THE RELATIONSHIP BETWEEN METHODS OF INSTRUCTION AND FREQUENCY OF LIBRARY USE BY STUDENTS AND FACULTY IN THREE UNIVERSITIES IN NIGERIA

BY

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This study is dedicated to the memory of our beloved father, Daniel Meseko, whose untimely death did not allow him to see us grow to maturity; to my mother whose perseverance has kept us together; to my brother; Lawrence Otitonaiye Daniel, whose timely actions, financial and moral support throughout my educational career helped make me what I am; to my wife, Oyinlola Ifejola Daniel, whose contributions to my educational career extend far beyond what one would expect of a colleague, friend, lover and wife, and to my daughters, Folashade and Adunni, for their patience. You all have singularly and jointly through your contributions made the completion of this program a reality.

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CHAPTER I

INTRODUCTION

Background of the Study

The role of the library in an expanding educational setting like that which Nigeria is experiencing has generated interesting debates among library scholars. Writers such as Louis Wilson,[1] Douglas Waples,[2] and Helen Sheehan,[3] contended many years ago, for instance, that larger library budgets, increased personnel and specialized services promote better education at college and university levels.

Similarly, various library reports have prescribed what the perceived roles of libraries in academic settings ought to be. According to The Parry Report, it is obligatory for a university library to meet the research and reading needs of all members of the institution of which it forms a part.[4] The Survey of the Land Grant Colleges published by the American Library Association in 1924, in a related statement, also noted that apart from the important functions of acquisition and dissemination of information, the library should try every means possible to encourage the use of acquired materials.[5] In this connection, Martin Randall, in his book, The College Library, added to these

blueprints that the university library has the obligation to stimulate the desire to read and to make books tempting to read and easy to obtain.'

Writing on the importance of university libraries, especially in a developing country like Nigeria, Carl Saunders in a report to the Inter-University Council wrote:

> . . . to any university, its library is of central importance; to a university in a country ill provided with public libraries, collection of books and bookshops, its library exceeds in importance any of its possessions.'

From the foregoing statements and descriptions of the place of libraries in higher education, librarians and educators presume that the library is indispensable to the acquisition of knowledge and that its use is necessary for better education at college and university levels.

Contrary to the generally assumed role of the library as an institution which promotes academic excellence for college and university students, however, several studies have shown the opposite to be the case. These investigations have pointed out that the library's role in education may not be as decisive as educators and librarians have assumed it to be. For example, separate studies by Errett McDiarmid,[8] John Weatherford,[9] Harvie Branscomb,[10] and Patricia Knapp[11] found that only a small proportion of college students, probably no more than 33 percent, are responsible for as much as 87 percent of their college library's total circulation. Further, Knapp's study claimed

that libraries made virtually no impact on most courses in the curricula of academic institutions.'[2]

As a result of these studies, scholars have tried to examine the causes of nonuse of libraries by college and university students. Howard Clayton, in 1965, discovered that students' economic and social characteristics, such as their parents' income and the size of the secondary school attended prior to college'[3] may account for use or nonuse of library materials. Despite these surveys, in the efforts to foster library use and to search for related factors limiting usage, the fundamental relationships between methods of instruction and library use, one of the hypotheses of this study, have not been systematically explored as a possible means of promoting the utilization of library resources in Nigeria.

A close examination of the concept of styles or methods of instruction indicates that every teacher exhibits a particular way of going about the complex task of teaching. The way an instructor introduces a topic, raises questions, makes assignments, talks to students, prepares lectures, uses research resources and many other particulars of behavior together make up a teacher's identification by colleagues and students. Kenneth E. Eble has noted, in this connection, "The more distinctive these characteristics are, the more they seem an integral part of who the person is and the more likely they are to be identified as his style or method of teaching."[4] Put more succinctly, style may be

said to be the total of the teacher himself. Viewed critically, the style of teaching is not merely something demonstrated for the occasion but rather similar to what F. L. Lucas has said of style in writing--it is not "elegant mannerism," but, "a means by which one personality moves others."[15] In a different context, McGregor, viewing "style" in general and in professions such as management, librarianship, and legal administration, has said that "a manager's style emerges as a result of his lifetime coping with reality" and it is rooted in his fundamental beliefs, values, lifetime of experience and his perception of himself."[16]

It is, therefore, the contention of this study that "style" as applied to instructing is not a mere high fashion concept acquired for an occasion but a routinized endeavor of a teacher to influence his students. In other words, if there is strong relationship between styles of instruction and students' preferences, as R. C. Wilson[17] and K. Yamato and H. Dizney have established,[18] there is a high probability that a teacher's style of teaching is related to the frequency with which students and faculty use the university library because the utilization of library resources is fundamental to both teaching and learning.

Having established that a professor's methods of instruction is an essential part of a teacher's ability to impart knowledge and influence his students, it is perhaps proper to relate this concept to librarianship by comparing

both professions' operational definitions, goals and objectives. Librarianship like teaching, is an activity. Both are unique, professional, rational and humane endeavors in which one uses himself and his knowledge to promote the welfare of others. In this respect, teachers and librarians are natural allies.

In a further comparison, teaching, according to John Hough and James Duncan, entails:

> . . . formulating goals of education, selecting content, stating objectives, creating instructional strategies and tactics. It is a process of instructing and measuring the appropriateness of objectives, the effectiveness of instruction and the reliability and validity of devices used to measure learning.''

Fundamentally, librarianship is not far from Hough and Duncan's definitions. Library work encompasses the formulation of goals and objectives, the selection and acquisition of relevant materials, the organization of data, and the retrieval and dissemination of information. Included, too, are the measurement, evaluation, and revalidation of operational strategies to promote utilization of accrued resources to achieve the stated objectives.

From the foregoing, it is clear that librarianship and teaching are closely related in their practice, goals and objectives. A relationship exists between the style faculty members adopt in teaching and the way their students, and the teachers themselves, use the resources of the library. This study is designed to explore the possibility of this

relationship between faculty methods of teaching and the teachers' and students' library use as a means of promoting learning in colleges and universities. Given the vital role accorded college and university libraries and the percentage of total university budgets expended on libraries annually, it is incumbent on librarians and educators to continue to employ ways of fostering library usage. This may or can be accomplished by devising and integrating professional mechanisms for maximal utilization of existing resources.

Statement of the Problem

Since 1960, when colonial rule ended in Nigeria, university education has undergone a transformation in that country. The increase in the number of students has been accomplished partially by the establishment of more universities and colleges of science and technology. Simultaneously, the phenomenal growth in higher education in Nigeria also brought a concomitant development in the holdings, services, staffing and importance of college and university libraries. In addition, the body of knowledge and the quantity of information which academic libraries are expected to manage have been augmented. The natural sciences have had an especially rapid development in this regard. Academic research has become more pronounced and diversified in nature and output, covering all disciplines, and mandatory for academic staff. These developments pose great challenges for the young and growing library

profession in Nigeria. One of the implications of these trends is that it can be postulated that continuously, both the managers of information and its users have been consumed in the excitement that typically accompanies changes of this magnitude. Thus, focus has been mainly on the more technical aspects of the library, with limited attention given to the clientele's broader needs.

Rutherford Rogers and David Weber in University Library Administration succinctly supported the foregoing postulation when they wrote:

> A distinguished collection of books is the sine qua-non of a great research library. Librarians and non-librarians alike may forget this because of the current preoccupations with computers, the enormous fiscal problems associated with larger and larger library buildings and the vexatious bibliographic problems of controlling huge bodies of materials in increasing diverse formats. However important these other factors may be, we should not forget that they are subsidiary to the root element that gives the library its name - liber, the Latin word for books.[20]

Although the acquisition of materials is a requisite function of librarianship, books, in the words of S. R. Ranganathan, are for use.[21] Indeed, "Books are for use," is the first of the five fundamental laws of library science postulated by him almost half a century ago. Incidentally, however, the systematic utilization of library resources is conceivably one of the least developed aspects of librarianship. Library use is perenially overshadowed by what Thomas Kirk described as the "emphasis on materials collection and processing to the detriment of reference and

public services."[22] A question may be raised as to whether Nigerian university students and faculty members use the books as they are assumed to do by librarians and educators.

Indeed, an examination of user studies as typified by Pauline Atkins' annotated bibliography[23] on the subject shows that scholars have no consensus as to the extent university communities use their libraries. While some studies have shown that the majority of academic communities make little use of their libraries, other studies have contradicted such findings.

The lack of consensus among scholars is not only limited to contradictory conclusions, but researchers disagree on what methodologies are best for gaining valid information on usage. For example, several years ago, Harvie Branscomb, commenting on the precariousness of securing any meaningful quantification of a social phenomenon such as library utilization, noted,

> Should we measure the total success of the institution's library in terms of its utilization? What inclusive criteria constitute good utilization? Is a numerical count of volumes or patrons on a given day sufficient? Are not these measures superficial, since the actual process is only reflected not measured. Physical presence or checking out of a volume does not guarantee the assimilation of knowledge. Thus, utilization is difficult, if not impossible, to measure.[24]

Many of these user studies of libraries have centered around circulation statistics. Ralph Esterquest noted this trend several years ago when he wrote:

> In their efforts to indicate the volume of library use, librarians have traditionally kept such statistics as: books loaned for home use, number

> of reference questions asked, and number of interlibrary loans transacted.[25]

Librarianship is not alone in the problems besetting the quantitative measurement of social phenomena. This difficulty involves most, if not all, of the social sciences. Louise Kidder attested to this fact when she noted:

> Measuring characteristics of the social world is like shooting an arrow at a moving target in the dark. The targets are abstract concepts, so we cannot see the bull's eye. Social science researchers can measure their accuracy only with reference to other arrows shot in the dark aimed at the same targets.[26]

The apparent lack of consensus on methodology and the variety of conclusions on user studies underscore the fact that, despite these studies, the problem of the extent of library utilization by faculty and students remains to be solved. Therefore, it is essential to determine the extent to which academic libraries in Nigeria perform their functions. The mere establishment of modern library facilities in institutions of higher education does not in any way assure that such amenities are functional, nor does it guarantee the usage of their contents. It is the degree to which the library meets the demands of the students and faculty that should be considered as a measure of functionalism while the extent to which it is utilized measures another aspect.

Purpose and Need for the Study

The purpose of this study was to gather objective and quantifiable evidence on library use in three universities in Nigeria. The investigation was also designed to generate data on the relationship between faculty methods of instruction and library utilization. In addition, the study examined the frequency of usage, the characteristics and patterns of use, and the methods and effect of bibliographic instruction, as well as student and faculty perceptions of the university library resources and its staff in terms of meeting their needs and expectations.

Generally, many academic librarians in Nigeria can make assertions regarding the use of their libraries by students and faculty members, but little objective and verifiable evidence is available to justify their contentions. Thus, despite the existence of some closely related user studies conducted in developed countries, user evaluation remains a relatively new and unexplored domain in developing countries like Nigeria. Besides the geo-political, economic and socio-cultural differences between developed and developing countries, which further underscored the necessity for this study, the possible surprises typical of necessity and the reality of librarianship practice constitute another impetus for this research. For example, in 1959, Knapp made these rather astounding submissions:

> . . . most students use the library very little, some students apparently manage to do adequate college work without using it at all. The few who

> use the library a good deal are not necessarily the brightest nor the most successful students on campus.[37]

However, one reaction of academic librarians to these conclusions would be to question whether or not similar observations could be made concerning the use of their libraries. Indeed, one cannot but become even more curious to discover what the peculiarities of library use are in the developing countries where students usually have limited contact with libraries prior to their attending universities. It was, therefore, one of the objectives of this research to find out whether there is a higher dependence on the university library by students and faculty members in developing countries like Nigeria than in developed countries like the United States, where more alternative sources usually abound.

Other related variables examined include reasons for use or nonuse of university libraries in the three Nigerian institutions surveyed, the library resources most frequently used, the educational levels of users by year, and the relationship between teachers' styles of instruction and students' library use. Also investigated was the relevance of library use to the attitudes of both teachers and students to the university library and its staff.

Footnotes to Chapter I

[1]Louis Round Wilson and Maurice F. Tauber, The University Library; Its Organization, Administration and Functions (Chicago: University of Chicago Press, 1956).

[2]Douglas Waples, et al., The Library (The Evaluation of Higher Institutions No. 4; Chicago: University of Chicago Press, 1936) p. 38.

[3]Helen Beebe Sheehan, The Small College Library (Westminister, Md: Newman Press, 1963) p. 18.

[4]University Grants Committee; Report of the Committee on Libraries (Parry Report; London: HMSO), p.4.

[5]Survey of the Land-Grant Colleges and Universities (Chicago: American Library Association, 1924), p.638.

[6]Martin Randall, The College Library (Chicago: American Library Association, 1940), p. 115.

[7]A.M. Carl-Saunders, The University of Northern Nigeria. Report of the Inter-University Council Delegation (London: Inter-University Council, 1961), p. 16.

[8]Erret Weir McDiarmid, Jr., "Conditions Affecting Use of the College Library," Library Quarterly 5 (January 1935): 59-77.

[9]John Weatherford, "Student Library Habits," College and Research Libraries 22 (September 1961): 78.

[10]Harvie Bennet Branscomb, Teaching with Books (Chicago: American Library Association, 1940), p. 15.

[11]Patricia B. Knapp, College and Teaching and the College Library (Association of College and Research Libraries Monograph Number 23; Chicago: American Library Association, 1959), p. 1.

[12]Ibid., p. 58.

[13]Howard Clayton, "An Investigation of Various Social and Economic Factors Influencing Student Use of One College Library" (Doctoral Dissertation, The University of Oklahoma, 1965), p. 101.

[14]Kenneth E. Eble, Editor, Improving Teaching Styles (Washington: Jossey-Bass, 1980), p. 70.

[15]F.L. Lucas, Style (New York: Collier, 1962), p. 9.

[16]D. McGregor, The Professional Manager (New York: McGraw-Hill, 1967), p. 18.

[17]R. C. Wilson, et al., College Professors and Their Impact on Students (New York: Wiley, 1975), p. 19.

[18]K. Yamato and H. F. Dizney, "Eight Professors: A Study on College Students' Preferences Among Their Teachers," Journal of Educational Psychology 57 (July 1966): 146-150.

[19]John B. Hough and James K. Duncan, Teaching: Description and Analysis (Menlo Park, Ca.: Wesley, 1970), p. 3.

[20]Rutherford D. Rogers and David C. Weber, University Library Administration (New York: H.W. Wilson, 1971), p. 113.

[21]S.R. Ranganathan, The Five Laws of Library Science (Bombay: Asia Publishing House, 1964), p. 9.

[22]Thomas G. Kirk, "Problems in Library Instruction in Four-Year College," in Educating the Library User, edited by John Lubans, Jr. (New York: Bowker, 1974), p. 86.

[23]Pauline Atkins, Bibliography of Use Surveys of Public and Academic Libraries 1950-1970 (London: The Library Association, 1971).

[24]Harvie Branscomb, Teaching with Books (Chicago: American Library Association, 1940), p. 115.

[25]Ralph Esterquest, "Measuring Library Use," College and Research Libraries 24 (May, 1967): 201.

[26]Louise Kidder, Research Methods in Social Sciences (New York: Holt Rinehart, 1981). p. 15.

[27]Knapp, op. cit. p. 1.

CHAPTER II

REVIEW OF RELATED LITERATURE

A survey of literature pertinent to this study was conducted by manual and computerized searches, when they were available, of Dissertation Abstracts International, Library Literature, Education Index, Annual Review of Information, Science and Technology, and the database of the Educational Resources Information Center (ERIC). Searched also were series of bibliographies of library use compiled by Richard Davis,[1] Carol Deweese,[2] and Pauline Atkins.[3] Equally helpful were the reviews by John Lubans, Jr. in Educating the Library User[4] and Progress in Educating the Library User[5] which brought together articles and trends on instruction in the use of libraries. Most of the studies relevant to university libraries, however, were found to have been published in the journal, College and Research Libraries.

The impact of the library in educational settings is influenced by many factors. Four facets of these influences have been identified by John Lubans:

1. patterns of library use as they relate to various student characteristics;

2. effects of the level of library service on academic achievement;
3. the role of instruction in impelling library utilization; and
4. teachers' knowledge of and preparation in library skills.[4]

Although his contentions are mere observations, as opposed to clinical research findings, this review of literature broadly covers the trends in library utilization except the aspect associated with teachers' knowledge of library skills which is outside the purview of this research.

Many librarians in the nineteenth century believed in the observation of Robert E. Lee that man had a yearning for learning and culture and, given the means, would educate himself.[5] John Lee, writing about this topic in 1919, recognized the necessity of promoting library use and argued that librarians must stimulate their patrons in the same manner that businesspeople promote their trades.[6] Put more succinctly, Joseph Wheeler wrote: "Every librarian must be a publicity man, with his heart in the work of reaching his people."[7] It was this realization of the need for public relations to promote the use of library resources that gave birth to user studies in the 1930s. Research in this area has grown since then from manipulations of circulation records to more intricate analyses of library-user interfaces. Throughout a greater part of this period, researchers focused on circulation statistics as means to a

better understanding of user borrowing patterns; the major criticism of this approach has been the absence of causal analyses.

Alvin Eurich was one of the pioneer researchers in library use. In 1930, he studied the call slips of the University of Minnesota Library for the fall semester and found that the average circulation of each day for one week was about one quarter of the student population.[10] Using sex as a major variable, Errett McDiarmid, Jr. also studied circulation statistics from seven college libraries. His study showed that women borrowed more books than men, bright students more than the poor ones, and upperclassmen more than lowerclassmen. McDiarmid's findings, however, did not correlate high academic performance with library usage.[11]

Another interesting study was undertaken in 1934 by Gaskill, Dunbar and Brown at Iowa State College. Their study showed a daily circulation of 4,200 against the college enrollment of 3,384 students. From these data, they concluded that the average student used the library more often than once a day. These researchers, further, showed that over 50 percent of the borrowing occurred in the reserve collection and that 14 percent of the students visited the library to read newspapers, while 51 percent went there for assigned readings and 9 percent were there to read their own materials.[12]

In 1940, Harvie Branscomb examined the effectiveness of college libraries by analyzing 60 library surveys. He

discussed, among others, studies by Gaskill, Eurich, McDiarmid, Dunbar and Brown, and refuted the validity of circulation records as an accurate measurement of library use. Tabulations, he argued, have different meanings for each library and open versus closed stacks yield variance in counts. In addition, he demonstrated that undergraduates made little use of college or university library book collections. He also found that during an ordinary year, a typical student borrowed twelve books, 60 percent of which came from reserve collections. He buttressed his submissions by condemning as erroneous the "average student" concept, because averages of circulation records were not significant in themselves and because the figures did not attribute or represent the pertinent functions of the library in education as depicted by Gaskill.[13]

A number of studies have supported Branscomb's views on the limited usage of libraries by undergraduates. In 1941, Russell Thompson and John Nicholson found in their studies similar evidence of meager use. They showed that two-thirds of student borrowing occurred in the second quarter of the semester studied.[14] Lewis Steig, also in 1941, found that the volume of materials students borrowed was far greater in the second semester than the first.[15]

Allison Davis was one of the first writers on the role of external influence on learning and grades. Writing in 1948 on the impact of social-class influence on learning, she declared that good grades were dependent upon the

students' ability to memorize, master learned symbols, and read or listen to pre-digested solutions offered by other people.''[17] Philip Jacobs' exploratory study of the impact of college teaching in 1957 confirmed Davis' contentions. Jacobs submitted that faculty method of instruction was unrelated to student grades, irrespective of the style of teaching.''[18]

Related to those findings was the outcome of Frank Jex's and Reed Merrill's study of intellectual and personality characteristics of University of Utah students in 1959. They wrote: "Research here and elsewhere does not support the commonly-held opinion that the amount of study is a crucial factor in the achievement of grades."'[19]

However, as observed by Lubans,'[20] scholars continued effortlessly, with limited success, to establish connections between library use and class level, academic achievement and scholastic aptitudes. Correlation coefficients of library use against grade-point averages remained invariably low when manipulated as ungrouped samples of large numbers of students from various majors or class levels, or both. However, a few surveys have demonstrated some modest, positive associations by matching the percentage of student circulations with specific grade-point ranges. In this regard, Thompson and Nicholson, cited earlier, reported some degree of relationship between circulation and intelligence scores.[21]

Patricia Knapp, in her seminar study of Knox College in 1959, also found statistically significant relationships between student aptitude test scores grouped in quartiles and course-related borrowings. "The per capita borrowing from the general collection by students in the top quartile outranked all other groups." Knapp, in the same Knox College study, also confirmed Branscomb's conclusions. She found that college library usage was almost exclusively course-related. Ninety-four percent of the total circulation during the studied period was for course work, with the bulk of borrowings occurring in the reserve collections. In addition, more than half of the materials circulated were credited to fewer than 20 percent of the student population. Also, less than 50 percent of the students accounted for about 90 percent of the total circulation. Knapp added another dimension to user studies by noting some positive associations among borrowing and the sex of the borrowers, their scholastic aptitudes, and their academic status. She also found that a small number of the student body was responsible for a large proportion of the borrowings in college and university libraries.[21]

In an article based on her study and published in Illinois Libraries, Knapp disputed the shibboleth of "the library as the heart of the college" and suggested that the relationship or dependence of any course in the college curriculum on the library relies heavily on the attitude of the teacher. In her words:

> . . . to call the library the heart of the college is to speak in hyperbole. There is a widespread lack of understanding or, at least, consensus among faculty and staff about what the library can and should contribute to the college - indeed, about what the library is. . . [22]

Johnnie Givens, in 1960, undertook a study of heavy and light users of Austin Peay State College for a masters thesis. With a sample of 73 heavy and 32 light users, she sought to determine the difference between the two groups in grade-point averages and likelihood of completing college. She found that sex was a major variable affecting both library use and grade-point averages. Although Givens correlated use of the library with grades, no causal relationship was established. Heavy users of the library were found to have higher grades and had a higher probability of graduating than light users.[23]

Another noteworthy research study related to library use was conducted by E. J. Josey. His focus was the instructional role of the college library staff in the use of the library. The outcome of his survey showed that 60 percent of the college libraries sampled did not offer required formal courses in the use of the library and 45 percent of the enrollees had only one lecture or guided tour during the week of orientation.[24]

One of the earliest departures from reliance on circulation records as a basis for studying library use was by John Weatherford, who, in 1950 administered a questionnaire to a random sample of 165 out of 5,542 students at Miami University in Ohio. His study focused on

the types of materials borrowed in the preceding semester. No correlation was found between either required or independent reading and grade-point averages. In other words, the amount of reading done by students was heavily dependent on the dictate of the instructor; extra reading beyond the teacher's requirements attracted no reward in terms of grades.[25] Weatherford's studies corroborated earlier studies by Jex and Merrill[26] as well as Davis' observations mentioned earlier.[27]

Natalie N. Nicholson and Eleanor Bartlett, in 1962, put the question: "Who uses the university libraries?" to 8,660 readers in the Massachusetts Institute of Technology. It was a week-long survey which was designed to determine, among other variables, the frequency and purpose of the use of collections. The results of this study showed that 46 percent of the respondents, who were undergraduates, indicated that 71.9 percent of their library usage was for class preparation.[28]

In 1963, Guy Lyle conducted an informal survey of library use with questionnaires. His study showed that freshmen used the library more than upperclassmen. This contrasts with other later studies where the opposite was reported. He found also that 50 percent of the library users studied exclusively non-library materials.[29]

The effect of pre-college exposure to library facilities on freshmen's grades was the focus of a doctoral dissertation by Richard Walker in 1963. He discovered that

the availability and level of library service in students' pre-college years had no significant relationship with the achievement of marks in the freshman year. Walker also found no difference in achievement between those exposed to high-level pre-college library services and students with little or no access to libraries in their pre-college years.[30]

User evaluation witnessed many studies in the sixties. Specific variables were subjected to indepth scrutinies, correlation between grades and library use being the most examined. Thus, "The relationships of library ability to performance in college" was the subject of a 1965 dissertation by Felix Snider. His study was conducted at the Southeast Missouri State College to determine if there were significant relationships between a college freshman's knowledge of the use of books and libraries, as represented by a score on a library ability test, and later success in college. His criteria for measuring success were based on grade-point averages, months spent in college, credit hours earned and degrees received. In his conclusions, Snider found a significant relationship between freshman grade-point averages and the Library Ability Tests. He also found the relationship between a student's ability to use books and libraries and his later performance and success in college to be positive, consistent and relatively strong.[31]

In 1966, Patrick Barkey studied Eastern Illinois University to determine the general pattern of usage with

sex as a specific variable. He collected data by saving call slips from the closed stacks for a period of 30 days of each quarter. These were tabulated and matched against each student's indentification card by sex and grade-point average. Barkey's outcome confirmed Given's findings that women checked out more books than their male counterparts. While he found no difference in the grade averages of the two sexes, the study showed a meaningful but statistically insignificant relationship between grades and the number of books borrowed. Sixty percent of Barkey's sampled population did not check out any book during the study period.[32]

By the mid-sixties, it had been proven that students did not use library materials as expected by many librarians. Howard Clayton decided in 1965 to research causes of nonuse. His study resulted in a doctoral dissertation which focused on the socio-economic factors influencing library use. The occupations of students and parents, family incomes, educational backgrounds of parents, and the population of pre-college high schools of respondents were the major variables he examined. His results showed a slight correlation between family income and occupation and the number of books borrowed. Students whose parents earned more than $8,000.00 per year borrowed fewer books than those whose parents earned less. Neither the educational level of parents nor the population of the high school attended correlated with borrowing habits.[33]

However, indirectly, Clayton's conclusion confirmed Walker's findings with respect to the influence of antecendent library service upon academic achievement.[34]

The question of who uses the library more, the freshman or the upperclassman, was the subject of Gorham Lane's inquiry in 1966. He administered questionnaires to five of the undergraduate colleges in Delaware, Ohio. Over 700 questionnaires were distributed to students who visited the library over a five-day period. His results showed that seniors used the library proportionately more than any other class. In addition, Lane indicated that library use increased with the number of years spent in school. He noted, also, that fewer than 40 percent of any class visited the library during a five-day survey period.[35] Lane's findings regarding differences between freshman and upperclassmen contradicted Lyle's[36] earlier conclusions.

William Wood, in 1965, studied the investigations produced from 1930 through 1964 which attempted to compare student use of libraries with student traits and characteristics. Some of his major findings were that most of the library use was curricula-oriented with the greater part of the student readings occurring in the humanities and the social sciences. He also found that women read more books than men but that the latter's readings were more separated from the curricula than the former. Wood also denounced the use of grade-point averages as a scientific measure of reading habits.[37]

In 1967, Orlando Behling and Kermit Cudd published their study of library use conducted at the library of Ohio State University. It consisted of a questionnaire distributed to every fifth reader entering the library on one day in 1966. The last question on the questionnaire solicited users' opinions as to their satisfaction or dissatisfaction on that visit. About 55 percent of the participants went to the library to read their own materials. Readers who went for information were more satisified than those who went to read their own materials. Sources of dissatisifaction had to do with physical conditions and services as well as interaction with library staff.[38]

Apart from Barkey's "unreliable correlation"[39] between scholastic achievement and library withdrawals, Floyd Kramer also found some correlation between attrition and library utilization.[40] His study revealed that students who did not borrow any books during the quarter examined had an average grade point of 2.00 on a 4.00 scale, while the library users earned a relatively higher grade of 2.22. While Kramer's data yielded a high degree of significance with a t-value of 4.26, there were noticeable differences in the grade-point averages among the various majors of the sampled population.[41] No library users were found to be more likely to drop out of school than the nonusers.

A hypothesis that the crux of library use hinged on the instructors' course organization and method of teaching was

tested at Grand Canyon College in Phoenix by Vernon Ritter. His method involved a comparison of books borrowed and grade averages of borrowers. He also investigated what motivated the readers to use or not use the library. The findings showed grades to be independent of library usage, thereby confirming earlier investigations that the library was not a necessity for satisfactory work in courses. He also found no relationship between teaching methods and library use.[42] Ritter's study method was circulation based and his subjects did not include teachers.

John Lubans' study of 1969 focused on nonusers. He conducted it at the Rensselaer Polytechnic Institute and evaluated attitudes to library facilities. The results showed that many students were unaware of existing services.[43] In a follow-up study, he sampled 37 students from the 239 identified from the previous study as nonusers for an interview. The result of his research showed that nonusers did not visit the library because they had insufficient time or did not desire to read extra materials beyond the class requirements which were satisfied outside the library. He found, however, no correlation between grade-point averages and library use.[44]

A study designed to determine principal library users and reasons for their usage was conducted in 1970 at Purdue University by Philip Rzasa and John Moriarty. The survey covered 6,568 participants in four categories: faculty, graduate students, undergraduates and others. A chi-square

test for 6,323 responses showed that these groups were not homogeneous in their reasons for using the library. Over 50 percent of the undergraduates went to the library to study their own materials, while the faculty members' reasons for use centered around publication and research needs. For the graduate students, course-related activities were found to be the primary reason for using the library.[45]

In 1970, Kenneth Allen undertook a study designed to identify student and faculty attitudes toward three Illinois community college libraries and the utilization of their resources. The results indicated favorable attitudes toward the library. Eighty percent of the faculty believed there was a strong need for the existence of the library. Also, 50 percent of the student body felt the use of the library had affected positively their final grades.[46]

One of Branscomb's observations that undergraduates did not use the book collection a great deal and that this lack of use did not hinder academic success was tested thirty-six years later by Larry Hardesty to determine if there had been any changes. He used circulation records of 2,800 undergraduates for the study. He found that 64 percent of the freshmen, about 64 percent of the sophmores, and 45 percent of the seniors did not borrow any material during the period studied. Concerning the relationship of grade-point average and use or nonuse of the library, he applied a coefficient correlation and chi-square tests at 99 percent confidence levels. The correlations were slightly positive,

but not significant, and the chi-square tests were not conclusive, even though they were fairly positive. Branscomb's assertions of the 1940s were, therefore, revalidated in 1974.[47]

The utilization of library resources by students in selected non-residential degree programs was the subject of James Groark's doctoral dissertation in 1974 at the State University of New York at Albany. His conclusions were that non-residential students used the library regularly but preferred the public library nearest them to university libraries. The study also showed that non-residential students required longer loan periods and had a tendency to purchase more books to meet their needs than the residential students.[48]

The users' approach to knowledge has not been a major focus for research in Nigeria; a dearth of literature on this subject attests to this assertion. One of the studies on library use in a Nigerian academic library setting was undertaken in 1975 by Oyeniyi Osundina. The purpose of his study was to determine if improved access to library resources promoted the utilization of such materials. The study, which was conducted at the Akoka campus of the University of Lagos, focused on the system of charging out reserve collections and meeting reference needs within a limited space.[49] He effected certain physical changes which included the expansion of the building and rearrangement of materials for an open access procedure instead of the closed

access system used previously in the reserve division of the library. The reference division was equally rearranged and equipped. Later, Osundina administered 703 questionnaires to users of the reserve collection to seek their opinions about the changes, especially if readers believed the new physical arrangements, which allowed more direct access, had increased their usage of the reserve resources. Sixty-three percent believed the physical changes promoted increased use of the library reserve and reference sources. Tabulations of monthly reserve circulation records also demonstrated that improved access increased the reserve collection circulation.[30]

Another related study conducted in Nigeria was by Adakole Ochai, who in a master thesis hypothesized that partial or nonuse of the library was caused largely by the inadequacies of the library's resources in meeting the undergraduate needs.[31] His findings identified the inadequacy of the library building as well as the failure of students' orientation in library use. Ochai surveyed only the undergraduates and had no conclusion to support his hypothesis. Besides, his study, which was limited to Kashim Ibrahim Library alone, was based on a former library building which was, by all standards, inadequate given the initial purpose of the building and the student population of Ahmadu Bello University in 1977.

Ali Emdad and Robert Rogers examined in 1978 the extent of undergraduate library use in a group of Pahlavi

University colleges in Iran. The main instrument was a questionnaire supplemented by interviews. The study did not find any relationship between faculty teaching and use of the library. Two-thirds of the sampled population did not receive any instruction in library use. However, the authors noted the increase of library utilization with years of study.[52]

The need for systematic exposure to library resources and bibliographic organization is a continual theme in user research. One such investigation was a study of student utilization of university business libraries. It involved an analysis of responses from 261 undergraduates and 70 M. B. A. students from the universities of Delaware, Maryland and Wright State University. Less than 30 percent of the undergraduates used the library for pleasure while fewer than 50 percent of the graduates rated themselves as regular borrowers. This study confirmed earlier studies made to demonstrate low-level library usage. The researchers recommended tutorials for faculty, imaginative assignments, and early introduction of information-seeking skills as a remedy to students' limited knowledge of library materials.[53]

Three surveys of the literature on user education are worthy of note because they put into perspective and delineate trends in this vital area of librarianship. Johnnie Givens examined and analyzed the extensive literature on bibliographic instruction published between

1930 and 1973.[54] She described the contemporary curricular patterns and summarized early approaches to user education and librarians' responses to the different stages. Malcom Stevenson of the University of Sussex, England, also undertook an analysis of the research findings and practical applications of 167 citations. His paper, which covered such variables as orientation sessions, separate courses, staffing, cooperation with faculty, design and evaluation, and alternative approaches, covered only the United States and England.[55]

The third of these reviews is that by John Lubans, Jr. He identified much of the salient literature on bibliographic instruction in the 1974 volume: Educating the Library User,[56] and Progress in User Education in 1977.[57] Lubans discussed the past, present and future of bibliographic instruction as well as the important studies conducted in user education to 1977.

The availability and increasing application of computers to library management poses a different challenge in user education. This challenge and how librarians can be involved was the focus of a recent article by David McDonald and Susan Searing. The authors suggested that librarians undertaking the instruction of groups must not only explain the benefits and limitations of online computers to their users but contribute to the catalogue design through the creation of help screens, error messages, prompts and online tutorials to promote library utilization.[58]

Generally, faculty members have been assumed to be the most important impelling factors governing the use of the library. "Librarians, however, have not convinced most of the faculty members to make library competence a collaborative effort."[51] More often than not, "personal qualities of instructional staff such as enthusiasm and approachability, may be even more important than qualifications."[60] In a study of faculty members by Jinnie Davis and Stella Bentley, perceptions and the length of time at an institution influenced faculty attitude towards the library.[61] In another study, neither the level of education nor the field of study influenced faculty members' attitude toward the library.[62] However, the faculty is consistently thought of by librarians as a major force in library use, and bibliographic instruction has been found to be an effective way to impart library skills.[63]

Many library studies have demonstrated that libraries are used only by a minority of students. However, the degree of nonuse continues to vary from study to study. While a recent investigation at DePauw University showed that 40 percent of the student body did not borrow a single library item in the semester studied and that 10 percent of the students accounted for almost 50 percent of the library circulation, Georgia State University, Atlanta,[64] found more positive results.[65] From the analyses of the questionnaires returned by over three hundred readers, this Georgia study showed that 85 percent of the students visited the library

weekly or more, while less than eight percent visited the library monthly. The library met all or most of the needs of 90 percent of the respondents. The study also showed a variety of non-traditional uses made of the library as a social resource--a role not usually recognized by funding sources.''

From the foregoing review of related literature on user studies, it is clear that for nearly 53 years, librarians have sought to document a positive correlation between library use and academic performance, but the validation of this desirable relationship has remained unattainable. In the process of reaching this goal, several scholars have documented either low usage or nonuse of library facilities in academic settings. This trend has not changed much, for example, a recent study at San Jose University, California, predicted a trend toward declining use of the library.'' However, there is no consensus among researchers as to the degree of use or nonuse. Various factors have been examined in an attempt to explain causes of low and/or nonuse of libraries. Such factors include sex, grade-point averages, economic factors, pre-college exposure to libraries, the role of bibliographic instruction, users' attitudes regarding physical library conditions, and faculty-library staff roles. Even though certain correlations have been established, findings continue to vary from study to study. One factor, however, remains constant: the acknowledged need to ascertain the

characteristics of users for policy implementation to promote usage of acquired resources, especially today, when public pressure requires, more than ever before, accountability from public institutions to justify their continuity, in the midst of fast-changing environments. One aspect that has not been thoroughly examined is the relationship between methods of teaching and library use. In addition, most of the major studies mentioned have been conducted in the developed countries of the world. Put more succinctly, the developing countries are left in almost complete darkness in this vital area of librarianship despite the modest but sporadic growth of their academic libraries. The research reported here is an attempt to examine teaching relationships to library use and to document patterns of use and characteristics of academic library users in a developing country--Nigeria.

Footnotes To Chapter II

[1]Richard A. Davis and Catherine A. Bailey, Bibliography of Use Studies (Philadelphia, Pennsylvania: Drexel Institute of Technology, Graduate School of Library Science, 1964).

[2]Carol Deweese, A Bibliography of Library Use Studies (Lafayette, Indiana: Purdue University, 1967).

[3]Pauline Atkins, Bibliography of Use Surveys of Public and Academic Libraries, 1950-1970 (London: The Library Association, 1971).

[4]John Lubans, Jr., Educating the Library User (New York Bowker, 1974), p. 4.

[5]John Lubans, Jr., Progress in Educating the Library User (New York: Bowker, 1978).

[6]Ibid., p. 6.

[7]Robert Ellis Lee, Continuing Education for Adults Using the American Public Library 183-1964 (Chicago: American Association for Adult Education, 1966), p. 130.

[8]John H. Lee, "Reaching all Classes of the Community," A.L.A. Bulletin 13 (July 1919): 180.

[9]Joseph Wheeler, "The Larger Publicity of the Library," A.L.A. Bulletin 10 (July 1916): 168.

[10]Alvin Eurich, "Student Use of the Library," Library Quarterly 3 (January 1933): 87-94.

[11]Errett Weir McDiarmid, Jr., "Conditions Affecting Use of the College Library," Library Quarterly 5 (January 1935): 59-77.

[12]H.V. Gaskill, R.M. Dunbar and C.H. Brown, "An Analytic Study of the Use of a College Library," Library Quarterly 4 (October 1934): 586.

[13]Harvie Branscomb, Teaching with Books: A Study of College Libraries (Chicago: American Library Association, 1940), p. 37.

[14]Russell I. Thompson and John B. Nicholson, Jr., "Significant Influences in General Circulation in a Small Library," Library Quarterly 11 (April 1941): 142.

[15]Lewis Steig, "Circulation Records and the Story of Library Use," Library Quarterly 12 (January 1942): 107.

[16]Allison Davis, Social-Class Influence Upon Learning (Cambridge: Harvard University Press, 1948), p.

[17]Philip E. Jacobs, Changing Values in Colleges: An Exploratory Study of the Impact of College Teaching (New York: Harpers, 1957) p.

[18]Frank B. Jex and Reed M. Merrill, "Intellectual and Personality Characteristics of University of Utah Students," Journal of Educational Research 53 (November 1959), pp. 118-120.

[19]John Lubans, op. cit. p. 14.

[20]Thompson and Nicholson, op. cit. p. 142.

[21]Patricia B. Knapp, College Teaching and College Library, American College and Research Libraries Monograph Number 23 (Chicago: American Library Association, 1958), pp. 92-93.

[22]Patricia B. Knapp, "College Teaching and the Library," Illinois Libraries 40 (December 1958): 828-831.

[23]Johnnie Givens, "A Study of Heavy and Light Users of the Austin Peay State College Library" (Masters Thesis, University of Chicago, 1960), p. 24.

[24]E.J. Josey, "Role of the College Staff in Instruction in the Use of the Library," College and Research Libraries 23 (November 1962): 492-498.

[25]John Weatherford, "Student Library Habits," College and Research Libraries 22 (September 1961): p. 78.

[26]Jex and Merrill, op. cit., p. 119.

[27]Davis, op. cit., p.

[28]Natalie Nicholson and Eleanor Bartlett, "Who Uses the University Libraries?" College and Research Libraries 23 (May 1962): 220.

[29]Guy R. Lyle, The President, the Professor and the College Library (New York: H.W. Wilson, 1963), p.53

[30]Richard Dean Walker, "Influence of Antecedent Library Service Upon Academic Achievement of University of Illinois Freshmen" (Unpublished Ph.D. Dissertation, University of Illinois, 1962).

[31]Felix Eugene Snider, "The Relationship of Library Ability to Performance in College" (Unpublished Ph.D. Dissertation, University of Illinois, 1965).

[32]Patrick Barkey, "Patterns of Student Use of a College Library," College and Research Libraries 26 (March 1965): 116-117.

[33]Howard Clayton, "An Investigation of Various Socio-Economic Factors Influencing Students' Use of One College Library" (Ph.D. Dissertation, University of Oklahoma, 1965), pp. 107-115.

[34]Walker, op. cit.

[35]Gorham Lane, "Assessing the Undergraduates' Use of the University Library," College and Research Libraries 27 (July 1966): 277-282

[36]Lyle, op. cit., p. 53

[37]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies" (Masters Thesis, university of Chicago, 1965), pp. 48-50.

[38]Orlando Behling and Kermit Cudd, "A Library Looks at Itself," College and Research Libraries 28 (November 1967): 417-421.

[39]Barkey, op. cit., p. 117.

[40]Floyd D. Kramer and Martha B. Kramer, "The College Library and the Drop-out," College and Research Library 29 (July 1968): 310-312.

[41]Ibid., p. 311.

[42]Vernon Ritter, "An Investigation of Classroom Library Relationships on a College as Seen in Recorded Circulation and GPA," College and Research Libraries 29 (January 1968): 31-32.

[43]John Lubans, Jr., "Student Use of Technological University Library," IATUL Proceedings 4 (July 1969): 7-13.

[44]John Lubans, Jr., "Users and Uses of Rensselaer Library," IATUL Proceedings 4 (December 1969): 49-57.

[45]Philip V. Rzasa and John H. Moriarty, "The Types and Needs of Academic Library Users: A Case Study of Responses,: College and Research Libraries 31 (November 1970): 401-407.

[46]Kenneth W. Allen, Use of Community College Libraries (Hamden, Connecticut: Linnet Books, 1971), p. 2.

[42]Larry Hardesty, "The Academic Library: Unused and Unneeded?" The Library Scene 5 (December 1975/March 1976): 14.

[43]James Groark, "Utilization of Library Resources by Students in Selected Non-Residential Degree Programs: Implications for Education Administrators" (Doctoral Dissertation, State University of New York at Albany, 1974).

[44]Oyeniyi Osundina, "Improved Accessibility and Undergraduate Use of the Academic Library," International Library Review 7 (January 1975): 77-81.

[50]Ibid., p. 80.

[51]Adakole Ochai, "The Use of Kashim Ibrahim Library by the Undergraduates of Ahmadu Bello University" (Masters Thesis, Ahmadu Bello University, Zaria, Nigeria, 1977).

[52]Ali Emdad and Robert Rogers, "Library Use at Pahlavi University," College and Research Libraries 32 (November 1978): 448-455.

[53]James D. Culley, Denis F. Healy and Kermit G. Cudd, "Business Students and the University Library: An Overlooked Element in the Business Curriculum," Journal of Academic Librarianship 2 (January 1977): 293-296.

[54]Johnnie Givens, "The Use of Resources in the Learning Experience," in Advances in Librarianship (New York: Academic Press, 1974), pp. 149-174.

[55]Malcolm Stevenson, "Education of Users of Libraries and Information Services," Journal of Documentation 33 (March 1977): 53-78.

[56]Lubans, Jr., op. cit.

[57]Lubans, Jr., op. cit.

[58]David McDonald and Susan Searing, "Bibliographic Instruction: A Review of Research and Applications," in John Lubans, Jr., Progress in Educating the Library User (New York: R.R. Bowker, 1978), p. 14.

[59]David McDonald and Susan Searing, "Bibliographic Instruction and the Development of Online Catalogs," College and Research Libraries 44 (January 1983): 5-11.

[60]Arthur P. Young and Exir B. Brennan, "Bibliographic Instruction: A Review of Research and Applications," in John Lubans, Jr., Progress in Educating the Library User (New York: R.R. Bowker, 1978), p. 14.

[41]Ibid., p. 15.

[42]Jinnie Y. Davis and Stella Bentley, "Factors Affecting Faculty Perceptions of Academic Libraries," College and Research Libraries 40 (November 1979): 527-532.

[43]Patricia Rae Shelden, "The Effect of Orientation and Instruction on Use of, and Satisfaction with a Government Documents Collection in a University Library" (Ph.D. Dissertation, The University of Michigaan, 1982), p. 92.

[44]Larry Hardesty, "Student Use of the Libraries at DePauw University" (ED 187335, 1980), p. 5.

[45]James E. Prather, Ralph E. Russel and Michael L. Clemons, "Library Resources of a Metropolitan University -- Assessment by Users," College and Research Libraries 44 (January 1983): 59-65.

[46]Ibid., p. 64.

[47]Jo Bell Whitlatch, "Library Use Patterns Among Full and Part-Time Faculty Students," College and Research Libraries 44 (March 1983): 141-152.

CHAPTER III

METHODOLOGY

Choice of Methodology

Previous studies on this topic have employed two basic methods of obtaining data: the analysis of circulation records and the survey technique. However, the use of circulation figures has been criticized variously as unrepresentative of the complete picture of students' library use.[1] The survey method is, therefore, considered appropriate for this study. For one thing, the survey technique has the capability of probing into a variety of questions about groups of homogeneous subjects like faculty and students on different campuses. Put in Maurice Line's words,

> A survey gives an overview of a field, . . . it is a map rather than a detailed plan. The drawing and refining of the map provides a means to bring under control situations of increasing size and complexity, [it offers] perspectives and standards for comparison.[2]

Also, as Clayton noted, the survey with its focus on groups and consequently large numbers of participants makes possible the investigation of several potential relationships with stated empirical frameworks.[3] In addition, this method was considered suitable for this

research because it possesses the framework which makes theory and data mesh together, thereby providing an illuminating explanation, a verification and the possibility of application.[4] Also, as stated by Earl Babbie, the survey method of research is not only a vehicle for understanding the larger population from which the initial sample was drawn, but the explanatory analysis that results provides a means for the development of generalized propositions about human behavior.[5] In addition, such descriptive assertions provided by survey method are fundamental to discovering the distribution of certain traits or attributes.[6] It was expected that the survey method would facilitate the testing of the hypotheses included in this study as well as provide answers to the research questions for this report and thereby promote the understanding of the characteristics of library use in Nigerian universities.

Objectives of the Study

A review of literature related to library use showed that research on the relationship between library utilization and previous exposure to library environment, academic achievement, economic background, or scholastic aptitude has been unable to identify much causal connections. In addition, scholars have failed to establish high correlations between library utilization and academic achievement. These failures notwithstanding, the challenges

posed by the ever-changing library environment continue to dictate that librarianship should not only nurture a more evaluative attitude, but undertake, also, a multiplicity of research approaches to justify its existence. This diversity of approach, in turn, calls for an examination of selected occupational variables relevant to library use, such as the impelling role of the faculty in promoting student utilization of library resources. The research reported in this paper was conducted, therefore, to determine the relationship between faculty methods of teaching and library utilization. In addition, however, other variables, such as frequency of library use, faculty and student characteristics and attitudes toward the library were also investigated in order to fill an information gap created by the absence of studies in this vital aspect of librarianship in the less developed countries, especially Nigeria. Despite the rapidly growing number of academic libraries in Nigeria, there is no information on how the students use the library and whether students in Nigerian universities, as well as faculty members, actually use the huge libraries located on their campuses.

Because library use is one vital area of librarianship relatively unexplored in Nigeria, there is a vast array of questions that need to be answered on the topic. Therefore, the following research questions and hypotheses were considered relevant to the age-old research effort to

understand the library user in both the developed and the less developed countries of the world, especially Nigeria.

Research Questions

The specific research questions investigated in this study were:

1. Determination of Characteristics of Library Use
   (a) What percentage of the students study in the library using their own books?
   (b) What percentage of the sample study using library materials?
   (c) What percentage of students use the library as a meeting place?
   (d) How often do students checkout books?
   (e) What percentage of the students ask reference questions?
   (f) Where do students do most of their reading and writing for their studies--classroom, main library, faculty/departmental libraries, residential hostels?

2. Determination of the Students' Use of Selected Resources
   In what percentage and frequency do students use the following resources?
   (a) reference materials
   (b) periodical collections
   (c) newspapers
   (d) photocopying facilities

(e) reserve books

(f) interlibrary loan services

(g) microforms collections

(h) librarians' assistance

3. Determination of Causes of Nonuse of the Library

(a) What are the causes of nonuse?

4. Determination of Sources of Materials

(a) What other sources of information outside the university library systems do students use to obtain reading materials?

(b) How do such sources compare to the university library in frequency of use?

5. Determination of the Type and Relevance of User Education

(a) What types of bibliographic instructions are students offered?

(b) How helpful are these instructions?

(c) What is the relationship between bibliographic instruction and frequency of use?

6. Determination of Students' Perception of the Library

(a) How do the students perceive the library?

(b) How do students perceive the library staff?

(c) What changes do students desire to see to improve the university library?

(d) How satisfied are students with the university library systems?

7. Determination of Comparative and Related Variables

(a) How do faculty and students compare in frequency of library use in the three universities studied--Ahmadu Bello University, Zaria; Bayero University, Kano; and the University of Ilorin?

(b) How do undergraduates and graduates compare in the three universities studied in the use of their libraries?

(c) How do the two sexes compare in their library use in the three schools?

(d) What are the differences between the sciences and the non-science respondents in library use?

Statement of Hypotheses

The following hypotheses have guided this study:

1. There is a significant positive relationship between faculty methods of instruction and students' library use.

1.1 Faculty's frequency of specific reading assignments is positively correlated with students' frequency of library use.

1.2 Faculty's frequency of reserving items for students is positively correlated with students' frequency of use.

1.3 Faculty's frequency of requiring reading lists is positively correlated with students' frequency of use.

1.4 Faculty's frequency of requiring term paper references is positively correlated with students' frequency of use.

2. The greater the faculty members' utilization of library resources for teaching and individual research,, the greater the library use by students.

2.1 Faculty's frequency of library use is positively related to students' frequency of use.

3. The more faculty and students avail themselves of the resources of the library, the more positive their perceptions of the library become.

3.1 Faculty's perception is positively related to the faculty's frequency of use.

3.2 Students' perception of the library is positively related to students' frequency of use.

Assumptions

This study was based on the following assumptions:

1. The questionnaire is a reliable method for gathering pertinent data on library use and the relationship between faculty methods of instruction and library utilization.
2. The students and faculty are able and willing to give factual and accurate information on the questionnaire.
3. Although some students live outside the residential halls on the university campuses, the non-

residential students in Nigerian universities are negligible because university education is almost free and boarding cost is low.

4. The basic statistical data supplied by the office of the registrar and the development office as well as information from the various departments including the libraries are genuine and accurate.

Description of the Population: An Overview of Nigeria

The Federal Republic of Nigeria lies almost at the eastern end of the broad sweep of the West African coastline. She is demarcated by latitudes 4° and 14° north of the equator and longitudes 3° and 15° east meridian. Nigeria is bounded on the west, north and east by the French speaking countries of Benin, Niger and Cameroun respectively and on the south by the Atlantic Ocean.[7]

With an area of 356,669 square miles, Nigeria is nearly four times the size of the United Kingdom, or about the same size as France, West Germany and the United Kingdom combined. It is 50 percent larger than Texas.[8] In spite of its relatively small area, Nigeria is the most populous country on the continent of Africa, having over 100 million people.[9]

Politically, Nigeria became a nation on the first of January, 1900, and an independent nation only in 1960 after various parts of it had been under the British colonial rule for about 100 years. The country passed through a series of

constitutional changes culminating in the creation of a federation of three regions in 1952 and a federal republic in 1962.''[9] After a series of political crises, the country adopted a new federal structure of twelve states in 1968 which was increased to nineteen in 1976. Since the implementation of the new constitution in 1979, Nigeria has changed from a parliamentary democracy to a presidential system of government similar to that in the United States with an executive president, federal and states' houses of Congress and Senate.''

Economically, Nigeria is an oil dependent mono-economy with 97 percent of its gross national product (GNP) from petroleum. However, beside being the fourth largest oil producer in the world, she has one of the best quality oils in the world market and supplies twelve percent of the United States, petroleum needs. Most of the proceeds are directed toward national developments of which education receives a priority.''[2]

University Development in Nigeria

University development in Nigeria, although vigorous, is relatively young, dating back only to 1948 when the University College at Ibadan was established as an affiliate of the University of London. However, the recognition of the positive role higher education could play in furthering national consciousness, prosperity, economic, political and

social development culminated in extensive and rapid advancement in all sectors including librarianship.

Education has continued to play a unique role in Nigerian economic development and social transformation process. Successive governments, in recognition of this role, have accorded education a high priority in the structure of resource allocation. The practice which was manifest in the First National Development Plan and sustained through the Second Plan was particularly intesified during the Third National Development Plan, 1975-1980. During the Third Plan period, the education sector accounted for about seven billion dollars or 12 percent of the total public sector effective program of about 47 billion dollars. In absolute terms, the amount allocated to the education sector was more than the estimated total public sector program during the preceding Plan period. The impact of this dramatic rise in capital expenditure on the educational system was tremendous. Perhaps the most notable feature of developments in the system during this period was the phenomenal rise in enrollment at all levels of education. This would be depicted by the enrollment trend in the universities and the establishment of new ones, as shown in Tables 1 and 2 by subject field and per each university.

Between 1960 and 1983, the number of universities in Nigeria rose from two to the present total of twenty-three, of which eighteen are federally owned.[13] Simultaneously,

TABLE 1

ALL NIGERIAN UNIVERSITIES ENROLLMENT TREND*
(All figures are actual)

Field of Study	Year				
	1975 -76	1976 -77	1977 -78	1978 -79	1979 -80
Art and Humanities	5,132	6,485	6,938	5,963	8,731
Agriculture	1,625	1,990	2,321	1,959	2,497
Administration	1,703	2,112	1,845	3,368	2,593
Education	5,126	7,025	6,239	6,298	9,487
Engineering	2,426	2,768	3,381	2,554	3,981
Environmental Studies	826	962	993	1,325	1,786
Law	1,574	1,906	1,045	2,322	2,565
Medicine	4,045	4,469	6,123	5,847	7,354
Natural Sciences	5,000	6,101	6,338	6,491	7,453
Social Sciences	3,595	4,539	4,877	7,376	8,343
Veterinary Medicine	459	520	515	618	459
All Disciplines	31,511	38,877	40,615	44,121	55,249

*Federal Republic of Nigeria: Fourth National Development Plan, op. cit., p. 247.

student enrollment has jumped from 1,400 to over 70,000 with 100,000 projected by 1985. Current development plans and the new constitutional change have created room and called for more professionals to man Nigerian industries. To this

TABLE 2

NIGERIAN UNIVERSITIES
PROJECTED ENROLLMENTS -- 1981-85*

Universities	1980-81	1981-82	1982-83	1983-84	1984-85
Ibadan	8,595	9,557	10,034	10,285	10,485
Lagos	8,894	9,557	10,242	10,595	10,905
Nigeria, Nsukka	8,060	8,642	9,411	10,170	10,625
Zaria	10,396	11,122	12,279	12,170	12,985
Ife	8,771	9,217	9,620	10,342	10,675
Benin	3,890	4,660	5,681	6,560	6,985
Jos	3,293	4,135	5,158	6,045	6,610
Calabar	2,751	3,436	4,151	5,031	6,015
Kano	2,775	3,550	4,275	5,035	6,115
Maiduguri	3,393	4,398	5,009	5,685	6,150
Sokoto	1,717	2,532	3,317	4,217	4,625
Ilorin	2,042	2,999	4,204	5,220	6,215
Port Harcourt	1,976	2,504	3,155	3,935	4,830
Bauchi	--	400	600	800	1,000
Markurdi	--	250	500	750	1,000
Owerri	--	250	500	750	1,000
Ondo	--	--	250	500	750
Gongola	--	--	250	500	750
Ogun	--	--	--	250	500
Niger	--	--	--	250	500
All Universities	66,553	77,209	88,636	99,090	108,720

*Federal Republic of Nigeria: Fourth National Development Plan, op. cit., p. 249.

end, many more federal universities of technology are scheduled to begin operations in the near future.

Nigeria's universities are required to play multifaceted roles in national life, in addition to fulfilling traditional aims, such as producing the skilled manpower that any developing country needs. Also, the universities are seen as instruments of national unity. In keeping with Nigeria's federal character, as put by the Nigerian Universities Commission, the universities function as regional centers, which are focal points of local pride and achievement. In this way, they contribute to the even growth and well being of all parts of the nation, and thus, to Nigeria as a whole.

Currently, more than half the total annual funding allocated by the federal government for education is directed to the universities. Yet it is estimated that only one in four qualified applicants is able to gain admission into a university.'[4] Therefore, there is a high probability that continued expansion and development of higher education will remain a priority of both state and federal policy makers in Nigeria in the foreseeable future. It is pertinent to note that, along with the establishment of these institutions, libraries are developed and in most cases they are given high priorities.

The Selection of the Institutions Studied

This study focused on the students and faculty of Ahmadu Bello University, Zaria; Bayero University, Kano; and the University of Ilorin located at Ilorin. The institutions were stratified for convenience, according to Nigeria's historical contact with western and Arabic education. In this regard, the country consists of several cultural blocks, but for the purpose of this investigation it was stratified into two zones: the northern and southern zones. Historically, the southern zone of Nigeria came into contact with western civilization in the sixteenth century while the northern zone has been in contact with Arabic civilization since the twelfth century.'[5] Both cultures promote education, but with different emphases and orientations. Further, the influences of both cultures carried religious beliefs: Islam for the north and Christianity for the south. The overall effect of the impact of these cultures on the existing civilization in Nigeria has produced divergent and conflicting attitudes toward education, life and government among the inhabitants. These differing attitudes also affect the provision and use of libraries throughout the country. The three universities, with well-established libraries, selected for investigation are located in the northern half of Nigeria: Bayero University, Kano from the northernmost end; Ahmadu Bello University, Zaria from the middle; and the University of Ilorin from the southernmost tip of the northern states.

Description of the Institutions Studied

The following narration is a brief background on the characteristics of the three universities studied in this report.

Ahmadu Bello University (ABU)

Ahmadu Bello University (ABU), located in Samaru, nine miles northwest of Zaria, is the largest university in tropical Africa. It is one of the three universities which emanated from the Ashby Commission of 1960.[6] However, the school was not formally opened until 1962. A. B. U., which began with 400 students of the then College of Arts, Science and Technology, presently has almost sixteen thousand students. In addition, there are eleven faculties offering graduate and undergraduate programs. In its early days, Ahmadu Bello University was serving two-thirds of Nigeria, and this accounts for its many affiliated institutes and colleges scattered throughout the northern states of Nigeria.[7] Despite the recent establishments of new universities in these areas, Ahmadu Bello University's students still come from across the northern half of the country, and its motherly image is reflected in those newer universities in physical layout, libraries and policy.

There are as many libraries as there are affiliated campuses. However, the main university library, called Kashim Ibrahim Library, is located on the central campus, the main focus of this research. The ABU main library moved

from its inherited small building in 1976 to an ultra-modern building with a capacity for 2,000 readers and 500,000 volumes of books.[8] At present the collection housed by Kashim Library consists of approximately 200,000 volumes, 3,000 microforms, and 40,000 bound volumes of periodicals; the library subscribes to approximately 3,000 current journals. Because the number of books available is small, borrowing rules are strict. For example, undergraduates can only borrow a total of seven books, graduates ten books, and faculty members twenty items. Membership in the library is open to students, staff and alumni as well as outside researchers.

The pattern of teaching in Nigeria follows closely that of Great Britain with formal lectures and tutorials. The system of examining, too, was primarily British, but more and more universities adopt the unit course credit pattern typical of the United States' university system.[9] This is true of all the three universities covered by this research. It is interesting to note, too, that all of the libraries of the three institutions catalog and classify their materials according to Anglo-American Cataloging Rules (AACR II) and the Library of Congress Classification Scheme, with local variations.

Bayero University, Kano (BUK)

Bayero University, Kano (BUK) is the second university selected for this study. Founded in 1977, like Ahmadu Bello

University, it is federally owned. Indeed it was an A. B. U. affiliate until 1977, when it obtained a full university status. With only eight faculties, Bayero University is relatively small, but comparable to other institutions established at the same time, with a student population of 3,000, the figure is expected to rise to 10,000 in 1987.[20]

Bayero University sits in the largest of the Hausa cities, and indeed, the largest city in Savanna Africa established in the eleventh century as a terminus of the trans-Saharan trade. Kano is characterized by traditional architecture and known for its city walls of the sixteenth century measuring nearly thirteen miles in circumference.

The Bayero University Library was established in 1964 to serve the then Faculty of Arts and Islamic Studies of Abdulahi Bayero College. In 1968, however, it moved to its present site, and has expanded rapidly along with other components of the university, and now houses 100,000 volumes and subscribes to 1,400 serials. Membership in the library is limited to students and academic staff. Its present building seats 400 readers. Bayero University also has affiliated schools and colleges and serves a wide area of northern Nigeria.[21] The teaching follows the British pattern described earlier with some American credit systems. Bayero University Library is open for fourteen hours a day, five days a week and ten hours on weekends except public holidays.

The University of Ilorin

The University of Ilorin is the third university studied in this report. It was established in 1975 as a University College affiliated with the University of Ibadan, but achieved a full university status in 1977. The University of Ilorin, like the other two institutions studied, is a federal university located at Ilorin in Kwara State at the midpoint between the north and south of Nigeria. The city of Ilorin, with a population of 400,000, is the sixth largest town in the country. Besides being the midpoint of Nigeria, Ilorin also sits at the transitional zone between forest and savanna vegetations. In addition, it lies at the confluence of the cultures of northern and southern Nigeria.

With a current population of 3,000 students, it has a projected enrollment of 10,000 students in the near future. At present the university occupies two campuses called temporary and permanent sites. This study covered both campuses. In these campuses there were a total of eight faculties offering mainly undergraduate courses and very few graduate courses.[22]

The University of Ilorin library system consists of the main library, temporarily located on the mini-campus, the medical library, and the branch library at the permanent site serving the sciences and technology students and staff. It has a collection of (1980) 17,500 volumes and 650 periodicals, classified according to Library of Congress

classification scheme.[23] The library is open for a total of fourteen hours a day on weekdays and seventeen hours on weekends, except holidays.[24]

The teaching pattern is primarily British, but often mixed with seminar and course system in some departments, especially those with American educated professors. In the three universities studied, the libraries are allocated at least five percent of the total annual budgets of the respective universities. In addition, the aforegoing overview of the characteristics and location of the three schools surveyed showed that the study covered the largest and most important universities in Nigeria. These institutions are also spread over two thirds of the country with students and teachers from different parts of the Federal Republic of Nigeria. However, admission into these schools is by a quota system with the immediate localities having the largest share.

Sources of Data

Institutional data on academic records, numbers of students per faculty, sizes of the student bodies, and numbers of faculties, were obtained from the offices of the academic registrars of each of these three universities. The list and composition of students in each of the residential hostels as well as students living off campus came from the student affairs offices of the three schools. The establishment offices of the universities supplied basic

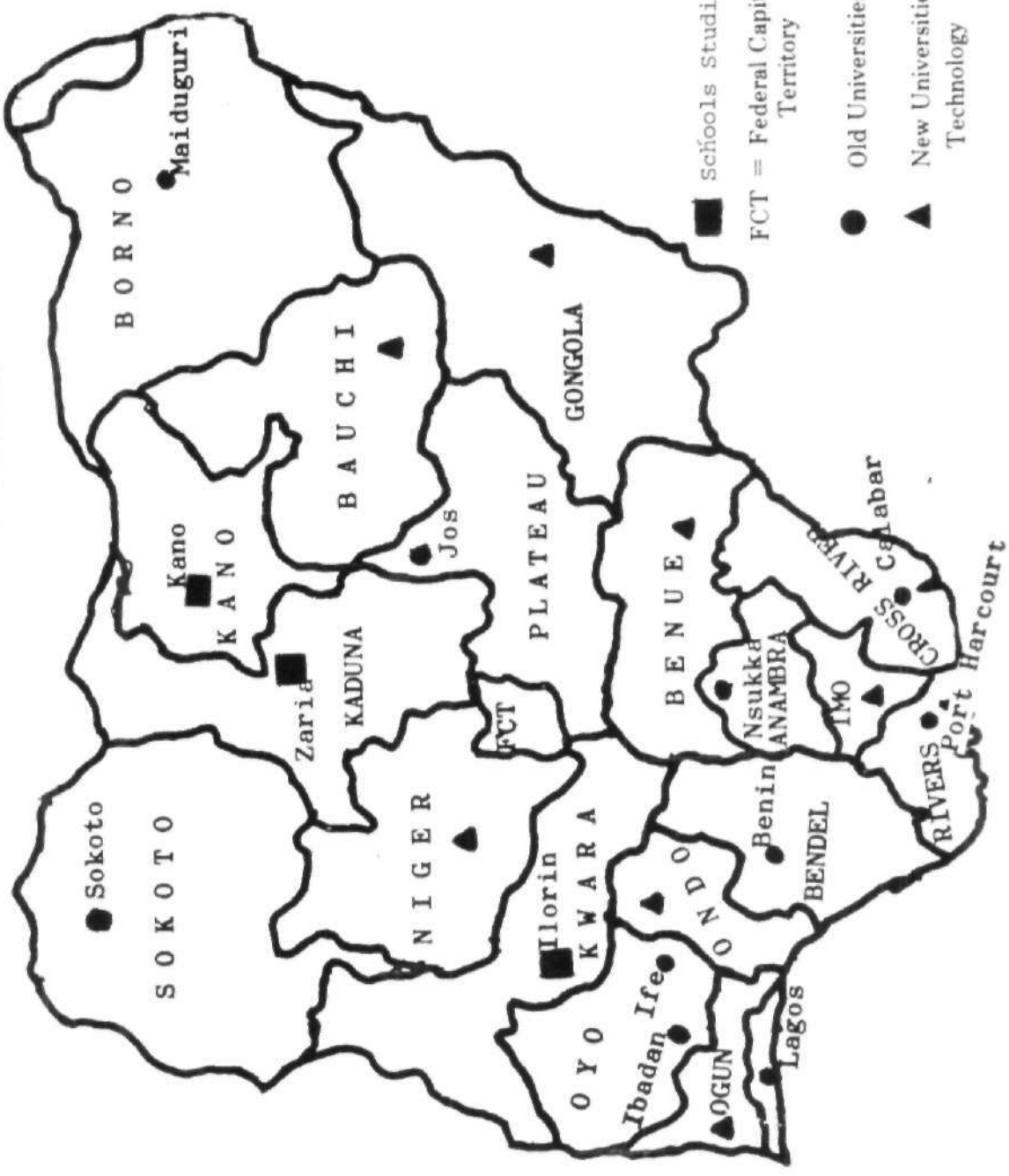


Fig. 1. MAP OF NIGERIA SHOWING UNIVERSITY TOWNS IN NIGERIA

information regarding faculty members. In addition, each faculty and department office supplemented some missing data for faculty, students, and subjects offered. Concerning basic statistics on the universities surveyed, information was gathered from the development offices of the schools.

Although some data were secured from the university offices listed above, some of this information was incomplete or dated. Therefore, some published sources, although dated also in some respects, formed the major supplementary materials of related data. Such published sources include: Basic Information on Nigerian Universities[25] and the Commonwealth Universities Yearbook[26] which was a useful source for statistical and organizational data. Other local publications from the universities studied which provided both historical and administrative data included calendars, bulletins, newsletters, diaries, mimeographed speeches, newspapers, and readers' guides.

The Survey Instruments

Two sets of similar questionnaires were designed for this study, one set for students and another for faculty. Each instrument was designed to solicit specific information required to test the hypotheses for this study and to provide answers for the research questions (see Appendices A, B, and C for a sample copy of the instruments). These door-to-door, self-administered questionnaires were developed over a six-month period. The students'

questionnaires were developed from a review of related literature. From an initial draft of 40, questions were reduced to 16 multiple-choice and one open-ended question. These seventeen questions were typeset on a six-by-four inches paper, and printed on golden-colored quarto size sheets, which were later folded into two making them attractive and brief. The faculty instruments were devised from an initial 22 questions with a final outcome of ten multiple choice and one open-ended, all on two six-by-four pages. These were also typeset and printed on both sides of six-by-four white papers.

The student questionnaire which consisted of seventeen questions covered the following: Questions 1-3 were designed to collect background information about subject field, sex, and year in school. The next two questions (4-5) focused on use. Respondents were asked to ascertain where they did most of their studies and how frequently they visited the library. They were to check one of a series of suggested answers which ranged from "once a week" to "never." In relation to frequency of library use, questions six and seven probed further into specific activities and asked respondents how often they used or performed selected library-related activities. Question eight was specifically designed for nonusers of university libraries. The respondents were asked to identify with suggested reasons for their rare or nonuse of library resources.

One of the aims of the study was to determine if other sources of information were used to substitute for the university libraries. Question nine was designed to investigate the assumption inherent in raising this point. Therefore, students were asked to name their sources of information for reading materials.

The following two questions (10-11) focused on user education, and respondents were asked to identify the type of bibliographic instruction they had received and how helpful the instruction had been to their library use and class work. The next questions (12-13) were designed to discover if adequacy of materials was a factor in nonuse. Respondents were asked to indicate how adequate library collections were in their view and if they had ever made any suggestions or feelings known to the librarians.

The remaining questions (14-16), except the last question (17), focused on perceptions of the respondents about the library and their desires both physical and material in relation to the library and academics. The last question (17) was an open-ended question which asked respondents to comment about the relationship of the university library to their academic careers and to give suggestions, appraisals or criticism in respect to the library.

Faculty questionnaires were similar in format and wording to the set of questions for students. This was necessary because similar dependent variables were to be

tested against frequency of use, the main variable, and relationships and associations between faculty and students were sought. However, demography was excluded in the faculty set of questions. The first part (1-2) solicited basic data about the school and academic departments.

Following this, questions three and four centered on the frequency of library use. Like the student questionnaires, similar frequencies of "weekly," "monthly," "termly," "rarely," "never" and "others" were used. Questions five and six related to the teachers' methodology, classroom preparation and library use.

The following three questions (9-11) were designed to probe the adequacy of library materials for teaching, and again as possible index of nonuse by faculty. The last question, which was open-ended, asked respondents what changes they desired to see in the services of the university libraries.

Pretest

The two sets of questionnaires were pretested on ten students enrolled in the University of Michigan for the Winter Term of 1983. Prior to the pretest and the final format, however, the instruments were subjected to criticisms and suggestions by the doctoral students in the "Research Methods" class at the School of Library Science in the University of Michigan. Further modifications were made after a thorough scrutiny by the Center for Research on the

Utilization of Scientific Knowledge (CRUST) and the Survey Research Center (SRC), both within the Institute for Social Research (ISR) at the University of Michigan. While the "Research Methods" class considered the proposal, the Center for the Utilization of Scientific Knowledge concentrated on perfecting the instrument for data analysis. The Survey Research Center, on the other hand, perfected the body and wording of the questionnaires to facilitate returns.

The most difficult task in planning the questionnaires was reducing the questions from an initial 60 thirty-page questions for students and 36 sixteen-page questionnaires for faculty to four half-quarto-size pages for students and two half-quarto-size pages for faculty members. The two centers of the Institute for Social Science Research as well as the dissertation committee were instrumental to this end. Another modifying agent was the Horace Rackham Graduate School Statistical Laboratory which reviewed the statistical aspects of the instrument.

The pretest followed closely the design of the proposal for this study. The pretest sample was drawn from a list of Nigerian Students Association of the University of Michigan. Following sampling processes, their home addresses in Michigan were sought and the questionnaires were delivered to the respondents by hand, and received back the same way. Although the return was high--80 percent there were several complaints about the size and time it took to complete the questions. The results of the pretest further indicated

that students in Nigeria would not like to respond to such a long questionnaire, and the return rate would be poor unless the size was drastically reduced. It was also clear from the pretest that the number of questions must not only be reduced, but the format should be changed and made more attractive. In addition, certain words which were found to be ambiguous or too professional in meaning were changed. Similarly, many ambiguous questions were deleted or reworded. One of the most useful outcomes of the pretest was the discovery that a room-to-room self-administered approach would facilitate higher returns in Nigeria than any form of mail-system. The final results, when compared with the pretest results, indicated that the changes and modified format did not only clarify some issues but perhaps also increased the response rate and reduced the researcher's time in the field.

Population Sampling Procedure

In determining the population, Nigeria was stratified into two cultural blocks of north and south. Three universities were selected on the basis of the status of their libraries, student population, and date of establishment and location. Because three institutions could not represent all the 24 universities in the country adequately, the sample was confined to the northern zone. Thus, the universe from which the sample for this study was selected consists of the main campus of Ahmadu Bello

University, located at Samaru, Zaria; Bayero University in Kano; and the old and new campuses of the University of Ilorin, located in Ilorin.

Sampling List

The current list of students in the residential hostels were used for sampling with the following assumptions:

1. The non-residential students in Nigerian universities are negligible because university education is almost free.
2. The average usage rate of non-residents is not different from the rate of residents.
3. The lists of students are random enough by years in school and fields of study and the circular systematic sampling is statistically reliable.

The total sample size from the three institutions was determined on the basis of 1979/80 population figures of the three schools because there were no current and uniform figures available from the registrars of these universities.

Sampling Procedure

In order to exclude the non-target subjects on the residential hostels' lists, a circular systematic sampling technique as established by Leslie Kish was employed for the joint lists of names of all the hostels in each campus.[27] The lists of names collected from the hostel administrators were regarded circular, the last unit, therefore was

followed by the first. Selection from the combined list consisted of taking every Kth sampling unit after a random start r, where N, the population size, represented the integral multiple of the desired size n, and the required sampling interval K = N/n was also an integer. The zonal length or interval for selecting other elements after the random start was calculated from the formula:

$$I = N/n$$

where I = interval

N = population size and

n = sample size

For example, when a number was drawn from 1 to K, that random start r, for the interval determined the unit which was selected in each implicit strata or zones. The interval K, divided the population into n zones of K units each and one unit with same location in each zone was selected. Because the first number was drawn at random from 1 to K, each unit had the same probability 1/K of selection.

The circular systematic sampling technique was employed in this study because of its proven statistical qualities. In addition, as Kish noted, it is flexible and easily yields proportionate sample.[28] Circular systematic sampling was especially suitable for combined residential hostel lists of names used in this study.

During the process of sampling, whenever a non-target subject (name) appeared, such a name was disregarded and no selection was made until the following zone;

where K = Population size/Sample size and

K was made the nearest integer.

In Ahmadu Bello University, sampling was confined to the undergraduate and graduate degree students on the main campus at Samaru, Zaria. The population size of this group of students was approximately 5,400 and the required sample size was 120. Thus, K or systematic zonal length was calculated by dividing 5,400 by 120. According to this procedure, the first sample unit was picked randomly from the first 45 numbers and every other 45th member thereafter was selected until 120 samples had been chosen. Similar procedures were followed in selecting the target subjects at the University of Ilorin and Bayero University.

Administration of Questionnaires

Having sampled the required number of students in each university from the combined list of names, the sampled students were listed on a separate sheet of paper with their residential hostel name, room number, field of study and year in school. These identifications were then used to locate the particular rooms and target subjects to whom questionnaires were administered to personally by the researcher. In most cases, the completed questionnaires were collected back from the respondents only a few minutes later since it took an average of fifteen to twenty minutes to answer all the questions.

Although the same procedures were followed for the delivery of questionnaires to teachers in the three universities surveyed, the list of teachers and their areas of specialization came from the various departmental offices. Unlike the students, the faculty's questionnaires were delivered to them personally in their offices as opposed to their residential addresses. Thus, it required more than one visit to track the respondents down for both the administration and collection of the questionnaires. In addition, contact with the faculty members were restricted to business hours only, unlike the students some of whom were located in the evenings.

However, while the question of return rates will be addressed in the following section, it is proper to note that prior to the collection of name lists and subsequent administration of questionnaires, first, the researcher obtained a written permission from each of the registrars to conduct the research. Such letters were copied to the Students Affairs Officer, the Academic Registrar and the Establishment Officers. These letters which introduced the researcher to all departments also enabled the author access to official documents and publications of the institutions. Some of these documents served as background information for this study.

Response Rate

The data base for this study consisted of 297 usable returns representing 90 percent (N = 330) of the students and 146 usable returns from faculty members which represents 97 percent (N = 150) from the three universities surveyed. The usable questionnaires in both sets of instruments were those completed enough to test the hypotheses of this study, as well as provide data on the major variables of sex, subject of specialization, year in school and frequency of use for students and faculty. Overall, however, the returns were high as depicted by Table 1.

TABLE 3

PERCENTAGE OF USABLE RETURNS

Institution	Sample Size	Number of Returns	Number Usable	Percentage Usable
Students				
Ahmadu Bello University	110	106	99	90.0
Bayero University	110	103	97	88.1
University of Ilorin	110	104	98	89.0
Total	330	313	297	90.0
Faculty				
Ahmadu Bello University	52	52	50	100.0
Bayero University	52	50	48	96.0
University of Ilorin	52	51	48	96.0
Total	156	153	146	93.5
Grand Total	486	466	440	91.2

The high number of returns, 90 percent for students and 91 percent for faculty, may be attributed to the size and format of the questionnaires. In addition, however, the self administration and collection as well as introductory letters from the University registrars may be other related factors. Another factor might be of interest in the subject, as over 60 percent of both groups, faculty and students and and the University librarians indicated their interest in the outcome of the study. Additional indication of possible interest can be inferred from the fact that over 80 percent of the student respondents used up all the available space in the only open-ended question requesting for personal opinions, appraisals and criticisms of the university libraries.

Treatment of Data

The survey data for this research were collected, edited, coded and key punched onto computer cards. Great care was taken throughout to ensure that the respondents' answers were uniformly and accurately recorded for tabulation and analysis. The editing process involved examination of each instrument for inclusion or exclusion according to the percentage of completeness or obvious ambiguities, inconsistencies and illegibility of input.

Coding involved recording responses on IBM coding forms according to code terms designated in a codebook designed for this study with the assistance of a professional coder

from the Institute of Social Science Research (ISR) at the University of Michigan. In addition, the open-ended questions were classified under six headings labelled and coded. After coding, the data were double checked for errors. The cleaned coded information was then transferred into machine readable form by key punching the data set onto computer cards which were read later into the data file for analysis. The key punching of the data set onto IBM cards was undertaken by a professional key puncher at the University of Michigan Computing Center. Following key punching, verifications were made for errors in readiness for data analysis.

Statistical Analysis

Prior to the analysis of these data, a data file was created with the assistance of a computer staff at the University of Michigan Computing Center. The data set were read into the computer and controlled for frequency distribution of all the variables in eight different categories. These categories included frequency distribution for the combination of all students in the three institutions surveyed (n = 297) and same analysis for individual students in each institution. Similar analyses were undertaken for faculty members, in one analysis, faculties from Ahmadu Bello University, Bayero University and the University of Ilorin were combined and another

analysis was accomplished for each university's faculty member.

However, beside frequency distributions, other statistical tests were performed, but in each case for all groups, of course, according to the type and level of data or measurement; such tests included analysis of variance, the Pearson Product Moment Correlation Coefficient (Pearson r), Chi-Square goodness of fit, t-tests, and Multiple Classification Analysis (MCA). In order to highlight the relationships of other variables, test results and frequency distributions were tabulated variously with two-way and three-way contingency tables.

Frequency distribution on all the variables on the questionnaire by all the students combined by each of the schools individually was done to give an overall picture of how the respondents answered each question on the survey instrument. The analysis of variance, on the other hand, was designed to highlight statistically the variance between and within groups in the survey. While Pearson Product Moment Correlation Coefficient was employed as a parametric measure of relationships between groups of continuous data in the study, the student t (t-test) was employed to test group mean differences for significance and the Multiple Classification Analysis was applied to predict the most import of variables of library use. Also, the Chi-Square test was applied to the data as a standard measuring

technique for statistical significance of relationships embodied in the ordinal level data in the questionnaires.

The chi-square tests, a commonly used technique for analyzing data in the social sciences, was applied because it allows for measurements between discrete categories and comparisons of attributes. Its main purpose being to give a measurement of the probability of getting a disagreement between observed and computer frequencies equal to or greater than that observed in either direction. In this report, the contingency coefficients were used to measure the extent of association between sets of attributes. In addition, values yielded by these tests were reported at both the .05 and .01 levels of significance. This was accomplished generally by describing a result as probably significance if its probability of error was less than 5 percent but greater than 1 percent. Such results were also labeled as highly significant if the probability was less than 1 percent.

In all the related tests, especially the parametric tests, the basic parametric assumptions were met in respect of sample size, n. For example, these were the sample sizes (n) for students in the three universities:

(a) Ahmadu Bello University n = 99

(b) Bayero University n = 98

(c) The University of Ilorin n = 97

Student total sample size n = 297.

Also, the faculty sample sizes in the three schools were large enough as indicated by these figures:

(a) Ahmadu Bello University n = 50

(b) Bayero University n = 48

(c) The University of Ilorin n = 48

Faculty total sample size n = 146.

The parametric assumption required to validate any parametric statistical test stipulates that the sample size (n) should be at least 30 subjects.[29]

The data for this study were analyzed via the University of Michigan Computer Center's Statistical Package for the Social Sciences (SPSS). This computer package was employed to determine if there were any significant patterns in the frequency of library use and to pinpoint any correlation between faculty methods of teaching and library utilization in the three schools studied. In addition, however, various statistical tests were performed using the SPSS to highlight institutional characteristics and related variables.

The Statistical Package for the Social Sciences (SPSS) was developed at Stanford University. It is maintained by the National Opinion Research Center at the University of Chicago.[30] This statistical package which satisfies many statistical analysis needs is a widely used system of computer programs. The SPSS provides comprehensive procedures for file manipulation and statistical tests designed for the analysis of social science data.[31] Besides

being international, SPSS is in such wide use because of its relative simplicity of the control statements, which are in natural language. It thus makes it possible for many researchers to do their own programming. In addition, one of the special advantages of SPSS is its ability to convert research data into a self describing system through its special file which contains all the information SPSS requires to identify relevant variables such as variable names, labels and missing value codes.[32] Although SPSS program is relatively easy for a researcher to design for analyzing his/her own data, the programming for the analysis of this research was done by an SPSS authority, who is also an accomplished statistician.

After the data were read into the system on punched cards, SPSS made the tabulations and performed the analysis on the data. The level of significance for all statistical tests was set at the 0.05 alpha level.

Footnotes to Chapter III

[1]John Weatherford, "Student Library Habits," College and Research Libraries 22 (September, 1961): 369-371.

[2]Maurice B. Line, Library Surveys (Hampden, Connecticut: Archon Books, 1967), p. 13.

[3]Howard Clayton, "An Investigation of Various Social and Economic Factors Influencing Student Use of One College Library" Doctoral Dissertation, the University of Oklahoma, 1965, p.11

[4]B.C. Vicleery, "The Triple Glow; Thoughts on Research in Librarianship," Journal of Librarianship 2 (October, 1970): 281-286.

[5]Earl R. Babbie, Survey Research (Belmont, California: Wadsworth,1973), p.46.

[6]Ibid., p.47

[7]Akin L. Mabogunje, Physical and Social Geography of Nigeria (London: MacMillan, 1979), p.12.

[8]Nigeria; Economic potential and Problems," Quarterly Review of Economics 3 (September, 1982): 5.

[9]UNESCO Statistical Yearbook (New York: UNESCO, 1982), p.730.

[10]Africa South of the Sahara (London: Europa Publications, 1983), p.798

[11]Nigeria, Constitution of the Federal Republic (Lagos, Nigeria: Federal Ministry of Information, 1979).

[12]Federal Republic of Nigeria, Fourth National Developmental Plan, 1980- 1985 (Lagos, Nigeria: Federal Ministry of Economic Planning, 1981).

[13]Federal Republic of Nigeria, National University Commission; Basic Information Kit on Nigerian Universities (Washington, D.C.: Nigerian Universities Commission, 1982), p.1.

[14]J.F. Ade Ajayi, "Academic Planning in a Federal System: The Nigerian Example," in Pressures and Priorities: The Report of Proceedings of the Twelfth Congress of the Universities of the Commonwealth Universities, Vancouver, August 1978 (London: Association of Commonwealth Universities, 1979), p. 27.

[15]B.O. Nwabueze, Constitutionalism in Emergent States (London: Hurst, 1972), p. 83.

[16]"Commission on Post-School Certificate and Higher Education in Nigeria; Investment in Education: The Report, Eric Ashby, Chairman." Lagos, Nigeria: Federal Ministry of Education, 1960.

[17]Ahmadu Bello University Calendar 1981/82 (Zaria, Nigeria: Ahmadu Bello University Press, 1982), p. 11.

[18]Ahmadu Bello University: Kashim Ibrahim Library: Readers' Guide (Zaria, Nigeria: Kashim Ibrahim Library, 1978), p. 1.

[19]Commonwealth Universities Yearbook (London: Europa Publication, 1982), p. 669.

[20]Bayero University Library Readers' Guide (Kano, Nigeria: Bayero University Library, 1982), p. 1.

[21]Bayero University Diary (Kano, Nigeria: Bayero University Press, 1983), p. 3.

[22]Federal Republic of Nigeria: Nigeria University Commission; Basic Information Kit (Washington, D.C.: Nigeria University Commission, 1982), p. 9.

[23]Commonwealth Universities Yearbook, p. 2079.

[24]University of Ilorin Library Readers' Guide (Ilorin, Nigeria: University of Ilorin Library, 1980), p. 1.

[25]Basic Information Kit on Nigerian Universities, p. 7.

[26]Commonwealth University Yearbook, p. 2082.

[27]Leslie Kish, Survey Sampling (New York: John Wiley, 1965), p. 237.

[28]Basic Information Kit, p. 1.

[29]Edward Balian, How to Design, Analyze, and Write Doctoral Research (Washington, D.C,: University Press of America, 1982), p. 136.

[30]Norman H. Nie, et al., SPSS: Statistical Package for the Social Sciences (New York: McGraw-Hill, 1975), p. 5.

[31]Norman H. Nie, et al., Statistical Package for the Social Sciences, Combined Edition (New York: McGraw-Hill, 1981), p. 12.

[32]M.J. Norusis, SPSS Introductory Guide: Basic Statistics and Operations (New York: McGraw-Hill, 1982), p. 16.

CHAPTER IV

ANALYSIS OF DATA

Introduction

The data for this research were gathered from questionnaires returned by 297 students and 146 faculty members of Ahmadu Bello University, Zaria, Bayero University, Kano and the University of Ilorin, Ilorin, all in Nigeria. Because this study covered two homogeneous, but distinct groups comprised of faculty members and students located on three university campuses in Nigeria, two separate sets of survey instruments were used to collect data from the subjects. Although the two instruments were both questionnaires, they differed in content and scope. However, they were similar in format, wording and the overall goals and objectives which were to generate pertinent data of various dimensions from students and faculty for this study. The questionnaires and the accompanying covering letters are reproduced in Appendices A-D.

The main objectives of this study were, first, to establish what patterns and volume of library utilization

existed among students and faculty members in Nigerian institutions of higher education, as a means of filling an information vacuum that existed in this vital area of librarianship, especially in the developing countries like Nigeria. Second, to determine if the level of library utilization was related in any way to selected methods of instruction by faculty members in the three universities surveyed. In addition, this study was to determine whether the faculty and the library systems per se influenced students' frequency of library use.

Computer Treatment of Data

The data for this research were collected, coded, and fed into the computer at The University of Michigan Computer Center. Several statistical tests were undertaken with the aid of three different statistical packages. First, the statistical package of the Social Sciences (SPSS) was used to generate basic descriptive statistics and Pearson Product Moment Coefficients, t-tests, as well as analysis of variance (ANOVA). Second, the data were recoded from alphanumeric to numeric to generate further tests of selected variables hitherto untreated by the SPSS program. Chi-square goodness of fit tests were then conducted on several variables for both faculty and student data to determine what major variables were related to the hypotheses and the research questions of this study.

On identifying the variables most related to library use and faculty methods of teaching, such variables, along with others pertinent to the hypotheses of this research, were investigated further using the OSIRIS IV Monitor System. The OSIRIS IV Monitor System program package was used mainly to identify in ranked order of magnitude the best predictors of library use by way of Multiple Classification Analysis (MCA).

All the data reported here were collected in Nigeria during the months of February and March 1983. Besides the fact that there was no detailed demographic information solicited other than sex on the students' instruments, complete anonymity was specifically guaranteed in the covering letters that accompanied each instrument administered to every respondent. Therefore, no individual subject has been identified in this study.

It is perhaps worth noting that after running the appropriate statistical tests on the data collected, many variables did not culminate in significant relationships, but they were meaningful in themselves. Such numbers and percentages were included in the discussions with their importance highlighted. In some instances, tabulations or graphical representations were apparent, and the analysis which accompanied the table only served to illuminate further the major findings and to compare results with previous studies.

Descriptive Analysis of Faculty Data

The faculty instrument was the second set of questionnaires designed exclusively for faculty members. The purpose was to solicit responses concerning faculty methods of teaching, frequency of library use, and attitudes towards the university libraries as a means of testing the hypotheses and the research questions of this report. In addition, both faculty and student responses were to be corroborated in determining the relationships between styles of instruction and library use.

The following responses were generated from the faculty members of three schools in Nigeria: Ahmadu Bello University, Bayero University and the University of Ilorin. Out of the 150 questionnaires administered to faculty members, 97 percent (n=146) were returned usable. Usability was based on the completeness of responses to questions on the instrument which were pertinent to the resolution of research questions posed and the determination of the hypotheses set forth for this research. The usable returns consisted of 50 questionnaires from Ahmadu Bello University and 48 each from Bayero University and the University of Ilorin. Out of the combined total returns, 63 percent were non-science, while 37 percent were science.

Faculty Styles of Teaching

Question five (Appendix D) explored the frequency with which faculty members selected reading materials for their

classes through: "personally prepared reading lists"; "titles recommended orally in class"; "items recommended to individual students"; and "materials selected from standard bibliographies." The responses showed that 58 percent of the teachers recommended items to individual students "sometimes" while another 60 percent also indicated that they recommended titles orally in class "sometimes," and 51 percent "sometimes" selected materials from their self prepared lists. For standard bibliographies, 43 percent of the faculty showed that they selected materials from this medium "sometimes."

Question six was designed to generate more data on methods of teaching. In this regard, faculty members were asked how often they prepared lists; reserved materials for students; demanded references in term papers; and assigned specific readings.

As regards how often faculty members prepared reading lists for students, the data showed that the majority of the faculty prepared reading lists for their students. Although "sometimes" had the highest frequency, a total of 95 percent of the sample indicated that they prepared reading lists for their students with frequencies ranging from "always" to "sometimes."

In respect to how often faculty members in the sample reserve items for their students, a total of 84 percent indicated they used this method of teaching in frequencies

ranging from "always" to "sometimes," the latter being the highest frequency checked by 32 percent of the sample.

"How often do faculty demand references in term papers?" A total of 77 percent showed they demanded references in the term papers students wrote for them. However, "sometimes" was also the highest frequency with 32 percent, followed by "often" and "always," and 19 percent indicated "never." These data tend to suggest that "demand for references in term papers" was a popular style of instruction among faculty members in the three institutions, albeit in various frequencies.

Another variable examined concerned how often teachers gave assignments. Faculty members were asked to estimate the frequency with which they usually gave assignments that required students to use the library. In response, 37 percent indicated "at least once per week," while 42 percent checked "once per month." Another 13 percent gave assignments "once per term" while 5 percent "rarely" gave assignments. In all, an overall 92 percent gave assignments to students at various frequencies not greater than "once per term."

Also investigated was how often faculty members got their selections purchased by the university librarians. To this question, a total of 91 percent indicated that they got their selections purchased in frequencies ranging from "always" to "sometimes." The majority of this 91 percent

(47 percent) checked "sometimes" and 9 percent indicated "never."

Faculty Satisfaction with Library Services

One of the hypotheses of this research was: "the more faculty and students avail themselves of the resources of the library, the more positive their perceptions of the library become." Question eight (Appendix D) was designed to examine this postulate along with a similarly worded question for the students. Therefore, faculty members were asked to rate how satisfied they were with the services offered by the university libraries. Suggested ratings were "very satisfied," "somewhat satisfied," and "not very satisfied."

In response, 85 percent of the sample were "satisfied," 77 percent of them "somewhat satisfied," and 8 percent not very satisfied. Compared with the students' counterpart of the question (VS51), the student overall satisfaction was 79 percent, and dissatisfaction was 31 percent among the students. Students' satisfacton was comparatively lower than the faculty. However, these data tend to suggest that the respondents were satisfied and had positive attitudes towards the library.

When the present findings were compared with an earlier investigation conducted at Ohio State University by Orlando Behling and Kermit Cudd, it differed. In their study, Behling and Cudd found low level satisfaction among users.

Some of the causes of dissatisfaction were related to physical conditions as well as the services offered by the library.' In the present study, however, there seemed to be a high level of satisfaction both with the library services and to a large extent, the physical conditions of the library.

Faculty Perception of Library Collections

The purpose of question nine (Appendix D) was to examine whether faculty's perception of library holdings adequacy for research, teaching and recreation was related to library use frequency and attitudes toward the library. In this respect, faculty members were asked to rate how adequate they thought the library collections in their universities were in meeting their teaching, research and recreation needs.

In response, 64 percent believed the collections were adequate for teaching with 56 percent of them in the "somewhat adequate" category. However, 34 percent checked "not adequate," 30 percent of which were in the "not very adequate" column. From these data, two-thirds of the sample believed that their library collections were adequate for teaching.

In respect to the collection's adequacy for research, 32 percent showed that the collections were adequate while 65 percent indicated that the collections were inadequate in meeting their research needs. As revealed by an examination

of the open ended question's responses, the major source of dissatisfaction with research collection lay in the non-currency of journals in the library. Incidentally, the datedness of international learned journals, the main tool of research in most fields of knowledge, was one of the main issues discussed by the respective librarians of the institutions studied in an informal interview during the field trip for this study. Lateness of journals, however, seemed to be a national issue in Nigeria beyond the confines of the university libraries. This was because it had to do with variables external to the institutions. Such external variables included foreign exchange control, postal systems, transportation and communication within the country in general.

The social contribution of the university library was one of the variables examined in this research. Faculty members were asked to rate how adequate the university library collections were for recreational reading. In response, a total of 17 percent checked "adequate" while 74 percent disagreed. These figures strongly suggest that the library collections were not adequate for recreation in the three schools studied. Both the science and the non-science faculty members were unanimous on this variable that the collections were inadequate for recreation.

Adequacy of Specific Library Collections

Question 11 (Appendix D) was designed to examine further the adequacy of specific collections of the library. Faculty members were asked to rate these resources from "very adequate" through "not adequate." The book collection was the first item examined. A total of 61 percent of the teachers indicated that the book collections were adequate while 38 percent disagreed.

As regards the adequacy of periodical collections, 52 percent checked "adequate" while 47 percent indicated the contrary. The "somewhat adequate" column had the highest number of respondents with 44 percent of the responses.

Another important tool which faculty members of the schools were asked to rate was the adequacy of reference materials. In response, 44 percent of the teachers checked "somewhat adequate" while 42 percent checked "not adequate." Overall, however, faculty members in the sample were evenly split with 49 percent on each side, on the adequacy or inadequacy of their reference tool.

Newspapers form one of the major tools of current information and reference on local and international issues. In this regard, newspapers were examined to determine how adequate their collections were in the three schools. Faculty members' ratings were as follows: 35 percent checked "very adequate" while 38 percent marked "somewhat adequate." Another 21 percent, however, checked "not adequate." Overall, a total of 73 percent were positive

about newspapers' adequacy while another 21 percent were negative and 6 percent did not answer the question.

"Microform collection" was another specialized resource examined in this report. Microform has been used here to describe the most important form of document reproduction in libraries. Thus, microform was used as a generic term which encompassed any information storage and communication medium containing images too small to be read with the naked eye. Because of the numerous applications microforms have been put to since the 1920's, its importance has grown in academic libraries.[2]

Faculty members were therefore asked to rate microform adequacy in their libraries. In response, 20 percent checked "somewhat adequate" while 40 percent thought they were "somewhat inadequate," and 27 percent checked "not adequate." Overall, 20 percent were positive, while a total of 67 percent were negative in their adequacy ratings of microforms' adequacy.

Finally, in this category, audio visual collections were examined to compare their adequacy ratings. Faculty members' responses were as follows: "Very adequate," 16 percent; "somewhat adequate," 16 percent; and "not adequate," 36 percent. Overall, a total of 32 percent checked adequate while 69 percent checked the inadequate category.

An overview of the various ratings of these important library resources showed that newspapers were the most

adequate resources in all the three schools with a 73 percent adequacy rating. The book collection was the next highest rated as adequate or somewhat adequate by 62 percent. On the other hand, the poverty of audio visual and microform collections was also revealed by these data with the former being rated the most inadequate by 69 percent of the sample. Despite the relatively high ratings of the book collection, the faculty members in the sample would like to see more duplicate copies added to the collection. In addition, they would like more current journals and more international newspapers.

Analysis of Student Data

Introduction

The following is a variable by variable analysis of the combined student data. There was a total of 297 or 90 percent usable questionnaires from students in the three universities studied. These responses were comprised of 33 percent (n=97) science students and 67 percent (n=200) non-science students. However, because the three schools used different terminologies for related academic disciplines, further subject grouping was blurred by the lack of a clear demarcation between fields, thus, analysis was limited to pure science and non-science.

However, it was apparent from the data that the number of non-science students in the three Nigerian schools studied outnumbered science students by a ratio of two to

one. This ratio is higher than the national average of four to one. However, a closer examination of the computations showed a mean of 1.67, with a median of 1.75. Therefore, one possible explanation for this disparity could well be the lack of consensus on what subject fields should be classified as science and which should not be.

Among the 297 respondents, 69 percent (n=205) were males while 31 percent (n=22) were females. The mode of the sample was the second year forming 37.7 percent (n=112) of the respondents.

Organization of Computed Results

The pages that follow contain the results of the several statistical analyses and tests performed to establish relationships and correlations between different variables and to resolve the pertinent questions of this research. In order to avoid tautology, however, the questionnaire findings were grouped and presented according to the seven research questions and the three major hypotheses outlined earlier in Chapter III of this study.

Therefore, the ensuing data analyses were reported in the following order:

(1) a re-statement of research objective and question;

(2) a descriptive statisticál narrative of the findings;

(3) the test statistic and inferences deducible from the data, and

(4) the resolution of the statement of hypotheses. Each level of analysis included only the significant statistical test results accompanied by tables where necessary. Such tables contained basic descriptive data like mean, mode, standard deviation from the means, variance, degrees of freedom as well as chi-square values and levels of probability, each referenced as necessary to buttress a point. Throughout this section, tables and relevant labels were presented according to the type of tests performed, be it an analysis of variance (ANOVA), chi-square goodness of fit, t-test, Pearson Product Moment Coefficient or the Multiple Classification Analysis (MCA).

In addition, each finding was accompanied by narratives highlighting the relevant points as they relate to faculty and students of Ahmadu Bello University, Bayero University and the University of Ilorin. Apart from the combined student and faculty analyses used mainly in this report, occasional references were made where necessary to individual school analyses to investigate how a particular school responded to a question.

Results for Research Questions Investigated and Inferential Statistics

The following were the findings according to the seven research questions investigated:

Research Question 1

Characteristics of Students' Library Use

(a) What percentage of the students study in the university libraries using their own books?

(b) What percentage of the students study using library materials?

(c) What percentage of the students use the library primarily as a meeting place?

(d) How often do students check out books?

(e) What percentage of the students ask reference questions?

(f) Where do students do most of their reading and writing for their studies; for example, classrooms, main university library, faculty/ departmental libraries, residential hostels?

Students Studying Using Personal Materials Within the Library

The questionnaire designed to answer these objectives was question six on the instrument (see Table 4). Respondents were asked to indicate how often they performed these selected library activities. Their answers were to be given in the frequencies of "always," "often," "sometimes," and "never." The first part of this section asked how often respondents studied in the library using their own books. In response, 36 percent (n=108) checked "sometimes" while 29

percent (n=86) and 27 percent (n=79) indicated "always" and "often," respectively.

The mode of the respondents was the third year. With a total of 92% in the affirmative frequencies of "always to sometimes" the responses were negatively skewed, with a mean of 2.1 on a scale of one to four, and a standard deviation from the mean of .87. It appeared this library activity was difficult to divorce from the following activities in the group since students probably used their own materials in addition to library materials. However, the number of students using their own materials indicated by this data was higher than James Prather's study at Purdue University where 50 percent of the respondents studied used their own books.[3]

Students Studying Using Library Materials

In response to the next question in this section students were asked how often they usually studied in the university library using library materials. In response, 19 percent (n=58) of sample checked "always" while 31 percent (n=91) checked "often" and 42 percent (n=127) had "sometimes." The remaining 8 percent (n=15) did not answer the question. In all, a total of 92 percent affirmed that they used the library at various frequencies with or without their own materials. While these two questions were difficult to divorce from each other by respondents, the

TABLE 4

STUDENTS' USE FREQUENCY OF SELECTED LIBRARY RELATED ACTIVITIES

V#	Activities Within the Library	Percentages			
		Always & Often	Sometimes	Never	No Answer
6	Study, using your own materials	55	36	2	7
7	Study, using library materials	50	43	3	4
8	Meet with friends	22	41	24	13
9	Check out books	35	38	17	10
10	Ask reference questions	17	51	23	9

data tended to suggest a high degree of use frequency either with or without using library materials.

Meeting with Friends in the Library

Similarly, the social function of the library was put to test by this question which sought to know how often students met with friends in the library. "Sometimes" with 41 percent (n=122) was the highest percentage returned. Twenty-four percent had "never" gone to the library mainly to meet friends while 13 percent (n=39) did not answer the question. Although 41 percent which used the library is less than half of the population, it is a noteworthy number because the social aspect of the library is often overshadowed by the libraries' academic activities. This may be a new trend in university library utilization as the Georgia State University study also found students increasingly using the university library as a social resource in addition to academics.'

Frequency of Checking Out Books

Question nine of this study was designed to answer how often students checked out books from the library. Again, "sometimes" was the highest frequency with 38.4 percent (n=114) of the population. Less than 25 percent of the sample checked "often" while 17 percent had "never" checked out a book in the past year. The percentage of respondents who did not check out books was relatively low, especially,

when compared with previous studies, such as DePauw University study where 40 percent of the sample did not borrow a single book during the semester studied,[5] whereas in the present study, a total of 70 percent checked out books.

A one-way analysis of variance was performed to determine variations in the means of the three schools in their patterns of checking out materials. There was a statistically significant difference at 95 percent confidence level among the three schools with a probability of .002. Bayero University was different statistically while Ahmadu Bello University and the University of Ilorin were statistically the same in the frequency of checking out books. From the descriptive data below (Table 5), Bayero University has a significantly lower group mean of 2.3488 to Ahmadu Bello University's 2.8764 and University of Ilorin's 2.7766. Therefore, these data suggest that Bayero University students checked out books from their libraries more often than students at A.B.U. or the University of Ilorin. Incidentally, A.B.U. which has more resources than the other two schools put together, had the lowest rate of students checking out books.

Frequency of Asking Reference Questions

The students' response to how often they asked the librarians reference questions showed that 23 percent of the sample checked "sometimes," while 11 and 24 percent

TABLE 5

ONE-WAY ANALYSIS OF VARIANCE IN RATE OF CHECKING OUT MATERIALS FROM THE UNIVERSITY LIBRARIES

Variable VS9: How often do you check out books? 95%Confidence Interval									
Group	Count	Mean (on scale of 1-4)	S.D.	S.E.	D.F.	Lower	Upper	F-Ratio	F-Prob.
A.B.U.	89	2.8764	0.9271	0.0983		2.6811	-3.0717	8.633	0.000*
Bayero	86	2.3488	0.8646	0.0932		2.1635	-2.5342		
Unilorin	94	2.7766	0.8818	0.0909		2.5960	-2.9572		
TOTAL	269	2.6729	0.9167	0.0559	2	2.5628	-2.7829		

*Significance beyond .01 level (p=0.000)

indicated "always" and "often" frequencies respectively, and 9 percent did not answer the question. An examination of the one-way analysis of variance showed that at the 99 percent level of confidence, the graduate students asked reference questions more frequently than the lower classes (p=.008).

Where Students Do Most of Their Studying and Writing

In order to determine where students generally did most of their reading and writing, they were asked to select one place among four most likely locations on the university campus: "their rooms in the hostel"; "the main university library"; the "departmental library" or any other locations which they were to specify. From the responses submitted by the sampled population, the absolute frequency of students who did most of their studies and writing in their room was 41 or 14 percent of the sample. On the other hand, more than half, 51 percent (n=151) of the students did their studies in the main university library. The classroom was the next popular place where 17 percent (n=50) did their academic work, and a negligible 3 percent studied or read in other locations. The responses to this question strongly suggest that the main university library was the most important center where the majority of the students from the three schools did their studying and writing.

Research Question 2

Students' Use of Selected Library Resources

In what percentage and frequency do students use the following library resources:

(a) reference materials

(b) periodical collections

(c) newspapers

(d) photocopying facilities

(e) reserve books

(f) interlibrary loan services

(g) microform collections

(h) librarians' assistance

The research objective of this question was to determine how often students used selected major resources of university libraries which were considered fundamental to academics. The responses to this question were given interval scales of one to four, and the results have been highlighted in three categories in Table 6.

Students' Use of Reference Materials

As displayed in Table 6, students' responses showed that 46 percent used reference materials weekly while 36 percent used them at least once per month. These put together indicated a total use of 82 percent against the 14 percent respondents who checked "never" and the 4 percent who did not answer the question. Based on a scale of one to four, the group mean was 1.91 with a median of 1.56 and a

standard deviation from the mean of 1.08. These data suggested an overall heavy use which was positively skewed. An analysis of variance test run to test for differences between groups yielded no statistical significance.

Students' Use of Periodicals

In response to how often students used periodicals, 46 percent (n=137) of the respondents checked "always," which was also the highest return to this question. However, another 26 percent (n=89) also marked "often." If one combines the responses for "always" and "often" frequencies of use (76 percent, n=226), then these data tend to suggest that there is a heavy utilization of periodicals in the three schools.

Based on this suggestion, a one-way analysis of variance was performed to determine if there was a variation in periodical usage between and within groups in ABU, BUK and Unilorin. The test yielded a statistically significant difference beyond the .01 level of confidence in the use of periodicals between the freshmen and the upper classes (p=.001). As depicted in Table 7, the difference between the group means of the freshmen and the graduates (1.031) was the largest, and suggests that the freshmen did not use periodicals as much as upper classes. In addition, a closer examination of the group means suggest that periodical usage among the years one through five progressed in ascending order of magnitude reaching its peak in the final graduate

years at school (years 3 and 4 for bachelors degrees and year five for graduates).

TABLE 6

STUDENTS' USE FREQUENCY OF MAJOR LIBRARY RESOURCES

V#	Resources	Percent			
		Per Week	Other	Never	No Answer
11	Reference Material	46	36	14	4
12	Periodicals	17	46	29	8
13	Newspapers	54	16	28	2
14	Photocopying	6	59	31	4
15	Reserve books	53	30	14	4
16	Interlibrary loan	5	25	65	5
17	Microfilms	1	6	90	3
18	Librarians' Assistance	10	42	45	3

Students' Use of Newspapers

The question on how often students used newspapers was designed to be answered in the same frequencies as the preceding variables. Each respondent was given suggested frequencies from which to choose. The highest frequency was "always" selected as responses by more than half of the sample (54 percent, n=160). Although there was no major difference among the groups in the use of newspapers, these data suggest that the graduates tended to use newspapers

TABLE 7

ONE-WAY ANALYSIS OF VARIANCE SHOWING STATISTICAL VARIATION
WITHIN YEARS ONE-FIVE USE FREQUENCY OF PERIODICALS

Variable VS11

Group	Count	Mean (scale 1-4)	S.D.	S.E.	D.F.	95% Confidence Interval		F-Ratio	F-Prob.
						Lower	Upper		
Year 1	64	3.0313	1.0074	.1259		2.7796	-3.2822	4.896	0.000**
Year 2	105	2.6952	1.1105	.1084		2.4803	-2.9101		
Year 3	64	2.3750	1.1751	.1469		2.0815	-2.6685		
Year 4	18	2.3889	0.9785	.2306		1.9023	-2.8755		
Year 5	18	2.0000	0.9701	.2287		1.5176	-2.424		
TOTAL	269	2.6320	1.1173	0.0681	2	2.4978	-2.7661		

**Significant beyond .05 level

*Significant beyond .01 level (p=0.000)

more while the sophomores and the freshmen had the lowest use frequencies. The number of users was also higher than the 14 percent reported in 1934 by Gaskill and Brown at Iowa State College.'

Students' Use of Photocopying Facilities

In response to how much students used photocopying services within the university library complex, 6 percent (n=16) of the sample showed that they used it "always" while 20 percent (n=60) indicated "often." Another 31 percent (n=92) checked "sometimes" and 4 percent (n=13) did not answer the question.

Students' Use of Reserve Services

Also, the investigation of reserve services use showed that 53 percent (n=157) used the reserve services "always," while 18 percent (n=52) used it "often." Although there was no significant difference among groups, a combination of "always" and "often" categories (73 percent, n=209) suggest that reserve was a popular service on the campuses.

Students' Use of Interlibrary Loan and Microfilm Services

Two of the research questions in this section concerned how frequently students used the interlibrary loan services and the microform collections. As regards interlibrary loan, all categories of students were entitled to use the ILL service. However, students' responses to the

frequencies of use of both resources appeared to be quite low. For example, two-thirds of the sample, 65 percent (n=193), had never used interlibrary loan services (see Table 6).

Similarly, nearly half, 45 percent (n=134) of the respondents had never used microforms. On the whole, 29 percent indicated that they had used microfilms "sometimes."

Students' Use of Librarians' Assistance

Librarians' assistance was viewed by this study as one of the most current and ever present resources available to students whenever they needed it. It was therefore examined to determine how often students in the three schools availed themselves of this resource. In response, about half of the sample indicated that they had "never" requested a librarian's help. However, 29 percent had "sometimes" asked librarians for help while another 10 and 12 percent had sought librarians' assistance "always" and "often" respectively.

Research Question 3

Determination of Causes of Rare/Non-use of the University Library

What are the causes of nonuse?

As noted earlier in the review of the literature for this study, the question of "rare" or nonuse of university library collections has been attested to. Based on this theory, this research question was designed to identify

causes of nonuse that might be characteristic of Nigerian students in the schools surveyed. In this regard, respondents were asked to dis/agree with the following suggested statements:

(a) "I can do my assignment without using the library."

(b) "I have all the materials I need in my room."

(c) "The library is too far from my room."

(d) "My teachers do not recommend reading materials."

(e) I do not know how to use the library."

(f) "The books I need are never in the library."

The details of students' responses have been displayed in Table 9. Also, the respondents were to choose from a set of suggested answers to denote their agreement/disagreement. These ratings were: "strongly agree," "somewhat agree," "somewhat disagree," and "strongly disagree."

The first of these series of statements was: "I can do my assignments without the library." To this statement, 29 percent of the sample checked "somewhat agree" while 21 percent checked "strongly disagree." The question was not answered by another 20 percent of the sample. An analysis of variance test was conducted to test for variation among the three schools. The ANOVA test showed that Bayero University had a group mean score difference of .580 from Ilorin and .549 from ABU (Table 8). These data therefore suggest that respondents from Bayero disagreed more strongly with the suggestion that they could complete their

assignments without the library than the students from ABU and Unilorin.

In response to the next statement: "I have all the materials I need in my room," over one third, 36 percent, of the respondents strongly disagreed while another 20 percent of the sample somewhat disagreed. In all, a total of 56 percent of the sample either "strongly" or "somewhat disagreed" with the statement against a total of 20 percent who either "strongly" or "somewhat agreed." From this data, it seemed that students in the three universities did not possess all materials they needed for academics and thus depended on the university libraries.

In response to whether the location of the library from their place of residence was a factor prohibiting library use, respondents' reaction to the statement: "The library is too far away from my residence," showed that 38 and 19 percent "strongly" and "somewhat disagreed" respectively while 5 and 14 percent "strongly" and "somewhat agreed" respectively. Therefore, with a total of 57 percent (n=170) disagreeing with the statement and 24 percent missing, these data tend to suggest that the location of the library from the students' places of residence in the three schools was no significant repelling factor in rare or nonuse of university libraries.

Faculty members have been hypothesized as a major impelling factor governing the use of libraries by this study, and that teachers' styles of teaching were related to

TABLE 8

ANALYSIS OF VARIANCE SHOWING
INDISPENSABILITY OF THE LIBRARY TO ASSIGNMENTS

						95% Confidence Interval for Mean			
Group	Count	Mean (On scale of 1-4)	S.D.	S.E.	D.F.	Lower	Upper	F-Ratio	F-Prob.
A.B.U.	84	2.3929	1.1088	0.1210		2.1522	2.6335	7.307	0.000*
Bayero	69	2.9420	0.9684	0.1166		2.704	3.1747		
Unilorin	83	2.3614	1.0070	0.1105		2.1416	2.5813		
TOTAL	236	2.5424	1.0611	0.0611	2	2.4063	2.6784		

*Significant beyond .01 level (p=.000).

TABLE 9

RESPONDENTS' REACTION TO SUGGESTED CAUSES OF RARE/NONUSE OF LIBRARIES

V#	Statements	Percent		
		Agreed	Disagreed	No Answer
19	I can do my assignments without using the library	43	37	20
20	I have all the materials I need in my room	20	20	60
21	The library is too far away from my room	19	57	24
22	My teachers do not recommend reading materials	3	72	24
23	I do not know how to use the library	11	65	24
24	The books I need are never in the library	29	48	23
25	Other reasons (Please specify)	8	5	87

library use. Therefore, the question was put whether the way and manner faculty assigned or failed to recommend reading materials was a source of rare or nonuse of the library. The respondents were asked to react to this statement: "My teachers do not recommend reading materials."

In response to this question, 61 percent "strongly disagreed," while another 12 percent of the sample "somewhat disagreed." In all, a total of 73 percent disagreed with this statement.

Another possible cause of nonuse examined in this study was students' inability to use the library. Students were asked to dis/agree with this statement: "I do not know how to use the library." A total of 65 percent (n=92) disagreed with the statement, 24 percent did not answer the question, but 10 percent of the sample agreed with the statement.

Physical Inaccessibility: Factor of Nonuse

The last question designed to investigate factors of nonuse of university libraries by students centered on accessibility to materials. By Kenneth Brough's definition, library materials are accessible to an individual when circumstances permit him to obtain them for use. According to him, there are at least three elements of accessibility: bibliographic, physical and intellectual. For example, bibliographic accessibility involves card catalog consultation and physical accessibility, on the other hand,

means the provision of open shelf collections, while intellectual accessibility encompasses such considerations as the language in which a material is written, or the comprehensibility of its content or ideas to the reader.[7]

On the basis of Brough's definition, the aspect investigated here was the physical accessibility or the dictionary meaning of "setting forth"[8] or "displaying" materials in the library. Therefore, students in the three schools reaction to the statement: "The books I need are never in the library," were as follows: a total of 48 percent of the sample disagreed while 28 percent agreed with the statement. Twenty-four percent of the sample did not answer the question.

This result, therefore, rejects the statement and suggests that physical accessibility to library materials was not a repelling factor for nonusers of libraries in these schools.

The questionnaire designed to determine causes of nonuse gave nonusers the option to indicate other reasons unspecified on the instrument as reasons for their nonuse of libraries, but 86 percent did not answer the question and the few who responded to this question provided no relevant factors helpful to the understanding of the issue under study.

Research Question 4

Determination of Sources of Materials

(a) What other sources of information outside the university library systems do students use to obtain reading materials?

(b) How do such sources compare to the university library in the frequency of use?

As depicted in Table 10, a series of likely sources of reading materials was suggested to respondents who were to rate them in the frequencies of "always," "often," "sometimes" and "never." The sources suggested include loans from friends, non-university library sources, teachers, interlibrary loan or purchase from bookstores (see Table 10). The details of the responses were:

Non-University Library Sources

In response to unspecified non-university sources of reading materials, 58 percent of the sample checked "never" while 29 percent indicated "sometimes." Similarly answers to how often students obtained items from friends had 70 percent of the respondents under "sometimes" and 19 percent checked "always" while 11 percent did not answer.

As stated above, another likely source of material investigated was loans from teachers. Over half of the respondents had never taken loans from their teachers. However, another 36 percent indicated that they had "sometimes" taken loans from teachers. How often did

students take loans from their friends as alternatives or compliment to the university library's resources was put to respondents. In reply, 70 percent indicated "sometimes" while another 19 percent checked "always."

Interlibrary Loan as a Resource

Interlibrary loan is one of the specialized activities of resource sharing whose resources are open to both under/graduate students. Therefore, in response to the question of how often students had exploited this service to obtain reading materials, interestingly enough, an overwhelming majority of 77 percent had never employed interlibrary loan services while only 13 percent used it often and another negligible 2 percent used it always. This massive nonuse of interlibrary loan services contradicts Bozimo's high overall success rate for loan requests in her 1980 study of six university libraries in Nigeria. However, only one of her samples (ABU) was included in this study, and besides, use of interlibrary loan service might not equal interlibrary loan fill rate.'

The other pertinent question investigated in this section was how many materials students purchased on their own as a source of book supply different from the university libraries. In response to this question, 38 percent checked "sometimes," while 30 percent indicated "often" and 25 percent of the sample had bought materials on their own "always." A total of 94 percent had bought materials in

TABLE 10

USE FREQUENCY OF SOURCES OF READING MATERIALS

V#	Sources of Materials	Percent			
		Always & Often	Sometimes	Never	No Answer
26	Loan from non-university libraries	12	29	58	1
27	Loan from friends	25	61	13	1
28	Loan from teachers	7	36	56	1
29	Loan through interlibrary loan	8	13	77	2
30	Purchase from bookstores	55	39	5	1
31	The university library	49	37	13	1
32	Other(s)	4	3	4	89

various frequencies and only a small 6 percent had never bought any materials.

The University Library as a Source

In relation to all the foregoing alternative sources for reading materials, it is worth noting that each source required certain individual efforts or constraints ideally, not typical of the university library supply, its primary purpose being to meet the needs of the students. Therefore, the next question was designed to determine how often students availed themselves of the library as a source of reading materials. A total of 85 percent of the sample indicated that they depended on the university library as a source for reading materials in the frequencies that ranged from "always," "often," and "sometimes," to "never." These data, therefore, suggest that the university library as a source for reading materials did not only compare favorably with sources outside it, but also served as the major source which the majority (85 percent) of the students depended upon for the supply of their reading materials.

Research Question 5

Determination of the Type and Relevance of User Education

(a) What types of bibliographic instructions are students offered?

(b) How helpful are these instructions?

Educating the library's clientele in the principles of bibliographic organization and their practical application

to the information seeking process has become a dominant concern in librarianship. Consequently, a number of approaches designed to educate the library user have emerged, and vary from library to library. In order to answer these research questions, two questions (see Appendix B, #10-11) were designed to determine what approaches were being used in the three Nigerian institutions surveyed. The first part was to determine types of instruction and the second part examined the helpfulness of the bibliographic instructions.

From the responses, 6 percent had credit earning instructions, 27 percent had occasional lectures, another 27 percent had directed tours while 28 percent had no instruction in library use at all. However, a total of 89 percent of the sample received some form of user education, though with varying qualities. This was higher by far than the Iranian study by Ali Emdad where two thirds of the students sampled did not receive any user education.'[6]

Question 11 (V34) asked respondents, "How helpful were the various courses they had in the use of the library?" Five percent thought they were "very helpful," 48 percent checked "somewhat helpful," while 36 percent believed they were "not helpful." On the whole, more than half of the sample thought the instructions were helpful, however, in varying proportions.

Research Question 6

Determination of Students' Perception of the Library

(a) How do students perceive the library resources?

(b) How do students perceive the library staff?

(c) What changes do students desire to improve the library?

(d) How satisfied are students with the university library systems?

Students' Perception of Library Resources

The objective of this research question had to do with whether students' perception of the adequacy of particular library resources had an impact upon their frequency of use and attitudes towards the library. Therefore, students were asked to rate the degree of adequacy of books, periodicals, newspapers, reference materials and microforms.

In response to how adequate the book collections were, a total of 66 percent of the sample thought they were adequate while 33 percent disagreed. However, most of the respondents checked "somewhat adequate" which had 41 percent (n=122).

The adequacy rating for periodicals was different from that of books with 57 percent in the affirmative, and 34 percent thought the periodicals supply was inadequate. Statistically, there was no significant difference among the groups in their ratings.

"How adequate were newspapers subscribed to by the libraries" was the next question in this section. Responses varied as follows: 41 percent believed they were very adequate while another 30 percent thought they were adequate and a combined 22 percent believed otherwise. With 71 percent of the sample in the affirmative, these data tend to suggest that the three schools had an adequate supply of newspapers, the majority of which were locally published.

An analysis of variance test performed to test for variation of the three schools indicated a statistically significant variation between the groups. Ahmadu Bello University differed statistically from Bayero University and the University of Ilorin. Ahmadu Bello University rated newspapers as being more adequate than the other two institutions. These variations are displayed in Table 11.

Also investigated was the adequacy of reference materials from the point of view of the students. Over two thirds (62 percent) of the sample believed they were adequate against 34 percent who disagreed.

Microforms received the highest negative rating in adequacy. Only four in a hundred felt microforms were adequate while 68 percent disagreed.

However, apart from the inadequacy of microforms suggested by these data, the other four major library resources, books, reference materials, periodicals, and newspapers, were rated to be adequate by over two thirds of the respondents with one third in the negative in each case.

TABLE 11

ANALYSIS OF VARIANCE BETWEEN A.B.U. AND BAYERO/UNIVERSITY OF ILORIN ON NEWSPAPER ADEQUACY RATINGS

How adequate are newspapers in your university library?

Group	Count	Mean (Scale 1-3)	S.D.	S.E.	D.F.	95% Conf. Int. For Mean Lower	Upper	F-Ratio	F-Prob.
A.B.U.	48	1.5208	0.7143	0.1031		1.3134	-1.7282	8.327	0.000*
Bayero	45	1.9778	0.8115	0.1210		1.7340	-2.2218		
Unilorin	44	2.1591	0.8053	0.1214		1.9143	-2.4039		
TOTAL	137	1.8759	0.8175	0.698	2	1.7378	-2.0140		

*Significant beyond .01 level (p=0.000).

In all, newspapers received the highest positive rating with 77 percent while microforms received the lowest with 12 percent, and 68 percent in the negative category.

In addition, a one-way analysis of variance test showed that the three schools were significantly different statistically. For example, the test showed that audio visual collections were more inadequate in Ahmadu Bello University than the other two schools. Ahmadu Bello University has a lower mean than Bayero University and the University of Ilorin whose group means were the same statistically. Details of the variance are highlighted in Table 12.

Students' Perception of the Library Staff

One of the objectives of this research was to examine whether there was a relationship between library use and students' perception of the total resources of the library. Therefore, a specific question was designed to gather the views of the sampled population on one of the most important resources of the library, the library staff. Respondents were required to rate its helpfullness to them in relation to their academic pursuits. In response, an overwhelming majority of 88 percent (n=263) of the sample indicated that the library staff members were helpful with only 10 percent in the negative category.

In addition, when ANOVA was calculated for the three schools to determine if their answers varied significantly, Bayero University was significantly different from the

TABLE 12

ONE-WAY ANALYSIS OF VARIANCE BETWEEN SCHOOLS
IN AUDIO AND VISUAL ADEQUACY RATINGS

How adequate are the audio visual collections in your university library?

Group	Count	Mean (Scale 1-4)	S.D.	S.E.	D.F.	95% Conf. Int. For Mean		F-Ratio	F-Prob.
						Lower	Upper		
A.B.U.	40	2.8750	0.9111	0.1441		2.5836	-3.1664	5.617	0.004*
Bayero	44	3.3409	0.6449	0.0972		3.1448	-3.5370		
Unilorin	43	3.3721	0.6909	0.1054		3.1595	-3.5847		
TOTAL	127	3.2047	0.7801	0.0692	2				

*Significant beyond .01 level (p=.004).

remaining two schools which were statistically similar, at the .05 confidence level. An examination of the individual schools' analysis and the group means for each school showed that Bayero University library staff was considered more helpful than the staff of Ahmadu Bello University and the University of Ilorin (p=0.000). Individual students' analysis showed that the graduate students at Bayero University believed the library staff was more helpful than the other classes. (See Table 13.)

Students' Desired Improvements

Another set of questions (see Appendix B, 15) was designed to determine the kind of desires the respondents had in terms of resources and amenities that could improve the university library services to them. Below is a detailed record of the responses in percentages.

From Table 14, it is clear that the respondents had some strong desires. The highest rated desire was for air conditioning of the libraries. This demand is understandable given the location of Nigeria a few degrees north of the equator. However, it is worth noting that an on the field visit to these libraries showed that they were all air conditioned. The problem, however, lay most probably with the general electric power failures typical of every town in Nigeria. Probably the installation of a power generator primarily to service the libraries would mitigate the problem temporarily.

TABLE 13

ONE-WAY ANALYSIS OF VARIANCE SHOWING VARIATION **BETWEEN** GROUPS ON LIBRARY STAFF HELPFULNESS

Group	Count	Mean (Scale 1-4)	S.D.	S.E.	D.F.	.95 Confidence For Mean		F-Ratio	F-Prob.
						Lower	Upper		
A.B.U.	100	1.8700	0.7338	0.074		1.7244	2.015	9.188	0.000*
Bayero	98	1.4592	0.5592	0.0505		1.3471	1.5713		
Ilorin	99	1.7020	0.7237	0.0727		1.1577	1.8464		
TOTAL	297	1.6785	0.6961	0.0404	2	1.5990	1.75791		

*Significant beyond .01 level (p=0.000).

The problem of better lighting which was also strongly desired by 74 percent of the sample is probably related to the electric power vagaries from the National Electric Power Authority (NEPA), the sole controller of electric power operations in Nigeria. Although power supply is an external variable uncontrollable by the university library, it is probable that if the monopoly enjoyed at the present by NEPA was broken, and power supply made more competitive, that national problem might be abated.

Students' Satisfaction With Library Services

In respect of how satisfied students in the three universities were with the services offered by the university library complex, 79 percent (n=235) were satisfied, while 19 percent (n=56) were dissatisfied and two percent did not answer the question.

In addition to the last question on the students' instrument was the only open ended question. It was optional and intended to solicit free comments from respondents about their desires and the relationship of the university libraries to their academic career. Respondents were required to give suggestions, appraisals and criticisms about the library system. In response, nearly four fifths of the respondents completely filled up all the dotted lines with useful comments which when classified into six categories were not different from the desired facilities and services earlier enumerated in Table 14. However, the need for more books topped the list followed by the desire

TABLE 14

CROSS TABULATIONS SHOWING STUDENTS' DESIRED IMPROVEMENTS

V#	Items	Percent		
		Desired	Not Desired	No Answer
V42	Individual reading/study rooms	48	47	5
V43	Good lighting	74	23	3
V44	Air conditioning/good ventilation	91	6	3
V45	Space in which to work	78	19	3
V46	Quiet/soundproofing	76	21	4
V47	Better book collection	89	7	3
V48	Student lounge/smoke room	40	58	4
V49	More duplicate copies of books	88	10	2
V50	Other	12	2	86

for current and international learned journals, air conditioners and standby power generators.

Research Question 7

Comparison of Selected Variables

(a) How often do students and faculty use the library?

(b) How do faculty and students compare in frequency of library use in the three universities studied -- Ahmadu Bello University, Zaria; Bayero University, Kano; and the University of Ilorin?

(c) How do undergraduates and graduates compare in the three universities studied in the use of their libraries?

(d) How do the two sexes compare in their library use in the three schools?

(e) What are the differences between the science and the non-science respondents in library use?

Students' Frequency of Library Use

Question five (Appendix B) was one of the most important questions on the instrument in relation to the hypotheses and especially to the pertinent question of whether students in the Nigerian universities studied actually use their libraries. It was pertinent to know because most of the known studies of college students in the developed world, especially in the United States, point to the fact that students little used their libraries. Therefore, a need existed for a knowledge of patterns of

library use in the developing countries, especially Nigeria. Thus, students were asked to indicate how often they normally visited their university libraries. The measurement was based on the frequencies of at least "once a week," "once a month," "once in two weeks," "once per term," and "never." The respondents were required to check only one answer.

The results showed that 83 percent (n=246) or over four fifths of the population used the library at least once a week. The number of students who frequented the library less often than weekly differed extensively from the greater majority. For example, only 5 percent (n=15) frequented the library fortnightly. Another small minority of 7.4 percent (n=22) used the library monthly and another smaller number of about 2 percent visited the library only once per term. Interesting enough, everybody in the sample used the library as shown by these returns. Nobody checked "never" as a response. The high frequencies of visits shown by these data suggest that the majority of the students in the three universities studied used their libraries extensively. Put in another form, at least 83 percent of the population visited the library 14 times in a term of 14 weeks and a total of 42 times in a school year.

Even though the definition of the term "library use" remains controversial among scholars, if, according to Harvie Branscomb, the library is not only a university in itself, but an academic equalizer. It is probable that a

trip through the collections of the thoughts of major achievements of the best scholars and scientists of the world by an individual university student forty-two times a year could be classified as use, albeit the degree of knowledge acquired might not be quantitatively determinable.

Thus, while this finding is considered relevant, it differed from many earlier findings. Such findings include Harvie Branscomb's (1940) who not only attested to the difficulty of measuring utilization and condemned the circulation statistics as a true measure of college library use, but who neverthelesss concluded that college libraries were little used. Another study whose findings also differed from the present study was Patricia Knapp's. In her study at Knox College (1959), Knapp found that a small proportion, or 20 percent, was responsible for 90 percent of the book circulation. She also submitted that college students not only used their library very little, but that they managed to do their work well without the library. She went further to call to question the idea of the library as the heart of the college.'' However, bearing in mind Knapp's submissions, the present findings differed greatly because with a large majority of 83 percent of the respondents (n=246), it can be inferred with great confidence that the students in the three institutions utilized the library a great deal. And in these schools, the library remains the center of academic enterprise. In addition, it can be inferred also that the use of the

library was well spread throughout the year with a frequency of 83 percent at least once a week or more.

These findings thus differed also from John Nicholson's and Lewis Steig's work of 1941 where in each separate study, both scholars found students' borrowings to be confined to particular semesters of the year.[12] Similarly, it contradicts Gorham Lane's results of 1966 where he found less than 40 percent of any class in five selected Delaware colleges in Ohio, visited their library during the five day survey period. Lane's work was of particular interest to this research for comparative purposes because of the similarity of his study to the present research in relation to methodology and instrument, both being questionnaire surveys.[13]

Another suggestion from the present data is that every student in the three schools used the library. The difference in usage lay only in the proportion of frequencies of use. This assertion was supported by the fact that no respondent (n=297) from 90 percent returns indicated "never" as his/her response. In addition, the other categories of visit frequency seemed to be negligible because of their low percentages. For example, only 7 percent visited the library at least once a month, 5 percent once in two weeks and another 2 percent (n=5) used the library at least once per term.

These data, therefore, suggest further that students in the three Nigerian schools not only used the university

libraries very frequently and extensively in large numbers, but the farther from "weekly use frequency," the lower the number of users becomes with a subsequent result of absolute zero at "never" use frequency.

Although these findings differed from some of the earlier studies, they agreed with some recent findings. One of these studies include a 1982 survey of 300 students at Georgia State University where 85 percent of the students visited the library weekly while eight percent visited it monthly.'*

Faculty Frequency of Library Use

One of the major purposes of this research was to examine the degree of influence faculty library use frequency had on students' library use habits. Therefore, a specific question was designed to address this question. Faculty members were asked to approximate how often they personally used the university libraries either for research or reference. Their responses showed that 59 percent (n=86) used the library for reference or research at least once per week or more while 34 percent (n=50) used the libraries at least once per month. Therefore, only 4 percent of the sample utilized the university libraries once per term and no subject in the sample checked "never" for an answer, but three percent of the faculty members indicated other frequencies which when examined were "more than once a week."

Comparison of Faculty and Student Library Use in ABU, BUK and Unilorin

A comparison of faculty and student data showed that both compare favorably in their library use. For example, four out of every five students and seven out of every ten faculty members sampled used the library at least once per week or more. In addition, no subject in the two groups indicated "never" as a response, thereby suggesting that every faculty member and student was a library user, albeit in varying frequencies.

As seen from Table 15, a comparison of the faculty usage showed that Ahmadu Bello University faculty had the lowest use percentage (50 percent) while Bayero University has the highest (65 percent), but closely followed by the University of Ilorin with 63 percent. Similarly, Bayero students had the highest student use frequency of 90 percent per week. Ahmadu Bello students, however, had the second highest of 80 percent followed closely by the University of Ilorin with 79 percent weekly use. On the whole, these data showed a total of 83 percent student and 59 percent faculty use with a combined student/faculty average of 71 percent weekly use. These findings suggest that both faculty and students in the three Nigerian schools were heavy and frequent users.

Comparison of Undergraduate and Graduate Library Use

From the analyses of the student data, some differences were noticeable between the undergraduates and the graduate

TABLE 15

FACULTY AND STUDENT LIBRARY USE SHOWING THE THREE SCHOOLS SEPARATELY AND COMBINED

	Percent		
	Weekly	Other	No Answer
A.B.U. Students	80	19	1
Bayero Students	90	4	6
Unilorin Students	79	20	1
A.B.U. Faculty	50	42	8
Bayero Faculty	65	27	8
Unilorin Faculty	63	37	0
Combined Students	83	14	3
Combined Faculty	59	38	3

students in their library use characteristics. For example, as displayed in Table 16, a one-way analysis of variance showed that the graduates have the lowest mean of 1.736 compared to 2.714 of the freshmen in the way both groups used the library as a source of material supply. With significance beyond the .01 level (p=.000), the graduates used the university library more as a source of reading materials, while the freshmen used it less. These data also showed a gradual increase in the group means from year one through year five (Table 16). Comparatively, this finding corroborated an earlier study by E. McDiarmid that upperclassmen borrowed more books than lower classmen.'[5]

Graduates were also different from the lower classes in their rate of borrowing materials from teachers. A one-way

TABLE 16

ONE-WAY ANALYSIS OF VARIANCE BETWEEN GRADUATES AND LOWER CLASSES IN OBTAINING MATERIALS FROM THE UNIVERSITY LIBRARY
How often do you obtain reading materials from the university library?

Group	Count	Mean (Scale 1-4)	S.D.	S.E.	D.F.	95% Conf. Int. Lower	95% Conf. Int. Upper	F-Ratio	P-Prob.
Year 1	70	2.7143	0.9501	0.1136		2.4877	-2.9408	5.179	0.000*
Year 2	112	2.4286	0.9559	0.0903		2.2496	-2.6076		
Year 3	69	2.1594	0.9795	0.1179		1.9241	-2.3947		
Year 4	19	2.5263	1.1239	0.2578		1.9846	-3.0680		
Year 5	19	1.7368	0.9913	0.2274		1.2591	-2.2146		
TOTAL	289	2.3945	0.0018	0.0589	4	2.2785	-2.5104		

*Significant beyond .01 level (p=0.000).

analysis of variance (Table 17) showed that the variation in group means declined systematically from year one and peaked in year five. The mean difference between years one and five was 0.564 and significance was at .01 level with p=0.000. These data also showed that graduates (years 4 & 5) borrowed more books from their teachers than the other classes.

Difference Between Male and Female in Library Use in the Three Schools

In order to test for variation between the two sexes, a t-test was performed. The result (Table 18) showed that on two variables the desire for air conditioning and the use frequency of newspapers. In both cases, the male students had lower mean scores. With significance at the .01 level (t=.005), the data suggest that male students had a stronger desire for air conditioning and also used newspapers more than their female counterparts. On all other variables, there was no noticeable sex variation.

Difference Between Science and Non-Science Faculty

From the t-test conducted on both data sets, a number of dichotomies were found between the science and non-science faculty on one hand and between the science and non-science students on the other hand (Tables 19 and 20).

With a difference of .327 lower group means for non-science faculty, a standard deviation of .814, and a level of significance at .01 (t=.018) (Table 19), the non-science faculty differed in their frequency of library use for

TABLE 17

ONE-WAY ANALYSIS OF VARIANCE BETWEEN AND WITHIN YEARS ONE THROUGH FIVE IN THEIR FREQUENCY OF LOANS FROM FRIENDS

How often do you take loans from teachers?

Group	Count	Mean (On scale of 1-4)	S.D.	S.E.	D.F.	95% Conf. Int. Lower	95% Conf. Int. Upper	F-Ratio	F-Prob.
Year 1	70	3.6143	0.7080	0.0846		3.4455	-3.7831	5.838	0.000*
Year 2	110	3.5727	0.6275	0.0598		3.4541	-3.6913		
Year 3	69	3.4058	0.5509	0.0663		3.2735	-3.5381		
Year 4	19	3.0526	0.6213	0.1425		2.7532	-3.3521		
Year 5	20	3.0500	0.8256	0.1846		2.6636	-3.4364		
TOTAL	228	3.4722	0.6672	0.0393	4	3.3948	-3.5496		

*Significant beyond .01 level (p=0.000).

TABLE 18

t-test SHOWING DIFFERENCES BETWEEN MALE/FEMALE STUDENTS AIR CONDITIONING DESIRE AND NEWSPAPER USE

V#	Question: Male/ Female (V2) With:	No. of Cases		Group Means		Standard Deviation		t=
		Male	Female	Male	Female	Male	Female	
44	Desire for airconditioning/ good ventilation	196	92	1.1939	1.4130	0.539	.729	0.005
13	Use of newspapers	200	90	1.9300	2.4000	1.278	1.364	0.005

research and reference. The science faculty used the library significantly less than their non-science counterparts.

Similarly, the non-science faculty gave their students more assignments that necessitated library use than the science faculty members. The level of significance was beyond .01 with t=.003, and a group mean score difference of 0.543 (Table 19).

The same differences between the science and the non-science faculty were noticeable in their styles of teaching. For example, the non-science faculty prepared personally more reading lists for their students than the science teachers with significance beyond .01 level (t=.000). Also, the non-science teachers demanded references in term papers more frequently than the science teachers. The difference in group mean score was 0.487 with a standard deviation from the mean of .237. The level of significance was beyond .01 (t=.000).

In addition, the non-science faculty assigned specific readings more frequently and rated the library collection adequacy higher than the science faculty. The significance level in both cases was beyond .01 with t=.000 and .001 respectively (Table 19).

Difference Between Science and Non-Science Students

The science students differed from the non-science students in six different library use patterns. Details of these are displayed in Table 20. The first noticeable

difference was the frequency of checking out books. With a difference of 0.315 lower group score means, and a standard deviation of .099 from the mean, the non-science students borrowed books more frequently than the science students. The significance was beyond .01 level (t=0.007) (Table 20).

Also, the data showed that the science students asked reference questions considerably less than their non-science counterparts. The level of significance was beyond .01 with t=0.000. Similarly, the non-science students used reference materials more frequently than the science students (t=.000).

In addition, the non-science students used the reserve service and asked for the librarians' assistance more frequently than the science students. The level of significance in each case was beyond .01 with t=0.000. Again, the science students were statistically different from the non-science students in the frequency of obtaining reading materials from the university library. The former borrowed fewer books than the latter. The group mean difference was .370 with a standard deviation from the mean of 0.041. Significance was also beyond .01 level with t=0.000 (Table 20).

Findings Related to Hypotheses

The preceeding analyses of faculty and student data sets provided a mechanism for measuring relationships between specific factors of library use and faculty methods of teaching. Three major hypotheses have been formulated as

TABLE 20

t-test SHOWING DIFFERENCES BETWEEN SCIENCE AND NON-SCIENCE STUDENT RESPONDENTS

V#	Question: Students Science and Non-Science V1 With:	Number of Cases		Group Means		Standard Deviation		t=
		Science	Non-Science	Science	Non-Science	Science	Non-Science	
V9	Frequency of checking out books	92	177	2.8804	2.5650*	0.970	0.871	0.007
V10	Frequency of asking reference questions	94	177	3.3085	2.8701*	0.748	0.723	0.000
V11	Use frequency of reference materials	91	193	2.3297	1.7202*	1.202	6.965	0.000
V15	Reserve book use frequency	93	194	2.2366	1.6907*	1.174	1.037	0.000
V18	Frequency of asking for librarians' assistance	94	194	3.3511	3.0258*	0.876	1.035	0.000
V31	Frequency of obtaining materials from the university library	97	197	2.6495	2.2792*	0.958	0.999	0.000

*Difference beyond .01 level (t=.000).

a means of summarizing the major focus of this research. The resolution of these hypotheses, re-stated below along with the research findings, were arrived at through various statistical methods. These results, therefore, have been described according to the various methods used to verify their validity, be it Pearson Product Moment Correlation Coefficients, t-tests, chi-square goodness of fit or Multiple Classification Analysis (MCA). The latter was applied primarily to determine the best predictors of library use in ranked descending order of magnitude. However, other statistical products of MCA, such as the chi-square value, the significance level and contingency coefficients have been reported to highlight levels of correlations between pairs of variables.

H_1: There is a significant positive relationship between faculty methods of teaching and students' library use. The resolution of this postulate involved the investigation of eight selected methods covering the processes of selecting materials in preparation for classroom teaching, and the styles of delivering the subject matter to the students through the utilization of the library.

The above analyses (Table 21) indicated a significantly positive correlation between faculty method of teaching involving giving assignments to their students (assignment method) and students' frequency of library use. A two-way cross tabulation test run for these two variables confirmed

TABLE 21

TWO-WAY CROSS TABULATION CORRELATION SUMMARY SHOWING CORRELATIONS BETWEEN PAIRS OF VARIABLES

Pairs of Variables	Chi-Square	Significance	Contingency Coefficients
Faculty assignment method & Faculty/student library use	88.42	.000**	.614
Faculty reserve method & library use frequency	15.40	.000**	.318
Faculty term paper footnote demand method & students' use	17.05	.000**	.333
Faculty self-prepared reading list method & students' selected readings	18.70	.000*	.345
Faculty method of recommending titles orally in class & students' library use	15.24	.000**	.321
Faculty method of assigning specific readings to students and students' library use	19.01	.000**	.345
Faculty self-prepared list method and students' assignments	21.26	.000**	.365
Faculty use of reserve services and students' use	4.38	.036*	.173
Frequency of purchasing faculty selected materials and faculty use	9.39	.002**	.249
Faculty satisfaction with library services and faculty library use	9.69	.001**	.262
Faculty library use and adequacy of collection for teaching	5.68	.017**	.198
Faculty library use and periodical collection adequacy	4.92	.026*	.185
Faculty assignment method and adequacy of periodical collection	4.64	.036*	.179

TABLE 21 (continued)

Pairs of Variables	Chi-Square	Significance	Contingency Coefficients
Faculty library use and adequacy of microform collection	5.94	.014**	.213
Faculty library use and adequacy of audiovisual collection	6.64	.009**	.225
Students' library use and collection adequacy	8.78	.003**	.248
Students' frequency of checking out books and frequency of visit to the library	5.59	.018**	.144
Student Frequency of visit and use of reference sources	22.50	.000**	.274
Student library visit and use of periodicals	21.5	.000**	.274
Student visit and use of newspapers	6.70	.009**	.152
Student library visit and use of photocopying service *	3.67	.055*	.115
Student frequency of visit and use of reserve books	24.76	.000**	.285
Student use of interlibrary loan and library use	7.79	.005**	.166
Student use of librarians' assistance and frequency of visit	6.39	.011**	.149
Student visit and the need to complete assignment	13.92	.000**	.238
Student frequency of visit and ability to use the library	10.16	.001**	.210
Student library use and university library as major source of reading material supply	31.38	.000**	.314
Student library use and helpfulness of library use instructions	16.04	.000**	.234

TABLE 21 (continued)

Pairs of Variables	Chi-Square	Significance	Contingency Coefficients
Student library visit and adequacy of microfilms	5.93	.014**	.157
Student library use and helpfulness of library staff	6.00	.014**	.143
Student library use and availability of air conditioned library	3.68	.055*	.113
Student library use and better book collection	4.81	.028*	.130
Student library use and overall satisfaction with library services	18.66	.000**	.248
Student's sex and use of newspapers	8.21	.004**	.166
Student's sex and frequency of checking out books	4.08	.043*	.123
Student's library use and the university attended	6.68	.035*	.150
Student's sex and the use of interlibrary loan	6.57	.010**	.152
Student's year in school and library use	11.07	.025*	.193
Students' year in school and student's place of study	9.39	.0519*	.179

*Significant beyond the .05 level.

**Significant beyond the .01 level.

this relationship. With a chi-square of 88.42 and a contingency coefficient of .641, the significance was beyond the .01 level (p=.000). The "assignment method" was the highest correlation encountered with student library use, especially considering the contingency coefficient of .614. This high correlation affirms the suggestion indicated by the large number of teachers (92 percent) who applied assignment method in teaching at various frequencies.

The second sub-hypothesis that the faculty's frequency of reserving items for students is positively correlated with students' frequency of use was also affirmed. The level of significance was beyond .01 (p=.000) with a coefficient of .318 and chi-square of 15.90 (df=1, Table 21). Similarly, the third sub-hypothesis was also affirmed. The faculty's method of requiring references in the term papers of their students was positively correlated with students' frequency of library use. As depicted in Table 21, significance was beyond level .01 (p=.000). The two-way chi-square test also showed a contingency coefficient of .333 and a chi-square of 17.05.

Also affirmed was another sub-hypothesis that the faculty's method of teaching was positively correlated with the faculty's library use. The significance was at the .01 level (p=.000). This was especially true with assignment method. Faculty members who gave assignments frequently to their students were frequent library users. Ninety-two percent of faculty members who gave assignments regularly to

their students used the library at least once per term or more. The correlation of faculty library use and faculty frequency of giving assignment also had a high contingency coefficient of .614, chi-square=88.42.

However, the sub-hypothesis that the faculty's frequency of required reading lists was positively correlated with student's frequency of use, was not supported by the data.

H_2: The greater the faculty members' utilization of library resources for teaching and research, the greater the library use by students. This hypothesis was affirmed by the data. A Pearson Product Moment Correlation Coefficient test showed a positive correlation beyond the .01 level of significance (p=.001) with a contingency coefficient of .523.

H_3: The more faculty and students avail themselves of the resources of the library, the more positive their perceptions of the library become. There was a strong positive relationship between the faculty's perception as expressed by their level of satisfaction with the services and resources of the university library and their frequency of library use. The level of probability was at .01 (p=.001) and the chi-square was 9.69 with a contingency coefficient of .262 (Table 21).

Similarly, there was a positive relationship between students' use of the library resources and their perception of the library. The chi-square goodness of fit test showed

a positive correlation statistically significant at .01 level (p=.000). The chi-square was 18.66 and the contingency coefficient stood at .248. These positive correlations supported the suggestions inferred by the high percentages of 59 percent and 83 percent use per week by faculty and students respectively. Another two-way tabulation that yielded a positive correlation in support of this hypothesis as it related to student perception was students' frequency of checking out books and students' perception of the library. The correlation was significant statistically beyond the .01 level (p=.000). The contingency coefficient was 10.92 while chi-square was .199.

Having performed various statistical tests to answer the research questions and resolve the hypothesis, the various variables encountered that were significant statistically at different levels were selected and matched for a ranking order test. Because the format of the data did not meet the requirement for a Multiple Regression Analysis, the OSIRIS Computer Package was used to run a Multiple Classification Analysis (MCA). The results of the MCA statistical test displayed in Tables 22, 23 and 24 showed in descending order the variables that best predict faculty methods of teaching and library use with the levels of betas indicated.

Table 22 showed in descending order of magnitude the faculty methods of teaching that best predict students' library use. The best method of teaching that promoted

library use by students was the lecture method through which titles relevant to the subject matter were recommended to students orally in the class. The value of beta for this variable was .348. The method of demanding references in the students' term papers was the next best faculty method of teaching for predicting student frequency of library use with beta=.249. In addition, as indicated in Table 22, the second best predictor of students' library use is the faculty method of demanding references or footnotes in the term papers students submit to them. Term paper writing is a common phenomenon of university education which may serve as a complement to any style of teaching, including independent study. With a beta of .249, faculty requirement for references surpassed the method of reserving materials for students which was the third best predictor of students' library use (beta=.208). On the whole, the least predictor of student library use among the eight styles of teaching examined was the method of recommending items to individual students (Table 22).

In addition to the methods of teaching investigated and ranked in Table 22, another set of variables was also ranked to see how they best predict library use by both student and faculty. The results of the first twenty of these variables were displayed in Table 23. Here, the result of the Multiple Classification Analysis showed that from a combination of the first twenty variables of library use, the best predictor was faculty frequency of giving students

TABLE 22

MULTIPLE CLASSIFICATION ANALYSIS (MCA) SUMMARY RANKING
FACULTY METHODS PREDICTING LIBRARY USE
IN DESCENDING ORDER OF BETAS

Rank	Variables	Betas
1	Method of recommending titles to students orally in class	.3432
2	Method of demanding references in term papers	.2493
3	Method of reserving materials for students	.2080
4	Method of selecting materials from standard bibliographies	.2003
5	Method of assigning specific readings to students	.1233
6	Frequency of preparing lists for students	.1062
7	Method of personally preparing reading list for students	.0948
8	Method of recommending items to individual students	.0298

assignments. Interestingly enough, with a beta of .254, faculty method of assignment best predicts both student and faculty library use. Also noticeable from Table 23, were other faculty methods of teaching, as well as the adequacy of the various resources of the library as predictors of library use. The best predictor of the resources was audio visual collections with a beta of .2085 which ranked as the third best twenty predictors, followed by reference material adequacy. Also ranked as the fifth best predictor of library use with beta .151 was faculty and students' satisfaction with library services.

The last of the three Multiple Classification Analysis tables predicting library use (Table 24) related specifically to students' first best twenty-six predictors ranked in descending order of magnitude. The highlights of Table 24 include the ranking as best student predictor "helpfulness of library use instruction in obtaining library materials" with a high beta of .705. The second best student library use predictor was the need or availability of space or individual carrels (beta=.583). The third best predictor (beta=.514) was the availability and need to use library materials.

One of the interesting things revealed from an examination of variables in Table 24 was the various physical aspects of the library. These include space, desire for good lighting, quietude, and air conditioning. The second most prominent set of predictors of student

TABLE 23

MULTIPLE CLASSIFICATION ANALYSIS (MCA) SUMMARY RANKING
IN DESCENDING ORDER FACULTY RELATED VARIABLES
THAT BEST PREDICT STUDENT AND FACULTY LIBRARY USE

Rank	Variables	Betas
1	Faculty frequency of giving students assignments	.2543
2	Faculty method of recommending titles orally in class	.2114
3	Adequacy of audiovisual collections	.2085
4	Adequacy of reference materials	.1594
5	Faculty satisfaction with library services	.1518
6	Faculty assignment of specific readings to students	.1470
7	Frequency of purchasing faculty selections	.1418
8	Faculty personally prepared reading lists	.1397
9	Students' selection of readings through standard bibliographies	.1043
10	Adequacy of periodical collections	.0948
11	Faculty frequency of preparing lists for students	.0910
12	Adequacy of newspapers	.0871
13	Adequacy of microfilms	.0837

Rank	Variables	Betas
14	Adequacy of library collection for teaching	.0826
15	Adequacy of library collection for recreation	.0594
16	Adequacy of library materials for research	.0552
17	Faculty method of recommending readings to individual **students**	.0395
18	Faculty method of demanding references in term papers	.0253
19	Faculty method of reserving items for students	.0168
20	Adequacy of book collections	.0092

TABLE 24

MULTIPLE CLASSIFICATION ANALYSIS (MCA) RANKING STUDENT LIBRARY USE PREDICTORS IN DESCENDING ORDER OF BETAS

Rank	Variables	Betas
1	Helpfulness of library use instruction in obtaining materials	.7058
2	Individual reading/study rooms	.5859
3	Study, using library materials	.5140
4	Desire for good lighting	.5133
5	Checking out books	.4774
6	Helpfulness of the library staff	.4678
7	Studyng personal materials in the library	.4658
8	Meeting friends in the library	.4393
9	Desire for quiet/sound proof study rooms	.4322
10	Availability of materials in the university library	.4313
11	The degree of satisfaction with library services	.3988
12	The frequency of and need to ask reference questions	.3754
13	Frequency of purchasing one's materials	.3352

Rank	Variables	Betas
14	Availability of duplicate copies of books	.2885
15	Availability of alternative sources of material	.2869
16	Year in school	.2473
17	Use of interlibrary loan (ILL)	.2112
18	Use of photocopying services	.1945
19	Use of newspapers	.1854
20	The type of bibliographic instructions students receive	.1713
21	Loan from non-university libraries	.1526
22	Loan from friends	.1205
23	Desire for space in which to work	.0839
24	Field of specialization	.0619
25	Air conditioning/good ventilation	.0396
26	Sex	.0076

library use noticeable from Table 24 include the various services offered by th library such as reference. The next most prominent set of predictors include the resources of the library both physical and human including staff helpfulness and students' satisfaction with the library. Interestingly enough, sex was the least predictor of library use with a low beta of .007. Also, air conditioning and field of specialization (science or non-science) were not prominent as predictors of library use when combined with twenty-three other variables.

Summary

This chapter has presented and analyzed all the data collected in this study. The first part presented the descriptive analyses of faculty and student data of all the 24 and 53 variables respectively. Descriptions were given in terms of basic information for each variable stated in percentages, means, frequencies, standard deviations, upper and lower limits of 95 percent confidence intervals, F-ratios, and the levels of probabilities which were denoted in asterisks.

The second half presented the inferential statistics according to the format of the seven research questions and the three major hypotheses postulated for the study. Statistical findings were reported along with properly labeled tables. The methods of analyses incuded the application of Pearson Product Moment Correlation

Coefficients, t-tests, one-way analysis of variance (ANOVA), two-way cross tabulations, chi-square goodness of fit and Multiple Classification Analysis. Various computer programs employed to accomplish these conclusions consisted of the Statistical Package for the Social Sciences (SPSS), Michigan Interactive Data Analysis System (MIDAS) and OSIRIS program for the Multiple Classification Analysis. All these computer packages were accessed via the University of Michigan Terminal System (MTS) operated by the University's Computer Center.

Finally, the last part of this chapter combined all the results of the various analyses to resolve the hypotheses postulated for this study. Then, using the various statistically determined relationships between faculty methods of teaching and library use, the best predictors of library use for faculty, and students were presented in tabular form, ranked in descending order of magnitude according to the values of beta.

Overall, the data showed a high positive correlation between faculty methods of teaching and students' library use with a strong chi-square of 88.42 and a coefficient of .61. The level of significant was beyond .01. Among the eight specific styles of teaching tested, the highest correlation was encountered between assignment method and library use. Other specific methods found positively related to students' library use include faculty requiring of footnotes in term papers, reserving books for students'

use, preparing reading lists for students, recommending titles orally in class and assigning reading materials to individual students.

Also, a strong correlation was found between faculty and students' perception and how often they used the library. In addition, teachers' and students' satisfaction with the library was positively related to their library use. Another factor of library use identified by the study related to the physical conditions of the library. In this regard, apart from a good lighting system, the availability of air conditioning facilities in a library correlated with students' frequency of use. As regards frequency of use, students and faculty members used the university libraries heavily. Eighty-three percent of the students visited the library at least once a week while 59 percent of the faculty frequented it at least once a month. However, the graduate students were found to frequent the library more than the lower classes.

Another variation noticeable from the data was that the non-science students and faculty used the library more than their science counterparts. The latter also asked less reference questions and made less use of librarians' assistance than the former. The main university library was also found to be the center of students' academic activities as opposed to other sources of reading materials such as departmental libraries. The data also supported the major hypotheses of the study, namely: the greater the faculty

utilization of the library resources for teaching and research, the greater the library use by students. Also supported was the hypothesis that the more faculty and students avail themselves of the resources of the library, the more positive their perceptions of the library become. Overall, this study identified and ranked in descending order of betas a total of 54 factors which impel students and faculty to use the library. These were grouped and compared mainly to determine their strength when matched with other variables. These 54 variables could be used to predict faculty and students' library use.

Footnotes to Chapter IV

[1]Orlando Behling and Kermit Cudd, "A Library Looks at Itself," College and Research Libraries 28 (November 1967):417-421.

[2]Errett Weir McDiarmid, Jr., "Conditions Affecting Use of the College Library," Library Quarterly 5 (January 1935):59-77.

[3]James E. Prather, Ralph E. Russel and Michael L. Clemons, "Library Resources of a Metropolitan University -- Assessment by Users," College and Research Libraries 44 (January 1983):59-65.

[4]Ibid., p. 65.

[5]H.V. Gaskill, R.M. Lumbar and C.H. Brown, "An Analytic Study of the Use of a College Library," Library Quarterly 4 (October 1934):586.

[6]Ibid., p. 587.

[7]Kenneth S. Brough, Scholar's Workshop: Evolving Conceptions of Library Service (University of Illinois Press, 1953), p. 100.

[8]Webster's Third New International Dictionary of the English Language Unabridged (New York: Merriam, 1964), p. 802.

[9]Doris Oritsewenyi Bozimo, "Co-operation Among University Libraries in Nigeria: Problems, Perspectives, Implications for National Planning," Doctor of Library Science dissertation, Columbia University, 1980.

[10]Ali Emdad and Robert Rogers, "Library Use at Pahlavi University," College and Research Libraries 32 (November 1978):448-455.

[11]Harvie B. Branscomb, Teaching with Books: A Study of College Libraries (New York: Shoe String Press, 1964), p. 25.

[12]Patricia B. Knapp, College and Teaching and the College Library (Chicago: American Library Association, 1959), p. 3.

[13]John B. Nicholson, Jr., and Russell J. Thompson, "Significant Influences in General Circulation in a Small Library." Library Quarterly 11 (April 1941):142. Gorham Lane, "Assessing the Undergraduates' Use of the University Library," College and Research Libraries 27 (July 1966):277-282.

[14]Prather et al., op. cit., p. 63.

[15]Philip V. Rzasa and John H. Moriarty, "The Types and Needs of Academic Library Users: A Case Study of Responses," College and Research Libraries 31 (November 1970):401-407.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Design of the Study

A review of the literature on students' use of academic libraries clearly purported that a relatively small percentage of students accounted for the library's circulation. Conversely, some students managed to do college work without using the library at all. In addition, this fact did not appear to have had any appreciable impact on the educational attainment as research on the relationship between library use and class level, academic achievement and scholastic aptitude have failed to establish any causal connections.

Using the above conclusions as a point of departure, the present study was designed to investigate first, how much students in three Nigerian universities used the facilities of their libraries and second, to examine if there was a relationship between faculty methods of teaching and students' library use. As a further departure from the previous studies which were circulation based, two sets of questionnaires formed the main instruments of this investigation. The first questionnaire was administered to students while the second set covered faculty members.

The information solicited on these questionnaires included general characteristics and frequencies of students/faculty library use, perceptions, causes of rare or non-use of library resources as well as an examination of the selected styles of teaching used by faculty members. Thus, the samples of 297 students and 146 teachers came from Ahmadu Bello University, Zaria, Bayero University and the University of Ilorin. These samples were selected through a circular systematic sampling method from lists of names supplied by the office of the registrar of each university.

Specific questions investigated in this study can be summarized as follows:

1) How often do students and faculty use the library?
2) What are the library use characteristics of students as regards: studying in the library using their own or library books, checking out books, using the library as a rendezvous, asking reference questions and choicest reading and study places.
3) In what percentage do students use the following library resources: reference materials, periodical collections, newspapers, photocopying facilities, reserve books, interlibrary loans, microform collections and librarians' assistance?
4) What are the causes of non-use of university libraries as viewed by students?
5) What other alternative sources of information and material supply outside the university library do

students use, and how do these compare to the university sources?

6) What type of bibliographic instructions do students receive and what is the relationship between bibliographic instructions and library use?

7) How do the students perceive the library and the library staff and what changes do students desire to see in the library system?

8) What differences are noticeable among the three schools, between undergraduates and the graduate students, male and female and science and the non-science students?

The major hypotheses of this study were:

H_1: There is a significant positiverelationship between faculty methods of instruction and students' library use.

H_{1a} Faculty's frequency of specific reading assignments is positively correlated with students' frequency of library use.

H_{1b}: Faculty's frequency of reserve items for students is positively correlated with students' frequency of use.

H_{1c}: Faculty's frequency of required reading lists is positively correlated with students' frequency of use.

H_{1d}: Faculty's frequency of required term paper references is positively correlated with students' frequency of use.

H_2: The greater the faculty members' utilization of library resources for teaching and individual research, the greater the library use by students.

H_3: The more faculty and students avail themselves of the resources of the library, the more positive their perceptions of the library become.

H_{3a}: Faculty's perception is positively related to the faculty's frequency of use.

H_{3b}: Students' perception of the library is positively related to students' frequency of use.

Following the coding of the collected data, basic descriptive measures were undertaken to establish mean, median, mode, and standard deviation values and confidence intervals were calculated for all variables in both data sets. In addition, one and two-way analysis of variance and student t-tests were conducted to determine differences in mean scores. Next, important pairs of variables were identified and tested further for significance and correlations by applying chi-square goodness of fit, and Pearson Product Moment Correlation Coefficient formula. Finally, the highly related variables were grouped and retested using Multiple Classification Analysis procedures to establish in ranked order of magnitude the best faculty method of teaching as predictors of students' library use.

Findings Pertaining to Relationships Between Variables

Faculty Methods of Teaching and Students' Library Use

In respect to the eight faculty methods of teaching tested to determine their influence on students' library use, six were found to be related at different confidence intervals with students' library use. A chi-square goodness of fit test yielded a high correlation between faculty method of giving assignments to students and the frequency with which students used the library. There was a correlation of a high chi-square of 88.42 and an equally high contingency coefficient of .614 with a significance beyond the .01 level.

Also highly correlated with students' library use were faculty methods of reserving materials, demanding footnote references in term papers, recommending titles orally in class during lectures, assigning specific readings to individual students as well as teaching with self-prepared reading lists.

This study has clearly demonstrated that faculty members are strong impelling agents of students' library use. In addition, the student library use impelling instructors were found to have adapted certain distinct characteristics in their methods of teaching which demand for reference sources in term papers, specific and explicit assignments, self compiled titles and use of standard bibliographies, in-class oral recommendations of subject related titles as well as counselling of students

individually on reading materials, and reserving most needed books in the library for students' use. Comparatively, some of these characteristics confirm earlier studies of student library use, and went further to identify other factors previously unknown. This substantiation of previous findings is not unusual given the over half a century of research in college students' libary use.

Correlation between Faculty Perceptions and Faculty Library Use

Faculty members' perception of the university library correlated with faculty use of the library. Also, teachers' satisfaction, with library services correlated with teachers' library use. In addition, faculty perceptions of collection adequacy for teachng correlated with faculty use frequency. Other specific library resources correlated with faculty library use included adequate periodical collection, microform and audio visual collections. Correlation was also found between faculty use of reserve services and students' use of reserves.

Correlations Pertaining to Students' Library Use

Similar to the findings about faculty, there were correlations between students library use and students' perception of the adequacy of these resources: periodicals, reference materials, newspapers, photocopying service, reserves and interlibrary loan. Students' requirement to complete assignments also correlated with students' frequency of visits. In addition, the helpfulness of

library staff and library use instructions correlated with students' library use. There was also a correlation between students' satisfaction with library services and students' library use and the availability of air conditioning was found to be a factor of students' library use.

In addition, sex was a correlate of students' library use of newspapers and the rate of checking out books. More males read newspapers while more females checked out books. Also, the level of education or year in school correlated with the frequency of students' visits to the library. The upperclassmen or graduates used the library more frequently than the freshmen or the first and second years. Also, in this section, there was a correlation between students' year in school and the students' choice of where to study. The majority of the students did their studying and writing in the main university library.

Findings Pertaining to Variations Between Groups

Certain variations were found between the science and the non-science students. The non-science students checke dout books more frequently than the science students. The non-science students also asked reference questions, used reserve and reference materials more frequently than their science counterparts. The science students also asked for librarians' assistance and obtained reading materials from the main university library as a primary source less frequently than the non-science students. In all these, the

probability that these differences were due to chance were beyond the .01 level with t=.000 in each case.

Similarly, non-science faculty members used the library more frequently for personal reference and research and gave assignments requiring students to use the library more frequently than the science faculty members. In addition, the science faculty prepared less frequently reading lists, demanded less frequently references in term papers and assigned specific reading less frequently than the non-science faculty.

Findings Pertaining to Hypotheses

H_1: There was a high positive and significant correlation between faculty method of teaching and students' library use. Teaching methods which incorporate assignments to students ranked highest in chi-square and coefficient value with significance beyond the 99 percent level of confidence.

The data also supported the first sub hypothesis. There was a positive correlation between faculty reserves and students' library use. Similarly, faculty's method of demanding reference sources in term papers was positively correlated with students' frequency of library use. Also, faculty's method of teaching was positively correlated with faculty's library use frequency. Faculty members who gave students assignments most frequently were the most frequent library users.

H_2: The second major hypothesis of this research that the greater the faculty members' utilization of library resources for teaching and research, the greater the library use by students, was supported by the data with probability beyond the 99 percent confidence level and a high contingency coefficient.

H_3: Also supported was the third major hypothesis of this study that the more faculty and students avail themselves of the resources of the library, the more positive their perceptions of the library became. There was a high positive relationship between the overall faculty perception of satisfaction with the library system and faculty library use frequency with a high probability beyond .01 level of confidence, a fairly low contingency coefficient of .262 and a chi-square of 9.69.

Students' use of the library resources and students' overall perception of the library were positively correlated. The level of confidence was beyond the 99 percent interval. This chi-square goodness of fit correlation corroborates the high frequencies encountered in the descriptive data of the student and faculty. In addition, students' perception of the library was positively related to students' frequency of checking out books. Using a multiple classification analysis, faculty method of assignment to students was ranked highest among the eight faculty methods. Assignment method also ranked high when combined and ranked with the other twenty variables, as a

predictor of students' library use. However, among the combined twenty variables tested for the best predictors of student library use, the helpfulness of library use instruction in obtaining materials ranked highest with a high beta of .705. In addition, the desire for certain physical environments of the library also ranked high as predictors of students' library use.

Conclusions

The research questions and hypotheses of this study were designed to examine the relationships between faculty methods of teaching and students'/faculty library use. In addition, specific characteristic patterns of Nigerian university students' library use were to be established and compared with earlier findings as a measure of bridging the information vacuum that existed in user aspects of Nigerian librarianship. The study was also designed to determine through statistical procedures the best predictors of student and faculty library use among the positively correlated variables. The following general conclusions can be drawn regarding these relationships and objectives.

Relationships between Faculty Method of Teaching and Students'/Faculty Library Use

1) Faculty method of giving assignments to students appeared to be a strong factor that motivated students to use the library. It also appeared to be true that faculty members who gave assignments requiring the use of the

library to students also used the library more than other teachers who did not apply the assignment method.

2) Equally found to be an impelling student library use factor was the faculty method of teaching which incorporated reserving subject related core materials in the library for students to read.

3) Faculty method of teaching which required students to list reference sources beyond the textbook at the end of their term papers was found to be likely to motivate students to use the library.

4) Faculty members' method of recommending titles orally in class during lectures appeared to be a major factor in students' library use.

5) Faculty members who assigned specific readings to students appeared to use the library more than those who did not assign specific readings.

6) Faculty members self-prepared list method was found to be closely associated.

7) Based on the data, librarians' fulfillment of faculty book purchase requests appeared to influence faculty frequency of library use as well as faculty perception of the library.

8) Also related to faculty library use was faculty's perceptions of library collection adequacy for teaching and research.

Students' Library Use Characteristics

9) Students' library use appeared to be solely curriculum oriented and highly related to the styles of teaching adapted by the faculty. In addition, students were found to be heavy users of the university libraries. The main university library was used more regularly than faculty/departmental or hostel libraries. It also appeared from the data that the necessity to complete assignments was a major factor motivating students to use the library. Eighty-three percent of the students used the library at least once per week.

10) It was also found that the availability or adequacy of major library resources such as reference materials, periodicals, newspapers, photocopying services, reserve services, microforms and audio visuals was a major impetus for students' library use.

11) Another factor of students' library use revealed by the data was the presence or absence of library staff assistance.

12) The attitudes of the students to university library appeared to be positive, and their perception of the overall library setting was satisfactory. In this regard, a relationship was established between students' library use and students' and faculty's satisfaction with the library system.

13) Instruction in library use was also shown by the available data as a factor that dictated students' library

use frequency. Students' who had an adequate knowledge of library setting and how to approach the materials appeared to be more likely to frequent the library than those who did not know how to use the resources. Indeed, the usefulness and type of bibliographic instruction a student received was found to be a good predictor of library use. However, there was no formalized credit earning course in any of the schools. Library use education was confined to orientation talk and library tours.

14) Non-science students used the library more frequently, borrowed more books and asked more reference questions than science students.

15) The graduate students borrowed more books, asked more reference questions and studied using library materials as well as loaned more books from their teachers than the junior classes.

16) Also different statistically were the characteristics of male/female students. Female students checked out more books and made use of interlibrary loans more than their male counterparts. However, the male students used newspapers more than female students. In addition, an air conditioned library environment was more desired by the male than the female students. Indeed, air conditioning appeared to be a predictor of students' library use.

17) The data also showed that students level of education or year in school dictated to a large extent the location a student chooses to study.

18) As regards other sources of book supply, although most of the students showed that they had to buy additional books at various times, the university library appeared to be the primary source of book supply to all students.

19) According to the data, all the suggested possible causes of rare or non-use of the library were rejected by the students. These included the physical aspect of the library, the distance of the library from the hostel or absence of bibliographic instruction.

20) There were no statistically significant differences among the three schools' responses especially in the applicability of the relationships between faculty methods of teaching and student/faculty library use. However, Bayero University students indicated that their library staff were more helpful than the other two schools'. Also, audio visual collection was more inadequate in Bayero University than either ABU or at the University of Ilorin. In addition, the Ahmadu Bello University students used newspapers more frequently than the other two schools.

Implications

Given the objective evidence of this research, a number of anticipated results have been confirmed while others have been less positive. Certain academic and library

characteristics of Nigerian students hitherto unknown have been identified. If these results were accurate reflections of the relationship between faculty methods of teaching and students' library use as well as students' library characteristics, then, a number of challenges and concerns can be identified. Eight such challenges are highlighted in the following paragraphs.

1) The findings of this study suggested that the applicability of bibliographic instruction for retrieving the resources of the library ranked among the highest predictors of students' library use with a beta of .705. Indeed, the type of user education which was combined with the first twenty student variables tested for best predictors in ranked order, produced a lower beta score of .171. The implication of this is that the form of user education was not as important as the carry-over-value or the effect of the bibliographic instruction an individual student received in leading him to the library materials. Such user education does not necessarily have to take a routinized form, formal or informal, but must be guided by the end result of making it effective and useful to the individual for locating his academic needs. The determination of what method is most suitable to achieve this goal should be determined between the librarian and faculty members. However, before such a decision is finalized, various bibliographic methods should be

experimented with to incorporate local variations and see which produces the best results.

2) The physical aspects of the library also featured prominently as predictors of student use with a beta of .585. The desire for good light, enough space, quiet, and air conditioning were pointed out as predictors of students' library use. These call to attention the need for proper architectural planning of library buildings which takes to account the physical and climatic conditions that exist in the tropics. The challenge is to provide better conditions in the library than it is available anywhere on the campus. In this case, grandeur and aesthetics should not be sacrificed for comfort and functionality of the building. Given the level of development and the existing infrastructures uncontrollable by the library such as electricity, ventilation, air conditioning, alternative sources such as standby generators, solar heating and lighting, individual air conditioning units as opposed to central air conditioning and the location of building in relation to accessing the natural air. The challenge should be resolved jointly by the librarian, the school administration and consultants.

3) The adequacy of major library collection featured prominently as a predictor of students' library use. The availability of books for loan, and use within the library as well as the overall library resources such as staff, services offered, duplicate copies of books, newspapers and

periodicals rated high in impelling students to use the library. Given the limited resources of the library, the challenge lies in the adequate provision of these resources. The expected qualities of these resources should dictate what percentage of the total university allocation the library gets.

The perception of the library by the students was found to be a major factor of use, and satisfaction was found to be dependent on library resources and staff performance. This underscores the need for adequate professional staff and the strife for cordial relationship between the students and the librarians. This is also a challenge that library management should incorporate on the short and long run.

4) The use of the library as a meeting place with a beta of .432 was another students' library use predictor. This is a rather new trend gradually assuming prominence in academic libraries. Although there was no previous study in Nigeria with which to compare the increase except studies in the United States. Nigerian academic libraries challenge is the provision of physical environments where this social application of the library can prosper as a divergence and complement of the traditional strict academic atmosphere of the library. The meeting of this challenge may be achieved by the provisions of discussion rooms, students' lounges/ smokerooms and conference rooms.

5) The faculty has been found as a major impelling agent in students' library use. The faculty methods of

teaching was the major instrument through which students were attracted into the library. Both the chi-square fitness test (χ^2=88.42 and contingency coefficient=.614), and Multiple Classification Analysis ranking of best predictors of students'library use (beta=.254) confirm this hypothesis. The separate ranking of the eight methods of teaching examined in this study (Table 22) also showed various correlations with varying beta values. Overall, these methods identified the basic classroom approaches and library behaviors of faculties. The challenge to the librarian thus centers on securing the cooperation of the faculty by meeting his academic requirements to satisfy student needs. Since the data also showed that purchasing the faculty's selections was another factor that promoted faculty library use, involving the faculty in regular selection may be another challenge before the librarian. This challenge expresses itself further in terms of finding compromises between the narrow subject base of the faculty and general reference sources as well as distribution of fund allocation among departments who may be active in selection and those departments who may not be and the library itself. Those challenges could be approached through the establishment of selection policies acceptable to the various departments and updated according to curriculum and enrollment changes. The library should strive to involve the faculty in selection and purchase such selections when made.

6) This study has shown variously both in the frequency distribution and statistical testing that students in the three schools use the library heavily. In addition, the data showed that the main library was the most used. However, the use of the library was curriculum dependent and the faculty was the sole agent. The implication of these findings is that the librarian might continue to discover avenues of improving the present use frequency in response to curriculum needs through independent initiative. Such approaches would be essential to introduce the library to faculty members who might be lukewarm selectors. In addition, the knowledge of the library and awareness of its curriculum support potential would add to the popularity of the library and make additional funding an easier issue to justify before appropriate committees. In addition, it would enhance the library's contribution to higher education and the librarians' prestige and cooperation with faculty members in their partnership to educate students.

7) Although the findings showed that the faculty was the main impelling agent of students' library use, when the eight methods of teaching were combined and ranked along with twenty other students' library use variables, faculty methods ranked sixth. This suggests that although the faculty is a major impelling factor of students' library use, there are other conditions which make students use the library. Such other conditions include the staff helpfulness, the state of the library resources, the

physical conditions of the library for comfort and the effect of user education. These other variables should not be neglected at the expense of securing faculty liaison on methods of teaching. Rather, all should be combined to woo the most important clientele in academic community -- the students and faculty.

8) This study indicated that college and university students' library characteristics as well as faculty methods that impelled students to use the library in Nigeria did not differ from the practice in the United States. Indeed, many similarities were found and variations occurred only in terms of degrees. This implies that librarianship is international and the research findings of one country may be applicable to another country, taking into account local variations. In addition, it also shows that international training in librarianship has a carry-over-value which might revitalize an existing order when acquired and applied judiciously.

Limitations of the Study

This study was limited to students matriculating in a course of study leading to a degree--undergraduate, graduate, and post-graduate professional certificates--and full-time faculty members of three universities in Nigeria. These institutions are: Ahmadu Bello University, Zaria; Bayero University, Kano; and the University of Ilorin at Ilorin. It excluded all non-degree professional certificate

students as well as other universities in Nigeria. This in itself is a limitation because the findings cannot be generalized with great confidence as representative of situations in all Nigerian universities. Further, this research is limited to the extent that the aforementioned assumptions can be called into question.

As regards students' questionnaires, question eight which was intended for students who rarely or never used the library was answered by many students who were regular users. Although the question was not misunderstood, the words "never" and "rarely" should have been capitalized instead of italicized. Such a format might have been more noticeable by regular users who were not supposed to answer the question.

Similarly, there was some confusion on the type of bibliographic instructions students received in their various schools (question 10). Students seemed not to have distinguished between an in class credit earning instruction and an orientation lecture usually given during orientation week. The word "occasional" could have been added to question 10b to read "Library orientation by means of occasional lecture."

Suggestions for Further Research

The outcome of this investigation on the relationship between faculty method of teaching and students' library use; faculty/student perception of the library and student/

to students. Such an investigation should include an examination of how best to incorporate the faculty since the latter constituted the sole agent of student library use.

3) The effect of teachers' methods of teaching on the librarian in general would be a useful investigation to see how closely allied both are in luring students into the library.

4) The physical conditions of the library was a major factor of students and faculty library use. The students particularly desired air conditioning and good ventilation. It would be useful to investigate the best physical building layouts for tropical environments like Nigeria. Such an investigation should examine the applicability of solar energy to generate electricity, the use of central air conditioners and single units. The usefulness and cost of standby generators as a supplementary alternative source of supply would also be useful.

6) One of the controversies of user research is the definitions of a "typical use" and the measurement of use. The longitudinal method of research based on questionnaires applied in this study was intended to beat the circulation statistics method widely criticized. However, an investigation of student library use defining and measuring use with combined longitudinal and circulation statistics would be useful comparison with the present study. In addition, such a study would be useful in comparing visit

frequency which is equated with use in this study with actual circulation statistics of individual students.

7) It would be useful to examine how much students and faculty require instructions in the use of the library. This would assist the library to program training sessions and evaluations. Similarly, it would be useful to determine when to offer bibliographic instructions to students, especially given the evidence that upperclasses used the library more than the lower classes.

8) Throughout this study, no plan was made to determine the extent of students' and faculty knowledge of library resources. It would be useful to investigate how much the faculty and the students know of the resources available for their use, and what is the relationship of awareness of library collections and library use for each group.

APPENDICES

APPENDIX A

Covering Letter for Faculty Questionnaire

The University of Michigan
School of Library Science
Ann Arbor, Michigan 48109

Dear _____

The enclosed questionnaire relates to a dissertation entitled "The Use of Libraries in Three Universities in Nigeria", which I am undertaking in my doctoral program at The University of Michigan. The main focus of the study is on the characteristic patterns of student and teacher interactions with university library systems. It is research on the use of resources and facilities as well as users' perceptions of the services offered by libraries.

To get an accurate picture of the university library's performance, you have been selected through a sampling system to represent your university in giving your opinion for this study. Your cooperation is highly essential and important to the success of this investigation. The information you provide will be used to improve library services to you, your colleagues and to others who would go through our university systems in the future.

Every measure has been taken to assure the anonymity of your response. The data collected will not be tabulated for the individual questionnaires, but as a group, and your response will be used for no other purpose than the one stated. Please read the questions, compare the suggested alternatives, and check the appropriate box directly in front of your choice.

Thank you very much for your assistance.

Sincerely,

J. O. Daniel

APPENDIX B

Faculty Questionnaire

QUESTIONNAIRE FOR FACULTY MEMBERS

1. _____Name of University

2. _____Name of Department

3. Approximately how often do you personally use the university libraries either for research or reference?

   (a) ☐ At least once a week

   (b) ☐ At least once a month

   (c) ☐ At least once a term

   (d) ☐ Never

   (e) ☐ Other (please specify) _____

4. Estimate the frequency with which you usually give assignments requiring students to use library materials?

   (a) ☐ Once a week

   (b) ☐ Once a month

   (c) ☐ Once a term

   (d) ☐ Rarely

   (e) ☐ Never

   (f) ☐ Other (please specify) _____

5. How often do students select reading materials for your classes through the following methods:

		Always	Often	Sometimes	Never
(a)	Personally prepared reading lists	☐	☐	☐	☐
(b)	Titles recommended orally in class	☐	☐	☐	☐
(c)	Items recommended to individual students	☐	☐	☐	☐
(d)	Standard bibliographies	☐	☐	☐	☐

6. How often do you:

(a)	Prepare reading lists for students	☐	☐	☐	☐
(b)	Reserve items for students	☐	☐	☐	☐
(c)	Demand references in term papers	☐	☐	☐	☐
(d)	Assign specific readings	☐	☐	☐	☐

7. How often do you get your selections purchased by the librarian?
   (a) ☐ Always (c) ☐ Sometimes
   (b) ☐ Often (d) ☐ Never

8. How satisfied are you with the services offered by the university libraries?
   ☐ Very satisfied
   ☐ Somewhat satisfied
   ☐ Not very satisfied

9. On the whole, how adequately would you say the current holdings of your university library meet your needs for:

		Very Adequately	Somewhat Adequately	Not very Adequate	Not Adequate at all
(a)	Teaching	☐	☐	☐	☐
(b)	Research	☐	☐	☐	☐
(c)	Recreation	☐	☐	☐	☐

10. How adequate would you rate these library collections in meeting your academic needs?

		Very Adequate	Somewhat Adequate	Not very Adequate	Not Adequate at all
(a)	Book collections	☐	☐	☐	☐
(b)	Periodical collections	☐	☐	☐	☐
(c)	Reference materials	☐	☐	☐	☐
(d)	Newspapers	☐	☐	☐	☐
(e)	Microform collections	☐	☐	☐	☐
(f)	Audio Visual collections	☐	☐	☐	☐

11. What changes would you like to see made in the services of your university libraries?

_____

_____

_____

_____

_____

_____

APPENDIX C

Covering Letter for Student Questionnaire

The University of Michigan
School of Library Science
Ann Arbor, Michigan 48109

Dear Student:

The enclosed questionnaire concerns a study on the characteristic patterns in which you, as a student, use the resources and facilities as well as your attitude towards the services offered by university libraries.

To get an accurate picture of the university library's performance, you have been selected to represent your university in giving your opinion for this study. Your cooperation is highly essential to the success of this investigation because your opinion represents the points of view of over one hundred other students. The information you provide will be used to improve library services for you, your classmates and others who would go through our university systems in the future.

Every measure has been taken to assure the anonymity of your response. The data collected will not be tabulated for the individual questionnaire, but as a group, and your response will be used for no other purpose other than the one stated. Please read the questions, compare the suggested alternatives and check the appropriate box directly in front of your choice.

Thank you for your assistance.

Sincerely,

J. O. Daniel

APPENDIX D

Student Questionnaire

QUESTIONNAIRE FOR STUDENTS

1. Department _____

2. Sex: ☐ Male ☐ Female

3. Year in school ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th ☐ Graduate

4. In this university, where do you do MOST of your reading and writing for your studies? (Check one only)
   (a) ☐ Room in the Hall of Residence
   (b) ☐ Main University Library
   (c) ☐ Faculty/Departmental Library
   (d) ☐ Classroom
   (e) ☐ Other (please specify) _____

5. How often do you usually visit the university libraries? (Check only one)
   (a) ☐ At least once a *week*
   (b) ☐ At least once every *two weeks*
   (c) ☐ At least once a *month*
   (d) ☐ At least once a *term*
   (e) ☐ Never

6. Please indicate how often you perform each of these activities *in* the library:

		Always	Often	Sometimes	Never
(a)	Study, using your own materials	☐	☐	☐	☐
(b)	Study, using library materials	☐	☐	☐	☐
(c)	Meet with friends	☐	☐	☐	☐
(d)	Check out books	☐	☐	☐	☐
(e)	Ask reference questions	☐	☐	☐	☐

7. Please indicate how often you use these library resources:

(At least)	Once a Week	Once a Month	Once a Term	Never
(a) Reference materials	☐	☐	☐	☐
(b) Periodicals	☐	☐	☐	☐
(c) Newspapers	☐	☐	☐	☐
(d) Photocopying	☐	☐	☐	☐
(e) Reserve books	☐	☐	☐	☐
(f) Interlibrary loan	☐	☐	☐	☐
(g) Microfilms	☐	☐	☐	☐
(h) Librarian's assistance	☐	☐	☐	☐

8. If you *rarely* or *never* use university library, check by rating how closely these statements agree with your feeling about the library:

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
(a) I can do my assignments without using the library	☐	☐	☐	☐
(b) I have all the materials I need in my room	☐	☐	☐	☐
(c) The library is too far from my room	☐	☐	☐	☐
(d) My teachers do not recommend reading materials	☐	☐	☐	☐
(e) I do not know how to use the library	☐	☐	☐	☐
(f) The books I need are never in the library	☐	☐	☐	☐
(g) Others (please specify)	☐	☐	☐	☐

_____

_____

9. Please indicate how often you have obtained reading materials from these sources during the past year:

	Always	Often	Sometimes	Never
(a) Loan from non-university libraries	☐	☐	☐	☐
(b) Loan from friends	☐	☐	☐	☐
(c) Loan from teachers	☐	☐	☐	☐
(d) Loan through inter-library loan	☐	☐	☐	☐
(e) Purchase from book-stores	☐	☐	☐	☐

9. (continued)

	Always	Often	Sometimes	Never
(f) The university library	☐	☐	☐	☐
(g) Other (please specify)	☐	☐	☐	☐

_____

_____

10. What type of instruction have you had on library use? (Check one only)
    (a) ☐ An *in class* instruction for credit
    (b) ☐ Library orientation by means of *a lecture*
    (c) ☐ Directed *tour* of the library
    (d) ☐ No instruction in library use
    (e) ☐ Other (Please specify) _____

11. How helpful is the library use instruction to you in obtaining materials for your studies?
    (a) ☐ Very helpful
    (b) ☐ Somewhat helpful
    (c) ☐ Not very helpful
    (d) ☐ Not helpful at all

12. Please indicate how adequate these library collections are in meeting your needs.

	Very Adequate	Somewhat Adequate	Not very Adequate	Not Adequate at all
Book	☐	☐	☐	☐
Periodicals	☐	☐	☐	☐
Newspapers	☐	☐	☐	☐
Reference Materials	☐	☐	☐	☐
Microforms	☐	☐	☐	☐

13. Have you ever made any suggestion to a librarian regarding library services and facilities in your university?
    ☐ Yes ☐ No

    13a. What was the suggestion?

    _____

    _____

14. On the whole, would you say the library staff are:
    (a) ☐ Very helpful
    (b) ☐ Somewhat helpful
    (c) ☐ Not very helpful
    (d) ☐ Not helpful at all

15. How much do you desire to see these facilities added to or improved in your university library system:

	Desired a great deal	Desired somewhat	Not much desired	Not at all desired
(a) Individual reading/study rooms	☐	☐	☐	☐
(b) Good lighting	☐	☐	☐	☐
(c) Air conditioning/ good ventilation	☐	☐	☐	☐
(d) Space in which to work	☐	☐	☐	☐
(e) Quiet/sound proofing	☐	☐	☐	☐
(f) Better book collection	☐	☐	☐	☐
(g) Student lounge/ smoke room	☐	☐	☐	☐
(h) Duplicate copies of books	☐	☐	☐	☐
(i) Other (Please specify)	☐	☐	☐	☐

_____

_____

16. In general, how satisfied are you with the services offered by the library?
    (a) ☐ Very satisfied
    (b) ☐ Somewhat satisfied
    (c) ☐ Not very satisfied
    (d) ☐ Not at all satisfied

17. Please comment below, if you wish, about the relationship of the university libraries to your academic career with suggestions, appraisals and criticisms.

_____

_____

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BIBLIOGRAPHY

BIBLIOGRAPHY

Afifi, A.A. Statistical Analysis; A Computer Oriented Approach. 2nd ed. New York: Academic Press, 1979.

Africa South of the Sahara. London: Europa Publications, 1983.

Ahmadu Bello University Calendar 1981/82. Zaria, Nigeria: Ahmadu Bello University Press, 1982.

Ahmadu Bello University: Kashim Ibrahim Library: Readers' Guide. Zaria, Nigeria: Kashim Ibrahim Library, 1978.

Ajayi, Ade J.F. "Academic Planning in a Federal System: The Nigerian Example," in Pressures and Priorities: The Proceedings of the 12th Congress of the Universities of the Commonwealth, Vancouver, Canada, August 1978. London: Association of Commonwealth Universities, 1979.

Allen, Kenneth. "Student and Faculty Attitudes," Library College Journal 3(Fall 1970):28-36.

Allen, Kenneth W. Use of Community College Libraries. Hamden, Connecticut: Linnet Books, 1971.

Amundson, Colleen Coghlan. "Relationship Between University Freshmen's Information Gathering Techniques and Selected Environmental Factors," Ph.D. dissertation, University of Minnesota, 1971.

Atkins, Pauline. Bibliography of Use Surveys of Public and Academic Libraries, 1950-1970. London: The Library Association, 1971.

Axford, William. "Interrelations between University Freshmen's Information-Gathering Techniques and Selected Environmental Factors." Ph.D. dissertation, University of Minnesota, 1971.

Axford, William. "Interrelations of Structure, Governance and Effective Resource Utilization in Academic Libraries," Library Trends 23(April 1975):551-571.

Babbie, Earl. Survey Research Methods. Belmont, California: Wardsworth Publishing Company, 1973.

Balian, Edward S. How to Design, Analyze, and Write Doctoral Research; the Practical Guidebook. Washington: University of America, 1982.

Barkey, Patrick. "Patterns of Student Use of a College Library," College and Research library 26(March 1965):115-118.

Bayero University Diary. Kano, Nigeria: Bayero University Press, 1983.

Behling, Orlando and Kermit Cudd. "A Library Looks at Itself," College and Research 28(November 1967):416-422.

Blazek, Ronal David. "Teacher Utilization of Non-Required Library Materials in Mathematics and the Effect on Pupil Use," Ph.D. dissertation, University of Oklahoma, 1979.

Brancomb, Harvie. Teaching with Books. Chicago: Association of American Colleges, 1940.

Branscomb, Harvie B. Teaching with Books; A Study of College Libraries. Chicago: The Shoe String Press, 1964.

Brough, Kenneth S. Scholar's Workshop: Evolving Conceptions of Library Service. Chicago: University of Illinois Press, 1953.

Burns, Mary Ada. "The Relationship Between the Use of the San Diego State University Library and Selected Personal Characteristics of the Student Population (ED 154 807, 1977).

Busha, Charles H. and Harter, Stephen P. Research Methods in Librarianship; Techniques and Interpretation. New York: Academic Press, 1980.

Carl-Saunders, A.M. The University of Northern Nigeria. Report of the Inter-University Council Delegation. London: Inter-University Council, 1961.

Centra, John A. and Potter, David, N. "School and Teacher Effects: An Interrelational Model," Review of Educational Research. (Summer 1980):273-291.

Chen, Chih Ching and Hernon, Peter. Information Seeking. New York: Neal-Schuman, 1982.

Claver, Sr. Mary Peter. Student and Faculty Use of Libraries in Three Secondary Schools. Ph.D. dissertation, Columbia University, 1960.

Clayton, Howard. "An Investigation of Various Social and Economic Factors Influencing Students' Use of One College Library." Ph.D. dissertation, University of Oklahoma, 1965.

"Commission on Post Certificate and Higher Education in Nigeria; Investment in Education: The Report, Eric Asby, Chairman." Lagos, Nigeria: Federal Ministry of Education, 1960.

Commonwealth Universities Yearbook. London: Europa Publications, 1983.

Daniel, Wayne W. Applied Nonparametric Statistics. Boston: Houghton, Mifflin, 1978.

Davis, Allison. Social Class Influence Upon Learning. Cambridge: Harvard University Press, 1948.

Davis, Jimmie Y. and Bentley, Stella. "Factors Affecting Faculty Perceptions of Academic Libraries," College and Research Libraries, 40(November, 1979):527-532.

Davis, Richard A. and Bailey, Catherine A. Bibliography of Use Studies. Philadelphia, Pennsylvania: Drexel Institute of Technology, Graduate School of Library Science, 1964.

Davis Y. Jinnie and Bentley Stella. "Factors Affecting Faculty Perceptions of Academic Libraries." College and Research Libraries, 40(November 1979):527-532.

Deweese, Carol. A Bibliography of Library Use Studies. Lafayette, Indiana: Purdue University, 1967.

Draper, H. "Librarian Versus Scholar-User," Library Journal 79(May 1964):1907-1910.

Duncat, O.P. Sister Mary Peter Claver. "Student and Faculty Use of the Library in Three Secondary Schools." D.L.S. dissertation, Columbia University, 1960.

DuMont, Rosemary Ruhig. "A Conceptual Basis for Library Effectiveness," College and Research Libraries 41(March 1980):103-111.

Eble, Kenneth E. ed. Improving Teaching Styles. Washington, D.C.: Jossey-Bass, 1980.

Edwards, Allen L. Statistical Analysis. 3rd. ed. New York: Holt Rinehart and Winston, 1969.

Emdad, Ali and Rogers, Robert. "Library Use at Pahlavi University," College and Research Libraries 32(November 1978):448-455.

Esterquest, Ralph. "Measuring Library Use," College and Research Libraries 24(May 1967):201-203.

Eurich, Alvin. "Student Use of the Library," Library Quarterly 3(January 1933):87-94.

Federal Republic of Nigeria, Fourth National Development Plan, 1980-1985. Lagos, Nigeria: Federal Ministry of Economic Planning, 1981.

Federal Republic of Nigeria, National University Commission; Basic Information Kit on Nigerian Universities. Washington, D.C.: Nigerian Universities Commission, 1982.

Gaskill, H.V., Dumbar, R.M. and Brown, C.H. "An Analytic Study of the Use of a College Library," Library Quarterly 4(October 1934):586-588.

Givens, Johnnie. "A Study of Heavy and Light Users of the Austin Peay State College Library," Master's thesis, University of Chicago, 1960.

Greve, Clyde Leroy. "The Relationship of Libraries to the Academic Achievement of Iowa School Seniors." Ph.D. dissertation, University of Denver, 1974.

Groark, James. "Utilization of Library Resources by Students in Selected Non-Residential Degree Programs: Implications for Educational Administrators," Ed.D. dissertation, State University of New York at Albany, 1974.

Gwinn, Nancy E. "Academic Libraries and Undergraduate Education: The CLR Experience," College and Research Libraries 41(January 1980):5-16.

Hardesty, Larry. "The Academic Library: Unused and Unneeded?" The Library Scene, 5(1975/March 1976):14-16.

Hardesty, Larry. "Student Use of the Libraries at DePauw University." (ED 187 335 1980):5-11.

Harris, Ira Whitney. "The Influence of Accessibility on Academic Library Use," Ph.D. dissertation, Rutgers-The State University, 1960.

Hostrop, Richard Windfred. "The Relationship of Academic Success and Selected Other Factors to Student Use of

Library Materials at College of the Desert." E. Ed. Dissertation, University of California, 1966.

Hough, John B. and Duncan, James K. Teaching Description and Analysis. Menlo Park, California: Westley, 1970.

Houldridge, David L. "Students, Libraries and Books," Research in Librarianship 1(June 1966):56-75.

Hostop, Richard Winifred. "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," D. Ed. dissertation, University of California, 1966.

Jex, Frank B. and Merrill, Reed M. "Intellectual and Personality Characteristics of University of Utah Students," Journal of Educational Research 53(November 1959):118-120.

Johnson, Kathleen A. and Barbara S. Plake. "Evaluation of PLATO Library Instructional Lessons: Another View," Journal of Academic Librarianship 6(July 1980):154-158.

Jones, R.C. "Use of the Library for Better Instruction," Junior College Journal 29(April 1959):493-495.

Joyce, W.D. "Student Grades and Library Use; A Relationship Established," Library Journal 83(January 1961):832-833.

Kidder, Louise. Research Methods in Social Sciences. New York: Holt Rinehart, 1981.

Kish, Leslie. Survey Sampling. New York: John Wiley, 1965.

Knapp, Patricia B. "Guidelines for Bucking the System: A Strategy for Moving Toward the Idea of the Undergraduate Library as a Teaching Instrument." Drexel Library Quarterly 7(July-October 1971):217-221.

_____. College Teaching and the College Library. ACRL Monograph No. 23. Chicago: ALA, 1959.

_____. "Introduction: Seeking a Partnership Between the Teacher and the Librarian," in Progress in Educating the Library User. New York: Bowker, 1979, pp. 1-11.

_____. The Role of the Library in a Given College in Implementing Course and Noncourse Objectives of that College. Ph.D. dissertation, University of Chicago, 1959.

_____. et al. An Experiment in Coordination Between Teaching and Library Staff for Changing Student Use of

University Library Resources. Detroit: Monteith College, Wayne State University, 1964.

Kodras, Janet and Prather, James. Profile of Library Users. Atlanta: Georgia State University, 1978.

Lane, Abrham. "Assessing the Undergraduates' Use of the University Library," College and Research Libraries 27(July 1966):277-282.

Lee, John H. "Reaching All Classes of Community," A.L.A. Bulletin 13(July 1919):180.

Line, Maurice B. Library Surveys. Hamden, Connecticut: Archon Books, 1967.

Line, Maurice and Mavis Tidmarsh. "Student Attitudes to the University Library." Journal of Documentation 7(Spring 1957):217-221.

Louttit, C.M. and J. Patrick. "A Study of Students' Knowledge of the Use of the Library." Journal of Applied Psychology 16(1932):475-484.

Lubans, John Jr. ed. Educating the Library User. New York: Bowker, 1974.

_____. "Introduction: Seeking a Partnership Between the Teacher and the Librarian." In Progress in Educating the Library User. New York: Bowker, 1979.

_____. A Look at Library Use Instruction Programs: The Problems of Library Users and Non-Users. Boulder, Colorado: Colorado University Libraries, 1974.

_____. Progress in Educating the Library User. New York: Bowker, 1979.

Lucy, Herber Eugene. "A Study of Selected Factors Related to the Academic Success of Undergraduate Students at the University of Souhern Mississippi," Ed. D. dissertation, University of Southern Mississippi, 1962.

Lyle, Guy R. The Administration of the College Library. New York: The H.W. Wilson, 1963.

Lyle, Guy R. The President, the Professor and the College Library. New York: H.W. Wilson, 1963.

Mabogunje, Akin. Physical Geography of Nigeria. London: MacMillan, 1979.

McDiarmid, Evvett Weir, Jr. Conditions Affecting Use of the College Library. Ph.D. dissertation, University of Chicago, 1934.

McDonald, David and Searing, Susan. "Bibliographic Instruction and the Development of Online Catalogs," College and Research Libraries 44(January 1983):5-11.

Mapp, Edward. "Instructor-Librarian Collaboration in a Community College," Junior College Journal 28(March 1958):404-406.

Martin, A. Lowell. "User Studies and Library Planning," Library Trends 24(January 1976):483-496.

Nelson, Jerold. "Faculty Awareness and Attitudes Toward Academic Library Reference Services: A Measure of Communication," College and Research Libraries 34(September 1973):268-275.

Nicholson, Natalie N. and Eleanor Bartlett. Who Uses University Libraries? College and Research Libraries 23(May 1962):217-222.

Nie, Norman H. et al. SPSS: Statistical Package for the Social Sciences Combined Edition. New York: McGraw-Hill, 1981.

Nie, Norman, H. et al. SPSS: Statistical Package for the Social Sciences. 2nd ed. New York: McGraw-Hill [1975].

Nigeria, Constitution of the Federal Republic. Lagos, Nigeria: Federal Ministry of Information, 1979.

"Nigeria; Economic Potential and Problems," Quarterly Review of Economics 3(September, 1982):5-6.

Nordling, JoAnne. "The High School Library and the Classroom: Closing the Gap," In Progress in Educating the Library User. Edited by John Lubans, Jr. New York: Bowker, 1974.

Nwabueze, B.O. Constitutionalism in Emergent States. London: Hurst, 1972.

Osundina, Oyeniyi. "Improved Accessibility and Undergraduate Use of the Academic Library," International Library Review 7(January 1975):77-81.

Prather, E. James, Russel, Ralph E. and Clemons, Michael L. "Library Resources of a Metropolitan University-Assessment by Users." College and Research Libraries 44(January 1983):59-65.

Ranganathan, S.R. The Five Laws of Library Science. Bombay: Asia Publishing House, 1964.

Ritter, Vernon. "An Investigation of Classroom Library Relationships on a College as Seen in Recorded Circulation and GPA," College and Research Libraries 29(July 1969):7-13.

Rogers, Sharon. "Research Strategies: Bibliographic Instructions for Undergraduates." Library Trends 29(Summer 1980):68-81.

Rosenberg, Morris. The Logic of Survey Analysis. New York: Basic Books, 1968.

Rzasa, Philip V. and Moriarty, John H. "The Types and Needs of Academic Library Users: A Case Study of Responses." College and Research Libraries. 31(November 1970):401-407.

Scherer, Henry. "The Faculty and the Librarian." Library College Journal 4(Fall 1970):37-43.

Solltiz, Claire, et al. Research methods in Social Relations. New York: Holt Rinehart & Winston, 1959.

Shelden, Patricia Rae. "The Effect of Orientation and Instruction on Use of, and Satisfaction With, a Government Documents Collection in a University Library." Ph.D. dissertation, University of Michigan, 1982.

Simpson, I.S. Basic Statistics for Librarians. London: Clive Bingley, 1975.

Smalley, Topsy N. "Bibliographic Instruction in Academic Libraries: Questionning Some Assumptions," Journal of Academic Librarianship 3(November 1977):280-283.

Snider, Felix Eugene. "The Relationship of Library Ability to Performance in College." Ph.D. dissertation, University of Illinois, 1965.

Steele, Fred I. Physical Settings and Organizational Development. Reading, Mass.: Addison-Wesley, 1973.

Steig, Lewis. "Circulation Records and the Study of College Library Use," Library Quarterly 12(January 1942):87-90.

Survey of the Land-Grant Colleges and Universities. Chicago: American Library Association, 1924.

Sutton, H.L. "Is the Library the Heart of the College?" Saturday Review 45(April 1962):42-43.

Thompson, Russell I. and Nicholson, John B. Jr. "Significant Influences in General Circulation in a Small Library," Library Quarterly 11(April 1941):142.

Trinker, Charles L. Teaching for Better Use of Libraries. New York: Shoestring Press, 1970.

Turabian, Kate L. A Manual for Writers of Term Papers, Theses, and Dissertations. 4th ed. Chicago: University of Chicago Press, 1973.

UNESCO Statistical Yearbook. New York: UNESCO, 1982.

University Grants Committee; Report of the Committee on Libraries (Parry Report). London: HMSO, 1974.

Upton, Graham, J.G. The Analysis of Cross-tabulated Data. New York: John Wiley, 1978.

Van Pelt, W. Austin. "Instructional Theory and Student Subcultures," Improving College and University Teaching 17(Spring 1969):281-286.

Vicleery, B.C. "The Triple Glow; Thoughts on Research in Librarianship," Journal of Librarianship 2(October 1970):281-286.

Walker, Richard Jean. "Influence of Antecedent Library Service Upon Academic Achievement of University of Illinois Freshmen," Ph.D. dissertation, University of Illinois, 1965.

Waples, Douglas et al. The Library: The Evaluation of Higher Institutions, No. 4. Chicago: University of Chicago Press, 1936.

Weatherford, John. "Student Library Habits," College and Research Libraries 22(September 1961):78-91.

Whitlatch, Jo Bell. "Library Use Patterns Among Full and Part-Time Faculty Students," College and Research Libraries 44(March 1983):141-152.

Whiteman, Harold B., Jr. "Library Characteristics of Colleges Ranking High in Academic Excellence," College and Research Libraries 24(September 1963):369-371.

Wiggins, Marvin E. "The Development of Library Use Instruction Programs," College and Research Libraries 33(November 1977):473-479.

William, Mitsuko and Elisabeth B. Davis. "Evaluation of Plato Library Instructional Lessons," Journal of Academic Librarianship 5(March 1979):14-19.

Wilson, Louis Round and Tanber, Maurice F. The University Library; Its Organization, Administration and Functions. Chicago: University of Chicago Press, 1956.

Wilson, R.C. et al. College Professors and Their Impact on Students. New York: John Wiley, 1975.

Woods, William Edward. "Factors Influencing Student Library Use: An Analysis of Studies," Master's thesis, University of Chicago, 1965.

Yamato, K. and Dizney H.F. "Eight Professors: A Study on College Students' Preferences Among Their Teachers," Journal of Educational Psychology 57(July 1966):146-150.

Young, Arthur P. and Exir B. Brennan. "Bibliographic Instruction: A Review of Research Applications," in Progress in Educating the Library User. New York: Bowker, 1979, pp. 13-28.

Zipf, George Kingsley. Human Behavior and the Principle of Least Effort: An Introduction to Human Ecology. Cambridge, Massachusetts: Addison-Wesley Press, 1949.

Zweizig, Douglas L. "Measuring Library Use." Drexel Library Quarterly 13(July 1977):3-15.