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The Use of Information Sources and Services and Its Effect on the Research Output of Social Scientists in Nigerian Universities

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Introduction

In the last ten years, the demand for higher education in Nigeria, especially in core social science disciplines (geography, economics, political science, psychology and sociology) has been increasing. This is partly due to the nature of Nigerian economy, which is highly import-dependent, consumer-oriented, and thrives on distributive trade. In a nutshell, it is a nation that is service-oriented. Consequently, the Nigerian economy has a high demand for university graduates specializing in these core social science subjects. The universities are saddled with the responsibility of producing highly-skilled people to produce value-added goods and services for national development. Beside this statutory function, they must also teach, do research and render community service.

The quality of teaching, research, and community service of social scientists in any university system depends on information sources and services. Information availability, accessibility, and use are essential to the teaching, research, and service activities of social scientists in the Nigerian university system. One of the critical factors used in determining productivity is research output. Local and international recognition and respect are partly determined by published works. Some highly productive scholars in the social science disciplines have been found to be more information rich than their counterparts. Meadow and Yuan (1997) view information as a message that changes the recipient's knowledge base. This implies that information adds significantly to the existing knowledge of the user. The information resources and services available in institutional information systems (library, archives, records offices, documentation centers, and data centers) must be capable of supporting research activities. Shokeen and Kaushik (2002) report that social scientists of Haryana universities in India most frequently used current journals, textbooks, and reference books. Agba, Kigongo-Bukenya, and Nyumba (2004) state that the shift from print to electronic information means that both academic staff and students in a university system must use these resources for better quality, efficient, and effective research more than ever. Milne (1999) submits that CD-ROMs had become more important to social scientists than scientists and academic humanities. This may be due to broad spectrum of information in social science available in CD-ROM databases. Line (2000) states that social science researchers also tend to consult experts, abstracts, or indexes and discuss matters with their colleagues. Meho and Tibbo (2003) studied the information-seeking behaviour of social scientists in stateless nations, and reported that they relied heavily on personal collections, field work data, and grey literature as major information sources. Very little new research or even replication of older studies has been done in Africa or elsewhere on social science information sources and systems. Past studies on information seeking behaviour by social scientists did not relate it to their research productivity. This paper focuses on the effect the use of information sources and services on the research productivity of social scientists in Nigerian universities.

Objectives of the Study

This study aims at achieving the following objectives:

- To determine the major information sources and services used by the respondents when conducting research.
- To ascertain the criteria used by the respondents in evaluating information resources available to them when embarking on research.
- To investigate any significant difference between male and female use of information sources in social science research in Nigerian universities.
- To determine if there is a significant relationship between research output and age of the respondents.
- To find out if there are main and interaction effects of information sources and services use on research output of social scientists in the Nigerian universities.

Literature Review

Buckland (1991) defines information as a process which occurs in the mind when a problem is united with data that can help solve it. Information is part of a process of converting messages received into knowledge. Aiyepoku (1992) views information as something that reduces uncertainty in decision-making. The survival of a social scientist in any university system depends on the ability to exploit available information resources. Line (1971) observes that social scientists do not use formal information tools like bibliographies or reference databases, but rely on personal collections, browsing journals, and citations in other publications. Stoan (1991) and Hurych (1986) agree with this finding by submitting that only a small percentage of social sciences regularly use formal information resources such as databases.

Roberts (1980) asserts social scientists use information resources far less than those in the sciences. The problems facing social scientists in the Nigerian university system include: poor searching skills, inadequate current library materials, ineffective provision of information services, and poor knowledge of existing information products and services in the library. Tyagi (1994) says that the problem is compounded when indigenous information resources in developing countries are not well known. Hobohm (1999) asserts that practitioners of the applied social sciences working in developing countries have a particularly urgent need for better information resources, which could be addressed using indigenous information and knowledge. Haladu (1989) stresses the importance of both formal and informal information exchange.

Aya (2000) investigates the use of the Internet by social scientists and academics in Abuja, Nigeria, and reports that used the Internet to get information. Alasa and Kalechukwu (1999) point out that the Internet gives access to archives, expertise, and convenient and updated information. Bright (1999) reports that social scientists in Mexico used abstracts and indexes, citations in books and journals, colleagues, tables of contents, book reviews, and browsed library collections for their information needs. White (1973) submits that the most frequently used source of information by social scientists is journals. Kwafo-Akoto (1995) makes the case for establishing a social science data archive in Botswana, to give access to primary data for secondary analysis and teaching. Hobohm (1999) states that data used by social scientists does not always come from social science research, but is mainly from other resources not indexed in social sciences information systems. In Nigeria, social scientists obtain data from the national statistical information system, feasibility reports, and government documents. The inability of university libraries to meet their information requirements may have forced them to use personal collections when conducting research. Rosenberg (1997) corroborates this view in describing the marginalisation of university library in Africa, the growth of departmental libraries, and the adoption of alternative ways of obtaining information. Alemna, Chifwepa, and Rosenberg (2000) survey the use of

African-published journals in two African universities and reported that those journals are not popular with academics because of lack of bibliographic and physical access, although African-published journals are important to teaching and research in Nigerian institutions of higher learning.

Research methodology

The study population is social scientists in the thirteen Nigerian federal universities that were founded between 1948 and 1975, and which offer at least three of the core disciplines in social science (geography, economics, psychology, sociology, anthropology, and political science). These universities account for about 70 percent of the annual supply of social science graduates to Nigerian labour market. They are first and second generation universities, with a reputation for producing highly-skilled human resources. Simple cluster sampling with equal allocation was used to select 35 social scientists each of 9 of the 13 universities. A self-developed questionnaire called Information Use and Research Output of Social Scientists (IUROSS) with a cronbach-Alpha reliability coefficient ($\alpha = 0.78$) was used on a total sample of 315 social scientists, of which 281 responded and had questionnaires that were valid for analysis, a response rate of 89.2 percent. The data on questionnaire administration and retrieval is reflected in table 1.

Table 1: Questionnaire Administration and Retrieval

	Date of Establishment	No. sampled	No. of responses
University of Ibadan, Ibadan *	1948	35	35
University of Nigeria, Nsukka*	1960	35	35
Ahmadu Bello University, Zaria *	1962	35	30
University of Lagos, Lagos *	1962	35	35
Obafemi Awolowo, Ile-Ife*	1962	35	35
University of Benin, Benin	1972		
Bayero University, Kano			
University of Calabar, Calabar*	1975	35	25
University of Ilorin, Ilorin *	1975	35	30
University of Jos, Jos*			35
University of Maiduguri, Maiduguri			
Usman Danfodio University, Sokoto*		26	
University of Port Harcourt, Port Harcourt			

* Selected universities

Data Analysis and Discussion

Of the 281 respondents, 191 (68%) are male, while 90 (32%) are female. Their ages are between 32 and 58 years. 172 (61.2%) hold PhDs and 109 (38.8%) master's degrees. Their length of service ranges from 3 to 28 years with a mean ($X = 24$, $SD = 3.4$ years). Of the 281 respondents, 65 (23.1%) are hold the rank of Assistant Lecturer, 44 (15.7%) are Lecturer II, 82 (29.2%) are Lecturer I, 55 (19.6%) are Senior Lecturer, 20 (7.1%) are Readers, and 15 (5.3%) are Professor. Social scientists use conceptual, methodological, historical, and statistical information to do teaching and research.

Table 2: Mean Scores of Information Sources Used by the Respondents

Source	X	SD	Variance
Journals	4.98	0.80	0.64
Abstracts/Indexes	4.96	0.76	0.58
Colleagues	4.95	0.74	0.55
Statistical publications	4.93	0.70	0.49
Conferences papers	4.90	0.58	0.34
Textbooks	3.94	0.98	0.96
Government documents	3.94	0.96	0.92
Theses and Dissertations	3.92	0.94	0.88
Newspapers/Magazines	3.91	0.90	0.81
Reports	2.89	0.44	0.19
Radio/Television	2.80	0.36	0.13
Internet/CD-ROM database	1.96	0.28	0.08
Encyclopaedia	1.92	0.22	0.05
Directories/Handbooks	1.88	0.19	0.04

Respondents were asked to rate a list of information sources on a 5-point Likert scale: very heavily used = 5, heavily used = 4, frequently used = 3, occasionally used = 2, never used = 1. Mean and standard deviation of each information source were computed. The major sources of information are journals, abstracts and indexes, colleagues, statistical publications, and conference papers. It is not a surprise to find that journals top the list. This finding is in line with that of Copper (1998) who reports that social scientists meet their information needs from serials, textbooks, and statistical publications.

Table 3: Mean Number of Journals Read on a Regular Basis by Subject Disciplines of the Respondents

Source	X	SD	Variance
Economics	6.0	0.28	0.08
Geography	5.0	0.18	0.03
Psychology	5.0	0.22	0.05
Political Science	6.0	0.25	0.06
Sociology/Anthropology	4.0	0.16	0.03
Overall	7.0	0.26	0.07

The mean number of journals read on a regularly basis ranges from 4 to 6 and varies by discipline. The average number of journals read on a regular basis reflects a level of current awareness. Social scientists generally find journals indispensable to teaching and research.

The university library is set up to provide effective information services in support of teaching and research. How well Nigerian university libraries achieve this objective depends on the staff, technology, budget, and user education programme. If university information services did not meet the needs of Nigerian social scientists, they would use other available systems. Respondents were asked to rate information services on a 5-point Likert scale: very heavily used = 5, heavily used = 4, frequently used = 3, occasionally used = 2, and never used = 1.

Table 4: Mean Scores of Information Services Used by the Respondents

Source	X	SD	Variance
Current awareness (CAS)	4.96	0.85	0.72
Statistical Data Analysis	4.96	0.84	0.71
Selective dissemination of information (SDI)	4.92	0.82	0.67
Document delivery/loaning	4.90	0.79	0.62
Computer word processing	4.86	0.74	0.55
Photocopying	3.49	0.52	0.27
Referral	3.48	0.52	0.27
Internet/E-mail	2.36	0.48	0.23
CD-ROM database searching	2.20	0.39	0.15
Indexing and Abstracting	1.44	0.24	0.06
Translation	1.44	0.23	0.05
Bindery	1.42	0.09	0.01
Microfilming	1.41	0.08	0.01
Facsimile	1.40	0.06	0.004

The major information services used by the respondents in support of their research activities are current awareness, statistical data analysis, selective dissemination of information (SDI), document delivery/loan, and word processing. This supports the earlier report of Popoola (2000) that the most significant information services used by the social scientists in the Nigerian first generation universities in support of their research programmes were current awareness, statistical data analysis, photocopying, word processing, and referencing. It is surprising to find that electronic information services-Internet/E-mail with a mean score of only 2.36, and CD-ROM database searching with only 2.20. Preschel and Woods (1989) submit that the academic social sciences are not on the leading edge of information technology for reasons such as costs, interdisciplinary structure, imprecise terminology in the subject areas; and possibly a lack of return on investment. This finding is also in line with the claim of Roberts (1980) that databases are not designed with the real interests of social scientists in mind.

When searching for information, academic social scientists interact with various resources. It is therefore of interest to know the criteria used in selecting information resources.

Table 5: Criteria Used by Respondents in Evaluating Information Resources in Support of Research

Criteria	Used	%	Not used	%	Total
Purpose	143	50.9	138	49.1	281
Reliability	252	89.7	29	10.3	281
Completeness	233	82.9	48	17.1	281
Comprehensiveness	251	89.3	30	10.7	281
Audience	100	35.6	181	64.4	281
Currency of information	264	93.9	17	6.1	281
Accuracy	240	85.4	41	14.6	281
Relevance	200	71.2	81	28.8	281
Ease of access	155	55.2	126	44.8	281

Cost effectiveness	147	52.3	134	47.7	281
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Table 5 shows clearly that respondents evaluate information resources on their reliability, completeness, comprehensiveness, currency of information, accuracy, and relevance.

Table 6 shows the test of significant difference between male and female use of information sources. The mean score of male use of information sources is 18.0 while that of the female is 16.2. Despite the fact that the female score is lower, the Z-score test shows no significant difference ($Z = 1.71$, $P > 0.05$).

Table 6: Summary of Test of Significant Difference Between Male and Female Use of Information Sources in Social Science Research

Sex	n	X	SD	Z	Sig.P
Male	205	18.0	8.4		
				1.71	0.066
Female	76	16.2	7.6		

The research output of respondents was measured by the number of publications produced in a given time period. University regulations states that academic staff are evaluated for promotion every three years. Respondents were asked the number of publications appearing in referred works in the last three years by type of publication (see Table 7).

Table 7: Mean Research Output of the Respondents by Type of Publication

Publication	n	X	SD
Books	15	2.0	0.25
Chapters in Books	120	8.0	1.32
Journal Articles	254	12.0	2.40
Conference Proceedings	188	5.0	1.16
Technical Reports	108	8.0	1.24
Overall		7.0	1.22

Journal articles are the main form of publication among respondents, who produced an average of 7 publications during the last three years with a mean of approximately 2 publications per year.

Table 8: Summary of Test of Significant Relationship Between Age and Research Output of Social Scientists in Nigerian Federal Universities

Variable	n	X	SD	df	r	Sig.P
Age	281	44.8	8.40			
				2.79	-0.71	0.028
Research output	281	7.0	1.22			

The mean age of the respondents is 44.8 years. There is a high negative relationship between age and research output of the respondents ($r = -0.741$, $P < 0.05$). This implies that the higher the age, the lower the research output and vice-versa.

Table 9: 2-Way ANOVA Showing Interaction Between Use of Information Sources and Services and Research Output of Social Scientists in Nigerian Federal Universities

Source of variation	DF	SS	MS	F	vSig. P
Information Sources Utilization(ISU ₁)	1	1324.8	1324.8	26.50*	0.022
Information Sources Utilization(ISU ₂)	1	1436.6	1436.6	28.73*	0.038
Interaction(IS ₁ x ISU ₂)	1	898.4	898.4	17.97*	0.016
Residual	277	13850.0	50.0		
Total	280				

Table 9 presents the summary of 2-way Analysis of Variance (ANOVA) of the interaction effects between use of information sources and services and research output. The results show main and interaction effects. Use of information sources or services will improve the research output of the respondents, and if information sources and services available in their institutional information system or elsewhere are used, their research output is more significantly enhanced.

Conclusion and Recommendations

Information is an essential commodity that is needed for improved productivity of social scientists in the Nigerian university system. The popular slogan “publish or perish” shows that more emphasis is put on publication than on teaching or community service. Scholars who have access to information and use it wisely can survive in the Nigerian university system. This study establishes that use of information sources and services have main and interaction effects on the research output of the social scientists in the first and second generation universities in Nigeria, that they produce an average of two publications per year. They read an average of seven journals on a regular basis and evaluate information sources on reliability, completeness, comprehensiveness, currency, accuracy, and relevance.

Based on these findings, it is recommended that:

- Social scientists in Nigerian universities should endeavour to use electronic information resources and services in support of their research activities;
- University libraries should acquire current information materials for their use;
- Library management should organize information literacy programmes for social scientists to improve their information searching and retrieval skills; and
- Information sources and services available to them should be used for their improved productivity.

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