

REVIEW OF THE STATE OF RESEARCH METHODOLOGY IN AFRICAN LIBRARIANSHIP

*Paul Manda*¹

ABSTRACT

The paper reviews of the state of research methodology in African Librarianship. The data for the paper is based on the content analysis of journal articles published in the African Journal of Library, Archives and Information Science between 1991 and 1999. The study has revealed major weaknesses in research methodologies in African Librarianship. Among the major shortcomings are researches not being grounded on theory and the findings having no bearing on theory construction. Additionally, operational definitions of underlying concepts or variables are not provided. The study did not reveal a clear pattern of development towards either qualitative or quantitative methodology although there is a total dependence on the questionnaire for data collection. Research in African Librarianship is at its weakest in sampling and data analysis phases. Studies employ crude descriptions and sampling strategies. The individual is the major unit of analysis. Overall, the study concludes that quality of research methodology and consequently the entire research process in African Librarianship requires major improvements.

INTRODUCTION

This paper reviews of the state of research methodology in African Librarianship. Research methodology has major implications in the construction of knowledge in any scientific discipline or sub-discipline. Science itself is defined in the context of methodologies that underpin the investigation of research problems in the scientific disciplines. This exploratory study examines the extent to which research in African librarianship is grounded in the scientific model of inquiry. The review is divided into two major parts. The first part is a brief overview of the literature on library and information science as an academic and scientific discipline. Studies dealing with research methodology in African Librarianship are also reviewed. The second part is research

¹ Paul Manda (PhD)- Senior Librarian and Head of Acquisitions, University of Dar-es-Salaam library

findings based on the content analysis of journal articles published in the African Journal of Library, Archives and Information Science between 1991 and 1999. This journal was selected primarily because it is a core journal in African Librarianship. Furthermore, a fairly large proportion (40%) of the articles published in this journal during the period under review is empirical in nature. This enabled the author to get an understanding of the dynamics of the state of research methodology in African Librarianship by content analyzing the articles.

BACKGROUND INFORMATION AND LITERATURE REVIEW

Library and Information Science (LIS) is a convergence of librarianship and information science. Librarianship itself as a profession has evolved as an applied field. Traditionally librarians being at the center of this system are mainly concerned with the day to day practical issues facing libraries. In the early stages of the development of the discipline, these issues included the creation and development of major cataloguing and classification schemes for efficient organization and retrieval of library materials. In the 19th century librarians were therefore concerned with the physical custody of cultural capital. Librarians were also involved in the selection and control of library materials access (Crowley and Brace, 1999). With the adoption of computer technology in library work towards the second half of the 19th century an information paradigm began to make impact in the development of library profession. By the 1970s the information paradigm which is stronger in theory became an active competitor to library service paradigm (Apostle and Raymond, 1997). These two conflicting paradigms one emphasizing library service provision and the other information provision began to converge, hence the concept of library and information science.

The development of Library and Information education started in the West around the 19th century. At that time librarianship was mainly about custodial duties that related mainly to library documents. The sort of training provided then was largely vocational and the emphasis was on library routines and practices. The training was largely unsystematic and was mainly carried out by individual libraries. In the United Kingdom the formal programs

of education for librarianship started in 1885 although full-time education for librarianship was firmly established in the 1960s. In the USA, Dewey opened the first Library School at Columbia College in 1887 (Advances in Librarianship, 1982). By the 20th century librarians in the West attempted to gain professional status while the library was emerging as a central organ in most schools and colleges. In addition, the image of librarian as a teacher was becoming common. By the 1920s in the USA alone there were more than 15 library schools operated by libraries. Library education was starting to focus on training professional workers and not clerical staff. In 1928 the first Graduate Library School in the USA was established at the University of Chicago with its curriculum directed away from specialization to integration with other fields (Advances in Librarianship, 1982). This multi-disciplinary approach to training in librarianship had implications for the growth and development of library science as an academic discipline in its own right. For example, as a reaction to the 19th century apprentice based model of training librarians, a new methodological approach began to emerge (Trowsow, 2001). In the 20th Century the dominant methodological paradigm was the positivistic approach to the study of phenomenon. The positivistic approach was based on dominant methodological thinking in the hard and physical sciences at that time. Therefore, positivism (“the scientific model of inquiry”) became the dominant methodological paradigm in LIS as well. The emphasis was empirical research based on the scientific method of investigation. The Graduate Library School at the University of Chicago became the focal point for the development of LIS as a scientific discipline.

Trowsow (2001) identifies the major assumptions of the positivist approach that puts emphasis on scientism and upon which methodology in LIS has evolved as: One, LIS is a genuine natural science, therefore the methodological approach of the natural sciences are applicable to LIS. Two, there are general laws (facts) that govern LIS and the discovery of these facts is the objective of research (discovery/construction of theories) Three, application of laws that are able to explain, predict and control the state of affairs in LIS. Four, the work of library scientists must observe strict value neutrality according to mainstream view. This point is also the guiding principle of the profession as a whole and permeates not

only the research in LIS but also the concrete practice of librarianship as well.

In Africa the history of modern library profession as we know it today is fairly short. African Universities have only begun establishing Library Schools and departments of Library and Information Studies. In Africa only a few schools have doctoral programs in Library and Information Science. Therefore, the training of librarians in Africa has been undertaken outside of Africa. This has consequences and implications for the development of the methodologies in African Librarianship.

In East Africa, training in librarianship developed gradually from certificate, diploma and to degree levels. In Tanzania for example, training at certificate level began in the 1970s. The diploma program started in 1989. The Tanzania Library Services Board (The Public Library System) organizes these two programs. In October 1997 the first graduate program in Library and Information Studies was launched at the University of Dar es salaam with the first intake of only two students. The number increased to 10 students by the second intake in 1998/1999 academic year. This program which is under the Faculty of Arts and Social Sciences (FASS) is administered by the Library and taught by Library Staff. According to the 1971 University of Dar es salaam Act, the University Library has no mandate to run a degree program and hence the involvement of the FASS for the purpose of conferring degrees.

PROCEDURES

Data for this paper is based on the content analysis of major articles published in the African Journal of Library, Archives and Information Science between 1991 and 1999. This journal was selected because it is a core journal in African Librarianship. Also because a substantial proportion of articles appearing in this journal are empirical in nature. Therefore content analysis will provide an understanding and insight into the dynamics and changes in research methodology in African Librarianship over the decade. The findings of the content analysis are discussed with the view of providing explanations for the observed patterns. This study is a partial replication of methods and procedures used by (Stokes and Miller, 1985; Sewell, 1965). In these previous studies on

methodological review of rural sociology the criteria for judging the methodological adequacy of research were organized around four major areas: problem statement; data characteristics; data analysis and conclusion. In evaluating the adequacy of problem formulation, the previous studies examined the explicitness of the problem; theoretical and operational definitions of major concepts. In the case of theoretical definitions the criteria is whether such definitions are provided and procedures of measurements specified e.g the use of scales etc. Data characteristics were examined in terms of sampling procedures and whether probability or non-probability sampling procedures are used and the sample size. It also examined whether validity and reliability tests of the measurements are reported. In data analysis reviewers examined the type of analytic techniques used (e.g univariate, bivariate or multi-variate) and if reasons are given for the use of these techniques. Finally the forms of relationship are examined (i.e linear or non-linear) and whether tests of significance are employed. In this study the author read all the articles and reviewed them according to the above criteria used by Sewell (1965); Stokes and Miller (1985).

FINDINGS AND DISCUSSION

MEASUREMENT: CONCEPTUALIZATION AND OPERATIONALIZATION

Measurement process starts when a researcher formulates a research problem that contains concepts. The first stage in any scientific inquiry is to generate a research problem. The central criteria used in determining the adequacy of the problem statement is the clarity of the problem. In this study (see table 1 below) about 43% of all papers based on empirical studies did not describe the research problem therefore one could not comment on the adequacy of the problem statement for these articles. Thirty three percent of the articles were categorized as having clearly stated the research problem and 23% as being adequate.

Table 1: Conceptualization and Operationalization

Rank	Clarity of statement	Conceptual Definitions	Operational Definitions
No Problem/Definitions	13 (43.3%)	20 (67%)	20 (100%)
Poor	0 (0%)	0 (0%)	0 (0%)
Adequate	7 (23.3%)	9 (30%)	0 (0%)
Good	10 (33.3%)	1 (3%)	0 (0%)
Total	30 (100%)	30 (100%)	0 (0%)

Theoretical definitions (i.e. conceptualization) of the key concepts are an integral component of the development of theories in any scientific discipline and consequently very central in any scientific research. Findings of this study however indicate that articles generally do not provide theoretical definitions of concepts used and neither do they discuss theoretical issues. For example, conceptual frameworks within which particular studies are grounded are not described. Sixty seven percent of all papers based on empirical investigation do not provide any theoretical definition or discussion of the key concepts. Only one paper has what is considered as good theoretical definition and the remaining 30% had adequate theoretical definition of the key concepts. Thus substantial research in African Librarianship is not theoretically informed.

Operational definitions (operationalization) of the key concepts in a scientific research are critical to ensure that researchers measure the underlying theoretical concepts. None of the papers reviewed provided operational definitions of the major variables. This is a major weakness given that concepts in the social sciences often have more than one indicator with several meanings.

Is African Librarianship a-theoretical sub-discipline? Or is it that researchers ignore to include these important elements when writing their papers? This study has shown that data used in research in African Librarianship is by and large not linked to theory or theory construction. There is probably one major explanation to account for this trend. Graduate course curricula in Library Schools do not emphasize theoretical issues especially the

definition of concepts (Manda, 2001). This partly stems from the fact that the major concern of the training in Librarianship is with the application, the practice instead of the theoretical and methodological development of the field. Bramley, (1975) observes that among the major criticisms of the nature and content of the postgraduate courses in Library and Information Science is that these are vocation-oriented. The assumption is that students are probably not very much aware of the basics of librarianship and information work and therefore need a dose of this. Additionally, since the aim is to train students for a career in librarianship there is no need to dwell much on issues of theories, methodology etc. Bramley (1975) concludes that, as a consequence of this library and information studies became dull at postgraduate level and that attempts to intellectualize librarianship resulted in half-baked irrelevant theorizing. However, the introduction of doctoral programs in Library and Information is expected to enhance the capabilities of researchers and scholars in the discipline. PhD holders by the nature of their training are expected to tackle issues of knowledge construction and generation in the discipline rather than concentrate on the practices alone.

While the importance of reliable and valid measures have often been emphasized in the social science research none of the papers reviewed reported reliability and validity coefficients or even discussed the reliability and validity issues of their measurements. The explanations for the non-use of reliability and validity measures in research in African Librarianship is probably due to the fact that authors are probably not conversant with these issues and this reflects the type of training that they have received in the library schools. This training which as already noted does not emphasize the issues of methodology but rather the practical subjects such as cataloguing, user need assessment, the use of emerging technologies etc.

DATA CHARACTERISTICS

The nature of data

Results on table 2 below show that researchers in African Librarianship rely heavily on primary sources of data. Eighty

percent of the empirical papers in the journal are based on primary data.

Table 2: Data collection methods

Data Collection Method	Frequency and Percent Distributions
Questionnaire	20 (67%)
Observations	3 (10%)
Interviews	1 (3%)
Census/Vital Statistics	0 (0%)
Records/Documents	2 (7%)
Other	4 (13%)
Total	30 100%

The questionnaire is the dominant technique of data collection. Sixty seven percent of researchers use this technique of data collection. Only 7% of the papers use secondary data with total reliance on records and documents. Census data and vital statistics are not used at all. The study also shows that researchers rarely employ a combination of techniques of data collection. The total dependence on a single technique of data collection (ie. questionnaire) or lack of diversity in data collection is a serious deficit in African Librarianship. Equally conspicuous is the non-use of current qualitative techniques of data collection such as Focus Group Discussions (FGDs) and Action Research in the African Librarianship. These qualitative methods of data collection have been found to be very useful by other social scientists conducting research in Africa. The dominance of questionnaire is due to two major factors. One, is the lack of exposure on the part of librarians to other research methodologies in library schools. Second, questionnaires are easy to administer and cheap to fund and research in African Librarianship is not endowed with generous grants.

Sampling

Fifty nine percent of empirical studies do not employ any sampling procedures but are based on enumeration. Eighty five percent of articles indicate the universe from which samples are drawn or enumeration made. Both probability and non-probability sampling procedures are equally used. About 21% of articles employ probability-sampling techniques and similar proportion use non-probability-sampling techniques. This implies that very limited inferences can be drawn from the findings. Thus research in African Librarianship is often localized and cannot be generalized beyond the sample study. Twenty percent of all papers did not indicate the sample sizes. The problem of small sample size is endemic to much research in African Librarianship. Seventy one percent of all articles indicating sample size use, have sample sizes of less than 100 cases. Twenty five percent have between 101 and 299 cases. The effect of small sample sizes coupled with non-probability sampling strategies is that it is difficult to make any meaningful theoretical or applied conclusions based on research findings in African Librarianship. Furthermore, the use of non-probability sampling increases the likelihood of biases in research findings making replication of research findings or building cumulative body of knowledge in African Librarianship difficult if not outright impossible.

Additionally, given the small sample sizes comparisons and powerful statistical data analysis cannot be undertaken. The inability to make comparisons means research in African Librarianship is by and large not of explanatory nature and neither does it test hypotheses to examine relationship between variables. This type of research is not very useful in advancing the frontiers of knowledge in the discipline in general and African Librarianship in particular. Limited financial resources to undertake large-scale studies could partly explain the small sample sizes.

DATA ANALYSIS

This is the weakest part of research methodology in African Librarianship. Research without exploring relationships between variables and explanation is not scientific. The univariate analysis is the dominant type of analysis employed in the reviewed articles. Studies use rudimentary statistical analysis. The most complex

analysis involves the use of correlation coefficient. *Why this low levels of statistical analysis?* One possibility is that authors have not been trained in the use of the powerful techniques of data analysis. The other possibility is that given the small sample sizes and non-probability sampling procedure used in the studies, powerful statistical analyses are not appropriate. This pattern of development in the analysis of data in African Librarianship is in sharp contrast to patterns of data analysis that are emerging in the discipline globally. The worldwide trend is towards complex models in data analysis in library and information science (Peter, 2001). Limited use of tests of significance is typical of research that does not employ multivariate models or analysis. Research in African Librarianship is mainly descriptive and univariate in nature.

Data collection focuses on the individual thus the individual is the dominant unit of analysis in research in African Librarianship. Forty seven percent of papers reviewed uses the individual as the unit of analysis followed by organizations (30%).

Table 4: Unit of analyses

Unit of Analysis	Frequency and percent distributions
Individual	14 (47%)
Organizations	9 (30%)
Books	6 (20%)
Computers	1 (3%)
Total	30 (100%)

Ninety six percent of papers do not provide any justification for the techniques of data analysis used.

Seventy three percent of all papers use univariate analysis and the remaining 27% use bivariate analysis. None of the papers use multivariate analysis. Analysis of data of research in African Librarianship is a simple one with no attempt being made at explanation or comparisons.

Results on table 4 reveal that simple descriptions are the major technique of data analysis of research in African

Librarianship. About 67% of all empirical papers simply describe the findings. This is congruent with the dominant type of data analysis, which is univariate in nature. Tabular analysis is used in 27% of the papers. While these are the primary techniques of data analysis, substantial numbers of studies employ more than one technique of data analysis. A combination of descriptions and some tabular analysis is a common feature.

Table 4: Statistical techniques of data analysis used

Primary technique of data analysis	Frequency and percent distributions
Description	20 (67%)
Tabular analysis	8 (27%)
Non-parametric test of difference/independence (χ^2)	0 (0%)
Non-parametric association (e.g gamma, rho)	0 (%)
Parametric association (e.g pearsonian r)	1 (3%)
Analysis of variance, t, z	1 (3%)
Regression and covariance	0 (0%)
Path analysis	0 (0%)
Other (e.g lisrel, discriminant analysis)	0 (0%)
Total	100%

Researchers in African Librarianship do not use complex statistical techniques of data analysis such as regression, path, LISREL etc. It is significant to note that even when type of analysis is bivariate and the presentations are done in tabular forms no

attempt is made to examine the relationship between variables and examine the strength of the relationship. Only in two out of five papers employing bivariate analysis is the test of significance reported. With current developments in computer programmes that can process large quantities of data and undertake complex statistical analysis researchers in the field may need some retraining to enable them take full advantage of such new developments.

SUMMARY AND CONCLUSIONS

This review of the state of research methodology in African Librarianship has revealed major weaknesses in this sub-field. First, most research is not grounded on theory and research findings do not lead to theory construction. Second, operationalization (i.e. the operational definition of underlying concepts or variables) of measurements are not provided. Third, there is total dependence on questionnaire as the method of data collection. However there is no pattern of development towards either qualitative or quantitative methodology. This is symptomatic of a discipline that is neither growing theoretically or methodologically. Research tradition in LIS is deeply rooted in western science and consequently culturally biased and thus its relevance to African context needs close scrutiny. Consequently, there is a need to re-conceptualize LIS in African context. Fourth, research in African Librarianship employs crude sampling procedures and data analysis techniques. Fifth, overall the quality of research and hence the state of methodology in African Librarianship is far from satisfactory.

Several factors seem to inhibit the developments of research methodology in African Librarianship. These include first, limited amount of funding available for research in librarianship in Africa. Second, is the type of training, which does not emphasize issues of methodology and theory. Third, limited opportunities for PhD, programmes in LIS in Africa. Fourth, is the problem of limited publishing avenues for publication of research findings so that they get the exposure and scrutiny they deserve.

RECOMMENDATIONS

A number of recommendations made include first, the need to provide adequate funding for research in African Librarianship. Library schools in Africa should have some funds for their academic staff to conduct research in library and information science issues. Second, journal editors should only publish articles that are based on scientific model of research. Third library schools in Africa should revise graduate curricula so that it is based in the context of African realities i.e. re-conceptualizing LIS in the African situation. Finally, library staff with academic status in the universities in Africa needs re-training in research methodologies.

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