Most of the articles in this study (73%) did not provide a distinct discussion section, and there was no significant difference between the two journals.

Although not required by the APA manual, a conclusion or summary section is generally added to most articles, and most articles in the study (73%) did include such a section. There was no significant difference between *C&RL* and *JAL*.

The provision of charts, graphs, and tables can be a great help to the readers

of articles. Of the articles studied, the majority (67%) provided such assistance. However, the journals differed significantly in their use of such illustrative matter ($X^2 = 9.8$, $p < .01$). *C&RL* articles were more likely to contain tables, charts, or graphs than were *JAL* articles (79% compared to 52%).

Hypotheses and null hypotheses form the bases of empirical research. Within these two journals, only ten articles specifically stated their research hypotheses and none gave null hypotheses. Many articles did provide research questions they were addressing.

Hypotheses and null hypotheses form the bases of empirical research. Within these two journals, only ten articles specifically stated their research hypotheses and none gave null hypotheses.

Even fewer articles ($n = 6$, 5%) specified the significance level for any inferential statistics that would be used.

Another standard feature of research articles is to specify explicitly any independent and dependent variables included in the study. There was a significant difference between *C&RL* and *JAL* in the specification of variables ($X^2 = 11.5$, $p < .001$). Of the articles appearing in *C&RL*, thirty-eight (54%) provided variable specification whereas only thirteen (24%) of those in *JAL* did so. This is reflective of the greater number of research-oriented articles in *C&RL*.

Population and sampling methodology are important features for understanding the relevance of research articles. Among the articles studied, forty-six (66%) in

TABLE 3

Article Type	<i>C&RL</i>	<i>JAL</i>	Total
Nonresearch	18	33	51
Research	52	21	73
Total	70	54	124

$X^2=15.8, p<.001$

C&RL discussed the population of interest in the study, but only twelve (22%) in *JAL* included this information. The difference was significant ($X^2 = 23.2$, $p < .001$). A similar result was obtained for sampling. All the *C&RL* articles that discussed the population also discussed sampling. For *JAL*, more articles provided information on sampling ($n = 16$, 30%) than on the population as a whole. The difference between the two journals was significant ($X^2 = 15.9$, $p < .001$).

C&RL articles ($n = 44$, 63%) were much more likely to contain descriptive statistics than were *JAL* articles ($n = 16$, 30%), resulting in a significant difference ($X^2 = 13.5$, $p < .001$). The major type of statistic used was a simple reporting of percentages, which was provided in forty-nine articles (40%). Means were given in twenty-two articles (18%), and standard deviations were given in only five (4%). One article presented a median, and none gave modes or variances.

By far, the most popular methodology was the survey or questionnaire, which was used by a total of forty-two articles (34%).

Inferential statistics were used in only twenty-six (21%) of the articles in the study. There was a significant difference between *C&RL* and *JAL* ($X^2 = 5.6$, $p < .05$). Twenty articles (29%) in *C&RL* used at least one inferential statistic, compared to only six articles (11%) in *JAL*. Correlations and chi-squares were the most popular inferential statistics, appearing in eight articles (6.5%) each. ANOVAs were used in seven articles (6%), and t-tests were used in four (3.3%). Multiple regression was used in three articles (2.4%), and a variety of more specialized tests were used in eleven (9%).

Data collection methods were speci-

fied in a total of seventy-four articles (60%), with a significant difference between the two journals ($X^2 = 17.2$, $p < .001$). Of the articles in *C&RL*, fifty-three (76%) included a description of the data collection methodology. In *JAL*, twenty-one articles (39%) included this information. By far, the most popular methodology was the survey or questionnaire, which was used by a total of forty-two articles (34%). Documentary evidence was used in twenty-one articles (17%), and interviews were used in eight (6.5%). Other methods such as the Delphi technique, shelf surveys, and citation data were used in individual articles.

Discussion and Conclusion

The data presented in this study indicate that at the current time, *C&RL* can be considered the primary publisher of research-based articles in academic librarianship. However, this in no way lessens the importance and impact of *JAL*. Both journals publish a mix of articles (research and nonresearch) that can provide both professional stimulation and practical information to academic librarians. Moreover, both journals strive to fulfill their goals of providing high-quality articles to their readers.

When compared to earlier research, a higher percentage of research articles are now being published (for *JAL*, 20% versus 39% in this research; for *C&RL*, 50% versus 74% in the current research).²² The growth in the percentage of research articles in these two journals that represent academic librarianship indicates that librarians have heard the call for an increased level of research and are responding positively. Such a result is important to academic librarianship if, indeed, it wishes to be perceived as having a firm foundation based on research.

Notes

1. Charles H. Busha, *Research Methods in Librarianship* (New York: Academic Pr., 1980); Pierce Butler, *An Introduction to Library Science* (Chicago: Univ. of Chicago Pr., 1933); Herbert Goldhor,

An Introduction to Scientific Research in Librarianship (Urbana, Ill.: Univ. of Illinois Pr., 1972); Jesse Shera, "Darwin, Bacon, and Research in Librarianship," *Library Trends* 13 (1964): 141-49.

2. Mary Jo Lynch, *Academic Libraries: Research Perspectives* (Chicago: ALA, 1990).

3. Malcolm Getz, "Analysis and Library Measurement," in *Academic Libraries: Research Perspectives*, ed. Mary Jo Lynch (Chicago: ALA, 1990), 192-214; William G. Potter, "Insurmountable Opportunities: Advanced Technology and the Academic Library," in *Academic Libraries: Research Perspectives*, ed. Mary Jo Lynch (Chicago: ALA, 1990), 165-91.

4. Research for College Librarianship Committee, "Research Agenda for College Librarianship," *College & Research Libraries News* 56 (1995): 470-71+.

5. *Ibid.*, 470.

6. Peter Hernon, "Editorial: Going beyond 'Same Old, Same Old,'" *Journal of Academic Librarianship* 23 (1997): 169-76.

7. David F. Kohl and Charles H. Davis, "Ratings of Journals by ARL Library Directors and Deans of Library and Information Science Schools," *College & Research Libraries* 46 (1985): 40-47; Mary K. Sellen, "Bibliometrics in Information Science: A Citation Analysis of Two Academic Library Journals," *College & Research Libraries* 45 (1984): 129-32; Robert Swisher and Peggy C. Smith, "Journals Read by ACRL Academic Librarians, 1973 and 1978," *College & Research Libraries* 43 (1982): 51-58.

8. Christine L. Borgman and Ronald E. Rice, "The Convergence of Information Science and Communication: A Bibliometric Analysis," *Journal of the American Society for Information Science* 43 (1992): 397-411; Ronald E. Rice, "Hierarchies and Clusters in Communication and Library and Information Science Journals, 197-1987," in *Scholarly Communication and Bibliometrics*, ed. Christine L. Borgman (Newbury Park, Calif.: Sage, 1990), 138-53; Ronald E. Rice, Christine L. Borgman, D. Bednarski, and P. J. Hart, "Journal-to-Journal Citation Data: Issues of Validity and Reliability," *Scientometrics* 15 (1989): 257-82; Ronald E. Rice, Christine L. Borgman, and B. Reeves, "Citation Networks of Communication Journals, 1977-1985: Cliques and Positions, Citations Made and Citations Received," *Human Communication Research* 15 (1988): 256-83; Ronald E. Rice and Gregory A. Crawford, "Context and Content of Citations between Communication and Library and Information Science Articles," in *Between Communication & Information*, ed. Jorge R. Schement and Brent D. Ruben (New Brunswick, N.J.: Transaction, 1993), 189-217.

9. Kalervo Jarvelin and Pertti Vakkari, "Content Analysis of Research Articles in Library and Information Science," *Library and Information Science Research* 12 (1990): 395-421.

10. Lois Buttar, "Analyzing the Library Periodical Literature: Content and Authorship," *College & Research Libraries* 52 (1991): 38-53.

11. Kathy B. Enger, Georgia Quirk, and Andrew J. Stewart, "Statistical Methods Used by Authors of Library and Information Science Journal Articles," *Library and Information Science Research* 11 (1989): 37-46.

12. Barbara C. Brattin, "Quantitative Methods in Library and Information Science Literature: Descriptive vs. Inferential Statistics" (Master's thesis, Kent State University, 1991). ERIC Document Reproduction Service No. ED 339 396.

13. Paul Metz, "A Statistical Profile of *College & Research Libraries*," *College & Research Libraries* 50 (1989): 42-47.

14. Suhasini Kumar, "Content Analysis of Journal Literature in Library and Information Science from June 1994-June 1995" (Master's thesis, Kent State University, 1995). ERIC Document Reproduction Service No. ED 401 937.

15. John Budd and Charles A. Seavey, "Characteristics of Journal Authorship by Academic Librarians," *College & Research Libraries* 51 (1990): 463-70.

16. Buttar, "Analyzing the Library Periodical Literature."

17. James L. Terry, "Authorship in *College & Research Libraries* Revisited: Gender, Institutional Affiliation, Collaboration," *College & Research Libraries* 57 (1996): 377-83; Gloria S. Cline, "*College & Research Libraries*: Its First Forty Years," *College & Research Libraries* 43 (1982): 208-32; Metz, "Analysis and Library Measurement."

18. Mickey Zemon and Alice Harrison Bahr, "An Analysis of Articles by College Librarians," *College & Research Libraries* 59 (1998): 422-32.

19. "About *College & Research Libraries*," *College & Research Libraries* 58 (1997): 105.

20. "Guidelines for Article Contributions," *Journal of Academic Librarianship* 23 (1997): 78.

21. American Psychological Association, *Publication Manual of the American Psychological Association* (Washington, D.C.: APA, 1994).

22. Buttar, "Analyzing the Library Periodical Literature;" and Kumar, "Content Analysis of Journal Literature in Library and Information Science" from June 1994-June 1995."