DOCUMENT RESUME

ED 291 378 IR 052 276

AUTHOR Eaton, Gale; Burgin, Robert
TITLE An Analysis of the Research Articles Published in the Core Library and Information Science Journals of 1983.
PUB DATE [83]
NOTE 43p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Authors; Classification; Comparative Analysis; Data Analysis; *Information Science; *Library Research; *Library Science; Longitudinal Studies; Measurement Techniques; Multidimensional Scaling; Periodicals; Reliability; Research Design; *Research Methodology; Sample Size
IDENTIFIERS *Journal Articles

ABSTRACT

This study by two Ph.D. students in library science reviewed a systematic sample of the research literature in library and information science published in 62 core library journals in 1983 to order to identify substantive articles and compare their findings on research methodologies and trends with those reported in a similar study performed in 1980. A sample of 250 articles was selected from the 1,912 substantive articles identified. Each of 61 research articles selected from the sample was then classified by research methodology, subject areas, statistical methods, and author affiliations. The final analysis and comparison led to the following two conclusions: (1) the core of journals under consideration was expanded in the present study, and therefore suggested possible differences in quality as well as quantity of the literature studied; and (2) the study was based on a sample, rather than on all the substantive articles published in core journals during a given year, indicating that less confidence could be associated with the findings on research methodologies. Suggestions for future work in this area include the application of multidimensional scaling techniques in determining the subject areas for the articles, and characterization of the articles by institutional setting rather than by subject. Appended materials include a listing of the 61 research articles together with the research methodologies used, subject areas covered, and statistical methods, and 13 tables displaying analyses of the data on the core journals used and on the articles studied. (CGD)

An Analysis of the Research Articles Published in the Core Library and Information Science Journals of 1983

Gale Eaton,

Ph. D. student in Library Science,
University of North Carolina at Chapel Hill
Chapel Hill, NC 27514

Robert Burgin,

Ph. D. student in Library Science,
University of North Carolina at Chapel Hill,
and Lecturer,
School of Library and Information Science,
North Carolina Central University,
Durham, NC 27707

Introduction

In recent years, several scholars have analyzed the content and methodology of research literature in library and information science. Some have focused on the dissertation literature (e.g., LaBorie and Halperin [1976]). Others have examined journal articles published during given periods (Saracevic and Perk [1973]; Van de Water, Surprenant, Genova, and Atherton [1976]; Peritz [1980]; Nour [1983]). Such studies, periodically replicated, make possible the identification of trends in research. In general, however, existing studies have used different definitions, procedures, and classifications of subject matter and method. Their results cannot be conveniently compared, and replication is at best partial.

The purpose of the present paper is to describe a systematic sample of substantive articles published in core library journals during 1983. The research articles in the sample have been identified, and each one has been further characterized by research methodology, subject areas, statistical methods, and author affiliations.

A secondary purpose is to report findings in such a way that will permit longitudinal comparison with past studies. This goal was only partially achieved. The research methodology was classified according to a scheme employed by Nour, who examined 1,404 articles from the 1980 issues of forty-one core journals. Nour, in turn, had adopted the categories with little change from Peritz, who studied the research published in core journals during 1950, 1960, 1965, 1970, and 1975. This makes possible a comparison of prevalent methodologies in the field over a thirty-three year

period. Categorization of subject areas, however, does not replicate that of previous studies, as it was felt that definitions might differ from study to study, and the resulting comparability would be misleading.

Determining Core Journals

The first step was to determine the core journals for the field of library and information science. Core journals were defined as English-language journals that appeared in at least two of the following sources: Library and Information Science Abstracts (LISA), Library Literature, Science Citation Index (SCI), and Social Science Citation Index (SSCI). Table 1 lists the sixty-seven journals that satisfied those conditions and the indexes that covered each journal. Only two journals, Bulletin of the Medical Library Association and Journal of Documentation, were indexed by all four sources. Twenty were indexed by three sources; forty-five, by only two sources.

Table 1 here

Five journals were dropped from the core list because the 1983 issues or the journals themselves were not received by the library of the School of Library Science at the University of North Carolina at Chapel Hill. These were Canadian Journal of Information Science, Law Library Journal, Library Science with a Slant to Documentation, Methods of Information in Medicine, and Ontario Library Review. The remaining sixty-two journals made up the core journals in library and information science for the study.

The definition of core differed slightly from those of Peritz and Nour. Peritz based her core on LISA, Library Literature, SSCI, Information Science Abstracts, Referativnyi Zhurnal: Informatika, and Current Awareness - Library Literature. She selected journals that met the following conditions: covered by SSCI and four of the tools if the journal dealt with information science; covered by SSCI and three of the tools if the journal did not deal with information science; covered by four of the tools and not by SSCI if the journal was not devoted to a specialized field outside librarianship or was not a state or regional society publication or a newsletter. Peritz also excluded weekly and annual publications and abstracting journals; in addition, she included two journals that had appeared in 1975 and were therefore not adequately covered by her sources. Her core contained thirty-nine journals, thirty-one of which are included in the present study.

Nour used three sources (LISA, Library Literature, and SSCI) and selected journals that were included in two of the three. She found forty-one journals, of which all but Library Technology Reports are included in this study. The primary difference between Nour's methodology and that of the present study was the use here of SCI, to ensure the inclusion of significant journals on information science. As it was, only one journal, Scientometrics, was added by virtue of its listing in SCI. (Methods of Information in Medicine, also included in SCI and one other source, was omitted because it was not available.)

A second methodological difference accounts for the larger core size in this study. Nour excluded from consideration state, regional, and foreign journals. Inclusion of these journals had an effect on the

results. Publications that were not included in Nour's core contributed twenty research and sixty-five non-research articles to the sample; 23.5 per cent of them were research, bringing down the overall percentage of research articles only slightly. Of those research articles, eleven (55 per cent) were surveys or experiments on libraries, and one was a survey on the library public, making a total of 60 per cent that used survey methodology, as opposed to 59.1 per cent in the entire sample. However, of the eighty-five articles, six research articles were contributed by Scientometrics; three research and two non-research articles came from Database, which began publication in 1978 and was not indexed in the 1980 Library Literature. (All of the Database and two of the Scientometrics research articles were surveys or experiments on libraries.) Expansion of the core does not appear to have had much effect on the make-up of the sample, but exclusion of the foreign and local publications, following Nour's example, would have increased the proportion of research articles to 28.4 per cent of the sample.

Determining Research Articles

All of the substantive articles in the issues for 1983 were then counted. As in Nour's study, substantive articles were defined to exclude news items, book reviews, and correspondence. For the total number of substantive articles in each of the core journals for 1983, see Table 1.

From the universe of 1,912 substantive articles, a sample was selected for further study. The sample size necessary for $p = .05$ and a 5 per cent margin of error was found to be 246.9; the chosen sample size was therefore 250 articles.

The next step was to check the 250 sample articles and to identify the research articles. Following Peritz and Nour, research was defined as "any inquiry which is carried out, at least to some degree, by a systematic method with the purpose of eliciting some new facts, concepts, or ideas." (Peritz, p. 251) A pretest of ten articles ensured consistency in the application of this definition by four team members.

The Research Articles

Of the 250 sample substantive articles, 61 were classified as research and received further study by the authors. The citations for those 61 articles are listed in Appendix 1, along with the research methodology, subject area, and statistical methodology associated with each one.

Following Nour's classification, research methodologies - "the design of the systematic procedures and methods by means of which an inquiry is approached and carried out" (Nour, p. 16) - were categorized as follows:

1. Theoretical/analytical research
2. Information system design
3. Surveys on the library public
4. Surveys or experiments on libraries, services, operations, librarians
5. Bibliometric studies
6. Content analysis
7. Secondary analysis
8. Historical methodologies
9. Descriptive bibliography
10. Comparative studies of regions or systems using methods other

than the above

11. Other and multiple

The last category was used whenever an article used two or more methodologies.

Classifying the articles by subject was more difficult. The ideal classification scheme would have consisted of clear, mutually exclusive categories, such that each category was of equal weight, each category dealt with one significant problem, and no significant problem in the field was omitted from the classification. Such a scheme proved elusive, and an alternative was devised by reviewing the articles first, then developing a list of subjects treated by those articles, and finally compressing them into a general list of subject areas. In the end, thirteen subject areas were listed:

1. Cataloging/classification
2. Circulation
3. Citation
4. Collections
5. Cooperation
6. Education for librarianship
7. Library buildings
8. Library history
9. Management
10. Other
11. Reference services
12. Retrieval/representation

13. User instruction

The boundaries between these subject areas were sometimes nebulous, and in an effort to ensure consistency, somewhat arbitrary private definitions were used. For instance, the articles assigned to "Retrieval/ representation" focused on the technical design of reference services, while those assigned to "Reference services" were more concerned with the use of those services by library patrons; the problems overlapped, but the techniques were different. No article was assigned more than one subject heading.

The final variable listed for each article was the statistical methodology. Again, a list of statistical methodologies was derived from an examination of the articles themselves. These included the following twelve:

1. Chi-square
2. Cluster analysis
3. Correlation
4. Enumeration
5. F ratio
6. Factor analysis
7. Mean/median/standard deviation
8. Multiple regression
9. None
10. Other
11. Percentage
12. T test

All methodologies used by a given article were assigned to that article. Enumeration was defined as the listing of numbers of items under consideration. For example, in Crawford's article (see Appendix 1, Number 8), she enumerated data concerning the number of health sciences libraries in various types of library and in various regions of the country in 1969 and 1979. Since she also expressed her data in terms of percentage change from 1969 to 1979, the article was assigned both enumeration and percentage as its statistical methodologies.

Findings - Articles

A total of sixty-one articles, or 24.4 per cent of the sample, were evaluated as being research articles. By comparison, Nour found the same figure (24.4 per cent) for her 1980 core library journals. Peritz determined the percentage of research articles for selected years between 1935 and 1975. A comparison of these figures is given in Table 2.

Table 2 here

Based on these data, the percentage of research articles in the core journals has held steady since Nour's 1980 data, which had shown a drop from Peritz's 1975 figure of 31.0 per cent. Peritz had used percentage increase figures to show that the rate of growth in the percentage of research articles in core journals had waned from 1970 to 1975 (as compared to 1965 to 1970). Perhaps the slowing of the rate of growth became the decrease reflected in Nour's data, a decrease that has now leveled off. Or

perhaps, as Nour has suggested, the differences in the data "may be a reflection of changes in editorial policies, increased emphasis on publishing by professionals (which is not required to be research), the different journals included in the ... studies, a stricter interpretation of 'research,' etc." (Nour, p. 30)

Tables 3 and 4 list the core journals that were reflected in the sample and the number of research and non-research articles that appeared in each. Table 3 lists the journals in alphabetical order, and Table 4 lists them in rank order by the number of research articles. College and Research Libraries ranked first in the number of research articles, with eight research and no non-research articles. Scientometrics followed, with six research articles and no non-research articles. The five top ranked journals accounted for twenty-five of the sixty-one research articles in our sample, 41.0 per cent.

Tables 3, 4 here

Findings - Research Articles

As noted above, each of the sixty-one research articles was classified according to the article's research methodology, subject area, and statistical methodology. The original sample size of 250 justified relative confidence in the conclusion that 24.4 per cent of the articles in our core journals were research. Since there are only sixty-one research articles, the following results must be accepted more cautiously.

Data on the research methodologies employed by the research articles in our sample are summarized in Table 5. The majority of the articles (52.5 per cent) employed surveys or experiments on libraries, services, operations, or librarians. Bibliometric studies (9.8 per cent) and information system design (8.2 per cent) followed.

Table 5 here

In addition to the percentages for the 1983 articles, Nour's 1980 percentages and those of Peritz for 1950 through 1975 are listed. By comparison, the 1983 data indicated a higher percentage of articles using the survey methodology - up from Peritz's 31.6 per cent and Nour's 35.8 per cent to 52.5 per cent. Large declines were seen in several methodologies: theoretical/analytical research (from 21.2 per cent in Nour's 1980 data to 6.6 per cent in the 1983 data), secondary analysis (7.0 per cent to 1.6 per cent), and historical methodologies (7.3 per cent to 3.3 per cent). The decline in historical methodologies followed a trend noted by Nour. She also found that bibliometrics had increased, but the 1983 data showed that this methodology had leveled off. On the other hand, these data reflected some growth in descriptive bibliography (.3 per cent to 3.3 per cent) since Nour's study.

The subject areas dealt with in the research articles are outlined in Table 6. Articles on collections were the largest category, with 18.0 per cent of the sample research articles. Reference services and retrieval/ representation followed with 13.1 per cent each. The use of a different

classification precludes the comparison of 1983 subject data with those of Nour and Peritz.

Table 6 here

Table 7 compares the research methodologies used in the sample research articles by subject areas. For example, seven of the eight articles on reference services used the survey methodology, as did seven of the eleven articles on collections. As might be expected, the two articles using a historical methodology were on the subject of library history, and four of the six articles employing bibliometric studies were on the subject of citations.

Table 7 here

Statistical methodologies, determined for each of the articles, are presented in Table 8. Just over half the articles (50.8 per cent) used enumeration; nearly half employed percentages (45.9 per cent). Over one-fifth of the articles (21.3 per cent) used no statistical methodology, while 18.0 per cent employed mean, median, or standard deviation. Of the more rigorous statistical methodologies, correlation was found the most often, in 9.8 per cent of the research articles.

Table 8 here

Findings - Bibliographic Services

The data on research articles and core journals were used to evaluate the four indexes of library and information science literature employed in determining core journals. Table 9 lists data showing the total number of core journals covered by each index, the total number of research and non-research articles in the sample from the core journals covered by that index, and what might be roughly termed "precision" and "recall" figures for each index.

Table 9 here

"Precision" may be taken to mean the ratio of research articles in core journals indexed by a source to the total number of articles from the sample that appeared in core journals covered by a particular index. Thus, LISA indexed journals providing a total of 187 of the sample articles. Of that total, thirty-nine articles - or 20.9 per cent of the total 187 - were research articles. SCI produced the highest "precision" figure - 65.0 per cent.

"Recall" represents the ratio of the total number of research articles in core journals indexed by a particular source to the total number of research articles in our sample. Thus the core journals indexed by LISA provided thirty-nine of the sixty-one research articles in our sample, or

63.9 per cent. The highest "recall" figure was Library Literature's 86.9 per cent.

As expected, there were trade-offs between "recall" and "precision." While SCI's "precision" was high, the fact that it indexed only three of our core journals led to a low "recall" of 21.3 per cent. On the other hand, Library Literature's high "recall" figure of 86.9 per cent included a large number of non-research articles and thus its "precision" was lower, 22.2 per cent. SSCI was able to provide a higher "precision" (31.9 per cent) than either LISA or Library Literature while maintaining a "recall" figure (83.6 per cent) that was higher than LISA's and comparable to that of Library Literature.

Findings - Authors

Since information was available about the authors of the sample articles, a number of comparisons could be drawn between authors of research articles and authors of non-research articles. For example, did the number of authors connected with an article vary with the research nature of the article? The null hypothesis was that the number of authors would be unrelated to whether the article was research or not. A chi-square test showed that this null hypothesis could be rejected; the results are summarized in Table 10. The percentage of research articles tends to increase with the number of authors; thus while research articles made up 19.1 per cent of articles with one authors, they represented 45.1 per cent of those with two or more authors. Likewise, 37.7 per cent of the research articles were written by two or more authors, while only 14.8 per cent of the non-research articles involved more than one author. A phi

test showed a positive but weak relationship between the research nature of the article and whether it was written by one or by more than one authors. The phi measure obtained was .244, where the upper limit of phi for a 2 x 2 table is 1. (Palumbo, 85)

Table 10

In addition to data on the number of authors for each article, the affiliation of most of the authors could be obtained from author information accompanying the articles. Author affiliations for both research and non-research articles are listed in Table 11 and, ranked by the total number of research articles, in Table 12. (Note that an article with multiple authors will be listed for each author's affiliation.)

Tables 11, 12 here

Twenty-three authors of research articles were identified as librarians in university libraries; eighteen, as members of library school faculties. These two affiliations accounted for 44.1 per cent of all authors of research articles in our sample.

School affiliations for the library school faculty in our sample are listed in Table 13. Only two schools of library and information science accounted for more than one research article - the University of Illinois and the University of Sheffield, which produced two research articles each.

Table 13 here

Conclusions

It had been hoped in this paper to report both the ratio of research to non-research articles in the literature and the relative frequency with which research methodologies were used, in such a way that the findings from a systematic sampling of 1983 journal articles could be compared with some confidence to Nour's findings for 1980. In the final analysis, however, any such comparisons must be made with great caution, for at least two reasons. First, the core of journals under consideration was expanded to include many which Nour would have omitted. This does not seem to have affected the results dramatically, but it does suggest possible differences in quality as well as quantity of the literature studied. Second, this study was based on a sample, rather than on all the substantive articles published in the core journals during a given year. Although the original sample was large enough to allow some confidence in the conclusion that 24.4 per cent of the substantive articles in 1983 core journals were research, the sample of research articles was smaller, and accordingly, less confidence can be associated with the findings on research methodologies.

The determination of subject areas for the articles is an area for further work. Ideally, perhaps, such a scheme would be developed apart from or prior to the study of the articles themselves. Such a procedure would seem to enhance objectivity and transferability. Our classification

was devised after the fact, based on an examination of the articles. Nour used a list developed by LaBorie and Halperin, who did not explain how it was derived. They in turn cited Saracevic and Perk, who constructed a similar classification scheme, which they described as "empirical and rough" without further explanation. Possibilities for the development of a more objective list of subject areas for research articles include the use of subject terms assigned to those articles by online data bases or by computer programs that automatically assign subject terms to documents.

Such an approach would permit the application of multidimensional scaling techniques, whereby the research articles could be mapped into a multidimensional space based on correlations between pairs of articles in terms of shared methodology, shared problem area, and a number of other objective attributes. One could then determine the number of dimensions needed to describe research articles adequately and could derive interpretations of those defining dimensions.

Characterization of the articles by institutional setting would permit comparison to Peritz's study. Classification by organization, rather than by subject, is relatively objective, and Peritz used it, in conjunction with separate counts of articles or particular problems, instead of a comprehensive classification scheme. She found "only a handful" of research papers on public or school libraries, and of the user studies she counted, most were about professional rather than ordinary library users. In general, Peritz concluded that research in library and information science tends to focus on the profession itself rather than on the public it serves. Speculating on the reasons for both this concentration and the rapid increase in research during the quarter century she studied, Peritz

proposed an economic explanation that might best be investigated historically. The 1983 findings on author affiliation, however, parallel her institutional findings; if both variables were recorded for the same sample of literature, the correlation would probably be high. This may mean only that academics have more economic incentive to write research than do authors with other affiliations and that they are more likely to research their own settings than other, less convenient ones.

It is unlikely that the perfect subject classification will be developed soon. New approaches to the problem, however valuable, sacrifice by their very novelty at least some points of comparison with previous studies. Since studies have not been systematically replicated, any new study would gain in value if, like Peritz's, it sampled the literature of past years at intervals. Some additional insight might be gained by applying any new classification to literature that has already been classified by an older scheme and by studying the differences.

For example, we believe that the likeliest explanation of our difficulties in assigning articles to existing subject classifications was uncertainty about the definitions and criteria of previous researchers. It is just possible, however, that some of the difficulty may arise from developments in the literature itself: there may be more research in new or hybrid specialties that don't quite fit the old categories. Such developments could perhaps be detected by a re-analysis of the earlier literature.

Any study of this type combines quantitative with qualitative methods. Although the systematic reporting of percentages may give this paper an objective look, the classification process is subjective and slippery.

Future studies in this area will be more meaningful as clearer, more simply applied classifications are developed - and applied often enough to assure, if not complete objectivity, at least intersubjectivity.

Acknowledgement

We wish to acknowledge Dr. Susan Steinfirst and Dr. Judith Wood for their astute suggestions and assistance during the data gathering stage of this project. We also acknowledge the guidance and assistance of Dr. William Shaw throughout this paper.

Appendix 1. Research Articles with Research Methodologies, Subject Areas, and Statistical Methodologies

(* indicates pretest articles that were judged to be research)

1. Klaus B. Hendriks and Brian Lesser. "Disaster Preparedness and Recovery: Photographic Materials." American Archivist 46 (Winter 1983): 52-68.
Comparative studies
Collections
Enumeration

2. James W. Geary. "Catholic Archives in a Public Institution: A Case Study of the Arrangement Between Kent State University and the Diocese of Youngstown, Ohio." American Archivist 46 (Spring 1983): 175-182.
Surveys or experiments on libraries, etc.
Collections
None

3. John Martyn. "Three Specialised Data Centers." Aslib Proceedings 35 (June/July 1983): 258-277.
Surveys or experiments on libraries, etc.
Reference services
None

4. Toby Burrows. "Western Australian Government Publications." Australian Academic and Research Libraries 14 (September 1983): 137-143.
Surveys or experiments on libraries, etc.
Collections
Enumeration, Percentages

5. D. Warwick Dunstan. "Building Review 1980 & 1981." Australian Library Journal 32 (May 1983): 18-44.
Surveys or experiments on libraries, etc.
Library buildings
Enumeration, Mean/median/standard deviation, Percentages

6. George W. Black, Jr. "Core Journal Lists for Behaviorally Disordered Children." Behavioral & Social Sciences Librarian 3 (Fall 1983): 31-38.
Bibliometric studies
Collections
Enumeration

7. Susan J. Feinglos. "MEDLINE at BRS, DIALOG, and NLM: Is There a Choice?" Bulletin of the Medical Library Association 71 (January 1983): 6-12.
Surveys or experiments on libraries, etc.
Library buildings
Enumeration

8. Susan Crawford. "Health Sciences Libraries in the United States: I. Overview of the Post-World War II Years." Bulletin of the Medical Library Association 71 (January 1983): 16-20.
Historical methodologies
Library history
Enumeration, Percentages

9. David Bishop, Justine Roberts, and Nancy W. Zinn. "Bibliographic Control of Medical Illustrations - A Case Study in the Development of a Library Subsystem: I. Project Planning." Bulletin of the Medical Library Association 71 (July 1983): 263-268.
Information system design
Cataloging/classification
None

10. Richard B. Pride, Linda Keiter, and Kathleen Bub. "Development of a State-wide Health Sciences Information Network: A Cooperative Effort." Bulletin of the Medical Library Association 71 (July 1983): 287-298.
Surveys or experiments on libraries, etc.
Cooperation
Enumeration

11. Rajia C. Tobia, David A. Kronick, and Gary D. Harris. "A Clinical Information Consultation Service at a Teaching Hospital." Bulletin of the Medical Library Association 71 (October 1983): 396-399.
Surveys or experiments on libraries, etc.
Reference services
Enumeration, Percentages

12. Adele M. Fasick and John P. Wilkinson. "To Buy or Not to Buy: An Analysis of Some School Library Purchasing." Canadian Library Journal 40 (April 1983): 67-73.
Surveys or experiments on libraries, etc.
Collections
Enumeration, Percentages

13. Margaret Ann Wilkinson. "Not Really Unloved or Unwanted." Canadian Library Journal 40 (December 1983): 365-370.
Surveys or experiments on libraries, etc.
Cooperation
None

14. Annabelle Corrick. "Marketing as Applied through Publishing: Converting Theory to Practice." College and Research Libraries 44 (January 1983): 38-45.
Surveys or experiments on libraries, etc.
Management
Enumeration

15. Georgiana K. N. Nwagha. "Deployment of Professional Librarians: A Barrier to the Availability of Publications in a Developing Country." College and Research Libraries 44 (March 1983): 168-172.
Surveys or experiments on libraries, etc.
Education for librarianship
Chi-square, Enumeration, Percentages

16. Gemma De Vinney and Patricia Tegler. "Preparation for Academic Librarianship: A Survey." College and Research Libraries 44 (May 1983): 223-227.
Surveys or experiments on libraries, etc.
Education for librarianship
Mean/median/standard deviation, Percentages

17. Nathan M. Smith and Veneese C. Nelson. "Burnout: A Survey of Academic Reference Librarians." College and Research Libraries 44 (May 1983): 245-250.
Surveys or experiments on libraries, etc.
Management
Correlation, Mean/median/standard deviation, T test

18. Paul M. Anderson and Ellen G. Miller. "Participative Planning for Library Automation: The Role of the User Opinion Survey." College and Research Libraries 44 (July 1983): 245-254.
Surveys on the library public
Circulation
Enumeration, Percentages

*19. Becky Bolo Gray and Rosalee McReynolds. "A Comparison of Academic Librarians with and without Faculty Status in the Southeast." College and Research Libraries 44 (July 1983): 283-287.
Surveys or experiments on libraries, etc.
Education for librarianship
Percentages

20. Russ Davidson, Connie Capers Thorson, and Diane Stine. "Faculty Status for Librarians: Querying the Troops." College and Research Libraries 44 (November 1983): 414-420.
Surveys or experiments on libraries, etc.
Management
Enumeration, Percentages

21. George V. Hodowanec. "Literature Obsolescence, Dispersion, and Collection Development." College and Research Libraries 44 (November 1983): 421-443.
Bibliometric studies
Collections
Enumeration, Percentages

22. Ann J. Van Camp and Catherine Seeley. "A Comparison of the Currency of the BRS Pre-Med Database with MED-LINE, SciSearch and ISI/BIOMED." Database 6 (February 1983): 28-35.
Surveys or experiments on libraries, etc.
Reference services
Enumeration, Percentages

23. Carl S. Hantman. "Statistical Methodology in the Social Sciences: Searching the Literature on DIALOG." Database 6 (February 1983): 46-53.
Surveys or experiments on libraries, etc.
Reference services
Enumeration, Mean/median/standard deviation, Percentages

24. Alex Byrne. "How to Lose a Nation's Literature: Database Coverage of Australian Research." Database 6 (August 1983): 10-17.
Surveys or experiments on libraries, etc.
Reference services
Enumeration, Mean/median/standard deviation, Percentages

25. Stuart Glogoff. "Communication Theory's Role in the Reference Interview." Drexel Library Quarterly 19 (Spring 1983): 56-72.
Theoretical/analytical research
Reference services
None

26. M. R. Aderibigbe. "Classification of Government Publications at the University of Lagos Library in Nigeria." Government Publications Review 10 (January/February 1983): 109-116.
Information system design
Cataloging/classification
None

27. Gary W. North. "Maps for the Nation: The Current Federal Mapping Establishment." Government Publications Review 10 (July/August 1983): 345-360.
Surveys or experiments on libraries, etc.
Collections
Enumeration, Percentages

28. Dennis D. McDonald, Eleanor Jo Rodger, and Jeffrey L. Squires. "Findings of the IFLA International Study on the Copyright of Bibliographic Records in Machine-Readable Form." IFLA Journal 9 (1983): 205-221.
Surveys or experiments on libraries, etc.
Cataloging/classification
Percentages

29. Marcelle Beaudiquez. "Retrospective National Bibliographies in the Context of Universal Bibliographic Control." IFLA Journal 9 (1983): 309-316.
Surveys or experiments on libraries, etc.
Cataloging/classification

Enumeration

30. Jane Levine. "Cooperative Reference in an Illinois Library System." Illinois Libraries 65 (April 1983): 252-260.
Surveys or experiments on libraries, etc.
Reference services
Correlation, Percentages

31. Eben Kent. "A Microcosmic Examination of Microcomputers Resources in Illinois." Illinois Libraries 65 (October 1983): 507-510.
Surveys or experiments on libraries, etc.
Collections
Enumeration

32. Doreen V. Parker. "Logical Data Analysis for Library Systems Design." Information Bulletin of LASIE 14 (November/December 1983): 2-23.
Information system design, Surveys or experiments on libraries, etc.
Retrieval/representation
None

33. Martin Dillon, John Ulmschneider, and James Desper. "A Prevalence Formula for Automatic Relevance Feedback in Boolean Systems." Information Processing and Management 19 (1983): 27-36.
Theoretical/analytical research, Information system design
Retrieval/representation
Mean/median/standard deviation, Percentages

34. Pirkko Pietilainen. "Local Feedback and Intelligent Automatic Query Expansion." Information Processing and Management 19 (1983): 51-58.
Theoretical/analytical research, Information system design
Retrieval/representation
Percentages

35. Reginald P. Coady. "Testing for Markov-Chain Properties in the Circulation of Science Monographs." Information Processing and Management 19 (1983): 279-284.
Surveys or experiments on libraries, etc.
Circulation
Chi-square

36. Sue Stone. "The Antecedents and Outcomes of Interlibrary Loan Requests." Interlending and Document Supply 11 (October 1983): 153-156.
Surveys on the library public
Cooperation
Percentages

37. D. Goldberg and Dieter Rumpel. "Recognition of Abbreviated Context-Words by Man." International Classification 10 (1983): 143-146.
Theoretical/analytical research
Retrieval/representation
Other

38. Edward G. Summers, Joyce Matheson, and Robert Conry. "The Effect of Personal, Professional, and Psychological Attributes, and Information Seeking Behavior on the Use of Information Sources by Educators." JASIS 34 (January 1983): 75-85.
Surveys or experiments on libraries, etc.
User instruction
Enumeration, F ratio, Factor analysis, Mean/median/standard deviation, Multiple regression

39. Chandra G. Prabha. "Some Aspects of Citation Behavior: A Pilot Study in Business Administration." JASIS 34 (May 1983): 202-206.
Bibliometric studies
Citation
Cluster analysis, Correlation, Enumeration

40. Ronald C. Toifel and Wesley D. Davis. "Investigating Library Study Skills of Children in the Public Schools." Journal of Academic Librarianship 9 (September 1983): 211-215.
Surveys on the library public
User instruction
Correlation, F ratio, Mean/median/standard deviation, T test

41. David J. Craik, Avil Kumar, and George C. Levy. "MOLDYU: A Generalized Program for the Evaluation of Molecular Dynamics Models Using Nuclear Magnetic Resonance Spin-Relaxation Data." Journal of Chemical Information and Computer Science 23 (February 1983): 30-38.
Information system design
Retrieval/representation
None

42. Ronald C. Read. "A New System for the Designation of Chemical Compounds. 1. Theoretical Preliminaries and the Coding of Acrylic Compounds." Journal of Chemical Information and Computer Science 23 (August 1983): 135-149.
Information system design
Retrieval/representation
None

*43. Raymond Kilpela. "A Profile of Library School Deans, 1960-81." Journal of Education for Librarianship 23 (Winter 1983): 173-192.
Secondary analysis
Education for librarianship
Enumeration, Percentages

44. A. Neelameghan and Ma. Divina Pascua-Cruz. "Online Access to Remote Data Bases: An Experiment in User Sensitization." Journal of Information Science 7 (October 1983): 107-115.
Surveys on the library public
Retrieval/representation
Enumeration

45. Norman Roberts and Gillian Bull. "Professional Education and Practice: A Survey of Past Students." Journal of Librarianship 15 (January 1983): 29-46.
Surveys or experiments on libraries, etc.
Education for librarianship
Percentages

46. Debora Shaw and Charles H. Davis. "The Concept of Entropy in the Arts and Humanities." Journal of Library and Information Science 9 (October 1983): 135-148.
Theoretical/analytical research
Retrieval/representation
Percentages

47. William Smith. "The Parochial Library of Steeple Ashton in Wiltshire." Library History 6 (1983): 97-113.
Descriptive bibliography
Library history
None

*48. D. Joleen Bock. "Two-Year College LRC Buildings." Library Journal 108 (December 1, 1983): 2219-2221.
Surveys or experiments on libraries, etc.
Library buildings
Enumeration, Mean/median/standard deviation

49. Mary Biggs. "Women's Literary Journals." Library Quarterly 53 (January 1983): 1-25.
Descriptive bibliography
Collections
None

50. J. Periam Danton. "University Library Book Budgets, 1860, 1910, and 1960: Introduction to an Inquiry." Library Quarterly 53 (July 1983): 384-393.
Historical methodologies
Library history
Enumeration

51. Alan Seal. "Experiments with Full and Short Entry Catalogues: A Study of Library Needs." Library Resources and Technical Services 27 (April/June 1983): 144-155.
Information system design, Surveys or experiments on libraries, etc.
Cataloging/classification
Enumeration, F ratio, Percentages

52. Richard V. Janke. "BRS/After Dark: The Birth of Online Self-Service." Online 7 (September 1983): 12-29.
Surveys or experiments on libraries, etc.
Reference services
Enumeration, Percentages

53. J. A. Large and C. J. Armstrong. "The Microcomputer as a Training Aid for Online Searching." Online Review 7 (January 1983): 51-59.
Information system design
Education for librarianship
None

54. Maisa Krokfors. "Work with Music in Children's Libraries - A Finnish Approach." Scandinavian Public Library Quarterly 16 (1983): 99-100.
Surveys or experiments on libraries, etc.
Collections
None

55. Hildrun Kretschmer. "Representation of a Complex Structure Measure for Social Groups and Its Application to the Structure of Citations in a Journal." Scientometrics 5 (January 83): 5-30.
Theoretical/analytical research
Citation
F ratio, Other

56. Hildrun Kretschmer. "The Reflection of Lotka's Law in the Structure of Citations of a Journal." Scientometrics 5 (March 1983): 85-92.
Bibliometric studies
Citation
Percentages

57. J. P. Rushton, H. G. Murray, and S. V. Paunonen. "Personality, Research Creativity, and Teaching Effectiveness in University Professors." Scientometrics 5 (March 1983): 93-116.
Surveys or experiments on libraries, etc.
Other
Correlation, Enumeration, Mean/median/standard deviation

*58. C. H. Davis. "Institutional Sectors of 'Mainstream' Science Production in Subsaharan Africa, 1970-1979: A Quantitative Analysis." Scientometrics 5 (May 1983): 163-175.
Bibliometric studies
Citation
Other

59. A. Schubert, S. Zsindely, and T. Braun. "Scientometric Analysis of Attendance at International Scientific Meetings." Scientometrics 5 (May 1983): 177-187.
Surveys or experiments on libraries, etc.
Other
Correlation, Enumeration, Percentages

60. Katherine W. McCain. "The Author Cocitation Structure of Macroeconomics." Scientometrics 5 (September 1983): 277-289.
Bibliometric studies
Citation
Cluster analysis

61. Paul Robert Green. "The Performance of Subscription Agents: A Detailed Survey." Serials Librarian (Winter 1983): 7-22.
Surveys or experiments on libraries, etc.
Collections
Enumeration, Mean/median/standard deviation, Percentages

Table 1. Journals Used and "Substantive Articles" for 1983

Number of Articles	Journal	Indexed by (1 = LISA, 2 = Lib Lit, 3 = SCI, 4 = SSCI)
29	American Archivist	2, 4
40	American Libraries	1, 2
59	Aslib Proceedings	1, 2, 4
21	Australian Academic and Research Libraries	1, 2
16	Australian Library Journal	1, 2
8	Behavioral and Social Sciences Librarian	2, 4
52	Bulletin of the Medical Library Assoc	1, 2, 3, 4
	Canadian Journal of Information Science	2, 4
38	Canadian Library Journal	1, 2, 4
8	Catalogue & Index	1, 2
29	Catholic Library World	1, 2
48	College & Research Libraries	1, 2, 4
23	Database	2, 4
29	Drexel Library Quarterly	1, 2, 4
14	Film Lib Quarterly	1, 2
37	Government Publications Review	2, 4
14	Herald of Library Science	1, 2
7	IATUL Proceedings	1, 2
16	IFLA Journal	2, 4
85	Illinois Libraries	1, 2
17	Information Bulletin of LASIE	1, 2
37	Information Processing and Management	1, 2, 4
46	Information Technology and Libraries	2, 4
25	Interlending and Document Supply	2, 4
13	International Classification	2, 4
28	International Forum on Information and Doc	1, 2, 4
37	International Library Review	1, 2, 4
32	Journal of Academic Librarianship	1, 2, 4
34	Journal of Chemical Information and Computer Sci	1, 3, 4
17	Journal of Documentation	1, 2, 3, 4
31	Journal of Education for Librarianship	1, 2, 4
49	Journal of Information Science	2, 4
16	Journal of Librarianship	1, 2, 4
10	Journal of Library and Information Science	1, 2
20	Journal of Library History, Philosophy, and ...	1, 2, 4
73	Journal of Micrographics	1, 2
54	Journal of the ASIS	1, 2
6	Law Librarian	2, 4
	Law Library Journal	1, 2, 4
25	Library Acquisitions	2, 4
44	Library Association Record	1, 2
3	Library History	1, 2
119	Library Journal	1, 2, 4

Table 1 (continued). Journals Used and "Substantive Articles" for 1983

Number of Articles	Journal	Indexed by (1 = LISA, 2 = Lib Lit, 3 = SCI, 4 = SSCI)
24	Library Quarterly	1, 2, 4
35	Library Resources and Technical Services	1, 2, 4
17	Library Review	1, 2
	Library Science with a Slant to Documentation	1, 2
20	Library Trends	1, 2, 4
24	Libri	2, 4
	Methods of Information in Medicine	1, 3
49	New Library World	1, 2
43	Online	2, 4
22	Online Review	2, 4
	Ontario Library Review	1, 2
10	Pacific Northwest Library Assoc Quarterly	1, 2
27	RQ	2, 4
41	Scandinavian Public Library Quarterly	1, 2
33	Scholarly Publishing	2, 4
15	School Librarian	1, 2
59	School Library Journal	1, 2
20	School Media Quarterly	1, 2
24	Scientometrics	3, 4
26	Serials Librarian	2, 4
17	South African Libraries	1, 2
36	Special Libraries	1, 2, 4
21	UNESCO Journal of Information Science...	1, 2, 4
40	Wilson Library Bulletin	1, 2, 4
1912	Total	

Table 2. Percentage of Research Articles Among Core Journals

1983	1980	1975	1970	1965	1960	1950	1945	1935-36
24.4	24.4	31.0	24.1	16.0	14.7	15.7	8.4	14.2

Table 3. Findings - Breakdown by Journal

Research	Non-Research	Journal
2	4	American Archivist
0	5	American Libraries
1	6	Aslib Proceedings
1	3	Australian Academic and Research Libraries
1	2	Australian Library Journal
1	1	Behavioral and Social Sciences Librarian
5	4	Bulletin of the Medical Library Assoc
2	5	Canadian Library Journal
0	6	Catholic Library World
8	0	College and Research Libraries
3	2	Database
1	3	Drexel Library Quarterly
0	3	Film Library Quarterly
2	3	Government Publications Review
0	2	Herald of Library Science
0	1	IATUL Proceedings
2	1	IFLA Journal
2	9	Illinois Libraries
1	2	Information Bulletin of LASIE
3	0	Information Processing and Management
0	7	Information Technology and Libraries
1	1	Interlending and Document Supply
1	1	International Classification
0	2	International Forum on Information and Doc
0	3	International Library Review
1	6	Journal of Academic Librarianship
2	3	Journal of Chemical Information and Comput Sci
1	2	Journal of Education for Librarianship
1	5	Journal of Information Science
1	1	Journal of Librarianship
1	1	Journal of Library and Information Science
0	11	Journal of Micrographics
2	4	Journal of the ASIS
0	1	Library Acquisitions
0	5	Library Association Record
1	0	Library History
1	12	Library Journal
2	2	Library Quarterly
1	7	Library Resources and Technical Services
0	4	Library Review
0	1	Library Trends
0	1	Libri
0	4	New Library World
1	4	Online

Table 3 (continued). Findings - Breakdown by Journal

Research	Non-Research	Journal
1	0	Online Review
0	1	Pacific Northwest Library Assoc Quarterly
0	3	RQ
1	7	Scandinavian Public Library Quarterly
0	3	Scholarly Publishing
0	1	School Librarian
0	5	School Library Journal
0	2	School Media Quarterly
6	0	Scientometrics
1	4	Serials Librarian
0	2	South African Libraries
0	6	Special Libraries
0	2	UNESCO Journal of Information Science...
0	3	Wilson Library Bulletin
61	189	Total

Table 4. Journal Rankings by Total Number of Research Articles

Rank	Research	Non-Research	Journal
1	8	0	College and Research Libraries
2	6	0	Scientometrics
3	5	4	Bulletin of the Medical Library Assoc
4	3	2	Database
	3	0	Information Processing and Management
6	2	4	American Archivist
	2	5	Canadian Library Journal
	2	3	Government Publications Review
	2	1	IFLA Journal
	2	9	Illinois Libraries
	2	3	Journal of Chemical Info and Computer Sci
	2	4	Journal of the ASIS
	2	2	Library Quarterly
14	1	6	Aslib Proceedings
	1	3	Australian Academic and Research Libraries
	1	2	Australian Library Journal
	1	1	Behavioral and Social Sciences Librarian
	1	3	Drexel Library Quarterly
	1	2	Information Bulletin of LASIE
	1	1	Interlending and Document Supply
	1	1	International Classification
	1	6	Journal of Academic Librarianship
	1	2	Journal of Education for Librarianship
	1	5	Journal of Information Science
	1	1	Journal of Librarianship
	1	1	Journal of Library and Information Science
	1	0	Library History
	1	12	Library Journal
	1	7	Library Resources and Technical Services
	1	4	Online
	1	0	Online Review
	1	7	Scandinavian Public Library Quarterly
	1	4	Serials Librarian

Table 4 (continued). Journal Rankings by Total Number of Research Articles

Rank	Research	Non-Research	Journal
34	0	5	American Libraries
	0	6	Catholic Library World
	0	3	Film Library Quarterly
	0	2	Herald of Library Science
	0	1	IATUL Proceedings
	0	7	Information Technology and Libraries
	0	2	International Forum on Information and Doc
	0	3	International Library Review
	0	11	Journal of Micrographics
	0	1	Library Acquisitions
	0	5	Library Association Record
	0	4	Library Review
	0	1	Library Trends
	0	1	Libri
	0	4	New Library World
	0	1	Pacific Northwest Library Assoc Quarterly
	0	3	RQ
	0	3	Scholarly Publishing
	0	1	School Librarian
	0	5	School Library Journal
	0	2	School Media Quarterly
	0	2	South African Libraries
	0	6	Special Libraries
	0	2	UNESCO Journal of Information Science...
	0	3	Wilson Library Bulletin
	61	189	Total

Table 5. Research Methodologies - Research Articles

Methodologies	Articles	Percentage 1983	1980 Nour	1950-75 Peritz
Theoretical/analytical research	4	6.6	21.2	14.1
Information system design	5	8.2	7.8	16.7
Surveys on the library public	4	6.6	5.7	5.9
Surveys or experiments on libraries, services, operations, librarians	32	52.5	35.8	31.6
Bibliometric studies	6	9.8	10.9	4.2
Content analysis	0	0.0	2.9	0.8
Secondary analysis	1	1.6	7.0	8.4
Historical methodologies	2	3.3	7.3	18.1
Descriptive bibliography	2	3.3	.3	3.3
Comparative studies of regions or systems using methods other than the above	1	1.6	.8	2.1
Other and multiple	4	6.6	.5	3.3

Table 6. Primary Subject Areas - Research Articles

Subject Area	Articles	Percentage
Cataloging/classification	5	8.2
Circulation	2	3.3
Citation	5	8.2
Collections	11	18.0
Cooperation	3	4.9
Education for librarianship	6	9.8
Library buildings	3	4.9
Library history	3	4.9
Management	3	4.9
Other	2	3.3
Reference services	8	13.1
Retrieval/representation	8	13.1
User instruction	2	3.3

Table 7. Comparison of Research Methodologies by Subject Areas - Research Articles

Methodologies	Catal	Circu	Citat	Colle	Coope	Educa	LibBu	LibHi	Manag	Other	Refer	Retri	User
Theoretical/analytical research	-	-	1	-	-	-	-	-	-	-	1	2	-
Information system design	2	-	-	-	-	1	-	-	-	-	-	2	-
Surveys on the library public	-	1	-	-	1	-	-	-	-	-	-	1	1
Surveys or experiments on libraries, services, operations, librarians	2	1	-	7	2	4	3	-	3	2	7	-	1
Bibliometric studies	-	-	4	2	-	-	-	-	-	-	-	-	-
Content analysis	-	-	-	-	-	-	-	-	-	-	-	-	-
Secondary analysis	-	-	-	-	-	1	-	-	-	-	-	-	-
Historical methodologies	-	-	-	-	-	-	-	2	-	-	-	-	-
Descriptive bibliography	-	-	-	1	-	-	-	1	-	-	-	-	-
Comparative studies of regions or systems using methods other than the above	-	-	-	1	-	-	-	-	-	-	-	-	-
Other and multiple	1	-	-	-	-	-	-	-	-	-	-	3	-

Table 8. Statistical Methodologies - Research Articles

Methodologies	Articles	Percentage (N = 61)
Chi-square	2	3.3
Cluster analysis	2	3.3
Correlation	6	9.8
Enumeration	31	50.8
F ratio	4	6.6
Factor analysis	1	1.6
Mean/median/standard deviation	11	18.0
Multiple regression	1	1.6
None	13	21.3
Other	3	4.9
Percentage	28	45.9
T test	2	3.3

Table 9. Breakdown of Research Articles by Indexes Covering Journals in Which Articles Appeared

Index (Total Core Journals)		Total Research Articles	Total Non-Research Articles	"Precision"	"Recall"
LISA	(41)	39	148	20.9	63.9
Library Lit	(56)	53	186	22.2	85.9
SCI	(3)	13	7	65.0	21.3
SSCI	(36)	51	109	31.9	83.6

Table 10. Relation Between Number of Authors of an Article and Its Research/Non-Research Nature

Numbers of Authors	Research	Non-Research	Total
1	38	161	199
2+	23	28	51
Total	61	189	250

Chi-square = 14.88
df = 1
$p < .001$

Phi coefficient = .24

Table 11. Author Affiliation

Author's Affiliation	Research Article Authors	Non-Research Article Authors
Archivist	0	4
Bishop	0	1
College - Librarian	0	7
College - Unspecified	0	1
Consultant	2	8
Corporate - Librarian	1	1
Corporate - Non-Librarian	0	5
Corporate - Unspecified	1	24
Division (Government Library)	0	1
Editor, Writer, Publisher	0	7
Free-Lance Reviewer	0	1
Government - Librarian	5	15
Government - Non-Librarian	0	2
Government - Unspecified	3	9
Law - Unspecified	0	1
Lawyer	0	3
Librarian - Unspecifiable	0	2
Library School Faculty	18	31
Library School Student	4	0
Medical Librarian	6	9
Non-Library School Faculty	7	7
Professional Association	0	3
Public Librarian	2	24
Research Fellow	1	0
School Librarian	1	2
Television Reporter	0	2
Unclassifiable	2	8
University - Librarian	23	23
University - Non-Librarian	2	1
University - Unspecified	8	18
Unknown	7	8
Total	93	228

Table 12. Author Affiliation Rankings by Total Number of Research Articles

Rank	Author's Affiliation	Research Article Authors	Non-Research Article Authors
1	University - Librarian	23	23
2	Library School Faculty	18	31
3	University - Unspecified	8	18
4	Non-Library School Faculty	7	7
	Unknown	7	8
6	Medical Librarian	6	9
7	Government - Librarian	5	15
8	Library School Student	4	0
9	Government - Unspecified	3	9
10	Consultant	2	8
	Public Librarian	2	24
	Unclassifiable	2	8
	University - Non-Librarian	2	1
14	Corporate - Librarian	1	1
	Corporate - Unspecified	1	24
	Research Fellow	1	0
	School Librarian	1	2
18	Archivist	0	4
	Bishop	0	1
	College - Librarian	0	7
	College - Unspecified	0	1
	Corporate - Non-Librarian	0	5
	Division (Government Library)	0	1
	Editor, Writer, Publisher	0	7
	Free-Lance Reviewer	0	1
	Government - Non-Librarian	0	2
	Law - Unspecified	0	1
	Lawyer	0	3
	Librarian - Unspecifiable	0	2
	Professional Association	0	3
	Television Reporter	0	2
Total		93	228

Table 13. Faculty Affiliation - Library Schools Only

University	Research Article Authors (Articles)	Non-Research Articles Authors (Articles)
Banaras Hindu University, India	0	1 (1)
Birmingham Polytechnic, England	0	1 (1)
Brigham Young Univerity	1 (1)	0
City University, London	0	4 (1)
College of Librarianship, Wales	1 (1)	0
Columbia University	0	1 (1)
Drexel University	1 (1)	0
East Carolina University	0	1 (1)
Gordon's School of Librarianship, England	0	1 (1)
Hungarian Academy of Sciences	3 (1)	0
Indiana University	0	1 (1)
Instituto Profesional de Santiago	0	1 (1)
Kent State University	1 (1)	0
Riverina College, Wagga Wagga, Australia	0	1 (1)
Rutgers University	0	2 (1)
Simmons College	0	2 (2)
Syracuse University	0	1 (1)
University of California at Berkeley	1 (1)	1 (1)
University of Chicago	1 (1)	0
University of Hawaii	0	1 (1)
University of Illinois	2 (2)	0
University of Iowa	1 (1)	0
University of Maryland	0	2 (2)
University of Michigan	0	1 (1)
University of North Carolina	1 (1)	0
University of Sheffield	2 (2)	1 (1)
University of South Carolina	0	1 (1)
University of South Florida	0	1 (1)
University of Southern California	1 (1)	0
University of Southern Mississippi	0	1 (1)
University of the Philippines	0	1 (1)
University of the Western Cape, South Africa	0	1 (1)
University of Toronto	2 (1)	3 (1)

References

LaBorie, T., and M. Halperin. (1976) "Citation Patterns in Library Science Dissertations." Journal of Education for Librarianship 16, 271-283.

Nour, M. M. (1983) "Research in Librarianship: An Analysis of Research Articles in Core Library Journals of 1980." Master's paper, University of North Carolina at Chapel Hill.

Palumbo, D. J. (1977) Statistics in Political and Behavioral Science. New York: Columbia University Press.

Peritz, B. C. (1980) "The Methods of Library Science Research: Some Results from a Bibliometric Survey." Library Research 2, 251-268.

Saracevic, T., and L. J. Perk. (1973) "Ascertaining Activities in a Subject Area Through Bibliometric Analysis." Journal of the American Society for Information Science 24, 120-134.

Van de Water, N.; N. Surprenant; B. K. L. Genova; and P. Atherton. (1976) "Research in Information Science: An Assessment." Information Processing and Management 12, 117-123.