

AN ABSTRACT OF THE THESIS OF

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Title: Survey of Collection Analysis Practices in Public and Academic Libraries in the United States, and the Effect of Automation Thereon

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This study investigated the practices public and academic library administrators find useful and utilize in analyzing use of collections. The study also investigated administrators' satisfaction with their collection use analysis practices, and the impact they perceived automation to have upon collection use analysis practices.

A survey developed for this study was sent to two stratified random samples of 495 academic libraries and 605 public libraries in the United States. Eight hundred and eighty-eight usable responses were received. Chi-square analyses of six null hypotheses were made and data analyzed computing totals, percentages and rankings.

All six null hypotheses were rejected in specific instances. There were differences in the collection analysis practices nonautomated and automated libraries in the sample used found useful. There was a correlation between a library's satisfaction with its practices and its state of automation. In two of four instances there was a generalizable difference between the expectations of

automated and nonautomated libraries regarding the utility of automated systems in gathering data for analyzing collection use. There was a difference in the practices used by the sample of automated and nonautomated libraries to analyze collection use. There was a difference in the collection analysis practices identified as useful by the sample of academic and public libraries. There was a difference in the practices used by the sample of academic and public libraries to analyze collection use.

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Survey of Collection Analysis Practices in  
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and the Effect of Automation Thereon

by

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SURVEY OF COLLECTION ANALYSIS PRACTICES IN  
PUBLIC AND ACADEMIC LIBRARIES IN THE UNITED STATES,  
AND THE EFFECT OF AUTOMATION THEREON

CHAPTER 1

PURPOSE OF THE STUDY, STATEMENT OF THE PROBLEM

Introduction

Management of book and periodical collections and the use thereof have always presented important challenges to the administrators of public and academic libraries. The largest component of most library budgets, after personnel, is the materials acquisitions budget. (Evans, 1978) In one recent year alone expenditures for American academic and public collections totaled \$1,601,880,723. (O'Hare and Sun, 1987)

As more of these libraries automate their operations, the challenges and opportunities for improving services to the users increase. The investment of capital and personnel resources for library automation, as for collection development, is not inconsequential.

Prudent use of financial resources has always been a consideration. However, certain factors now call for a change in traditional library operations to enhance productivity. Demands for more and varied services are appearing even as financial resources are becoming more limited. (Cortez, 1983) The real purchasing power of the materials budget is declining. Growing facilities costs prohibit the use of prime space for materials storage.

Technological advances are offering viable alternatives to materials acquisition. At universities, the damage of inflation has been compounded by enrollment declines, and the call for more interdisciplinary works has been straining budgets. (Kent, 1979) To meet the needs of present and future users managers must seek every opportunity to improve the effectiveness and efficiency of their operations. (Cortez, 1983)

Although the need is pressing for information regarding collection analysis practices at college and public libraries, no comparative study has been done to date in this area. Neither has the impact of automation upon these practices been ascertained.

### Purpose of the Study

The purpose of this study was to investigate the practices used by academic and public library administrators throughout the United States in assessing the use of their collections, and the impact automation has had in matching collections with the needs of the populations served.

The study was designed to seek answers to the following questions:

1. What were the practices followed in matching collections to populations served in libraries that were not automated?
2. Were the practices of automated libraries different from those of nonautomated libraries?

3. Did public and academic libraries use different practices?
4. In the judgment of library administrators what should constitute the practices to be followed in collection management in relation to the populations served?
5. How adequate were the design and use of the present automated and manual systems in matching the available collections to the populations served, as evaluated by library collection managers?
6. What recommendations, based on the findings and conclusions of this study, could be made to academic and public library administrators with automated systems or those considering such systems?

#### Rationale

The rationale for this study was derived from assumptions based on the pertinent literature and other research. It was assumed that:

1. Library administrators have the capability to identify practices that are, and should be, followed in evaluating the extent to which collections match user needs.
2. A responsibility of the appropriate library administrator(s) is to evaluate the extent to which library collections meet the needs of the populations served.

#### Background

Until relatively recently librarians viewed it as a legitimate goal to acquire most, if not all, of the materials their users might conceivably need. Some items were acquired less for their utility than their presence on some list of

required materials. Patron requests for interlibrary loans from other institutions were seen as institutional failures rather than as in keeping with normal policy. Locating and obtaining materials via interlibrary loan was a cumbersome, inefficient process, often taking months to complete.

In the last two decades a number of forces changed these traditional attitudes and practices. Budgets tightened even as inflation eroded libraries' purchasing power. Fiscal officers demanded greater accountability for expenditures. (Dowlin 1982) (Cummins, 1988) The continuing information explosion brought the realization that it was no longer feasible for even the largest research libraries to attempt to acquire all that was being published.

Cost effective methods for rapid interlibrary loans became possible with the advent of automated bibliographic utilities. Through these utilities large and medium-sized libraries suddenly had immediate access to the collections of their counterparts throughout the United States. Attitudes about collection sharing changed appreciably. Libraries explored and adopted cooperative linkages of many types. Management and evaluation of collections gained new urgency.

According to Hall collection evaluation may be divided into two broad categories, collection-centered practices and client-centered practices. The former describe the size and content of collections, with no regard for how the materials are used after acquisition. By contrast client-centered

practices focus upon past, present and anticipated utilization of items. (Hall, 1985) Because libraries acquire materials primarily to make them available and accessible to patrons, it is necessary to measure the actual and perceived use of collections. (Katz, 1985) Client-centered techniques may be placed in five categories: user surveys, availability and accessibility studies, citation analysis, circulation studies, and in-house use studies. (Hall, 1985)

The only pertinent collection analysis research extant in an academic setting was Abrams's descriptive study of eighty four-year college libraries in the western United States. (Abrams, 1974)

### Automation in Libraries

Traditionally a labor-intensive field, librarianship includes many detailed, highly repetitive tasks which lend themselves handily to the automation process. For this reason librarians embraced automation relatively early, in the 1960's, especially at university libraries where staff had access to their institutions' computer centers. Only such large organizations could justify the massive commitment of resources necessary to develop and maintain the automated systems of this period. However, by the 1970's commercial vendors began offering cost-effective automated systems in a variety of configurations. In the present decade there has



been a tremendous growth in computer systems accessible to small as well as large libraries.

In addition to freeing staff from highly repetitive tasks, automation has provided libraries with a recordkeeping ability hitherto impossible on a continuing, large-scale basis. If a library's collections have been entered into a sophisticated computerized circulation system, the capability exists to track precisely which materials are being used, use frequency, time of use, and who uses them. If a library's collections exist in a sophisticated automated catalog, it should be possible to perform an in-depth analysis of those collections which can in turn be cross-tabulated with a profile of users' identified interests. It should also be possible to track patron use of the automated catalog, logging types of searches and success rates in finding materials.

Is this type of information of interest to librarians? Are the present systems providing it, and if so, is it in a format practical to librarians? It is useful here to differentiate between raw data and information, which is data which have been processed in such a way as to gain knowledge. Thus information is placed in the context of a larger planning and management data system.

### Management and Information Systems for Libraries

The intensifying competition for financial support has caused libraries as well as other social institutions to search for ways to produce relevant information regarding the extent of their use. (Hamburg, 1974) (Dowlin, 1982) (Cummins, 1988) While librarians have been accustomed to the requirement of measuring their inputs, they have been less familiar with measuring their outputs, such as use of collections. Consequently, library accounting systems have been oriented to monitoring fund expenditures, and have produced little if any meaningful information for other managerial purposes.

In a report for the National Center for Higher Education Management Systems Jones cites the acquisition and use of data as an increasingly important aspect of organizational life, in part because of expanding technological capabilities and decreasing costs for these capabilities. (Jones, 1980)

The investment in the storage, retrieval and manipulation of data at institutions such as libraries has in the past produced little of value, according to Jones, especially when potential benefits are considered. Rather than treat the symptoms of problems of existing management information systems, however, Jones proposes development of "a coherent conceptual foundation" for creating data systems and using

information for making decisions. Jones finds it important to differentiate between data, or raw facts, and information, which is data that have been processed by a user in such a way as to gain knowledge. The challenge then becomes how to relate data acquisition and storage functions with the organizational need to choose, organize, consolidate and communicate data so as to transform them into information. (Cortez, 1983) Without this transformation, data remain unconcentrated junk. (Baldrige and Tierney, 1978)

While libraries are accustomed to collecting data on a day-to-day basis, these data are too often operational in nature, and are not always necessary pieces of information. (Cummins, 1988) (Hawks, 1988) Although information is most often formulated from previously collected data, information needs vary among institutions, management activities, and periods of time, making planning difficult. (Tague, 1979) (Hawks, 1988)

The components in Figure 1, derived from Jones's concepts, are necessary in conceptualizing a planning and management data system.

Within this framework are identified the major reference entities which should be reflected in any planning and management data system. A target group may be defined as those persons whom the library by its mission is intended to serve. Users are those within the target group who actually use the library. In this framework other libraries are those

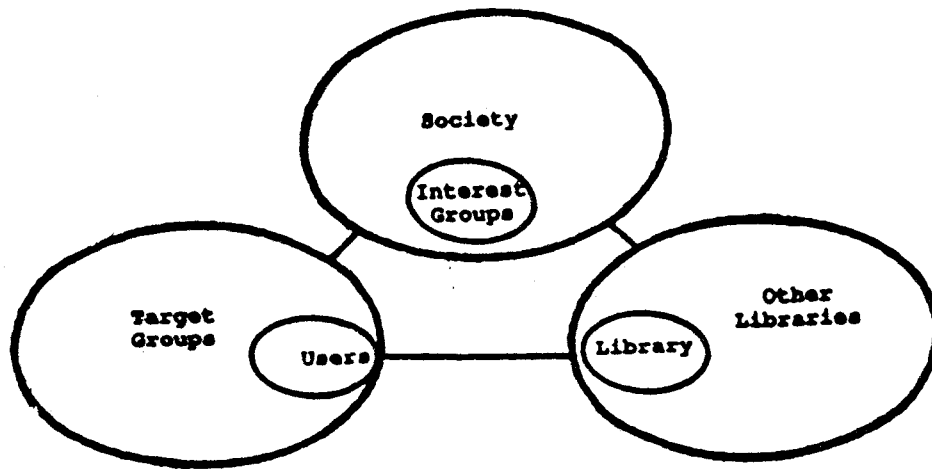


Figure 1

Library Planning and Management  
Data System Components

with which the library interacts in some fashion, such as for purposes of resource sharing, coordination of services, or competition for funding. Each library must define for itself which target groups, users, interest groups and other libraries it wishes to consider, and in what context. This study will not be considering the societal components nor interest groups as indicated in Figure 1, but will instead concentrate upon target groups, users, the library, and, to a much lesser degree, relationships with other libraries.

The framework for a planning and management data system includes data concepts for the above components. The data concepts are descriptors/traits, state/condition, and programs.

Utilizing Jones's concepts it is possible to outline a framework for a planning and management data system which considers only those elements to be addressed in this study. Such a framework is shown in Figure 2.

A way of identifying descriptors/traits for target groups, patrons and collections is outlined in the Library Data Collection Handbook submitted to the National Center for Education Statistics by the American Library Association. (Lynch and Eckard, 1981) This is a revision of an unpublished report of the National Center for Higher Education Management Systems. (Jones, 1978) The concepts and definitions in the revised handbook were utilized in the formulation of this study's survey instrument and glossary.

### Glossary

Availability and accessibility measures - collection analysis methods which determine the likelihood that patrons can locate required materials (availability) and the speed with which they obtain them (accessibility). In this study specific measures are percent of title requests filled, interlibrary borrowing requests, average time patron devotes to locating items in finding tools, competition for items, distribution between branches and percentage of materials available when needed.

Circulation statistics - collection analysis method of counting the number of materials formally loaned to users for off- or on-site use

Citation analysis - collection analysis method which employs bibliographic references from published works to determine whether said research could be duplicated at a given library

Client-centered collection analysis - measure of collection adequacy based upon its demonstrated and projected use

ENTITIES	TARGET GROUP (S)	LIBRARIES
	PATRONS	LIBRARY
1. DESCRIPTORS/TRAITS	age, sex, others	academic, public
2. STATE/CONDITION		
A. INTERNAL	attitudes, interests, knowledge	
B. EXTERNAL		collection (with descriptors)
C. RELATIONSHIPS		interlibrary loan
3. PROGRAMS		
A. PURPOSES		maintain/increase collection use
B. TARGET ENTITIES	target groups: users nonusers	
C. METHODS		circulation analysis surveys citation analysis access/availability measures in-house use circulation interlibrary loan in-house use
D. ACTIVITY LEVELS		library operational system (manual or automated)
E. RESOURCES UTILIZED		maintain/increase collection use
F. OUTCOMES		

Figure 2  
Planning and Management Data System Framework

Collection-centered analysis - measure of collection adequacy based upon its size and content

Data - raw facts. (See also "Information")

In-house use - collection analysis measure of materials use on site, with no formal loan

Information - data that have been processed by a user in such a way as to gain knowledge; information is part of a larger planning and management data system. (See also "Data")

Planning and management data system - conceptual foundation for selecting, organizing, combining and thus converting data into information suitable for a specific situation

Target population - those persons whom a library by its mission is intended to serve

Users - those patrons who actually use a library

User surveys - collection analysis methods which query patrons directly regarding their use and perception of collections

### Hypothesis of the Study

It was hypothesized that libraries with automated systems had different expectations regarding collection analysis practices than did nonautomated libraries. It was further hypothesized that automated libraries possessed a greater capability to assess the adequacy of their collections than did nonautomated libraries, and that they used this capability to a greater extent.

It was further hypothesized that academic and public libraries wished to use and did use different practices to assess the adequacy of their collections.

To examine the above the following hypotheses were tested:

There is a difference in the collection analysis practices identified as useful by nonautomated and automated libraries.

There is a correlation between a library's satisfaction with its practices and its state of automation.

There is a difference between the expectations of automated and nonautomated libraries regarding the utility of automated systems in gathering data for analyzing collection use.

There is a difference in the practices used by automated and nonautomated libraries to analyze collection use.

There is a difference in the collection analysis practices identified as useful by academic and public libraries.

There is a difference in the practices used by academic and public libraries to analyze collection use.



## CHAPTER 2

## SURVEY OF THE LITERATURE

A number of investigators have studied practices and issues pertinent to this study. Their insights, grouped into appropriate categories, are reflected in this chapter. Those issues include management and information systems for libraries, specific client-centered collection evaluation measures, and the changes in these measures since automation.

Management and Information Systems for Libraries

Library managers have always found it difficult to obtain relevant information regarding outputs. Seldom have managers been comfortable with the timeliness, accuracy or completeness of the data they have received. (Runyon, 1981) Without this information decision making has suffered. (Morse, 1968) (Olson, 1972)

Even when relevant information has been available in a library, administrators have had to be able to organize it in a manner useful to them. Information itself has not been a substitute for a manager's experience and judgment in decision making. For this reason any means utilized to support decision making has had to fit and enhance the unique needs and capabilities of the decision maker. (Chorba and Bommer, 1983)

The rise of the concept of a decision support system has been viewed by some as a direct outcome of the failure of the management information system concept. (Chorba and Bommer, 1983) Others have seen it as a more highly evolved mode of operation. (Heim, 1983) (Dowlin, 1980) McDonald, however, has noted that information and decision making are conjoined in that information is useless unless decisions need to be made; conversely making decisions without utilizing relevant information is pointless. (McDonald, 1981) For this reason McDonald has embraced Yovits's definition of information as "data of value in decision making." (Yovits et al., 1981)

While researchers have not agreed upon precise definitions for either management information systems or decision support systems, the literature has suggested certain key characteristics necessary for any system supporting managerial decision making. First, the system must be flexible enough to accomodate individual managerial styles, goals and situations. (Shank, 1983) (Boland, 1983) (Dowlin and McGrath, 1983) (Chorba and Bommer, 1983) The information generated should be appropriate to the management level in question, and is not to be confused with operational information. (Dowlin and MaGrath, 1983) The information generated must be organized in a logical and systematic framework. (Hamburg, 1974) (Jones, 1982) (Runyon, 1981) (Lynch and Eckard, 1981) (Chorba and Bommer, 1983) Certain authors have maintained that the management information

system should operate in concert with, yet separate from, any existing automated system for day to day operation. (Dowlin and McGrath, 1983) (Jones, 1982) (Chorba and Bommer, 1983) Data categories in a decision support system should be precise and carefully defined. For purposes of comparison with other institutions, standardization of these data categories is a necessity. (Runyon, 1981) (Jones, 1980)

The National Center for Educational Statistics' (NCES) Library Data Collection Handbook was the result of a four-year effort to produce a document which identified useful information categories for communicating data about library programs and resources. (Lynch and Eckard, 1981) This revision of a 1977 handbook originally developed by the National Center for Higher Education Management Systems represents the combined efforts of its editors, Lynch and Eckard, various statistical committees and sections of the American Library Association, and the National Center for Educational Statistics. (Neely, 1980)

Underlying the revised Handbook's development was the premise that "all types of libraries have a common set of functions, purposes, and resources which outweigh the differences in setting, size, or organizational goals." (Lynch and Eckard, 1981)

Despite recent advances in the understanding of decision processes and in the timeliness of information delivery, the quality of management information has not improved

appreciably. One author attributed this to the lack of a coherent conceptual foundation for organizing systems for data collection, storage and conversion into information. This foundation has been lacking because existing knowledge has not been properly integrated. (Jones, 1982)

Other writers have found evidence that the library community has not progressed beyond the initial stage in the evolution of (automated) general information systems. They have identified four stages of information systems. The first is automation of clerical tasks. The second involves system redesign and subsystem integration. The third provides information for mid-management, while the fourth supports top level decision processes. (Taggart and Tharp, 1975) The literature has identified only one library claiming to operate even in part at the highest information system level. (Dowlin and MaGrath, 1983)

Recent pertinent articles have evidenced the assumption, explicit or otherwise, that management information systems and/or decision support systems involve automation in some manner. (Hamburg, 1974) (Jacob and Kaske, 1983) (Main, 1987) While there has been agreement that computerized data collection can be of help, administrators have been cautioned not to rely totally upon automated systems, especially operational systems, for management information. (Runyon, 1981) (Dowlin and MaGrath, 1983) (Shank, 1983) Reports such as Mullin's have demonstrated how inadequate automated

operation systems have been in producing management information. (Mullin, 1983) These systems have been seemingly fixed in Taggart and Tharp's second level of general information systems. They have generated mounds of useless data without supplying the information needed.

(Kanter, 1977) (Chorba and Bommer, 1983) (Main, 1987)

Mullin's report supported the assertion that library administrators neither understood their automated systems nor utilized the information generated by them. (Olsgaard, 1983) Both organizational and personal barriers to managerial use of information from automated systems were cited.

Drake noted that 'when service needs of the target population outpace organizational response, performance gaps occur. (Drake, 1979) In addition, library administrators and automation specialists may be too far removed from their clients to identify needs and respond accordingly. (Olsgaard, 1983) Organizational resistance to management information systems (MIS) may indicate a lack of planning, unrealistic expectations, and/or inadequate resources with which to implement and continue a system. The maturity of an organization, defined as the "degree to which systems are formalized, quantified and producing data appropriate to decision and control" also affects the likelihood of MIS acceptance. Those organizations which are more mature will more readily embrace MIS concepts. Top administrative personnel must also be fully committed to information systems

in order for them to work. Organizations must be prepared for radical change, individual and general alienation as jobs change, and disruption of routine; without this preparation, information systems will fail. (Heim, 1983)

Olsgaard identified certain motivational failures which inhibit managers in their use of automation-derived information. (Olsgaard, 1983) Another analysis of managerial data rejection was even more exhaustive. Major factors contributing to rejection of computer-derived data include managerial skepticism, personal inertia, ambiguous social conditions, perceptions of contradictory external information, unclear or misunderstood organizational goals, and MIS design problems which do not allow integration of external information. (Shank, 1983)

#### Client-Centered Collection Evaluation Measures

The literature reflected only one study remotely similar in purpose and design to the present one, that undertaken in 1974 by Abrams. In it Abrams queried directors at four-year colleges in the western United States regarding their collection evaluation practices. His survey addressed both collection-centered measures, (such as volumes added per year and collection subject balance), and client-centered practices. The latter included circulation statistics, user surveys, bibliographic citation analysis and interlibrary loan requests and unfilled requests, (i.e., accessibility and

availability measures). Abrams found that 70 percent of the libraries claimed to keep circulation statistics, 57.5 percent maintained interlibrary loan request information, and 25 percent monitored unfilled book requests. Twenty-six percent of the respondents stated they had surveyed users, and 25 percent utilized citation analysis. As collection size grew larger, there appeared to be a tendency for a library to forgo evaluation of the total collection in favor of evaluation of select areas. Abrams concluded that collection evaluation activities appeared to be more widespread than originally anticipated, although much of this activity was, in his view, ineffective because of a failure to conceive of evaluation as a process. No attempt was made in the study to ascertain respondents' attitudes regarding collection analysis.

The five types of client-centered collection evaluation identified by Hall are considered individually below, as is the history of their use in academic and public libraries in the United States.

#### User and Target Group Surveys, Questionnaires and Interviews

A user survey is developed to determine how well the library's collections meet the clientele's information needs. (McDiarmid, 1940) (Lyle, 1967) Elsewhere it has been described as "a systematic collection of data concerning libraries [and] ... use and users, at a given time or over a

given period." (Line, 1967) A survey may be a written questionnaire or an oral interview. It may query actual users, or those in target groups, whether users or not.

In addition to evaluating quantitatively and qualitatively the effectiveness of the collections in meeting user needs, information from a survey may assist in monitoring progress since earlier surveys, identify changing trends and interests, and provide information regarding user reactions to new materials formats. If not gathered elsewhere, data regarding the characteristics of library users and target populations may be defined in the process of surveying. (Christiansen, 1983) (Hall, 1985)

User surveys have distinct advantages. For the most part, assuming they are carefully constructed, they do reflect how well services and collections are fulfilling the expected needs of library clientele. Surveys can be as simple or as complex as desired. They enable librarians to verify in a systematic fashion the informal day to day feedback they have been receiving from patrons. Users of a collection have a better grasp of how well the collections are meeting library objectives, especially in their areas of expertise, than do many of the staff who work there. (Futas, 1985)

The possible shortcomings of surveys have been well documented in the literature. (Hall, 1985) (Wilson, 1947) Among the most common problems are those of instrument



design, validation, administration, tabulation and analysis of results.

A 1936 review of the literature of surveys of educational institutions and public libraries indicated that the survey had by that time already become one of the most important devices for studying and improving the whole educational system. (Wight, 1968) This was attributed to the fact that survey staffs had developed objective techniques for measuring many of the services and facilities of education. In contrast, the contribution of the public library survey to library progress was deemed relatively slight up to this point. This small contribution was attributed to the limited circulation and subjectivity of the reports issued, which restricted criticism and refinement of methodologies, as well as the creation of a body of factual, professional literature. (Wight, 1937) The situation changed very little until the last decade; surveys of public libraries remained scarce in the interim. (Peritz, 1977) In a study of public library surveys one author analyzed research conducted from the 1930s to the 1960s. (Wight, 1968) Notable throughout the surveys was a lack of a central objective or purpose to which they could be applied. Without clear objectives, many of the surveys produced little which could be used in effective library management. It was concluded that "the general public library survey of single public libraries has made little contribution to a substantial body of theoretical

knowledge about the management of the American public library."

Despite their relative popularity among client-centered collection analysis methods, surveys have not been nearly as common in the literature as have been such collection centered practices as comparisons with standards, lists of best books, and comparisons with other libraries.

Although practitioners began to conduct use studies considerably earlier, the term "use studies" did not appear as a heading in library periodical indexes until 1960, when nine titles were listed. (Tobin, 1974) In the period of 1960 to 1973, some 477 entries appeared. (Lancaster, 1977) These may be divided into comprehensive surveys of the use of a library in its entirety, and studies of the use of library materials. Studies of complete user communities have been much more common than studies of subgroups; library nonusers, in the larger target group, have rarely been studied. (Peritz, 1977)

From the period of 1966 to 1970 the self-administered questionnaire, with accompanying interview, was identified as the most frequently used survey method for the study of information transfer. (Wood, 1971) Evidence was given that during this period sampling was becoming more scientific, instruments were being more carefully constructed, and results analyzed on a more sophisticated level. On the other hand, response rates were low, and results could rarely be

generalized beyond the immediate library environment. The questionnaire remained by far the most common type of survey in academic and public libraries. (Peritz, 1977) (Hall, 1985)

In 1986 Sabine and Sabine reported the results of a study of the reading habits of 613 selected subjects. Nominated by fifty American libraries, these respondents described in telephone interviews their use of technical and professional books and journals. Interviewees were chiefly queried regarding methods of access to materials and the breadth and depth of their reading habits. While the study's conclusions were hardly surprising, its scope of respondents made it a first-of-its-kind. Because respondents were not randomly selected results could not be generalized. (Sabine and Sabine, 1986)

When the methodology involves interviews rather than questionnaires, a number of advantages may be realized. Generally, the response rate is higher. There is an opportunity to clarify meaning, and there is less danger of respondents' giving careless or hasty answers. However, interviewing is more time consuming, and usually involves a smaller number of respondents. It is also possible that the interaction between the interviewer and respondent may affect the reliability of the results, causing responses to be less than candid. Interviews are also more difficult to carefully record. (Hall, 1985) (Barber, 1966)

While interviews are good for collecting preferences and views, diaries have been deemed more accurate for recollection of reading. (Hogg, 1959) Investigators have been divided as to whether respondents' memories could be trusted, and there has been a difficulty in obtaining cooperation from many diary-keepers. (Barber, 1966) Even with cooperative respondents and better than average supervision, the diary method has not been viewed as reliable. (Shaw, 1956) Because it studies a respondent's entire universe of reading, this method is of more interest to research libraries.

Utilized with more frequency than diary-keeping has been the method of direct observation of use. (Barber, 1966) While it cannot elucidate opinion, this method can document what respondents actually do. In this respect it is superior to interviews, questionnaires, and diaries. It circumvents the often noted tendency of users to be much too generous in their praise for the library, which in turn leads administrators to overrate their institutions' contributions. (Futas, 1985) (Stevens, 1956) Observations may be overt, as in case studies of individuals over days, or covert, as in studies of browsers. The few formal studies employing this method have taken place for the most part in research universities. (Lawrence and Oja, 1980)

### Availability and Accessibility Measures

Availability and accessibility measures assist the library administrator in determining the capability of the institution to make materials available with as little delay and difficulty as possible for the user. (Hall, 1985)

(Lancaster, 1977) They may monitor only the library's materials, or they may be broadened to include materials at other institutions, obtained through interlibrary loan. These measures may use either simulated or actual data. Because various library policies and procedures affect the accessibility and availability of materials, these measures also provide useful data for altering those policies and procedures which adversely impact patron access to items.

Availability concerns the probability that patrons will find desired materials when they need them. Accessibility addresses the difficulties patrons meet in obtaining items, and is usually measured in time delays.

Document delivery capability refers to the availability of materials at a library. The primary concern in this type of evaluation is how many patron requests can be satisfied at the time materials are needed. Such library functions as acquisition, duplicating, binding, circulation, and discarding are analyzed in light of the needs and behaviors of users. Because a large amount of the demand for materials tends to be concentrated on a small proportion of the library's stock, attention is devoted to the problems of

managing those titles that are in relatively high demand.

(Buckland, 1975)

The number of titles a library possesses is the main factor to be considered in document delivery. Three additional factors which are critical in document delivery are the number of copies a library holds, the frequency with which an item is sought, and the length of time it is unavailable while being used. (Buckland, 1972) Because any request may presumably be filled eventually through interlibrary borrowing, the evaluator must decide whether to include interlibrary loans in the evaluation.

This type of test provides objective measurement of the collection's ability to satisfy user needs; also, if identical citation lists are used (in a simulation study), data may be compared between libraries. However, it is difficult to compile a list of representative citations, and the test must be repeated to be meaningful. Also, because the simulated searches are performed by library staff, they may not reflect the problems encountered by users.

(Christiansen, 1983)

Studies of document delivery capability appeared as early as 1934, when 1,042 students were interviewed at Iowa State University regarding their success in finding materials.

(Gaskill, 1934) Their high success rate (92%) was uncommon for this type of study and has been rarely equaled since. At the opposite extreme was Martell's study of use patterns and

availability at the University of California, Berkeley, which indicated that only thirteen percent of the books sampled would have been available or eligible for interlibrary loan. (Martell, 1975)

More recently, University of Minnesota faculty were queried regarding their evaluations of the document delivery service of this decentralized university. (D'Elia, 1984) D'Elia's respondents identified reasons for not using the intercampus document delivery services, as well reasons for use, the nature and extent of their use, and satisfaction with the service in general. The most extensive investigation of library document delivery capability to date was undertaken by the Institute for the Advancement of Medical Communications for the National Library of Medicine. (Orr, et al., 1968) The method developed in this study measures potential rather than actual document delivery capability. Its value and validity depend upon how representative the citation sample is and on how well the sample reflects actual user needs. (Hall, 1985) Penner applied a similar procedure to two library school libraries. (Penner, 1972) De Prosopo, et al. developed and tested related procedures for public libraries, utilizing what De Prosopo called probability samples for recently published books, periodicals and titles known to be in the library's collection. (De Prosopo et al., 1973) Twenty American public libraries of varying sizes were tested; of these twenty the

availability of materials (whether owned by that library) ranged from less than ten percent to sixty percent. As might be expected, availability correlated directly with the size of the library, although the probability of an owned book being on the shelf was greatest in the medium-sized libraries.

Shelf availability studies are undertaken to determine whether or not an item presumed to be in the collection is actually available to the user. This method monitors actual user inquiries rather than simulated inquiries through questionnaires and/or interviews. Both collection deficiencies and user errors are determined. Shelf availability measures can be readily repeated to note changes in library performance. Such tests identify non-collection development reasons for user failures and give data upon which to base changes in library policies and procedures. However, user cooperation is required and the procedure is time-consuming and difficult. Also, nonuser needs are not identified. (Christiansen, 1983)

In a 1977 project for the Association of Research Libraries Kantor developed an availability test based on data obtained from users of the library catalog. (Kantor, 1977) For the same project he suggested accessibility techniques to: 1) simulate the amount of effort a user must make to identify, obtain and check out items, and 2) to measure the delay time in providing patron services.



While some interlibrary loan (ILL) studies exist in the literature, there are fewer than might be expected, possibly because most libraries routinely monitor their ILL requests and purchase heavily requested items accordingly. (Wiemers, 1984)

The criteria and methods for interlibrary loan evaluation appear deceptively straightforward. The success of any activity can be measured in terms of the proportion of requests satisfied, and the time it takes to satisfy these requests. Written records of all such demands usually exist in libraries. Few librarians consider, however, whether a given item arrived in time to fulfill the patron's need. Also, it is uncommon for staff to attempt to measure the number of interlibrary loan requests that are needed but not made, for whatever reason. True microevaluation of interlibrary loan (ILL) activities involves an analysis of failures, categorization of failures, and an attempt to determine the reason for their occurrence. (Lancaster, 1977) Thomson identified possible factors affecting success rates at academic libraries, including library policies and resources available. (Thomson, 1970) The literature shows an even distribution of research among types of libraries. (Nelson, 1968) (Warner, 1971)

Aguilar's 1986 study was the first to suggest a methodology linking interlibrary loan statistics with holdings data and circulation records. He devised a formula

using percentage of expected use and ratio of borrowings to holdings which together provided a decision table for determining materials overuse and underuse. This decision table, in his view, made it possible to examine individual subject areas for decisions regarding purchase, weeding, and continued reliance upon outside sources. (Aguilar, 1986)

Prior to this decade the literature reported few studies of accessibility and availability in the United States. (For exceptions see for instance Burkhalter and Race, 1968, Newhouse and Alexander, 1972, or Mavor and Vaughan, 1974.)

Publication of two editions of Output Measures for Public Libraries (Zweizig and Rodger, 1982, and Van House, et al., 1987) stimulated activity in the public library field. Considerable attention has been given materials availability fill rates, which center upon measuring the success libraries have in filling patron requests for specific materials. Multi-year comparative assessments were made across public libraries within systems at Saint Paul, Minnesota, Fairfax County, Virginia and Baltimore County in Maryland. Successful fill rates ranging from 37 percent to 93 percent were computed separately for title, subject/author and browsers. A noteworthy difference of opinion surfaced regarding interpretation of results of these studies and the validity and reliability of the fill rate method recommended in the second edition of Output Measures for Public Libraries. D'Elia found the fill rate differences

significant but trivial when other statistical analyses including Cramer's V were performed. Van House suggested comparisons between library systems were inappropriate, and affirmed that the measure itself retained its validity and reliability within individual systems. (D'Elia, 1985) (Van House, 1987) (D'Elia and Rodger, 1987) (D'Elia, 1988a) (D'Elia, 1988b) (Van House, 1988a) (Van House, 1988b)

Ferl and Robinson utilized Kantor's standardized methodology for measuring book availability in a 1986 study at the University of California, Santa Cruz. (Kantor, 1978) Their survey of 145 users yielded a success rate of 61 percent, which compared favorably with the 50 percent success rate commonly found at larger academic institutions. (Ferl and Robinson, 1986)

### Citation Analysis

Citation analysis is a method of identifying the important literature in a subject discipline. It enables librarians to predict, from works authors have used previously, materials most likely to be used by researchers in the future. The method employs the references researchers have made to the published works of other researchers and the quantity of citations these works have received. (Hall, 1985) It may involve checking all the references in a bibliography, or a sample from it. Its fundamental characteristic is a reliance

upon actual published research to establish standards of quality. (Wiemers, 1984)

Citation analysis most often involves arranging lists of journal titles according to the number of citations made to them in the references of papers published in a standard journal. It is a practice most likely to be used in research libraries.

The assumptions underlying this method are these: 1) researchers are effective exploiters of library resources, and therefore the cited references are a reasonable proxy for all materials which might be used; 2) the collection being rated and the one used by the author are similar in purpose, size and subject matter; 3) the works being checked are the kind that could be written in the library being evaluated; 4) the library used by the author of the research providing the citations actually owned these items; and 5) the author actually used the items cited. (Wiemers, 1984) (Subramanyam, 1980)

As recently as 1983 Halpin found that citation analysis was not used by 78.5% of the academic research libraries polled. (Halpin, 1983) Significantly, he determined that all of those libraries that do use citation analysis also use other sources of data as part of the materials management process.

The reasons cited for not using this method may be divided into those involving management issues (no time, budget,

collection size, etc.), and those involving subjective issues (reluctance to use scientific methods, perceived vested interests of those promoting its use, and the view that this method is at best a secondary one for analyzing collection use.) The method is limited in its applicability, and cannot be used in a broad field with many subdisciplines, or to analyze the complete holdings of a large research library. It also neglects those users not doing research. (Orr, 1968) (Metz, 1983) For these reasons it is no surprise that citation analysis does not appear in the literature as a method employed at public or small to medium-sized academic libraries.

#### Circulation Statistics

Another important measure of collection utility is circulation. Circulation data may be examined for a part of, or the total collection, by user group, by purchase date of materials, or by subject class. Data of these kind can be used to 1) identify little-used materials which can be withdrawn or retired to storage; 2) identify a core collection of items likely to satisfy some specified percentage of all circulation demands within the near future; 3) identify use patterns of selected subject disciplines or materials types by comparing their representation in the collection to their circulation as a percentage of all

circulations; and 4) identify user populations.

(Christiansen, 1983)

Circulation data are easily arranged into categories for analysis. This type of analysis allows great flexibility as to duration of study and sample size. The data are easily gathered, and the information is objective. Unless a system is automated, however, this method excludes in-house consultation and underrepresents actual use. Further, it reflects only successes and does not record user failures. It may be biased through inaccessibility of heavily used material, and it fails to identify low use due to obsolescence or low quality of collections. (Christiansen, 1983) Numerous authors have cautioned that past use must not be the sole consideration when developing collections at academic institutions; it is vital to consider the curriculum, research or other use the collection is being built to serve. (Hall, 1985) (Wiemers, 1984)

One of the earliest studies of circulation statistics was Stieg's at Hamilton College. (Stieg, 1943) The analysis, based on circulation records for three consecutive years, showed what proportion of the titles circulated for given periods, and the effect of publication date and subject matter on circulation. Kilgour's studies of the Yale medical libraries attempted to identify a core of biomedical journals capable of satisfying a high percentage of all current demands. (Kilgour, 1962) (Kilgour and Fleming, 1964) The

data may support the position that the shorter the period for which circulation records are analyzed, the lesser the number of journals that will be included in a fixed percentage of the total usage.

Similar studies of circulation patterns in individual libraries have been conducted elsewhere. (Kurth, 1962) (Kovacs, 1966)

In a separate approach to identifying a core collection Trueswell created and tested a procedure based only on the last recorded circulation date. (Trueswell, 1964) (Trueswell, 1965) (Trueswell, 1966) This method can be used to estimate the size and composition of a core collection capable of satisfying a fixed percentage of demands. He applied his techniques to the libraries at Northwestern University, University of Massachusetts, and Mount Holyoke College, finding a similar distribution in the percentage of the collection accounting for a given percentage of the total usage. (Lancaster, 1977)

Jain's relative use method employed samples from the total collection, monographs borrowed for home use, and monographs used within the library. (Jain, 1965) (Jain, 1966) (Jain, 1967) (Jain, 1969) Each of these samples was then divided into subsets by certain preestablished characteristics, such as age, language, subject, year of acquisition, etc. Finally, the projected use of each of these subsets was compared with actual recorded use. Jain's application of

this method at Purdue University utilized a relatively large sample (20 percent) of the total collection.

A number of circulation studies have been carried out through the years at the University of Chicago. One of the best known is that of Fussler and Simon. (Fussler and Simon, 1969) In it the researchers sought to identify a statistical procedure or procedures which could predict with reasonable accuracy the frequencies with which groups of books with defined characteristics were likely to be used in a research library. The major purpose of this study was to identify books likely to be requested infrequently, which could be candidates for placement in less accessible storage areas. Researchers found that records of past use over a sufficiently long time, (i.e. twenty years), provided a good predictor of future use. The rules developed as a result of this study were later tested at the University of California, Berkeley, and Northwestern University, with similar findings. (Lancaster, 1977) One of the more novel approaches predicting collection use at a university was McGrath's. (McGrath, 1972) He categorized the courses taught at an institution according to the bibliographic classification scheme used by the library to produce a series of departmental subject profiles and an overall university profile. He then attempted to show that books with class numbers matching the institutional and departmental profiles would be more likely to be used than books outside the



profiles. A study of the University of Southwestern Louisiana collections verified his hypothesis.

Kantor has developed a circulation statistics formula which measures user frustration rates, and calculates from this the "vitality" of the collection. (Kantor, 1978)

### In-House Use

Circulation studies, when utilized as the sole indicator of collection use, have raised serious questions concerning validity. (Hall, 1985) Studies have shown that for some subjects in-house use may be significantly higher than external circulation. For noncirculating materials, such as reference books, circulation statistics are not available. For these reasons, measurement of in-house use is recommended.

This type of study may be approached from two directions, materials used and users of materials. The review may focus upon the whole collection or a part, upon all users or a sample. The definition of use must be clearly delineated, and at-shelf utilization should not be undervalued.

Among the problems concerning in-library use study is the difficulty of monitoring activity in open areas. The timing of the study may result in sample bias; further, only successes are measured. Also, materials in circulation are not available for in-house use. (Christiansen, 1983)  
(Lancaster, 1977)

Jain's relative use method cited earlier (Jain, 1965-1969) included samples of in-house use as an integral part of the technique. His 1966 study of in-library use at Purdue University examined all books left on tables, and ignored those materials which were reshelfed by patrons. For this reason, among others, Jain recommended utilizing a variety of methods when analyzing collection use.

Daiute and Gorman tested techniques to study in-house use via patron interviews, correlating these data with characteristics of library users. (Daiute and Gorman, 1974)

Demonstrating the importance of this issue to their institutions, members of the newly formed Coalition for Public Library Research in 1984 selected study of in-house use of materials as their first major project. Six member libraries participated in the study, providing service populations from sixty-five thousand to almost one million. The coalition utilized four techniques to measure in-house count: the table-count method, a patron questionnaire, a patron interview, and observation. The project thus afforded comparison of data collection methods as data were collected. It also indicated that in-house use could be correlated with other collection analysis measures. (Rubin, 1986)

#### Changes Since Automation

Although libraries had automated systems in various forms decades ago, studies of collection use employing automation

only began appearing in the literature within the last fifteen years. By far the most common topic of published automation research has involved analysis of circulation records. The earliest studies were, predictably, of university circulation systems. (See for example Guthrie's analysis at Ohio State University, 1973, or Burns's study of 24 academic libraries, 1976.) However, two-year and public libraries were also doing work here, including Ferguson at Dallas County Community College, (1978), and Simpson (1978). The studies cut across region and library type, with multi-institutional surveys as well as studies of individual institutions. The investigators reported which materials were being used by subject breakdown, and observed the predictable decline in use of individual items over time.

Researchers at the University of Pittsburgh demonstrated that institution's ongoing interest in collection use early on in one of the first cross tabulations of student demographic data with circulation data. (Grunstra, 1976) Ohio State University researchers expanded upon early circulation analysis efforts in 1980. Their study documented the organizational difficulties many researchers faced, especially in the area of resource allocation. Also noteworthy in this study was the scope of the analysis, with all book circulation records for 1973 through 1977 being scrutinized. (Nimmer, 1980)

Predominant in the literature at this time were reports of the process of automation at individual institutions.

(Beckman, et al. at Guelph University, 1978) (Hardesty at DePauw, 1980) Also present were surveys of groups of libraries to determine their state of automation and/or satisfaction with the automated systems utilized.

(Wheelbarger, 1977) (Simpson, 1978) (Bennett, 1979)

A landmark study of the period was Kent's analysis of collection use at the University of Pittsburgh. (Kent, 1979) This research was noteworthy for its scope, its extensive use of automation-generated data, and its emphasis upon academic collection use. Up to this point no large university had placed such importance and focused such attention upon developing measures for determining the extent to which library materials were used. (Kent, 1979) Six years of data from the University of Pittsburgh's automated circulation system were analyzed to yield a number of findings. Samples of in-house use were taken and studied as well. Researchers found that, as expected, many books and periodicals were never used; little data could be located, however, with which to compare Pittsburgh's use rate of 56 to 60 percent. The researchers affirmed the effectiveness of their automated circulation system in data collection, and planned to broaden its use to other departmental libraries. They also endorsed continued monitoring of materials use at their institution through a variety of means, automated and otherwise.

Metz's 1982 study of Virginia Polytechnic Institute and State University data demonstrated the capabilities of certain systems in cross tabulating automated patron and circulation statistics. With these data his research team was able to use two-days of circulation data, or 58,457 books charged to 10,126 borrowers, as the basis of the study. This sample approach allowed characterization of active users and the subjects they used. Researchers were able to compare use of materials in various subject areas in relation to the university's book stock through employment of proportional use statistics derived by dividing percentage of books in circulation within each subject by percentages of holdings. The author further compared reading patterns across departmental and institutional lines. (Metz, 1983)

Accessibility and availability measures were addressed in a 1984 University of Pittsburgh case study exploring the feasibility of a simulation-based decision support system for resource sharing. (Dubey, 1984) The model used computer simulations of alternative resource sharing configurations with available cost and use data to address questions pertaining to economics of information transfer.

Charbonneau affirmed the importance of measuring collection use in an Indiana University study comparing rates of use of materials cataloged locally with those cataloged from copy. His comparison found no difference between the groups. (Charbonneau, 1986) In the same year Coady made

additional use of the Ohio State University automated circulation data of 1975-78, comparing rates of return for science materials with those described in studies done at other institutions. He found cause for further investigation of patron status, subject, penalties and loan period length variables as they influence return rates. (Coady, 1986)

The relationship between loans and in-house use of books received attention in a 1984-85 study at Western Australian Institute of Technology. This foreign study was noteworthy in its corroboration of McGrath's findings that circulation totals could assist in prediction of in-house materials use as well as external use of materials. Extensive use was made of data from the library's automated circulation system. (Lane, 1987)

Hayden's analysis of a Huntington Beach (Public) Library weeding project indicated the degree to which automation had become integrated in library operations by the middle of this decade. Without data from its automated system this library would have been unable to identify missing and heavily used items, as well as those rarely circulating. (Hayden, 1987)

This decade brought increasing scrutiny of the level of automation of various types of libraries. (Dohrman and Weiss, 1985) (Osbourne, 1983) (Williams, 1985) Even the smallest libraries now regularly received information geared toward utilization of automated systems in measurement of book circulation use. (Trochim, Miller and Trochim, 1985)

Camp's 1985 survey of 300 four-year academic libraries was the most recent multi-institutional study reported. Of the 210 libraries (70 percent) responding, 65 percent were small libraries, with 250,000 volumes or less. Twenty-six percent had between 250,000 and 1,000,000 volumes, while 9 percent had over 1,000,000 volumes. The investigators found a distinct positive correlation (at P is less than .001 level of confidence) between the library's size in volumes and whether its records were in machine-readable form. While only 12 percent of the respondents currently possessed automated catalogs, 65 percent planned to implement them in the future. Half of those with automated catalogs had them in place less than one year, with only one library possessing such a catalog for more than five years. (Camp, 1987)

Nineteen percent had an online circulation system, with 85 percent of these currently generating statistics from these systems. Almost seventy percent of those without automated circulation systems planned to install them in the future. A direct correlation between library size and presence of an automated circulation system was demonstrated at the P is less than .001 level of confidence. While over 61 percent of the large libraries had automated circulation systems, only 34.5 percent of the medium-sized libraries and 7.4 percent of the small libraries currently possessed these systems.

The percentage of libraries owning integrated online systems (circulation and catalog combined) was only 8.5

percent; however, almost 54 percent planned to implement a combined system of this sort.

Camp found no relationship between library size and the origin of the automated system or systems present; that is, systems developed in-house were just as likely to exist at smaller libraries as they are at large libraries. The same held true for commercially developed systems. (Camp, 1987)

### Summary of the Literature Search

Library administrators need timely, accurate, comprehensive information with which to make decisions regarding the appropriateness and accessibility of their collections for the needs of users and nonusers in their target populations. The utilization of a variety of methods of collection analysis is more likely to reveal an accurate picture of use than is reliance upon one or two methods.

Practices involving collection analysis may be divided into those which are collection centered and those which are client centered. The client centered practices which assess collection use are client surveys, compilation of circulation statistics, analysis of in-house use, citation analysis and measures of availability and accessibility. While this review has attempted to summarize the most useful approaches to client-centered collection analysis, it is not meant to be exhaustive in its coverage of techniques.



Library literature reflects a preponderance of research involving user surveys and compilation of circulation statistics. Librarians at larger academic institutions, especially research universities, are more likely to report their practices in this area than are those at four-year colleges, public libraries or community/junior colleges. The few comparative studies in the literature have in the main involved research universities.

With the advent of automation in libraries, expectations regarding the feasibility and ease of information gathering have risen. Evidence exists that continuous, sophisticated data gathering and analysis is being carried out at some institutions which have automated their activities.

### CHAPTER 3

#### METHODOLOGY

The purpose of this study was to investigate the practices used by academic and public library administrators throughout the United States in assessing the use of their collections, and the impact automation had in matching collections with the needs of the populations served. This chapter reviews the specific methodology used to address the central purpose of the study. It describes the population, sample, data collection instrument, and the specific data collection procedures. In addition it provides information about respondent characteristics, the specific null hypotheses to be tested, and the statistical methods for analyzing the data.

#### Population

The population for this study consisted of all main academic libraries in the United States, summer 1988, and all public libraries in the United States with collections of at least thirty thousand books as of summer 1988. The academic library population totaled 4,824 libraries, including library branches and departmental libraries. Once departmental and branch libraries were eliminated, the total academic library population was 3,140.

The rationale for eliminating public libraries with smaller book collections from the population was based on the premise that these libraries lacked the resources for in-depth collection analysis. They were also judged unlikely to be contemplating automation in the foreseeable future.

Consultation with survey specialists (Helen Berg, Oregon State University Survey Research Center, and Delvin Cornutt, Chemeketa Community College social science instructor and private population research consultant) and a small-library specialist (Mary Ginnane, Oregon State Library) confirmed this view. The public library population of all sizes numbered 9,170. Public libraries which did not meet collection size requirements were eliminated during the sampling process. Of the total 9,170, 5,866 were eliminated, leaving a total of 3,304.

Results are not generalizable to other types of libraries, to smaller public libraries or to those outside of the United States.

The general weaknesses and shortcomings of surveys such as the one employed here have been well documented, and are discussed on page 20 of this study. (Wilson, 1947) Also, no attempt was made to differentiate among types of academic libraries.

### Sample

Two independent samples of public and academic libraries were selected for the study. Based upon recommendations by Oregon State University survey specialist Helen Berg a combined total of 1100 libraries for both samples was chosen. This total size encourages a response of 800 returns and thus a sampling error of five percent. The combined total was then divided into two independent samples of 605 public libraries and 495 academic libraries, based upon the proportion of total public library population to total academic library population. Branch and departmental libraries were then eliminated, as were those public libraries too small to meet the criteria of the study. A computer-generated random selection procedure was utilized to identify and select the sample from the population.

### Data Collection Instrument

A questionnaire was constructed for this study designed for public and academic library administrators.

These administrators were asked to evaluate suggested practices for collection use analysis. Both current and ideal practices were identified. Administrators were also asked to assess the impact of automation upon collection analysis.

A letter of transmittal accompanied the questionnaire. Each questionnaire had a title page describing the study and giving instructions.

#### Refinement of the Instrument

The primary data for this study were obtained entirely through the use of one questionnaire. Refinement of the instrument was given special attention. Following a study of the literature and related studies items for the questionnaire were developed. (Dillman, 1978) Advice from several library and social science specialists resulted in revision of the instrument. This tentative draft of the questionnaire was given to selected collection administrators in public and academic libraries in Oregon. Recommendations were given and further modifications made.

Because it was impossible to make a comprehensive assessment of the validity and reliability of the questionnaire responses, interviews were conducted with collection specialists at Oregon State Library, Salem Public Library and Oregon State University. Modifications of the instrument were again carried out.

#### Pretest

A pretest of the instrument was conducted during the month of June, 1988. Six public libraries and six academic libraries in the State of Washington were randomly selected

from the 1987-88 American Library Directory. (This two-volume directory was also used for selection of the survey sample itself, and is described in more detail below, in the section on Participants in the Study.) Directors at each of the pretest institutions were then mailed a copy of the instrument, cover letter, and an additional cover letter explaining the pretest. Of the twelve library directors queried, four academic and two public directors returned completed questionnaires. This response rate was deemed adequate for pretest purposes. No modifications were made to the instrument as a result of the pretest.

#### Participants in the Study

The 1987-88 American Library Directory sponsored by the American Library Association (ALA) and published by Bowker Publishers was used to identify the libraries for this study. This directory contains the name and address of each public and academic library in the United States, the name of each director, and a statistical review of collection size, operating budget, and other data. (American Library Directory, 1987)

### Procedures

The specific procedures utilized in this study were as follows:

1. The determination of an appropriate sampling size using recommendations of Helen Berg, Survey Research Center Director, Oregon State University.
2. The elimination of ineligible respondents.
3. The obtaining of a mailing list of randomly selected library directors through the cooperation of the Chemeketa Community College Institutional Research Department and Information Services Department.
4. The mailing of an instructional letter (Appendix A) and the instrument (Appendix B).
5. The mailing of a follow-up postcard one week later (Appendix C).
6. The mailing of a follow-up letter and replacement instrument three weeks later (Appendix D).
7. The mailing of a final follow-up letter and replacement instrument eight weeks later (Appendix E). A return envelope accompanied each instrument (Appendix F).
8. The identification of the practices and views of respondents regarding collection analysis, and the impact of automation thereon, as determined by the instrument.
9. The testing of the hypotheses for significant differences.
10. Analysis of data.
11. Presentation of findings, conclusions and recommendations.

### Characteristics of the Respondents

Of the 1100 surveys sent, 888, or 81 percent, returned usable responses. Four hundred eighty-four or 80 percent of

the 605 public libraries returned completed questionnaires. Four hundred and four or 82 percent of the 495 academic libraries responded. Three libraries are no longer in operation. In addition to the 888 responding librarians, staff from thirteen other libraries asked to be deleted from the study.

Responses were received from libraries of all sizes and in all fifty states. Fifty-eight percent of the academic libraries and 64 percent of the public libraries have book collections of 99,999 or less; 24 percent of the academic and 26 percent of the public libraries cite collections of 100,000 to 249,999. Twelve percent of the academic and eight percent of the public libraries have collections of 250,000 to 999,999, while 5 percent of the academic and 2 percent of the public libraries have collections of one million volumes or more. Table 1 reflects this information.

Table 1  
Number of Volumes in Respondent Libraries

Volumes	Academic		Public		Total	
0 - 99,999	236	(58%)	310	(64%)	546	(62%)
100,000 - 249,999	98	(24%)	124	(26%)	222	(25%)
250,000 - 999,999	50	(12%)	39	(8%)	89	(10%)
1,000,000 and more	20	(5%)	10	(2%)	30	(4%)
Total	404	(46%)	483	(54%)	887	(100%)

N = 887



Two hundred and forty, or 60 percent of the academic library respondents are directors or heads of their libraries. Three hundred and sixteen, or 66 percent of the public respondents are directors or head librarians. The remaining respondents hold a variety of positions, including acquisitions librarian, assistant director, and department head, among many others.

Of the 888 libraries responding, 884 indicate their library type in Table 2.

Table 2

## Respondent Libraries by Type

	Academic		Public		Total	
Public	0	(0%)	478	(99%)	478	(54%)
Two-Year Academic	154	(38%)	0	(0%)	154	(17%)
Four-Year Academic	220	(55%)	0	(0%)	220	(25%)
Other	27	(7%)	5	(1%)	32	(4%)
Total	401	(45%)	483	(55%)	884	(100%)

N = 884

(Note: Academic libraries also indicating they serve the public have been counted only as academic libraries for purposes of this study.)

Slightly fewer than one-third of the respondents have had automated systems in place for one year or more. Thirty-four percent of the public libraries and twenty-nine percent of

the academic libraries are fully automated. These data are reflected in Table 3.

Table 3  
State of Automation of Respondent Libraries

	Academic		Public		Total	
Automated	114	(29%)	166	(34%)	280	(32%)
Newly Automated	39	(10%)	40	(8%)	79	(9%)
Not Automated	247	(62%)	280	(58%)	527	(59%)
Total	400	(45%)	486	(55%)	886	(100%)

N = 886

### Hypothesis of the Study

It was hypothesized that libraries with automated systems had different expectations regarding collection analysis practices than did nonautomated libraries. It was further hypothesized that automated libraries possessed a greater capability to assess the adequacy of their collections than did nonautomated libraries, and that they used this capability to a greater extent.

It was further hypothesized that academic and public libraries wished to use and did use different practices to assess the adequacy of their collections.

To examine the above the following hypotheses were tested:

H<sub>1</sub> There is no difference in the collection analysis practices identified as useful by nonautomated and automated libraries.

H<sub>2</sub> There is no correlation between a library's satisfaction with its practices and its state of automation.

H<sub>3</sub> There is no difference between the expectations of automated and nonautomated libraries regarding the utility of automated systems in gathering data for analyzing collection use.

H<sub>4</sub> There is no difference in the practices used by automated and nonautomated libraries to analyze collection use.

H<sub>5</sub> There is no difference in the collection analysis practices identified as useful by academic and public libraries.

H<sub>6</sub> There is no difference in the number of practices used by academic and public libraries to analyze collection use.

### Methods of Analysis

#### Descriptive analysis

Descriptive analyses of categories and frequencies in terms of comparative percentages, proportions, and distributions were used.

#### Chi Square

Because the study involved data which resulted in the form of frequencies, categories, or classifications the chi-square ( $\chi^2$ ) statistical test was selected for measuring significant differences. (Downie and Heath, 1974) This test allows a researcher to determine if findings from a sample are generalizable to a population. Since the two groups

(automated and nonautomated libraries) and two classifications (academic and public) were independent and the data were reported in terms of frequencies in discrete categories, the  $\chi^2$  test of independence was considered the appropriate statistical tool for testing significant differences for the null hypotheses.

The chi-square formula (Meyer, 1976) for two or more independent samples is:

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^k \frac{(o_{ij} - e_{ij})^2}{e_{ij}}$$

where  $o_{ij}$  = the observed frequency of cases for the cell of the  $i$ th row and the  $j$ th column

$e_{ij}$  = the expected frequency of cases for the cell of the  $i$ th row and  $j$ th column

$(s)$  = the sum of all the cells ( $\sigma$ )

with the  $df = (r-1)(k-1)$

where  $r$  = number of rows

$k$  = number of columns

Runyon and Haber (1980) suggest that the  $\chi^2$  test for independence of categorical variables is utilized to determine whether variables are related or independent. If the  $\chi^2$  value is significant the variables are viewed as dependent or related and hence findings regarding the sample can be generalized to the population.

## CHAPTER 4

### FINDINGS

This chapter reports the results of the analysis of the null hypotheses specified in Chapter Three. Results of the survey are presented in the form of descriptive statistics, including counts, percentages and rankings. The findings regarding collection analysis practices are reported in order of the hypotheses, that is, expectations of automated and nonautomated libraries, practices of automated and nonautomated libraries, expectations of academic and public libraries, and practices of academic and public libraries.

#### Expectations of Automated and Nonautomated Libraries

Seventeen "client-centered" practices were identified as being of possible use to respondents in analyzing use of collections. These seventeen practices were:

- \* client surveys
- \* patron statistics by category
- \* use statistics by category
- \* circulation statistics
- \* materials expenditures statistics by category
- \* in-house utilization of materials statistics
- \* target group statistics by category
- \* analysis of appropriateness of collection breadth in relation to target group needs
- \* analysis of appropriateness of collection depth in relation to target group needs
- \* analysis of appropriateness of collection currency in relation to target group needs
- \* percent of title requests your library fills
- \* interlibrary borrowing requests by user group and/or subject

- \* average time a patron devotes to locating items in the catalog or other finding tool
- \* competition for items between users or groups
- \* degree to which materials are satisfactorily distributed between branches or libraries in a cooperative
- \* percentage of materials available when needed
- \* bibliographic citation analysis

In addition to the above practices, other practices which met the "client-centered" criteria of this study were elicited from the respondents. No additional practices meeting the researcher's criteria were identified.

A four-point Likert-type attitude scale (Gay, 1987) was constructed to determine the degree to which respondents found each practice useful. Respondents were also asked to categorize their state of automation, describing their libraries as either "automated," "newly automated" or "not automated." For the purposes of inferential testing the four-point attitude scale was then compressed to two points, combining "very useful" with "somewhat useful" and "not too useful" with "not at all useful." "Newly automated" libraries, those which had been automated less than one year, were also combined with those self-described as "not automated" in order to differentiate them from those "automated" one year or more. Cross tabulations of these groups then yielded the expectations of automated and nonautomated libraries regarding specific practices for analyzing collection use.

Null hypothesis one stated there was no difference in the collections analysis practices identified as useful by

nonautomated and automated libraries. To test this hypothesis the chi-square statistical test was performed on the data in Table 4. The summary table lists only responses which were in agreement with pertinent questions. Full tables of all data, including responses indicating disagreement with statements, are found in Appendices G1 through G18.

At the .05 level of confidence chi-square must be higher than 3.841 in order to demonstrate a significant difference in proportions expected. In only one instance, that for compilation of statistics on use by category, was the null hypothesis rejected, and the results therefore generalizable to the population. In the other sixteen areas the null hypothesis may have been supported and the results were not generalizable to the population.

In the sample of over 800 libraries circulation statistics and analysis of appropriate currency were chosen most often, by 95 percent of both types of libraries, as the most useful practices. (responses in agreement = 264 for automated and 560 for nonautomated libraries respectively.) Automated libraries then selected patron surveys (agreeing = 245), categories of use and interlibrary borrow requests (agreeing for each = 240), title fills (agreeing = 239), in-house use (agreeing = 233), appropriate depth (agreeing = 228), appropriate breadth and percent available (agreeing for each = 225), and materials expenditures (agreeing = 211).

Table 4: Summary Table: Usefulness of Collection Analysis Practices  
As Identified By Automated and Nonautomated Libraries

Practice	Automated	Nonautomated	Totals	N	Chi-square
Surveys	245 (89%)	486 (85%)	731 (86%)	849	3.038
Patron Statistics	175 (65%)	344 (61%)	519 (62%)	836	1.734
Use Categories	240 (88%)	463 (82%)	703 (84%)	840	6.087
Circulation Statistics	264 (95%)	560 (95%)	824 (95%)	865	0.002
Materials Expenditures	211 (78%)	465 (80%)	676 (79%)	852	0.533
In-house Use	233 (86%)	525 (90%)	758 (89%)	854	3.837
Target Group Statistic	154 (57%)	298 (53%)	452 (54%)	830	1.073
Appropriate Breadth	225 (84%)	489 (86%)	714 (85%)	837	0.335
Appropriate Depth	228 (85%)	505 (89%)	733 (88%)	837	2.889
Appropriate Currency	257 (95%)	546 (95%)	803 (95%)	844	0.002
Percent Title Fills	239 (89%)	504 (87%)	743 (88%)	846	0.673
ILL Borrow Requests	240 (88%)	496 (85%)	736 (86%)	855	0.767
Patron Locating Time	113 (41%)	250 (44%)	363 (44%)	834	0.644
Competition for Items	160 (59%)	323 (57%)	483 (58%)	838	0.429
Branch Distribution	119 (49%)	214 (43%)	333 (45%)	744	2.828
Percent Available	225 (83%)	462 (82%)	687 (83%)	832	0.161
Bibliographic Citation	141 (54%)	306 (55%)	447 (55%)	815	0.239

Degrees of freedom = 1



Nonautomated libraries preferred in-house use statistics (agreeing = 525), analysis of appropriate depth (agreeing = 505), percent title fills (agreeing = 504), interlibrary borrow requests (agreeing = 496), appropriate breadth (agreeing = 489), patron surveys (agreeing = 486), materials expenditures (agreeing = 465), categories of use (agreeing = 463), and percent available (agreeing = 462). Less useful to both groups were patron statistics (automated agreeing = 175 and nonautomated agreeing = 344) and competition between groups for items (automated agreeing = 160 and nonautomated agreeing = 323). Target group statistics were chosen by 154 of the automated and 298 of the nonautomated libraries, while bibliographic citation appeared in 141 of the lists of the automated libraries and 306 of their nonautomated counterparts. Distribution between branches and patron locating time were least useful to both groups; branch distribution received 119 responses in agreement from the automated group and 214 from the nonautomated group. Patron locating time was selected by 113 automated and 250 nonautomated libraries. Table 5 reflects collection analysis practices identified as useful by automated and nonautomated libraries, ranked by their usefulness. The numbers in this table are for responses in agreement with the statement; responses in disagreement as well as those in agreement appear in Appendix G.

Table 5: Summary Table: Collection Analysis Practices  
Ranked for Usefulness by Automated and Nonautomated Libraries

Practice	Automated	Rank	Nonautomated	Rank	Total	Rank
Surveys	245	3	486	8	731	7
Patron Statistics	175	12	344	12	519	12
Use Categories	240	4.5	463	10	703	9
Circulation Statistics	264	1	560	1	824	1
Materials Expenditures	211	11	465	9	676	11
In-house Use	233	7	525	3	758	3
Target Group Statistic	154	14	298	15	452	14
Appropriate Breadth	225	9.5	489	7	714	8
Appropriate Depth	228	8	505	4	733	6
Appropriate Currency	257	2	546	2	803	2
Percent Title Fills	239	6	504	5	743	4
ILL Borrow Requests	240	4.5	496	6	736	5
Patron Locating Time	113	17	250	16	363	16
Competition for Items	160	13	323	13	483	13
Branch Distribution	119	16	214	17	333	17
Percent Available	225	9.5	462	11	687	10
Bibliographic Citation	141	15	306	14	447	15

Null hypothesis two stated that there was no correlation between a library's satisfaction with its practices and its state of automation. Table 6 reflects the data when automated and nonautomated libraries were queried whether their libraries' current systems met their needs for information regarding collection use. The chi-square test was performed on these data.

Table 6

Automated and Nonautomated Library Satisfaction with Current Practices					
	Automated		Nonautomated		Total
Yes	85	(33%)	108	(19%)	193 (23%)
No	176	(67%)	460	(81%)	636 (77%)
Total	261	(31%)	568	(67%)	829 (100%)
chi-square = 18.391                      DF = 1                      N = 829					

There is a significant difference at the .05 level of confidence. Null hypothesis two is rejected, and the findings are generalizable to the population.

Automated libraries were more satisfied with their current practices than were nonautomated libraries, with a total of 85 libraries or 33 percent of the automated institutions expressing satisfaction while only 108 libraries or 19 percent of their nonautomated counterparts indicated satisfaction.

Hypothesis three stated that there was no difference between the expectations of automated and nonautomated libraries regarding the utility of automated systems in gathering data for analyzing collection use. In each of four questions addressing this topic respondents selected one of four statements which best reflected their attitudes. Those selecting "strongly agree" were combined with those choosing "agree somewhat." Respondents who marked "strongly disagree" and "disagree somewhat" were also combined. A chi-square statistical analysis of the data proved inconclusive because over 20% of the cells had expected counts less than 5. In order to make chi-square a valid test the data were reconfigured combining "agree somewhat," "disagree somewhat" and "strongly disagree." Results of these analyses as well as the inconclusive original tests are reflected in Tables 7 through 14.

Table 7

Automated and Nonautomated Library Satisfaction With  
Automation's Utility in Making Analysis Easier:  
Strongly Agree Separate

	Automated		Nonautomated		Total	
Strongly agree	186	(67%)	408	(71%)	594	(70%)
Agree - Strongly disagree	90	(33%)	169	(29%)	259	(30%)
Total	276	(32%)	577	(68%)	853	(100%)
<hr/>						
chi-square = 0.973	DF = 1		N = 853			

The null hypothesis may be supported. The results may not be generalized to the population.

The sample showed strong support for the belief that "Automation makes collection analysis easier to do." Of the 853 libraries responding to this question 594, or 70 percent, strongly agreed with the statement. One hundred eighty-six of these were automated libraries, and 408 were not automated.

When those libraries which marked "agree somewhat" were pulled out of the combined "disagree" category and combined instead with "strongly agree," support for this statement became even more pronounced. Two hundred sixty-six automated libraries and 572 nonautomated libraries responded positively, for a total of 838 or 98 percent. A combined total of 15 libraries disagreed somewhat or strongly with this statement. These data appear in Table 8.

Table 8

Automated and Nonautomated Library Satisfaction With  
Automation's Utility in Making Analysis Easier  
Combined Strongly/Somewhat Agree

	Automated		Nonautomated		Total	
Agree	266	(96%)	572	(99%)	838	(98%)
Disagree	10	(4%)	5	(1%)	15	(2%)
Total	276	(32%)	577	(68%)	853	(100%)
<hr/>						
chi-square = 8.212	DF = 1		N = 853			

Over 20 percent of cells have expected counts less than 5. Table is so sparse that chi-square may not be a valid test.

In Table 9 following the null hypothesis may be supported. The results may not be generalized to the population.

Sixty-three percent of the automated libraries and 66 percent of the nonautomated libraries in the sample of 849 libraries strongly agreed with the statement that "Automation makes collection analysis more timely." Thirty-seven percent of the automated libraries and 34 percent of those not automated agreed somewhat, disagreed somewhat or disagreed strongly with the statement.

Table 9

Automated and Nonautomated Library Satisfaction With  
Automation's Ability To Make Analysis Timely:  
Strongly Agree Separate

	Automated		Nonautomated		Total	
Strongly agree	173	(63%)	378	(66%)	551	(65%)
Agree - Strongly disagree	102	(37%)	196	(34%)	298	(35%)
Total	275	(32%)	574	(68%)	849	(100%)
<hr/>						
chi-square = 0.708			DF = 1			N = 849

When those libraries which marked "agree somewhat" were pulled out of the disagreeing group, support for the statement became much stronger. Table 10 reflects data when those libraries agreeing somewhat and strongly were combined.

Forty-three libraries, a combined total of 5 percent of the sample, disagreed somewhat or strongly with the statement. Eight hundred and six libraries agreed strongly or somewhat with the statement.

Table 10

Automated and Nonautomated Library Satisfaction With  
Automation's Ability To Make Analysis Timely:  
Combined Strongly/Somewhat Agree

	Automated		Nonautomated		Total	
Agree	256	(93%)	550	(96%)	806	(95%)
Disagree	19	(7%)	24	(5%)	43	(5%)
Total	275	(32%)	574	(68%)	849	(100%)
<hr/>						
chi-square = 2.877			DF = 1	N = 849		

Over 20 percent of cells in Table 10 have expected counts less than 5. The table is so sparse that chi-square may not be a valid test.

Table 11

Automated and Nonautomated Library Satisfaction With  
Automation's Ability to Allow Comprehensive  
Analysis: Strongly Agree Separate

	Automated		Nonautomated		Total	
Strongly agree	170	(62%)	395	(69%)	565	(67%)
Agree - Strongly disagree	105	(38%)	177	(31%)	282	(33%)
Total	275	(32%)	572	(68%)	847	(100%)
<hr/>						
chi-square = 4.380			DF = 1	N = 847		

In Table 11 the null hypothesis is rejected. The findings may be generalized to the population.

Sixty-two percent of the automated libraries and 69 percent of the nonautomated libraries in the sample strongly supported the statement that "Automation allows collection analysis to be more comprehensive." Thirty-eight percent of the automated libraries and 31 percent of the nonautomated libraries agreed somewhat, disagreed somewhat or strongly disagreed with this statement.

Recombining the libraries which agree somewhat with this statement with those which strongly agree yielded the findings in Table 12. Ninety-five percent of the automated libraries and 97 percent of those without automation supported this statement. A total of 30 libraries in the sample disagreed somewhat or strongly with the statement.

Table 12

Automated and Nonautomated Library Satisfaction With  
Automation's Ability to Allow Comprehensive  
Analysis: Combined Strongly/Somewhat Agree

	Automated		Nonautomated		Total	
Agree	262	(95%)	555	(97%)	817	(96%)
Disagree	13	(5%)	17	(3%)	30	(4%)
Total	275	(32%)	572	(68%)	847	(100%)
<hr/>						
chi-square = 1.675	DF = 1		N = 847			

Over 20 percent of cells have expected counts less than 5. Table is so sparse that chi-square may not be a valid test.



In Table 13 following the null hypothesis is rejected.  
The findings are generalizable to the population.

Table 13

Automated and Nonautomated Library Satisfaction With  
Automation's Ability to Provide All Needed  
Information: Strongly Agree Separate

	Automated		Nonautomated		Total	
Strongly agree	23	(8%)	99	(18%)	122	(15%)
Agree - Strongly disagree	251	(92%)	464	(82%)	715	(85%)
Total	274	(33%)	563	(67%)	837	(100%)
chi-square = 12.502		DF = 1		N = 837		

Eight percent of the automated libraries and 18 percent of the nonautomated libraries strongly agreed that "Automation provides all the information needed for analysis of collections, in the format needed." Ninety-two percent of the automated libraries and 82 percent of their nonautomated cohorts agreed somewhat, disagreed somewhat or disagreed strongly with this statement.

Splitting those libraries which agreed somewhat with the statement from those which disagreed allowed the data to be reconfigured as shown in Table 14. Here those strongly agreeing and agreeing somewhat were combined. While 39 percent of the automated libraries agreed strongly or somewhat that "Automation provides all the information needed for analysis of collections, in the format needed," 57

percent of those libraries without automation agreed with this statement. Sixty-one percent of those automated disagreed with the statement; 43 percent of the nonautomated disagreed.

Table 14

Automated and Nonautomated Library Satisfaction With  
Automation's Ability to Provide All Needed  
Information: Combined Strongly/Somewhat Agree

	Automated		Nonautomated		Total	
Agree	108	(39%)	320	(57%)	428	(51%)
Disagree	166	(61%)	243	(43%)	409	(49%)
Total	274	(33%)	563	(67%)	837	(100%)
<hr/>						
chi-square = 22.389	DF = 1		N = 837			

In summary nonautomated libraries in the sample had higher expectations of automated systems than did the automated libraries. They expected automation to make analysis easier; 71 percent of the nonautomated libraries strongly agreed with the statement, as opposed to 67 percent of the automated libraries. Sixty-six percent of the nonautomated libraries expected automation to make analysis timely, while 63 percent of the automated libraries strongly agreed with the statement. Sixty-nine percent of the nonautomated libraries were convinced that automation would allow comprehensive collection analysis, while 62 percent of the automated libraries thought the same. While only fifteen percent of

the total responding to the question strongly believed that automation would provide all the information needed for collection analysis, 18 percent, or 99 of these were in nonautomated libraries; only 8 percent, or 23 of the automated libraries strongly agreed with this statement.

#### Practices of Automated and Nonautomated Libraries

Null hypothesis four stated that there was no difference in the practices used by automated and nonautomated libraries to analyze collection use. To test this hypothesis the chi-square test was performed on the data in Table 15. Only responses in agreement are reflected in the summary table; full tables of data exist in Appendices H1 through H18.

Null hypothesis four is rejected in nine of seventeen practices and supported in eight. Those practices in which the null hypothesis is rejected are client surveys, patron statistics, categories of use statistics, circulation statistics, target group statistics, percent title fills, competition between groups for items, distribution between branches, and percent available. The findings regarding these practices may be generalized to the population.

The sample findings may not be generalized to the population for materials expenditures, in-house use, appropriate breadth, depth or currency, interlibrary borrow requests, patron locating time or bibliographic citation.

Table 15: Summary Table

## Collection Analysis Practices Used By Automated and Nonautomated Libraries

Practice	Automated	Nonautomated	Totals	N	Chi-square
Surveys	164 (64%)	296 (53%)	460 (56%)	818	9.826
Patron Statistics	111 (43%)	114 (20%)	225 (28%)	818	46.231
Use Categories	189 (74%)	258 (47%)	447 (55%)	806	53.918
Circulation Statistics	193 (75%)	352 (63%)	545 (67%)	813	11.804
Materials Expenditures	134 (53%)	267 (48%)	401 (49%)	813	1.546
In-house Use	131 (51%)	269 (48%)	400 (49%)	823	0.710
Target Group Statistic	50 (19%)	61 (11%)	111 (14%)	821	11.271
Appropriate Breadth	85 (33%)	175 (31%)	260 (32%)	813	0.374
Appropriate Depth	79 (31%)	181 (32%)	260 (32%)	816	0.133
Appropriate Currency	129 (51%)	253 (46%)	382 (47%)	806	2.119
Percent Title Fills	143 (57%)	259 (46%)	402 (49%)	816	7.726
ILL Borrow Requests	163 (63%)	342 (61%)	505 (61%)	823	0.524
Patron Locating Time	17 (7%)	29 (5%)	46 (6%)	824	0.690
Competition for Items	78 (30%)	109 (19%)	187 (22%)	832	12.287
Branch Distribution	59 (24%)	80 (15%)	139 (18%)	776	10.259
Percent Available	82 (32%)	112 (20%)	194 (24%)	820	13.420
Bibliographic Citation	55 (22%)	119 (21%)	174 (21%)	813	0.025

Degrees of freedom = 1

Table 16: Summary Table: Collection Analysis Practices  
Ranked in Order of Use By Automated and Nonautomated Libraries

Practice	Automated	Rank	Nonautomated	Rank	Totals	Rank
Surveys	164	3	296	3	460	3
Patron Statistics	111	9	114	12	225	11
Use Categories	189	2	258	7	447	4
Circulation Statistics	193	1	352	1	545	1
Materials Expenditures	134	6	267	5	401	6
In-house Use	131	7	269	4	400	7
Target Group Statistic	50	16	61	16	111	16
Appropriate Breadth	85	10	175	10	260	9.5
Appropriate Depth	79	12	181	9	260	9.5
Appropriate Currency	129	8	253	8	382	8
Percent Title Fills	143	5	259	6	402	5
ILL Borrow Requests	163	4	342	2	505	2
Patron Locating Time	17	17	29	17	46	17
Competition for Items	78	13	109	14	187	13
Branch Distribution	59	14	80	15	139	15
Percent Available	82	11	112	13	194	12
Bibliographic Citation	55	15	119	11	174	14

Table 16 contains a ranking of the data found in Table 15. The data indicate both automated and nonautomated libraries used circulation statistics most, (with 193 automated and 352 nonautomated libraries agreeing with this statement). Automated libraries then utilized categories of use (agreeing = 189), patron surveys (agreeing = 164), interlibrary borrow requests (agreeing = 163) percent title fills (agreeing = 143), materials expenditures (agreeing = 134), in-house use (agreeing = 131) and appropriate currency (agreeing = 129).

After circulation statistics nonautomated libraries used interlibrary borrow requests (agreeing = 342), patron surveys (agreeing = 296), in-house use (agreeing = 269), materials expenditures (agreeing = 267), percent title fills (agreeing = 259), categories of use (agreeing = 258) and appropriate currency (agreeing = 253).

As indications of use continued to fall automated libraries reported utilizing patron statistics (agreeing = 111), appropriate breadth (agreeing = 85), percent available (agreeing = 82), appropriate depth (agreeing = 79), and competition between groups for items (agreeing = 78).

Nonautomated libraries chose appropriate depth and breadth (agreeing for each = 260), patron statistics (agreeing = 225), percent available (agreeing = 194), and competition for items (agreeing = 187).

Least used by automated libraries were distribution between branches (agreeing = 59), bibliographic citation

(agreeing = 55), target group analysis (agreeing = 50) and patron locating time (agreeing = 17). Nonautomated libraries used less bibliographic citation (agreeing = 174), patron statistics (agreeing = 114), percent available (agreeing = 112), competition between groups for items (agreeing = 109), and branch distribution (agreeing = 80). As with the automated libraries, the least used practices of nonautomated libraries were target group analyses (agreeing = 61) and patron locating time (agreeing = 29).

#### Expectations of Academic and Public Libraries

Null hypothesis five stated that there was no difference in the collection analysis practices identified as useful by academic and public libraries. Table 17 presents a summary of the data and statistical test performed upon them. Appendices I1 through I18 show complete responses in agreement and disagreement with the statement.

Null hypothesis five is rejected in thirteen of seventeen cases and may be supported in four. Those practices in which the findings of the sample may be generalized to the population are the following: patron statistics, use categories, circulation statistics, materials expenditures, target group statistics, appropriate breadth, appropriate depth, percent title fills, interlibrary loan borrow

requests, competition for items, distribution between branches, percent available and bibliographic citation analysis.

Null hypothesis five may be supported for client surveys, in-house use statistics, appropriate currency and patron locating time. The sample data are not generalizable to the population in these cases.

Table 18 reflects the data of Table 17 ranked in order of importance to the sample of academic and public libraries. In the sample academic libraries ranked appropriate currency as the most useful practice, with 374 responses in agreement. Next for academic libraries were circulation statistics (agreeing = 372), appropriate depth (agreeing = 353), in-house use (agreeing = 352), appropriate breadth (agreeing = 345), patron surveys (agreeing = 342) and materials expenditures (agreeing = 337).

The public libraries surveyed found circulation statistics most useful (agreeing = 457), followed by appropriate currency (agreeing = 435), percent title fills (agreeing = 432), interlibrary borrow requests (agreeing = 413), in-house use (agreeing = 410), categories of use (agreeing = 403), patron surveys (agreeing = 394), and percent available (agreeing = 390).

Interlibrary loan requests were ranked eighth in importance to academic libraries (agreeing = 327). Next in rank were percent title fills (agreeing = 317), categories of



use (agreeing = 302), percent available (agreeing = 300), bibliographic citation (agreeing = 254), competition between groups for items (agreeing = 202), and patron locating time (agreeing = 167). Finally, academic libraries ranked patron statistics fifteenth (agreeing = 155), target group statistics sixteenth (agreeing = 124) and satisfactory distribution between branches seventeenth (agreeing = 108).

Public libraries in the sample ranked appropriate depth as the ninth most useful practice (agreeing = 385), then appropriate breadth (agreeing = 375), patron statistics (agreeing = 367), materials expenditures (agreeing = 343), target group statistics (agreeing = 331), and competition between groups for items (agreeing = 283). Branch distribution was fifteenth (agreeing = 228), patron locating time sixteenth (agreeing = 198) and bibliographic citation seventeenth (agreeing = 197) for public libraries.

Table 17: Summary Table: Usefulness of Collection Analysis Practices  
As Identified by Academic and Public Libraries

Practice	Academic	Public	Totals	N	Chi-square
Surveys	342 (87%)	394 (85%)	736 (86%)	854	0.432
Patron Statistics	155 (41%)	367 (80%)	522 (62%)	841	133.331
Use Categories	302 (78%)	403 (88%)	705 (84%)	844	16.935
Circulation Statistics	372 (93%)	457 (97%)	829 (95%)	871	6.068
Materials Expenditures	337 (85%)	343 (75%)	680 (79%)	858	13.260
In-house Use	352 (89%)	410 (89%)	762 (89%)	858	0.068
Target Group Statistic	124 (33%)	331 (73%)	455 (54%)	835	136.084
Appropriate Breadth	345 (88%)	375 (83%)	720 (85%)	843	3.978
Appropriate Depth	353 (90%)	385 (85%)	738 (88%)	843	5.009
Appropriate Currency	374 (95%)	435 (95%)	809 (95%)	850	0.085
Percent Title Fills	317 (82%)	432 (93%)	749 (88%)	852	24.009
ILL Borrow Requests	327 (83%)	413 (88%)	740 (86%)	861	5.240
Patron Locating Time	167 (43%)	198 (44%)	365 (43%)	840	0.118
Competition for Items	202 (52%)	283 (62%)	485 (58%)	843	7.441
Branch Distribution	108 (32%)	228 (56%)	336 (45%)	748	41.907
Percent Available	300 (78%)	390 (87%)	690 (83%)	836	12.580
Bibliographic Citation	254 (66%)	197 (45%)	451 (55%)	819	37.768

Degrees of freedom = 1

Table 18: Summary Table: Collection Analysis Practices  
Ranked for Usefulness by Academic and Public Libraries

Practice	Academic	Rank	Public	Rank	Totals	Rank
Surveys	342	6	394	7	736	7
Patron Statistics	155	15	367	11	522	12
Use Categories	302	10	403	6	705	9
Circulation Statistics	372	2	457	1	829	1
Materials Expenditures	337	7	343	12	680	11
In-house Use	352	4	410	5	762	3
Target Group Statistic	124	16	331	13	455	14
Appropriate Breadth	345	5	375	10	720	8
Appropriate Depth	353	3	385	9	738	6
Appropriate Currency	374	1	435	2	809	2
Percent Title Fills	317	9	432	3	749	4
ILL Borrow Requests	327	8	413	4	740	5
Patron Locating Time	167	14	198	16	365	16
Competition for Items	202	13	283	14	485	13
Branch Distribution	108	17	228	15	336	17
Percent Available	300	11	390	8	690	10
Bibliographic Citation	254	12	197	17	451	15

### Practices of Academic and Public Libraries

Null hypothesis six stated that there was no difference in the practices used by academic and public libraries to analyze collection use. Table 19 sets forth a summary of the data and the chi-square analysis results. Appendices J1 through J18 present full tables of the data and analyses.

Null hypothesis six is rejected in ten of seventeen cases, and may be supported in the remaining seven. Those practices in which the hypothesis is rejected are patron statistics, materials expenditures, target group statistics, appropriate breadth, appropriate depth, percent title fills, competition between groups, distribution among branches, percent available and bibliographic citation analysis. These findings are generalizable to the population.

Practices in which data may support the null hypothesis are client surveys, use categories, circulation statistics, in-house use, appropriate currency, interlibrary loan borrow requests, and patron locating time. These practices are not generalizable to the population.

The practice used most often by the sample academic group was that of compilation of circulation statistics (agreeing = 249). Next for academic libraries were materials expenditures (agreeing = 241), interlibrary borrow requests (agreeing = 239), patron surveys (agreeing = 224), categories of use (agreeing = 210), in-house use (agreeing = 186), and

appropriate currency (agreeing = 175). Appropriate breadth was eighth with 146 responses in agreement, followed by appropriate depth (agreeing = 141), percent title fills (agreeing = 134), bibliographic citation (agreeing = 107), patron statistics (agreeing = 74), percent available (agreeing = 58) and competition for items (agreeing = 45).

Public libraries sampled also used circulation statistics most (agreeing = 299). Tied next in the public sample use were interlibrary borrow requests and percent title fills, both with responses in agreement numbering 268. Fourth was patron surveys (agreeing = 239), then followed use categories (agreeing = 238), in-house use (agreeing = 216), appropriate currency (agreeing = 208), materials expenditures (agreeing = 161), and patron statistics (agreeing = 151). Competition between groups for items ranked tenth (agreeing = 142), while percent available was eleventh (agreeing = 136), appropriate depth was twelfth (agreeing = 120) and branch distribution was thirteenth with responses in agreement numbering 115.

Academic libraries in the sample ranked branch distribution fifteenth with 39 responses in agreement. Following in sixteenth and seventeenth place respectively were target groups statistics (agreeing = 25) and patron locating time with 17 responses in agreement.

Table 19: Summary Table

## Collection Analysis Practices Used by Academic and Public Libraries

Practice	Academic	Public	Totals	N	Chi-square
Surveys	224 (58%)	239 (54%)	463 (56%)	823	1.445
Patron Statistics	74 (19%)	151 (34%)	225 (27%)	823	22.381
Use Categories	210 (56%)	238 (55%)	448 (55%)	812	0.080
Circulation Statistics	249 (65%)	299 (69%)	548 (67%)	817	0.957
Materials Expenditures	241 (63%)	161 (37%)	402 (49%)	817	56.389
In-house Use	186 (49%)	216 (48%)	402 (49%)	828	0.006
Target Group Statistic	25 (6%)	86 (19%)	111 (13%)	827	29.469
Appropriate Breadth	146 (39%)	115 (26%)	261 (32%)	817	14.431
Appropriate Depth	141 (37%)	120 (27%)	261 (32%)	820	9.085
Appropriate Currency	175 (47%)	208 (47%)	383 (47%)	810	0.004
Percent Title Fills	134 (36%)	268 (60%)	402 (49%)	820	49.791
ILL Borrow Requests	239 (63%)	268 (60%)	507 (61%)	826	0.834
Patron Locating Time	17 (4%)	29 (6%)	46 (6%)	828	1.567
Competition for Items	45 (12%)	142 (31%)	187 (22%)	836	45.899
Branch Distribution	39 (11%)	100 (24%)	139 (18%)	781	21.534
Percent Available	58 (15%)	136 (31%)	194 (24%)	825	27.459
Bibliographic Citation	107 (28%)	69 (16%)	176 (22%)	818	18.540

Degrees of freedom = 1

Table 20: Summary Table: Collection Analysis Practices  
Ranked in Order of Use by Academic and Public Libraries

Practice	Academic	Rank	Public	Rank	Totals	Rank
Surveys	224	4	239	4	463	3
Patron Statistics	74	12	151	9	225	11
Use Categories	210	5	238	5	448	4
Circulation Statistics	249	1	299	1	548	1
Materials Expenditures	241	2	161	8	402	6
In-house Use	186	6	216	6	402	6
Target Group Statistic	25	16	86	15	111	16
Appropriate Breadth	146	8	115	13	261	9.5
Appropriate Depth	141	9	120	12	261	9.5
Appropriate Currency	175	7	208	7	383	8
Percent Title Fills	134	10	268	2.5	402	6
ILL Borrow Requests	239	3	268	2.5	507	2
Patron Locating Time	17	17	29	17	46	17
Competition for Items	45	14	142	10	187	13
Branch Distribution	39	15	100	14	139	15
Percent Available	58	13	136	11	194	12
Bibliographic Citation	107	11	69	16	176	14

The sample public library group ranked branch distribution fourteenth (agreeing = 100), target group statistics fifteenth (agreeing = 86), and bibliographic citation sixteenth (agreeing = 69). Like their academic counterparts, the public sample ranked patron locating time seventeenth (agreeing = 29).



## CHAPTER 5

## SUMMARY, CONCLUSIONS, OBSERVATIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to investigate the practices used by academic and public library administrators throughout the United States in assessing the use of their collections, and the impact automation has in matching collections with the needs of the populations served. The study was designed to seek answers to the following questions:

1. What were the practices followed in matching collections to populations served in libraries that were not automated?
2. Were the practices of automated libraries different from those of nonautomated libraries?
3. Did public and academic libraries use different practices?
4. In the judgment of library administrators what should constitute the practices to be followed in collection management in relation to the populations served?
5. How adequate were the design and use of the present automated and manual systems in matching the available collections to the populations served, as evaluated by library collection managers?
6. What recommendations, based on the findings and conclusions of this study, could be made to academic and public library administrators with automated systems or those considering such systems?

It was hypothesized that libraries with automated systems had different expectations regarding collection analysis practices than did nonautomated libraries. It was further hypothesized that automated libraries possessed a greater capability to assess the adequacy of their collections than

did nonautomated libraries, and that they used this capability to a greater extent.

It was further hypothesized that academic and public libraries wished to use and did use different practices to assess the adequacy of their collections.

### Procedures

During the summer of 1988 a total of 1,100 subjects was selected from the academic and public library populations in the United States. Two stratified random samples of 495 academic libraries and 605 public libraries were chosen. Public libraries with collections of fewer than 30,000 volumes were excluded from the study, leaving a total of 3,304 of the original public library population of 9,170. Departmental and branch academic libraries were also omitted, leaving a total of 3,104 academic libraries of the 4,824 original academic population.

Directors at all of the selected libraries received copies of a survey developed by the researcher which queried their use of and interest in client-centered collection analysis practices, and their perception of the effect of automation upon these practices. All subjects in the sample received a follow-up postcard. Those not responding were sent another follow-up letter and replacement copy of the survey; if they failed to return these surveys, an additional letter and survey were sent them. The practices and views of

respondents regarding collection analysis and the impact of automation thereon were then identified using the instrument. To determine the generalizability of the findings six null hypotheses were tested for differences using the chi-square analysis. Data were analyzed computing totals, percentages and ranks.

### Findings

Of the specific six null hypotheses examined in the study, all six were rejected in specific instances. Because the null hypothesis was rejected in specific instances it was possible to generalize to the population in those cases. Specific findings include the following:

1. There was a difference in the collection analysis practices identified as useful by nonautomated and automated libraries in the sample. In only one case, that for categories of use, were the results generalizable to the population as a whole. Both groups chose circulation statistics as most useful; appropriate currency ranked second for both. Automated libraries ranked patrons surveys third and categories of use and interlibrary borrow requests next. Nonautomated libraries ranked in-house use third, analysis of appropriate depth fourth, and percent title fills fifth. Differences were present

in the rankings of many of the remaining practices. Least useful to both academic and public libraries were analyses of patron locating time and distribution between branches for items.

2. There was a correlation between a library's satisfaction with its practices and its state of automation. Automated libraries were more satisfied with their current practices than were nonautomated libraries. In findings that were generalizable to the total population, 33 percent of the automated libraries expressed satisfaction and 19 percent of the nonautomated libraries indicated satisfaction with their practices.
3. In two of four instances there was a generalizable difference between the expectations of automated and nonautomated libraries regarding the utility of automated systems in gathering data for analyzing collection use. Higher percentages of nonautomated libraries in the sample agreed that automation made analysis easier and more timely, that it allowed more comprehensive analysis, and that automation provided all needed information for collection use analysis.
4. There was a difference in the practices used by the sample of automated and nonautomated libraries to analyze collection use. The results were generalizable in 9 of 17 practices. While libraries of both types

utilized circulation statistics more than any other practice, categories of use ranked second for automated libraries, patron surveys were third, interlibrary borrow requests were fourth, and percent title fills fifth. Nonautomated libraries ranked interlibrary borrow requests second, patron surveys third, in-house use fourth and materials expenditures fifth. Of the 17 practices identified, target group analyses were used least by both automated and nonautomated libraries.

5. There was a difference in the collection analysis practices identified as useful by the sample of academic and public libraries. In 13 of 17 cases the results were generalizable to the population as a whole. Academic libraries in the sample ranked the following as the five practices most useful to them: appropriate collection currency, circulation statistics, appropriate collection depth, in-house use, and appropriate collection breadth. The five top-ranked practices for public libraries were, in order, circulation statistics, appropriate collection currency, percent title fills, interlibrary borrow requests and categories of use. The dissimilarities in rankings continued through the entire list of 17 collection use measures.
6. There was a difference in the practices used by the sample academic and public libraries to analyze

collection use. The findings could be generalized to the population as a whole in 10 of 17 cases. While circulation statistics were most often used by libraries in both groups, materials expenditures were ranked second by academic libraries, followed by interlibrary borrow requests, patron surveys, and categories of use. After circulation statistics public libraries most often used interlibrary borrow requests, percent title fills, patron surveys and categories of use. While other rankings of the 17 practices varied between the groups, both academic and public libraries employed patron locating time least as a measure of collection use.

### Observations

#### Differences in Practices of Academic and Public Libraries

This study brought to light pronounced differences in the perceived usefulness of collection analysis measures in the random sample of 888 academic and public libraries in the United States. While circulation statistics and analysis of appropriate collection currency were identified as the two most useful measures by both groups in the sample, there was little agreement in the rankings thereafter.

The largest differences in the sample regarding perceived usefulness were identified for the measures of patron

statistics and target group statistics. Common statistical categories for both of these measures include age, education, sex, handicap, and native language. These results of this question were generalizable to the academic and public library populations as a whole. Eighty percent of the public libraries in the sample found patron statistics useful, while only 41 percent of the academic libraries indicated this measure was useful. Also, 73 percent of the public libraries deemed target group statistics useful, while 33 percent of the academic libraries wished to utilize this method of analysis.

While further study is needed to explore these differences, certain academic library respondents alluded to a possible factor contributing to this discrepancy. In written remarks in the survey a number of academic librarians indicated that patron and target group statistics were not useful to them because they already knew their patron and target group characteristics. While on the surface this seems to be a contradictory statement, one possible interpretation is that these libraries did not see a need to collect this information themselves because it was available to them elsewhere, perhaps through the college's office of the registrar or admissions. Public libraries, it may be surmised, often lack access to this information unless they gather it themselves.

No matter what their source of information about patron and target group characteristics, it would seem that academic libraries, like their public counterparts, would wish to use this information to study which target group members were actually patrons, in order to determine if their patrons were representative of their target population as a whole. It would also seem that detailed information regarding patron handicaps, language, education level and age would allow librarians to make a better fit between collections and specific users, and to track changes as they occurred. Further study may explain these perceived and real differences.

#### Least Used and Useful Practices

The practices least used by and least useful to the libraries in the sample were patron locating time, target group statistics, distribution of materials between branches, and bibliographic citation analysis. A number of respondents indicated that the measure of distribution of materials between branches was not applicable, as their libraries lacked branches. This is a probable explanation for this measure's exclusion from many other libraries' lists of useful and used measures.

Further study should be made to determine the factors inhibiting use of the remaining three practices, patron locating time, target group statistics and bibliographic



citation analysis. Possible factors to be considered here are perceived irrelevancy, difficulty, cost and redundancy with other measures.

#### Adequacy of Present Systems in Analyzing Collection Use

The study indicates a distinct discrepancy between practice and theory. While able to identify the practices to be followed in relation to populations served, library collection managers indicated that they utilized fewer practices than they would wish to utilize. This was true whether the collection managers represented academic or public libraries, and whether the institutions were automated or not automated.

The gap between the desired and actual level of use of specific practices varied from a low of 20 percent (for circulation statistics) to 56 percent (for analysis of appropriate collection depth). The gap was evident even for those practices least often chosen as useful; for instance the practice of measuring the average time a patron devotes to locating items in the catalog or other finding tool was indicated to be of use by 44 percent of the libraries responding, yet this measure was used by only 6 percent of the total responding.

As part of the study an attempt was made to identify possible factors contributing to the discrepancy between respondents' desires and practices in analyzing collection

use. Those libraries indicating dissatisfaction with their level of analysis were queried regarding possible causes.

Two hundred eighty-five academic and three hundred twelve public libraries cited lack of time and/or staff as a major reason for inadequately analyzing collection use. Seventy-five academic and ninety-six public libraries indicated they lacked the knowledge to use collection analyses practices. Twenty-four academic and thirty-one public libraries mentioned that they were unsure how to use the results of collection analysis. Forty-two academic and fifty-four public libraries described additional factors hampering their efforts in analyzing collection use; the factor most frequently mentioned here was lack of an automated system to make collection analysis possible. Table 21 summarizes factors contributing to inadequate collection use analysis. (Note: Respondents could check as many factors as they wished.)

Table 21

Responses to Factors  
Contributing to Inadequate  
Analysis of Collection Use

	Academic	Public	Total
Lack of time/staff	285 (67%)	312 (63%)	597 (65%)
Lack of knowledge of methods	75 (18%)	96 (19%)	171 (19%)
Unsure of how to use results	24 (6%)	31 (6%)	55 (6%)
Other (respondent supplied)	42 (10%)	54 (11%)	96 (10%)
Total	426 (46%)	493 (54%)	919 (100%)

(Note: Cells are not mutually exclusive.)

Responses = 919

Comparison of Collection Evaluation Practices of Academic Libraries

Abrams's 1974 study of collection evaluation practices utilized in selected midwest academic libraries showed many similarities to percentages identified in this study. Abrams found 70 percent of the academic libraries kept circulation statistics; this study indicated a response of 65 percent in the academic sample. Fifty-seven and one-half percent of his respondents maintained interlibrary loan request information, while this report recorded 63 percent. Twenty-five percent of his libraries monitored unfilled book requests as compared to 36 percent in this study. Bibliographic citation analysis

was utilized by 25 percent of the respondents in his study, while 28 percent in the present study made use of this method. The largest difference found in the studies involved client surveys; 26 percent of Abrams's libraries utilized this measure, while over double the percentage, or 58 percent of the present study's academic respondents employed it.

(Abrams, 1974) While it is not possible to generalize findings from this study to the academic library population in the United States as a whole, the disparity between Abrams's findings and those of the present research indicates further research is in order. It would be useful to know if the trend identified in the present study is, in fact, occurring in the general American academic library population, and if so, why more academic librarians are choosing to devote scarce resources to surveys of client needs.

Halpin's 1983 survey of academic research libraries determined that 21.5 percent of the subjects utilized citation analysis as a means of collection analysis. (Halpin, 1983) This compares to 28 percent utilization in all types of academic libraries queried in the present study. With a chi square of 18.540 at the .05 level of confidence the results of this particular question are generalizable to the population of academic libraries in the United States. Further study would be useful to explore factors contributing to what appears to be an increased utilization of

bibliographic citation analysis in American academic libraries. Is bibliographic citation analysis still being utilized primarily by research institutions, or has its use spread to smaller institutions? What role does automation have in this trend? Are increased staff awareness and staff expertise factors in this change?

#### Comparison of Levels of Automation

In the present study librarians were asked to identify their state of automation, selecting one of the following three categories: automated (for one year or more), newly automated (for less than one year) or not automated. Automation was defined here as having an automated circulation system and/or automated public access catalog. Responses are reflected in Table 22.

Table 22

#### State of Automation of Academic and Public Libraries

	Academic		Public		Total	
Fully automated	114	(29%)	166	(34%)	280	(32%)
Newly automated	39	(10%)	40	(8%)	79	(9%)
Not automated	247	(62%)	280	(58%)	527	(59%)
Total	400	(45%)	486	(55%)	886	(100%)

N = 886

Camp's 1985 survey of 300 four-year academic libraries found 12 percent of the respondents had automated catalogs and 19 percent possessed automated circulation systems. Because these types of automation were combined in the present study, it was not possible to make precise comparisons with Camp's findings. However, it would appear that academic libraries have been continuing to automate circulation and catalog functions. This supports Camp's finding that almost seventy percent of academic libraries without automated circulation systems planned to install them in the future; it also supports his finding that fifty-four percent of the libraries without automated integrated systems (combining the catalog and circulation functions), planned to implement systems of this sort at some time. (Camp, 1987)

#### Recommendations Regarding Automated Systems

One of the purposes of the study was to explore recommendations which could be made to academic and public library administrators with automated systems or those considering such systems. It was useful therefore to see if any relationship could be established between a library's satisfaction with its current collection analysis practices and its mode of automation. Libraries were asked to indicate whether their automated systems were developed in-house or were vendor-developed. Those checking "vendor-developed" were further asked to identify their specific vendors.

It should be noted that no attempt was made in this study to determine the sample libraries' satisfaction with their vendors' performance regarding collection analysis or generation of management information in general. Rather, the sample libraries were queried regarding which systems they used, whether automated or manual, and their satisfaction with the adequacy of their libraries' efforts in analyzing collection use. It is possible, for instance, that those automated systems capable of providing the most information regarding collection use analysis could in fact have the least satisfied customers, because these customers, although aware of their automated systems' potential, were, for whatever reasons, unable to utilize this potential adequately. Information presented here must therefore be considered carefully.

Of the 292 automated libraries indicating their mode of automation, 49 respondents specified that their systems were developed in-house, and 233 respondents noted their systems were vendor-developed. Respondents identified 36 vendors who installed their systems. While in most cases the vendor-specific samples were too small for comparison, five systems had sufficient installations for chi-square analysis. Results of this analysis are reflected in Table 23.

It may be seen that overall 32 percent of the respondents answering this question were satisfied with their analysis of collection use. Of the five vendors cited in the table, only

Geac, Inc. had more customers who indicated satisfaction over the mean of 32 percent. Forty percent of Geac, Inc.'s customers indicated satisfaction. Thirty-one percent of Notis and CLSI customers noted they were satisfied, while 22 percent of Dynix, Inc. customers and 20 percent of Data Research Associates (DRA) customers were satisfied with their current levels of analysis. The chi-square test indicates that results may not be generalized to the population.

Further study needs to be undertaken in this area to determine what relationship, if any, exists between specific vendors and their customers' satisfaction with the collection-related management information generated by automated systems.

Considering the capital investment represented in automated library systems, the level of client satisfaction indicated in this study's sample is modest. While it may be that automated library systems are still maturing and their clients are continuing to learn to utilize this potential, vendor and client efforts must not abate in this area. Librarians must not assume that current automated systems can and will provide all of the information needed for collection use analysis in the format needed. As noted in Chapter 1 of this study, management information systems must be flexible in order to meet the needs of specific institutions and departments.



Table 23

Automated Library Satisfaction  
With Current Collection Analysis Practices  
Categorized by Automation Vendor

Vendor	#	<u>Satisfied</u>		<u>Not Satisfied</u>			<u>Total</u>	
		% total	% vend.	#	% total	% vend.	#	% total
CLSI	25	(34%)	(31%)	55	(35%)	(69%)	80	(34%)
Geac	8	(11%)	(40%)	12	(8%)	(60%)	20	(9%)
Dynix	4	(5%)	(22%)	14	(9%)	(78%)	18	(8%)
Notis	4	(5%)	(31%)	9	(6%)	(69%)	13	(6%)
DRA	3	(4%)	(20%)	12	(8%)	(80%)	15	(7%)
Other*	30	(41%)	(34%)	57	(36%)	(66%)	87	(37%)
Total	74	(32%)		159	(68%)		233	(100%)
chi-square = 2.652		DF = 5		N = 233				

\*Other = combined totals of vendors with less than 10 installations each

### Conclusions

It was found that libraries in the sample with automated systems had different expectations regarding collection analysis practices than did nonautomated libraries in the sample. It was further found that automated libraries in the sample possessed a greater capability to assess the adequacy of their collections than did nonautomated libraries in the sample. While it was not possible to generalize all findings to the United States academic and public library populations, it was possible to identify practices of use for the sample of 888 American public and academic libraries.

Those collection analysis practices identified as most useful to academic libraries in the sample were analysis of appropriate collection currency, circulation statistics, analysis of appropriate collection depth, in-house use statistics, appropriate collection breadth analysis, surveys of clients and interlibrary borrow requests. Least useful practices were analyses of distribution among library branches, target group statistics, patron statistics, time patrons spent locating items and competition among groups for items.

In contrast, public library staff in the sample identified the following as most useful to them: circulation statistics, appropriate currency of materials, in-house use statistics, percentage of title fills, appropriate collection depth, interlibrary borrow requests, surveys of clients, appropriate collection breadth, categories of use and percentage of materials available. Least useful were analyses of time spent by patrons locating materials, distribution of materials among library branches, target group statistics, bibliographic citation study and competition among groups for items.

As hypothesized, it was found that libraries in the sample with automated systems had a greater capability to assess the adequacy of their collections than did nonautomated libraries, and that they used this capability to a greater extent. Automated libraries used the following practices

most: circulation statistics, categories of use, patron surveys, interlibrary borrow requests, and percent title fills. Employed less were materials expenditures, in-house use, appropriate collection currency, patron statistics, appropriate collection breadth, percent of collection available, appropriate collection depth, competition for items, branch distribution, bibliographic citation, target group statistics and patron locating time.

Nonautomated libraries used the following practices most: circulation statistics, interlibrary borrow requests, patron surveys, in-house use and materials expenditures. Utilized less were percent title fills, use categories, appropriate collection currency, appropriate collection depth, appropriate collection breadth, bibliographic citation, patron statistics, percent of collection available, competition for items, target group statistics, and patron locating time. Further research is needed to establish the nature of the relationship between these practices and access to automated systems.

The study indicated a clear discrepancy between practice and theory. Respondents used fewer practices than they would wish to use. Major factors which hindered libraries from adequately analyzing collection use included lack of time and/or staff, lack of knowledge of methods, uncertainty regarding how to use results, and lack of an automated system.

### Recommendations

The following recommendations for further research are based on the findings of the study:

1. This study should be repeated with other library populations in the United States, such as special libraries, libraries of specific sizes or users of specific automated systems.
2. This study should be repeated with libraries outside of the United States.
3. Further studies should be conducted exploring library administrators' attitudes concerning and understanding of management information and its role in collection use analysis.
4. Further studies should be conducted exploring the possible interface between specific automated systems and management information required by library administrators.
5. Further studies should be conducted exploring the relationships of a library's state of automation, its administrators' use of collection analysis practices and its administrators' satisfaction with levels of collection analysis.
6. This study should be replicated on the same type of population at five or ten year intervals to measure any shifts over time in the perceived satisfaction with

practices and with the utility of automated systems in gathering data for analysis.

7. Further studies should be carried out concerning the accuracy of data gained through library user studies.

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## APPENDICES

**CHEMEKETA**  
COMMUNITY COLLEGE

4000 LANCASTER DRIVE  
PO BOX 14667  
SALEM, OR 97309  
503 399-5000

July 27, 1988

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One of the ways librarians measure their success in serving patrons involves examining use of materials collections. Much has been written regarding how librarians could analyze collection use, but little research has been done to determine what librarians are actually doing, or what they would ideally like to do. For instance, does it help you to know which items are being used most in your library, or who is using them?

In the last few years, a number of libraries have automated many of their functions. To date, however, no large-scale survey has been done to see how, if at all, automation has impacted analysis of collection use.

Your library is one of a small number in which people are being asked to give their opinions on these matters. It was drawn from a random sample of the entire country. In order that the results will truly represent the thinking of librarians throughout the United States, it is important that each questionnaire be completed and returned. It is also important that we have the opinion of the person in your library most involved with analysis of collection use. Thus, we ask that you forward this survey to the person who, in your opinion, best fits this description.

You may be assured of complete confidentiality. The questionnaire has an identification number for mailing purposes only. This is so that we may check your name off the mailing list when your questionnaire is returned. Your name will never be placed on the questionnaire.

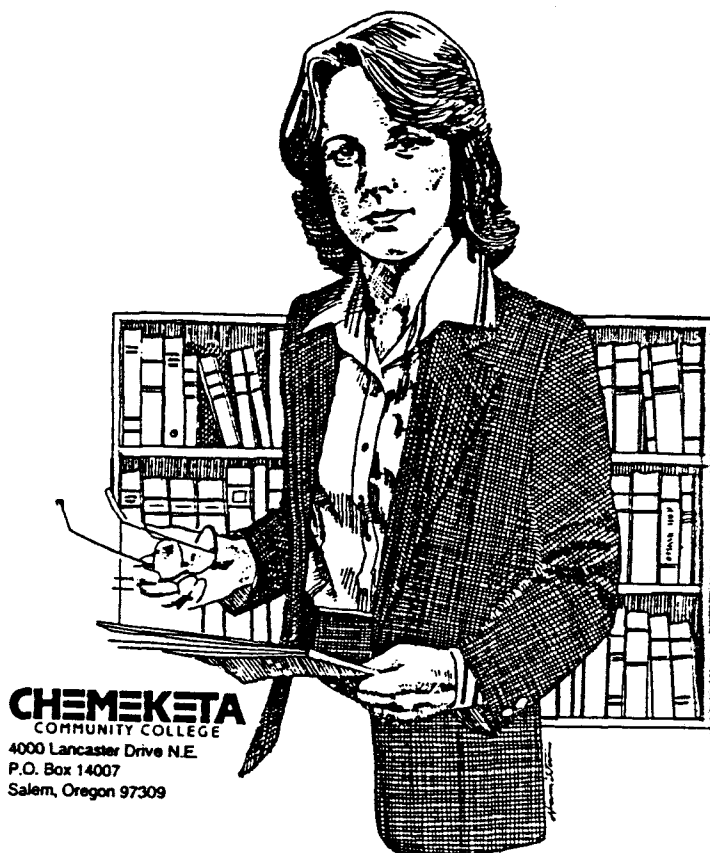
The results of this research will be made available to library professionals concerned with collection use. You may receive a summary of results by writing "copy of results requested" on the back of the return envelope, and printing your name and address below it. Please do not put this information on the questionnaire itself.

I would be most happy to answer any questions you might have. Please write or call. The telephone number is (503) 399-5043. Thank you for your assistance.

Sincerely,

Linda Cochrane  
Project Director

j1



This survey is being conducted to better understand how librarians analyze use of their materials collections, and how automation affects analysis of collection use, if at all. Please answer all questions. If you wish to comment on any question or qualify your responses please feel free to use the space at the end of the survey. Your response will be confidential.

1. How important is it to measure how well a library's collections meet user needs? *(Check the best answer)*

- ☐ Very important    ☐ Somewhat important    ☐ Not too important    ☐ Not at all important

2. Does your library adequately analyze collection use? *(Check one)*

- ☐ Yes    ☐ No    If no, why not? *(Check all that apply)*

- ☐ a. Lack time and/or staff  
☐ b. Lack knowledge of methods  
☐ c. Unsure of how to use results  
☐ d. Other (explain) \_\_\_\_\_

In the table below is a list of collection analysis practices which may or may not be useful to your library. Indicate how useful each would be and whether or not you currently utilize them.

	HOW USEFUL? CIRCLE ONE				DO YOU USE?	
	Very Useful	Somewhat Useful	Not Too Useful	Not At All Useful	Yes Use	No, Do Not Use
3. a. client surveys (such as questionnaires, case studies, observations, interviews) .....	1	2	3	4	Y	N
b. patron statistics by category (such as age, education, sex, handicap) .....	1	2	3	4	Y	N
c. use statistics by category (such as patron type, branch, subject) .....	1	2	3	4	Y	N
d. circulation statistics analysis (for example to check which items are used most, how much to spend per patron, average circulation) .....	1	2	3	4	Y	N
e. materials expenditure statistics by category (such as subject or language or who requested items) .....	1	2	3	4	Y	N

As on the previous page, the table below continues a list of collection analysis practices which may or may not be useful to your library. Indicate how useful each of the following would be and whether or not you currently utilize them.

	HOW USEFUL? CIRCLE ONE				DO YOU USE?	
	Very Useful	Somewhat Useful	Not Too Useful	Not At All Useful	Yes Use	No, Do Not Use
f. in-house utilization of materials .....	1	2	3	4	Y	N
g. target group statistics by category (such as age, sex, language) .....	1	2	3	4	Y	N
h. appropriateness of collection breadth in relation to target group needs .....	1	2	3	4	Y	N
i. appropriateness of collection depth in relation to target group needs .....	1	2	3	4	Y	N
j. appropriateness of collection currency in relation to target group needs .....	1	2	3	4	Y	N
k. percent of title requests your library fills .....	1	2	3	4	Y	N
l. interlibrary borrowing requests by user group and/or subject .....	1	2	3	4	Y	N
m. average time a patron devotes to locating items in the catalog or other finding tool .....	1	2	3	4	Y	N
n. competition for items between users or groups (for example analyzing holds put on items to identify what type of patron is waiting, waiting period, and/or number of holds per item) .....	1	2	3	4	Y	N

As on the previous page, the table below continues a list of collection analysis practices which may or may not be useful to your library. Indicate how useful each of the following would be and whether or not you currently utilize them.

	HOW USEFUL? CIRCLE ONE				DO YOU USE?	
	Very Useful	Somewhat Useful	Not Too Useful	Not At All Useful	Yes Use	No, Do Not Use
o. degree to which materials are satisfactorily distributed between branches or libraries in cooperative .....	1	2	3	4	Y	N
p. percentage of materials available when needed .....	1	2	3	4	Y	N
q. bibliographic citation analysis (defined here as checking your holdings against researchers' references to see if that research could have been done at your library) .....	1	2	3	4	Y	N
r. other (Please explain) .....	1	2	3	4	Y	N
_____						
_____						
_____						

4. Is your library automated, newly automated, or not automated? (Circle the best answer)

- ☐ a. automated (defined here as having an automated circulation system and/or automated public access catalog which has been operational for at least one year)

(If you circled a, please answer the following question)

Was your system produced in-house or by a commercial vendor?

- ☐ Produced In-house ☐ Produced by Commercial Vendor

Vendor Name \_\_\_\_\_

\_\_\_\_\_

- ☐ b. newly automated (defined here as having an automated circulation system and/or automated public access catalog for less than one year)
- ☐ c. not automated (that is, not possessing an automated circulation system and/or automated public access catalog at all)

Please answer the following questions whether or not your library uses automated systems of any kind. Below are certain statements regarding automation with which you may agree or disagree. Please circle the number which best represents your view on each of the questions. (Circle only one answer for each question)

- |                                                                                                                                                                                                           | Strongly<br>Agree | Agree<br>Somewhat | Disagree<br>Somewhat | Strongly<br>Disagree |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|----------------------|----------------------|
| 5. a. Automation makes collection analysis easier to do .....                                                                                                                                             | 1                 | 2                 | 3                    | 4                    |
| b. Automation makes collection analysis more timely .....                                                                                                                                                 | 1                 | 2                 | 3                    | 4                    |
| c. Automation allows collection analysis to be more comprehensive .....                                                                                                                                   | 1                 | 2                 | 3                    | 4                    |
| d. Automation provides all the information needed for analysis of collections, in the format needed .....                                                                                                 | 1                 | 2                 | 3                    | 4                    |
| 6. If you do not have an automated system, or your system has been in operation for less than one year, what difference(s), if any, do you think automating will make in your analysis of collection use? |                   |                   |                      |                      |
| _____                                                                                                                                                                                                     |                   |                   |                      |                      |
| _____                                                                                                                                                                                                     |                   |                   |                      |                      |

7. Please indicate whether your library is a public library, two-year college library, or four-year college library. (Check one only)

☐ Public Library    ☐ Two-Year College Library    ☐ Four-Year College Library

8. Check the total number of volumes in your book collection:

☐ 000 - 99,999 Volumes    ☐ 100,000 - 249,999 Volumes

☐ 250,000 - 999,999 Volumes    ☐ 1,000,000 Volumes and Over

9. In which state is your library? \_\_\_\_\_
10. What is your position? \_\_\_\_\_
11. Would you care to add anything about the information you need concerning collection use, or the effect automation has upon gathering this information?





## CHEMEKETA

400 UNIVERSITY DRIVE  
EUGENE, OREGON 97401  
503/345-5000

August 15, 1988

Approximately three weeks ago I wrote to you seeking your opinion about the methods your library staff find most useful for analyzing use of book and periodical collections. I also wanted to determine how, if at all, automation impacts this analysis at your library. As of today, your library's completed questionnaire has not been received.

Our research unit has undertaken this study because of the belief that it is important to identify which methods of collection analysis are important to librarians. We need the opinions of librarians with and without automated systems in their libraries.

I am writing to you again because of the significance each questionnaire has to the usefulness of this study. Your name was drawn through a scientific sampling process in which every public and academic library in the United States had an equal chance of being selected. This means that administrators in less than one-tenth of the libraries are being asked to complete this questionnaire. In order for the results of this study to be truly representative of the opinions of all academic and public library administrators, it is essential that each person in the sample return the questionnaire. As mentioned in my last letter, the questionnaire should be completed by the person in your library most involved with analysis of collection use.

In the event your questionnaire has been misplaced, a replacement is enclosed. Your cooperation is greatly appreciated.

Cordially,

Linda Cochrane  
Project Director

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enclosure

## CHEMEKETA

4100 W. ASTOR DRIVE  
SEASIDE  
SALEM, OREGON 97301  
503/465-5000

September 26, 1988

I am writing to you about our study of library administrators practices and preferences in collection analysis. We have not yet received your completed questionnaire.

The large number of questionnaires returned is encouraging. Yet we cannot be certain our study will accurately reflect current practices and opinions without the input of your library and others who have not yet responded. This is because our past experiences suggest that those of you who have not yet replied may have very different observations than those who have replied.

This is the first nationwide study of this type that has ever been done. Therefore, the results are of particular importance to library professionals involved with collection analysis, as well as to the automated system vendors who may serve them. The usefulness of our results depends upon how accurately we are able to describe what library administrators such as yourself want.

It is for these reasons that I am writing you again, and am enclosing a replacement questionnaire. May I urge you to complete and return it as quickly as possible.

I will be happy to send you a copy of the results if you wish. Simply put your name, address, and "copy of results requested" on the back of the return envelope. We expect to have them ready to send early next year.

Your contribution to the success of this study will be greatly appreciated.

Most Sincerely,

Linda Cochrane  
Project Director

j1

enclosure

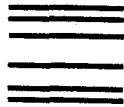
Last week a questionnaire was mailed to you seeking your opinion about collection use analysis and automation's impact upon it. Your name was drawn in a random sample of public and academic library directors in the country.

If you have already completed and returned it to us please accept our sincere thanks. If not, please do so today. Because it has been sent to only a small, but representative sample of American library administrators it is extremely important that your survey be included in the study if the results are to accurately represent the opinions of library administrators.

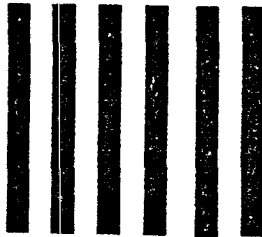
If by some chance you did not receive the questionnaire, or it got misplaced, please call me immediately collect (503-399-5043) and I will put another one in the mail to you today.

Sincerely,

Linda Cochrane, Project Director



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



FROM

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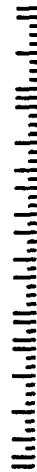


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**BUSINESS REPLY MAIL**  
FIRST CLASS MAIL PERMIT NO. 1228 SALEM, OR

POSTAGE WILL BE PAID BY ADDRESSEE

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4000 LANCASTER DRIVE NE  
PO BOX 14007  
SALEM OR 97309-9970



Appendix G  
Usefulness of Practices to Automated and Nonautomated  
Libraries

Table G1  
Usefulness of Client Surveys to Automated and Nonautomated  
Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	245	(89%)	486	(85%)	731	(86%)
Not Too, Not Useful	30	(11%)	88	(15%)	118	(14%)
Total	275	(32%)	574	(68%)	849	(100%)
-----						
chi-square = 3.038	DF = 1		N = 849			

Table G2  
Usefulness of Patron Statistics to Automated and Nonautomated  
Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	175	(65%)	344	(61%)	519	(62%)
Not Too, Not Useful	93	(35%)	224	(39%)	317	(38%)
Total	268	(32%)	568	(68%)	836	(100%)
-----						
chi-square = 1.734	DF = 1		N = 836			

Table G3  
Usefulness of Categories of Use to Automated and Nonautomated  
Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	240	(88%)	463	(82%)	703	(84%)
Not Too, Not Useful	32	(12%)	105	(18%)	137	(16%)
Total	272	(32%)	568	(68%)	840	(100%)
-----						
chi-square = 6.087	DF = 1		N = 840			

Table G4  
Usefulness of Circulation Statistics to Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	264	(95%)	560	(95%)	824	(95%)
Not Too, Not Useful	13	(5%)	28	(5%)	41	(5%)
Total	277	(32%)	588	(68%)	865	(100%)
<hr/>						
chi-square = 0.002	DF = 1		N = 865			

Table G5  
Usefulness of Materials Expenditures to Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	211	(78%)	465	(80%)	676	(79%)
Not Too, Not Useful	60	(22%)	116	(20%)	176	(21%)
Total	271	(32%)	581	(68%)	852	(100%)
<hr/>						
chi-square = 0.533	DF = 1		N = 852			

Table G6  
Usefulness of In-House Use Statistics to Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	233	(86%)	525	(90%)	758	(89%)
Not Too, Not Useful	39	(14%)	57	(10%)	96	(11%)
Total	272	(32%)	582	(68%)	854	(100%)
<hr/>						
chi-square = 3.837	DF = 1		N = 854			

Table G7  
Usefulness of Target Group Statistics to Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	154	(57%)	298	(53%)	452	(54%)
Not Too, Not Useful	116	(43%)	262	(47%)	378	(46%)
Total	270	(33%)	560	(67%)	830	(100%)
<hr/>						
chi-square = 1.073	DF = 1		N = 830			

Table G8  
Usefulness of Appropriate Breadth Analysis to Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	225	(84%)	489	(86%)	714	(85%)
Not Too, Not Useful	42	(16%)	81	(14%)	123	(15%)
Total	267	(32%)	570	(68%)	837	(100%)
<hr/>						
chi-square = 0.335	DF = 1		N = 837			

Table G9  
Usefulness of Appropriate Depth Analysis to Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	228	(85%)	505	(89%)	733	(88%)
Not Too, Not Useful	41	(15%)	63	(11%)	104	(12%)
Total	269	(32%)	568	(68%)	837	(100%)
<hr/>						
chi-square = 2.889	DF = 1		N = 837			



Table G10  
Usefulness of Appropriate Currency Analysis to Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	257	(95%)	546	(95%)	803	(95%)
Not Too, Not Useful	13	(5%)	28	(5%)	41	(5%)
Total	270	(32%)	574	(68%)	844	(100%)
-----						
chi-square = 0.002	DF = 1		N = 844			

Table G11  
Usefulness of Percent Title Fills to Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	239	(89%)	504	(87%)	743	(88%)
Not Too, Not Useful	29	(11%)	74	(13%)	103	(12%)
Total	268	(32%)	578	(68%)	846	(100%)
-----						
chi-square = 0.673	DF = 1		N = 846			

Table G12  
Usefulness of Interlibrary Loan Borrow Requests to Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	240	(88%)	496	(85%)	736	(86%)
Not Too, Not Useful	34	(12%)	85	(15%)	119	(14%)
Total	274	(32%)	581	(68%)	855	(100%)
-----						
chi-square = 0.767	DF = 1		N = 855			

Table G13  
Usefulness of Patron Locating Time to Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	113	(42%)	250	(44%)	363	(44%)
Not Too, Not Useful	159	(59%)	312	(56%)	471	(56%)
Total	272	(33%)	562	(67%)	834	(100%)
-----						
chi-square = 0.644	DF = 1		N = 834			

Table G14  
Usefulness of Item Competition Analysis to Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	160	(59%)	323	(57%)	483	(58%)
Not Too, Not Useful	110	(41%)	245	(43%)	355	(42%)
Total	270	(32%)	568	(68%)	838	(100%)
-----						
chi-square = 0.429	DF = 1		N = 838			

Table G15  
Usefulness of Distribution Between Branches to Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	119	(49%)	214	(43%)	333	(45%)
Not Too, Not Useful	123	(51%)	288	(57%)	411	(55%)
Total	242	(33%)	502	(67%)	744	(100%)
-----						
chi-square = 2.828	DF = 1		N = 744			

Table G16  
Usefulness of Percentage Available to Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	225	(83%)	462	(82%)	687	(83%)
Not Too, Not Useful	45	(17%)	100	(18%)	145	(17%)
Total	270	(32%)	562	(68%)	832	(100%)
-----						
chi-square = 0.161	DF = 1		N = 832			

Table G17  
Usefulness of Bibliographic Citation Analysis to Automated  
and Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	141	(54%)	306	(55%)	447	(55%)
Not Too, Not Useful	122	(46%)	246	(45%)	368	(45%)
Total	263	(32%)	552	(68%)	815	(100%)
-----						
chi-square = 0.239	DF = 1		N = 815			

Table G18  
Usefulness of Other Analysis (Respondent Supplied) to  
Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Very, Somewhat Useful	8	(89%)	8	(73%)	16	(80%)
Not Too, Not Useful	1	(11%)	3	(27%)	4	(20%)
Total	9	(45%)	11	(55%)	20	(100%)
-----						
chi-square = 0.808	DF = 1		N = 20			

Over 20% of cells have expected counts less than 5. Table is so sparse that chi-square may not be a valid test.

## Appendix H

## Use of Practices by Automated and Nonautomated Libraries

Table H1  
Use of Client Surveys by Automated and Nonautomated Libraries

	Automated	Nonautomated	Total
Yes	164 (64%)	296 (53%)	460 (56%)
No	91 (36%)	267 (47%)	358 (44%)
Total	255 (31%)	563 (69%)	818 (100%)
-----			
chi-square = 9.826	DF = 1	N = 818	

Table H2  
Use of Patron Statistics by Automated and Nonautomated Libraries

	Automated	Nonautomated	Total
Yes	111 (43%)	114 (20%)	225 (28%)
No	146 (57%)	447 (80%)	593 (72%)
Total	257 (31%)	561 (69%)	818 (100%)
-----			
chi-square = 46.231	DF = 1	N = 818	

Table H3  
Use of Categories of Use by Automated and Nonautomated Libraries

	Automated	Nonautomated	Total
Yes	189 (74%)	258 (47%)	447 (55%)
No	65 (26%)	294 (53%)	359 (45%)
Total	254 (32%)	552 (68%)	806 (100%)
-----			
chi-square = 53.918	DF = 1	N = 806	

Table H4  
Use of Circulation Statistics by Automated and Nonautomated  
Libraries

	Automated		Nonautomated		Total	
Yes	193	(75%)	352	(63%)	545	(67%)
No	63	(25%)	205	(37%)	268	(33%)
Total	256	(31%)	557	(69%)	813	(100%)
-----						
chi-square = 11.804	DF = 1					

Table H5  
Use of Materials Expenditures by Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Yes	134	(53%)	267	(48%)	401	(49%)
No	121	(47%)	291	(52%)	412	(51%)
Total	255	(31%)	558	(69%)	813	(100%)
chi-square = 1.546      DF = 1						

Table H6

Use of In-House Use Statistics by Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Yes	131	(51%)	269	(48%)	400	(49%)
No	127	(49%)	296	(52%)	423	(51%)
Total	258	(31%)	565	(69%)	823	(100%)
chi-square = 0.710	DF = 1				N = 823	

Table H7  
Use of Target Group Statistics by Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Yes	50	(19%)	61	(11%)	111	(14%)
No	207	(81%)	503	(89%)	710	(86%)
Total	257	(31%)	564	(69%)	821	(100%)
-----						
chi-square = 11.271		DF = 1		N = 821		

Table H8  
Use of Appropriate Breadth Analysis by Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Yes	85	(33%)	175	(31%)	260	(32%)
No	169	(67%)	384	(69%)	553	(68%)
Total	254	(31%)	559	(69%)	813	(100%)
-----						
chi-square = 0.374		DF = 1		N = 813		

Table H9  
Use of Appropriate Depth Analysis by Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Yes	79	(31%)	181	(32%)	260	(32%)
No	176	(69%)	380	(68%)	556	(68%)
Total	255	(31%)	561	(69%)	816	(100%)
-----						
chi-square = 0.133		DF = 1		N = 816		

Table H10  
Use of Appropriate Currency Analysis by Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Yes	129	(51%)	253	(46%)	382	(47%)
No	123	(49%)	301	(54%)	424	(53%)
Total	252	(31%)	554	(69%)	806	(100%)
-----						
chi-square = 2.119	DF = 1		N = 806			

Table H11  
Use of Percent Title Fills by Automated and Nonautomated  
Libraries

	Automated		Nonautomated		Total	
Yes	143	(57%)	259	(46%)	402	(49%)
No	110	(43%)	304	(54%)	414	(51%)
Total	253	(31%)	563	(69%)	816	(100%)
-----						
chi-square = 7.726	DF = 1		N = 816			

Table H12  
Use of Interlibrary Loan Borrow Requests by Automated and  
Nonautomated Libraries

	Automated		Nonautomated		Total	
Yes	163	(63%)	342	(61%)	505	(61%)
No	95	(37%)	223	(39%)	318	(39%)
Total	258	(31%)	565	(69%)	823	(100%)
-----						
chi-square = 0.524	DF = 1		N = 823			

Table H13  
Use of Patron Locating Time by Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Yes	17	(7%)	29	(5%)	46	(6%)
No	242	(93%)	536	(95%)	778	(94%)
Total	259	(31%)	565	(69%)	824	(100%)
-----						
chi-square = 0.690	DF = 1		N = 824			

Table H14  
Use of Item Competition Analysis by Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Yes	78	(30%)	109	(19%)	187	(22%)
No	182	(70%)	463	(81%)	645	(78%)
Total	260	(31%)	572	(69%)	832	(100%)
-----						
chi-square = 12.287	DF = 1		N = 832			

Table H15  
Use of Distribution Between Branches by Automated and Nonautomated Libraries

	Automated		Nonautomated		Total	
Yes	59	(24%)	80	(15%)	139	(18%)
No	182	(76%)	455	(85%)	637	(82%)
Total	241	(31%)	535	(69%)	776	(100%)
-----						
chi-square = 10.259	DF = 1		N = 776			



Table H16  
Use of Percentage Available by Automated and Nonautomated Libraries

	Automated	Nonautomated	Total
Yes	82 (32%)	112 (20%)	194 (24%)
No	177 (68%)	449 (80%)	626 (76%)
Total	259 (32%)	561 (68%)	820 (100%)
-----			
chi-square = 13.420	DF = 1	N = 820	

Table H17  
Use of Bibliographic Citation Analysis by Automated and Nonautomated Libraries

	Automated	Nonautomated	Total
Yes	55 (22%)	119 (21%)	174 (21%)
No	198 (78%)	441 (79%)	639 (79%)
Total	253 (31%)	560 (69%)	813 (100%)
-----			
chi-square = 0.025	DF = 1	N = 813	

Table H18  
Use of Other Analysis (Respondent Supplied) by Automated and Nonautomated Libraries

	Automated	Nonautomated	Total
Yes	8 (89%)	6 (43%)	14 (61%)
No	1 (11%)	8 (57%)	9 (39%)
Total	9 (39%)	14 (61%)	23 (100%)
-----			
chi-square = 4.874	DF = 1	N = 23	

Over 20% of cells have expected counts less than 5. Table is so sparse that chi-square may not be a valid test.

Appendix I  
Usefulness of Practices to Academic and Public Libraries

Table I1  
Usefulness of Client Surveys to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	342	(87%)	394	(85%)	736	(86%)
Not Too, Not Useful	51	(13%)	67	(15%)	118	(14%)
-----						
Total	393	(46%)	461	(54%)	854	(100%)
-----						
chi-square = 0.432	DF = 1		N = 854			

Table I2  
Usefulness of Patron Statistics to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	155	(41%)	367	(80%)	522	(62%)
Not Too, Not Useful	225	(59%)	94	(20%)	319	(38%)
-----						
Total	380	(45%)	461	(55%)	841	(100%)
-----						
chi-square = 133.331	DF = 1		N = 841			

Table I3  
Usefulness of Categories of Use to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	302	(78%)	403	(88%)	705	(84%)
Not Too, Not Useful	86	(22%)	53	(12%)	139	(16%)
-----						
Total	388	(46%)	456	(54%)	844	(100%)
-----						
chi-square = 16.935	DF = 1		N = 844			

Table I4  
Usefulness of Circulation Statistics to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	372	(93%)	457	(97%)	829	(95%)
Not Too, Not Useful	27	(7%)	15	(3%)	42	(5%)
Total	399	(46%)	472	(54%)	871	(100%)
<hr/>						
chi-square = 6.068	DF = 1		N = 871			

Table I5  
Usefulness of Materials Expenditures to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	337	(85%)	343	(75%)	680	(79%)
Not Too, Not Useful	61	(15%)	117	(25%)	178	(21%)
Total	398	(46%)	460	(54%)	858	(100%)
<hr/>						
chi-square = 13.260	DF = 1		N = 858			

Table I6  
Usefulness of In-House Use Statistics to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	352	(89%)	410	(89%)	762	(89%)
Not Too, Not Useful	43	(11%)	53	(11%)	96	(11%)
Total	395	(46%)	463	(54%)	858	(100%)
<hr/>						
chi-square = 0.068	DF = 1		N = 858			

Table I7  
Usefulness of Target Group Statistics to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	124	(33%)	331	(73%)	455	(54%)
Not Too, Not Useful	257	(67%)	123	(27%)	380	(46%)
Total	381	(46%)	454	(54%)	835	(100%)
-----						
chi-square = 136.084	DF = 1		N = 835			

Table I8  
Usefulness of Appropriate Breadth Analysis to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	345	(88%)	375	(83%)	720	(85%)
Not Too, Not Useful	47	(12%)	76	(17%)	123	(15%)
Total	392	(47%)	451	(54%)	843	(100%)
-----						
chi-square = 3.978	DF = 1		N = 843			

Table I9  
Usefulness of Appropriate Depth Analysis to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	353	(90%)	385	(85%)	738	(88%)
Not Too, Not Useful	38	(10%)	67	(15%)	105	(12%)
Total	391	(46%)	452	(54%)	843	(100%)
-----						
chi-square = 5.009	DF = 1		N = 843			

Table I10  
Usefulness of Appropriate Currency Analysis to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	374	(95%)	435	(95%)	809	(95%)
Not Too, Not Useful	18	(5%)	23	(5%)	41	(5%)
Total	392	(46%)	458	(54%)	850	(100%)
-----						
chi-square = 0.085	DF = 1		N = 850			

Table I11  
Usefulness of Percent Title Fills to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	317	(82%)	432	(93%)	749	(88%)
Not Too, Not Useful	70	(18%)	33	(7%)	103	(12%)
Total	387	(45%)	465	(55%)	852	(100%)
-----						
chi-square = 24.009	DF = 1		N = 852			

Table I12  
Usefulness of Interlibrary Loan Borrow Requests to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	327	(83%)	413	(88%)	740	(86%)
Not Too, Not Useful	67	(17%)	54	(12%)	121	(14%)
Total	394	(46%)	467	(54%)	861	(100%)
-----						
chi-square = 5.240	DF = 1		N = 861			

Table I13  
Usefulness of Patron Locating Time to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	167	(43%)	198	(44%)	365	(43%)
Not Too, Not Useful	223	(57%)	252	(56%)	475	(57%)
Total	390	(46%)	450	(54%)	840	(100%)
-----						
chi-square = 0.118	DF = 1		N = 840			

Table I14  
Usefulness of Item Competition Analysis to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	202	(52%)	283	(62%)	485	(58%)
Not Too, Not Useful	183	(48%)	175	(38%)	358	(42%)
Total	385	(46%)	458	(54%)	843	(100%)
-----						
chi-square = 7.441	DF = 1		N = 843			

Table I15  
Usefulness of Distribution Between Branches to Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	108	(32%)	228	(56%)	336	(45%)
Not Too, Not Useful	230	(68%)	182	(44%)	412	(55%)
Total	338	(45%)	410	(55%)	748	(100%)
-----						
chi-square = 41.907	DF = 1		N = 748			

Table I16  
Usefulness of Percentage Available to Academic and Public  
Libraries

	Academic		Public		Total	
Very, Somewhat Useful	300	(78%)	390	(87%)	690	(83%)
Not Too, Not Useful	87	(22%)	59	(13%)	146	(17%)
Total	387	(46%)	449	(54%)	836	(100%)
-----						
chi-square = 12.580	DF = 1		N = 836			

Table I17  
Usefulness of Bibliographic Citation Analysis to Academic and  
Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	254	(66%)	197	(45%)	451	(55%)
Not Too, Not Useful	128	(34%)	240	(55%)	368	(45%)
Total	382	(47%)	437	(53%)	819	(100%)
-----						
chi-square = 37.768	DF = 1		N = 819			

Table I18  
Usefulness of Other Analysis (Respondent Supplied) to  
Academic and Public Libraries

	Academic		Public		Total	
Very, Somewhat Useful	10	(100%)	6	(60%)	16	(80%)
Not Too, Not Useful	0	(0%)	4	(40%)	4	(20%)
Total	10	(50%)	10	(50%)	20	(100%)
-----						
chi-square = 5.000	DF = 1		N = 20			

Over 20% of cells have expected counts less than 5. Table is so sparse that chi-square may not be a valid test.

Appendix J  
Use of Practices by Academic and Public Libraries

Table J1  
Use of Client Surveys by Academic and Public Libraries

	Academic		Public		Total	
Yes	224	(58%)	239	(54%)	463	(56%)
No	159	(42%)	201	(46%)	360	(44%)
Total	383	(47%)	440	(53%)	823	(100%)
-----						
chi-square = 1.445	DF = 1		N = 823			

Table J2  
Use of Patron Statistics by Academic and Public Libraries

	Academic		Public		Total	
Yes	74	(19%)	151	(34%)	225	(27%)
No	307	(81%)	291	(66%)	598	(73%)
Total	381	(46%)	442	(54%)	823	(100%)
-----						
chi-square = 22.381	DF = 1		N = 823			

Table J3  
Use of Categories of Use by Academic and Public Libraries

	Academic		Public		Total	
Yes	210	(56%)	238	(55%)	448	(55%)
No	167	(44%)	197	(45%)	364	(45%)
Total	377	(46%)	435	(54%)	812	(100%)
-----						
chi-square = 0.080	DF = 1		N = 812			



Table J4  
Use of Circulation Statistics by Academic and Public  
Libraries

	Academic		Public		Total	
Yes	249	(65%)	299	(69%)	548	(67%)
No	132	(35%)	137	(31%)	269	(33%)
Total	381	(47%)	436	(53%)	817	(100%)
-----						
chi-square = 0.957	DF = 1		N = 817			

Table J5  
Use of Materials Expenditures by Academic and Public  
Libraries

	Academic		Public		Total	
Yes	241	(63%)	161	(37%)	402	(49%)
No	140	(37%)	275	(63%)	415	(51%)
Total	381	(47%)	436	(53%)	817	(100%)
-----						
chi-square = 56.389	DF = 1		N = 817			

Table J6  
Use of In-House Use Statistics by Academic and Public  
Libraries

	Academic		Public		Total	
Yes	186	(49%)	216	(48%)	402	(49%)
No	196	(51%)	230	(52%)	426	(51%)
Total	382	(46%)	446	(54%)	828	(100%)
-----						
chi-square = 0.006	DF = 1		N = 828			

Table J7  
Use of Target Group Statistics by Academic and Public  
Libraries

	Academic		Public		Total	
Yes	25	(7%)	86	(19%)	111	(13%)
No	359	(93%)	357	(81%)	716	(87%)
Total	384	(46%)	443	(54%)	827	(100%)
-----						
chi-square = 29.469	DF = 1		N = 827			

Table J8  
Use of Appropriate Breadth Analysis by Academic and Public  
Libraries

	Academic		Public		Total	
Yes	146	(39%)	115	(26%)	261	(32%)
No	232	(61%)	324	(74%)	556	(68%)
Total	378	(46%)	439	(54%)	817	(100%)
-----						
chi-square = 14.431	DF = 1		N = 817			

Table J9  
Use of Appropriate Depth Analysis by Academic and Public  
Libraries

	Academic		Public		Total	
Yes	141	(37%)	120	(27%)	261	(32%)
No	239	(63%)	320	(73%)	559	(68%)
Total	380	(46%)	440	(54%)	820	(100%)
-----						
chi-square = 9.085	DF = 1		N = 820			

Table J10  
Use of Appropriate Currency Analysis by Academic and Public Libraries

	Academic		Public		Total	
Yes	175	(47%)	208	(47%)	383	(47%)
No	196	(53%)	231	(53%)	427	(53%)
Total	371	(46%)	439	(54%)	810	(100%)
-----						
chi-square = 0.004	DF = 1		N = 810			

Table J11  
Use of Percent Title Fills by Academic and Public Libraries

	Academic		Public		Total	
Yes	134	(36%)	268	(60%)	402	(49%)
No	242	(64%)	176	(40%)	418	(51%)
Total	376	(46%)	444	(54%)	820	(100%)
-----						
chi-square = 49.791	DF = 1		N = 820			

Table J12  
Use of Interlibrary Loan Borrow Requests by Academic and Public Libraries

	Academic		Public		Total	
Yes	239	(63%)	268	(60%)	507	(61%)
No	140	(37%)	179	(40%)	319	(39%)
Total	379	(46%)	447	(54%)	826	(100%)
-----						
chi-square = 0.834	DF = 1		N = 826			

Table J13  
Use of Patron Locating Time by Academic and Public Libraries

	Academic		Public		Total	
Yes	17	(4%)	29	(6%)	46	(6%)
No	363	(96%)	419	(94%)	782	(94%)
Total	380	(46%)	448	(54%)	828	(100%)
-----						
chi-square = 1.567	DF = 1		N = 828			

Table J14  
Use of Item Competition Analysis by Academic and Public Libraries

	Academic		Public		Total	
Yes	45	(12%)	142	(31%)	187	(22%)
No	338	(88%)	311	(69%)	649	(78%)
Total	383	(46%)	453	(54%)	836	(100%)
-----						
chi-square = 45.899	DF = 1		N = 836			

Table J15  
Use of Distribution Between Branches by Academic and Public Libraries

	Academic		Public		Total	
Yes	39	(11%)	100	(24%)	139	(18%)
No	319	(89%)	323	(76%)	642	(82%)
Total	358	(46%)	423	(54%)	781	(100%)
-----						
chi-square = 21.534	DF = 1		N = 781			

Table J16  
Use of Percentage Available by Academic and Public Libraries

	Academic		Public		Total	
Yes	58	(15%)	136	(31%)	194	(24%)
No	324	(85%)	307	(69%)	631	(76%)
Total	382	(46%)	443	(54%)	825	(100%)
-----						
chi-square = 27.459	DF = 1		N = 825			

Table J17  
Use of Bibliographic Citation Analysis by Academic and Public Libraries

	Academic		Public		Total	
Yes	107	(28%)	69	(16%)	176	(22%)
No	273	(72%)	369	(84%)	642	(78%)
Total	380	(46%)	438	(54%)	818	(100%)
-----						
chi-square = 18.540	DF = 1		N = 818			

Table J18  
Use of Other Analysis (Respondent Supplied) by Academic and Public Libraries

	Academic		Public		Total	
Yes	8	(100%)	6	(40%)	14	(61%)
No	0	(0%)	9	(60%)	9	(39%)
Total	8	(35%)	15	(65%)	23	(100%)
-----						
chi-square = 7.886	DF = 1		N = 23			

Over 20% of cells have expected counts less than 5. Table is so sparse that chi-square may not be a valid test.

1. How important is it to measure how well a library's collections meet user needs? *(Check the best answer)*
- ☐ Very important    ☐ Somewhat important    ☐ Not too important    ☐ Not at all important
- 762                      114                      2                      1
2. Does your library adequately analyze collection use? *(Check one)*
- ☐ Yes    ☐ No    If no, why not? *(Check all that apply)*
- 76                      118    597 ☐ a. Lack time and/or staff
- 171 ☐ b. Lack knowledge of methods
- 55 ☐ c. Unsure of how to use results
- 96 ☐ d. Other (explain) \_\_\_\_\_

In the table below is a list of collection analysis practices which may or may not be useful to your library. Indicate how useful each would be and whether or not you currently utilize them.

	HOW USEFUL? CIRCLE ONE				DO YOU USE?	
	Very Useful	Somewhat Useful	Not Too Useful	Not At All Useful	Yes Use	No, Do Not Use
3. a. client surveys (such as questionnaires, case studies, observations, interviews) .....	282 1	454 2	100 3	18 4	463 Y	360 N
b. patron statistics by category (such as age, education, sex, handicap) .....	171 1	351 2	229 3	90 4	225 Y	598 N
c. use statistics by category (such as patron type, branch, subject) .....	362 1	343 2	103 3	36 4	448 Y	364 N
d. circulation statistics analysis (for example to check which items are used most, how much to spend per patron, average circulation) .....	507 1	322 2	34 3	8 4	548 Y	269 N
e. materials expenditure statistics by category (such as subject or language or who requested items) .....	292 1	388 2	157 3	21 4	402 Y	415 N

As on the previous page, the table below continues a list of collection analysis practices which may or may not be useful to your library. Indicate how useful each of the following would be and whether or not you currently utilize them.

	HOW USEFUL? CIRCLE ONE				DO YOU USE?	
	Very Useful	Somewhat Useful	Not Too Useful	Not At All Useful	Yes Use	No, Do Not Use
f. in-house utilization of materials .....1	380	382 2	80 3	16 4	402 Y	426 N
g. target group statistics by category (such as age, sex, language) .....1	107	348 2	275 3	105 4	111 Y	716 N
h. appropriateness of collection breadth in relation to target group needs .....1	358	362 2	104 3	19 4	261 Y	556 N
i. appropriateness of collection depth in relation to target group needs .....1	355	383 2	90 3	15 4	261 Y	559 N
j. appropriateness of collection currency in relation to target group needs .....1	504	305 2	36 3	5 4	383 Y	427 N
k. percent of title requests your library fills .....1	386	363 2	84 3	19 4	402 Y	418 N
l. interlibrary borrowing requests by user group and/or subject .....1	372	368 2	101 3	20 4	507 Y	319 N
m. average time a patron devotes to locating items in the catalog or other finding tool .....1	91	274 2	345 3	130 4	46 Y	782 N
n. competition for items between users or groups (for example analyzing holds put on items to identify what type of patron is waiting, waiting period, and/or number of holds per item) .....1	169	316 2	265 3	93 4	187 Y	649 N

As on the previous page, the table below continues a list of collection analysis practices which may or may not be useful to your library. Indicate how useful each of the following would be and whether or not you currently utilize them.

	HOW USEFUL? CIRCLE ONE				DO YOU USE?	
	Very Useful	Somewhat Useful	Not Too Useful	Not At All Useful	Yes Use	No, Do Not Use
a. degree to which materials are satisfactorily distributed between branches or libraries in cooperative .....	111 1	225 2	149 3	263 4	139 Y	642 N
p. percentage of materials available when needed .....	302 1	388 2	103 3	43 4	194 Y	631 N
q. bibliographic citation analysis (defined here as checking your holdings against researchers' references to see if that research could have been done at your library) .....	156 1	295 2	254 3	114 4	176 Y	642 N
r. other (Please explain) .....	1	2	3	4	Y	N
	10	6	0	4	14	9

4. Is your library automated, newly automated, or not automated? (Circle the best answer)

☒ a. automated (defined here as having an automated circulation system and/or automated public access catalog which has been operational for at least one year)

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(If you circled a, please answer the following question)

Was your system produced in-house or by a commercial vendor?

49 ☐ Produced In-house ☒ Produced by Commercial Vendor

Vendor Name 243



- 79  
☒ b. newly automated (defined here as having an automated circulation system and/or automated public access catalog for less than one year)
- ☐ c. not automated (that is, not possessing an automated circulation system and/or automated public access catalog at all)

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Please answer the following questions whether or not your library uses automated systems of any kind. Below are certain statements regarding automation with which you may agree or disagree. Please circle the number which best represents your view on each of the questions. (Circle only one answer for each question)

	Strongly Agree	Agree Somewhat	Disagree Somewhat	Strongly Disagree
5. a. Automation makes collection analysis easier to do .....1	595 2	246 2	11 3	4 4
b. Automation makes collection analysis more timely .....1	552 2	257 2	33 3	10 4
c. Automation allows collection analysis to be more comprehensive .....1	566 2	254 2	26 3	4 4
d. Automation provides all the information needed for analysis of collections, in the format needed .....1	122 2	307 2	269 3	142 4
6. If you do not have an automated system, or your system has been in operation for less than one year, what difference(s), if any, do you think automating will make in your analysis of collection use?				

7. Please indicate whether your library is a public library, two-year college library, or four-year college library. (Check one only)

478 ☐ Public Library ☒ Two-Year College Library ☐ Four-Year College Library

8. Check the total number of volumes in your book collection:

546 ☐ 000 - 99,999 Volumes ☐ 100,000 - 249,999 Volumes

89 ☐ 250,000 - 999,999 Volumes ☒ 1,000,000 Volumes and Over