

Original Research Article

Library Information Services, Resources and Research Productivity of Agricultural Scientists from Agriculture Research Institutes in Nigeria

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Abstract: The study was designed to ascertain the use of library information services, resources and research productivity effectiveness of agricultural scientists in Nigeria specifically; the study determined whether there is different between research productivity effectiveness of agricultural scientists in the universities of agriculture and that of agricultural research institute. The study was guided by two research questions and two hypotheses. The researchers employed a descriptive survey research design and questionnaire was used for data collection. 701 respondents (460 and 241) from universities of agriculture and agricultural research institutes respectively were sampled out from a population of 1465 for the study. Data were analyzed using mean, and standard deviation, while t-test was used to test the hypotheses. The finding showed that library information services were utilized to a large extent while most library information resources also had 2.50 and above mean score of utilization. The finding also indicated that there was no significant difference in the research productivity for agricultural scientists in the universities of agriculture and agricultural research institutes in Nigeria. It was recommended that agricultural scientists should effectively utilize library information services and resources especially e-resources and e-services to enhance their resource productivity.

Keywords: Library Information Services, Information Resources, Research Productivity, Agricultural Scientist Research Institutes, Nigeria.

INTRODUCTION

The thrust of every library including agricultural libraries is to provide information services and resources that will enhance the study, and research productivity of the user community. Making information services and resources readily available and the consequent accessibility and utilization by library users (agricultural scientist) could significantly increase their research productivity (Nwagwu and Iheanatu, 2011). Thus the nature and quality of library information services and resources provided would have a bearing on the quality of study and research productivity outputs of the users. Therefore timeliness and reliable services in addition with relevant resources could be the basic desirable characteristics of library and information service provision (Roberson, 2005).

Rhima (2014) posits that library information services may be viewed as those mechanisms designed and deployed by the library to delivery services to users. These mechanism include reference, current awareness services (CAS), selective dissemination of information (SDI), inter-library loan, (ILL), indexing and abstracting, CD-Rom database search etc., as well as digital age internet based and business bureau services such as e-mail, world wide web (www), photocopying, facsimile, word processing etc. These services are provided to link the users to library resources. On the other hand, library information resources may be defined as those information bearing materials that are in both printed and electronic format, including textbook, journals, indexes, abstracts, newspapers and magazines, reports, CD-Rom, databases, internet/Email, videotape/cassettes, diskettes, magnetic disk, computers etc. Poopola and Haliso (2009) maintained that library information resources are the raw materials that the libraries acquire, catalogue, store and make available and accessible for use by library clientele. When these library and information services are provided and adequately exploited by agricultural scientists, their research productivity would be enhanced.

Agricultural scientists are those individuals' researchers and practitioners in agriculture and related areas that are committed to sharing information and working together to solve agricultural problems. They include soil scientists, crop scientists, weed scientists, agricultural economists, agricultural engineers etc. These individuals are expected to use library information services and resources to solve agricultural problems through research and as a consequence, enhance food productivity of the nation (Uganneya, 2011).

Research productivity is the output of research work in form of creative work, conference paper, innovation, and research books including critical scholarly texts, new interpretation of historical events and new ideas or perspectives based on established research findings.

Research productive agricultural scientists is defined as those agricultural scientists with a demonstration of on-going commitment to research which meet the minimum threshold of performance prescribed by a given institution (Southern Cross University, 2005). Southern Cross University maintained that research productive staffs are those individual researchers/scientists who meet the requirement for a minimum publication of five outputs in the past five years as classified as:

- Research book (counts as five outputs)
- Chapter in research (count as one output)
- Referred journal article (count as one output)
- Creative works (counts as one output)
- Received reportable external research income of more than \$50,000 in the past five years.
- Published a further three (3) publications in the past five years that satisfy the requirement of the institution.

The need for agricultural information services and resources, provision and utilization by agricultural scientists in Nigeria cannot be overemphasized. This is because Nigeria is pre-dominantly an agricultural country. In spite the pre-eminent position of the petroleum sub-sector, the agricultural sector still plays prominent role in the Nigeria economic development contributing to 40% of the Nation GPA and employing about 70% of the active population. It is in recognition of this important role that agriculture plays that the government of Nigeria established libraries in all agricultural research institutes, including universities of agriculture as information support system (ISSs). Uganneya, (2011) is of the view that these libraries have the capacity to make impact on the research productivity of agricultural scientists, but in most cases, the needed impact is lacking or inadequate. For example, the Global Hunger Index published by the International Food Policy Research institute (IFPRI) cited by Federal Ministry of Agriculture and Natural Resources (FMANR) (2006) which ranked developing countries on the basis of then dimension of hunger in the range of 0 – 100 with '0' as state of "No hunger" and 100 as the worst states of hunger placed Nigeria at "20" in the rank of 10 – 20 labeled as having a serious state of hunger among compared sub-Saharan African countries. Furthermore, the food and agricultural organization (FAO) also cited by FMANR (2006) reported that Nigeria had over 12 million people reported as undernourished as at 2003.

It is in view of these ugly realities that this study sought to investigate the use of library information services and resources and agricultural research effectiveness of agricultural scientists in Nigeria. To link use of library information services and resources to research productivity effectiveness of research hers, this paper has to propose the extent to which each selected services and resources was used by the agricultural scientists. It was expected that the extent to which the library services and resources was used would be an indication of their impact on research productivity effectiveness of the agricultural scientists.

Problem Statement and Objectives

In the area of agricultural science, information resources and services in Africa and in Nigeria in particular, there has been no study on the use of library information resource and services in relation to research productivity of agricultural scientists in agricultural research institution in Nigeria. It is therefore necessary to find out whatever there is any empirical evidence in relationship between the use of library information resources and services and research productivity of agricultural scientists in Nigeria. It was in the light of this that this study investigated the use of library information resources and services and research productivity of agricultural scientists in Nigeria. The specific objectives were to:

- a) Find out the extent to which library information services were used by agricultural scientists in Nigeria agriculture research institutes.
- b) Ascertain the extent to which library information resources were used by agricultural scientists in Nigeria agricultural research institutes.

Research Questions

- a) To what extent was library information services used for research productivity by agricultural scientists in Nigeria agricultural research institutes?

- b) To what extent were library information resources used by agricultural scientists for research productivity in Nigeria agricultural research institutes in Nigeria?

Hypotheses

- H₀₁: There is no significant difference between the use of library information services and research productivity of agricultural scientists in agricultural research institutes and university of agriculture in Nigeria.
 H₀₂: There is no significant difference between the use of library information resources and research productivity of agricultural scientists in agricultural research institutes and university of agriculture in Nigeria.

The findings from this study on the use of library information resources and services and research productivity of agricultural scientists in agricultural research institutes in Nigeria may positively influence research productivity of agricultural scientist in Nigeria and it would also assist agricultural research library managers in Nigeria to improve their library information services and resources for effective service delivery. The findings will also provide insight for agricultural scientists on how their further exploitation and utilization of library information services and resources would enhance their research productivity. This may lead to enhance collaboration and support between agricultural scientists and library managers for better library development in Nigeria.

METHODOLOGY

The population of the study consisted of 1455 agricultural scientists/researchers from three universities of agriculture and three agricultural research institutes in Nigeria. Stratified sampling technique was used to select 701 respondents for the study. A self-developed questionnaire titled “Use of Library Information Resources and Services by Agricultural Scientists in Nigeria (ULIRSIN) scale was used to collect dat. The questionnaire had a Cronbach Alpha reliability Coefficient of 0.65 for library information services and 0.85 for the library information resources sub-section six trained research assistants were used to administer the questionnaire and subsequent collation. A total number of 701 (460 from university of agriculture and 241 from agricultural research institutes) were sampled out for the study. Data collected were analyzed using mean and standard deviation. Mean score of 2.5 and above was rated accepted while a mean score of less than 2.5 was rated rejected.

FINDINGS AND DISCUSSION

Population and Sample

Table 1 shows the distribution of respondents by research institute and the sample. According to the table, 196 were sampled out from a population of 327 from university of Agriculture Makurdi, 212 out of 387 from University of Agriculture, Abeokute and 52 out of 171 from University of Agriculture Umudike. Similarly, 72 respondents were sampled out of 165 from National Cocoa Resource Institute Ibadan, 91 out of 205 from National Veterinary Resources Institute Vom and 78 out of National Root Resource Institute Umudike.

Table-1: Distribution of Respondents by Agriculture Research Institutes

Agriculture Resource Institute	Population	Sample	Total
University of Agriculture, Makurdi	327	196	
University of Agriculture, Abeokuta	387	212	
University of Agriculture Umudike	171	52	460
Natural Cocoa Resource Institutes, Ibadan	165	72	
National Veterinary Resources Institute, Vom	205	91	
Natural Rootcrop Resource Institute Umudike	200	78	241
Total	1455		701

Extent of Utilization of Library Information Services

In order to elicit data on the extent of utilization of the various library information services, the respondents were asked to indicate the extent to which the various services were used. On a 4-point scale, very great extent (VGE), 4; great extent (GE), 3, moderate extent (ME) 2, and No extent (NO) 1. The mean score and standard deviation score of each item were then calculated as shown in Table 2. The results show that CAS, Internet/e-mail, computer word processing, CD-Rom database searching were used to a very great extent, while SDI, Document delivery/wearing, indexing/abstracting, photocopying, references, Binding/micro filming were used to a great extent and electronic data interchange was moderately used.

Table-2: Mean Score of Library Information Services Utilization by the Respondent

Services	Mean Score	Standard Deviation	Decision
Current Awareness	3.05	0.970	Accepted
Selective Dissemination of Information	2.89	1.100	Accepted
Document Delivery/Loaning	2.63	0.955	Accepted
Electronic Data Inter-Change	2.47	1.306	Rejected
Internet/E-mail	3.00	0.973	Accepted
Indexing/Abstracting	2.90	1.071	Accepted
Reference	2.55	1.099	Accepted
Photocopying	2.90	1.071	Accepted
Computer word processing	3.05	1.025	Accepted
CD-Rom Database Searching	3.05	1.025	Accepted
Binding/Microtaling	2.89	1.100	Accepted

Extent of Utilization of Library Information Resources

The results in Table 3 show the extent to which library information resources were utilized by the respondents on a 4-point scale. Very great extent = 4, great extent = 3, moderate extent = 2 and no extent = 1. As provided in the table, Newspaper/Magazine, Library Staff, Internet/CD Rom database, Journals, Conference Proceeding, were used to a very great extent, encyclopedia, abstracts/indexes, were used to a great extent, while government publications, directories, handbooks, technical reports and dictionaries were moderately used.

Table-3: Mean Score of Library Information Resources Utilization by the Respondents

Resources	Means Score	Standard Deviation	Respondents
Newspaper/Magazine	3.05	1.025	Accepted
Dictionary	2.35	1.268	Accepted
Encyclopedia	2.50	1.192	Accepted
Library Staff	3.30	0.864	Accepted
Statistical Pub.	2.50	1.192	Accepted
Abstract/indexing	2.70	1.080	Accepted
Internet/CD-Rom database	3.05	0.970	Accepted
Technical report	2.31	0.477	Accepted
Conference proceedings	3.05	0.970	Accepted
Textbook	2.68	1.108	Accepted
Journals	3.05	0.970	Accepted
Audio-Visuals	2.90	1.071	Accepted
Directories/Handbooks	2.25	1.517	Accepted
Government Documents	2.40	1.095	Rejected

Research Productivity on Use of Library Services

Table 4 shows the prevalent library information services scores for research productivity effectiveness. These services include reference services with mean score of 3.10, followed by document delivery with means score of 2.96, CD/Rom searching with a mean score of 2.82, and current awareness services with 2.58 means score, while selective dissemination of information had 2.35 mean score.

Table-4: Mean Scores on Research Productivity of Respondents on Use of Library Services

Respondents		CAS	SDI	DD	IS	REF	CDRS
Agric Research Institutes	Mean Std	2.58(p) .665	2.35(N) .616	2.96(p) .617	3.10(p) .608	3.10(p) .623	2.82(p) .407
Universities of Agriculture	Mean Std.	2.54(p) .671	2.44(N) .703	2.91(p) .585	3.-2(p) .596	2.98(p) .635	2.78(p) .362

KEY: CAS = Current awareness services; DD = Document delivery; REF = Reference; SDI = Selective Dissemination of Sources; IS = Internet/E-mail; CDRS = CD Rom Services.

Research Productivity on Use of Library Resources

The results in Table 5 show that internet/CD-Rom database had a mean score of 2.78, followed by abstract/indexes with 2.70 mean score, journal with 2.60 mean score, technical report with 2.57 means score, which textbook and conference proceedings had 2.40 and 2.45 mean scores respectively.

Table-5: Mean Scores on Research Productivity of Respondents on Use of Library Resources

Respondents		TB	JOU	INT/CDRD	CP	TR	AB/IND
Research Institutes	Mean	2.40(N)	2.60(p)	2.78(p)	2.45(N)	2.57(p)	2.70(p)
	Std	.717	.715	.737	.723	.703	.693
Universities of Agriculture	Mean	2.44(N)	2.75(p)	2.68(p)	2.48(N)	2.50(p)	2.72(p)
	Std	.766	.667	.693	.736	.701	.732

Key: TB = Textbook; JOU = Journal; INT/CDRD = Internet/CD-Rom Database; CP = Conference paper; TR = Technical Report; AB/IND = Abstract/Indexes

Hypothesis One

There is no significant difference on the use of library information services and research productivity of agricultural scientists in the universities of agriculture and agricultural research institutes in Nigeria. To investigate whether there is significant difference between research productivity of agricultural scientists in the agricultural research institute and universities of agriculture, the hypothesis one is tested. Table 6 shows the result of the t-test on the research productivity of agricultural scientists in agricultural resource institutes and university of agriculture. It was seen from the Table 6 that the t-cal value is 0.525 while the probability value was 0.600. This implies that the t-cal is not significant at 0.05. This is because 0.05 is less than 0.600. This implies that there is no significant difference between the use of library services and research productivity of agricultural scientists in universities of agriculture and agricultural research institutes in Nigeria.

Table-6: t-test summary on the use of library information services and research productivity of agricultural scientists in University of Agriculture and Agricultural Research Institutes

Group	N	Mean	SD	t-value	Significant
Universities of Agriculture	460	2.6	0.5	0.525	0.600
Agricultural Research Institutes	241	2.6	0.5		

Hypothesis Two

There is no significant difference on the use of library information resources and research productivity of agricultural scientists in the agriculture research institute and that of universities of agriculture. To investigate whether there is a significant difference between research productivity of agriculture scientists in the agricultural research institutes and universities of agriculture, the hypothesis two is tested. Table 7 shows the results of the t-test on the research productivity of agricultural scientists in the agricultural research institute and universities of agriculture. It is seen from the Table 7 that the t-cal value was 0.158 while the significant value was 0.158; hence not significant. This implies that there is no significant difference on the use of library resources and research productivity of agricultural scientists in the agricultural research institute and that of universities of agriculture.

Table-7: t-test summary on the use of library information resources and research productivity of agricultural research scientists in the agricultural research institutes and universities of agriculture

Group	N	Mean	SD	t-value	Significant
Universities of Agriculture	460	2.8	0.4	1.413	0.158
Agricultural Research Institutes	241	2.9	0.4		

DISCUSSION

Information Services and Research Productivity

This study found out that library information services used mostly by the respondents were current awareness, computer-word process, CD-Rom database searching, Internet/e-Mail, followed by photocopying, indexing/abstract, and selective dissemination of information. This finding is in agreement with the study of Popoola and Haliso (2009) who reported that most prevailing library information services utilized by the respondents were current awareness, selective dissemination of information, document delivery/loaning of materials, photocopying, reference, CD-Rom database searching and Internet/E-mail. This suggests that these services enhanced research productivity of agricultural scientists. It is interesting to note that electronic data interchange and reference services were the least reported used by the respondents in this study. This might imply that electronic data inter-change services are not common in the institutions studies, or that most of the respondents were not aware of its availability. In the case of reference service, it could imply that internet/e-mail has presented a better alternative to reference service. However, evidence from this study indicated that respondent made use of both traditional and electronic library information services in the course of their research activities, indicating that both of them are crucial to research activities.

Libraries Services and Research Productivity

The library information resources heavily utilized by the respondents in this study easily catch the eye. These resources included library staff, newspaper/magazine journal, conference papers, internet/CD-Rom database, audio-visuals and abstracts/indexes. This finding is almost in agreement with the assertion made by Watson (2002) that scientists in general make regular use of journal, newspaper/magazine, internet/CD-Rom database because they present similar characteristics i.e. they contain current information that are useful for research activities. Reliance on these materials could also indicate possible impact on research. The findings also showed that the least used library information resources including dictionary, directories, handbooks, and government documents, textbook and technical reports among others. This indicates that agricultural scientists to a large extent do not depend on these information resources for their research activities. The finding is in agreement with Hurych (1996) and Stoan (1998) who reported that, generally, less than ten percent of both agricultural scientists and social scientists make regular use of secondary and tertiary information scores for research purposes.

CONCLUSION AND RECOMMENDATIONS

Agriculture Scientists in the universities and research institutions in Nigeria require quality library information services and relevance information resources in order to enhance their study and research output. The libraries are social institutions established to provide these quality services and relevant information resources. The global growth in agricultural information services and resources in print and electronic formats has provided both opportunities and challenges for the libraries as they are expected to provide such resources and services which, when effectively exploited and utilized by agricultural scientists should translate into improved research productivity effectiveness. This expectation triggered this current study, which investigated the use of library information services, resources and research productivity of agricultural scientists in Nigeria. The findings of the study show that most of traditional services and resources as well as electronic formats were effectively utilized, as a consequence enhanced the research productivity of the respondents. It was therefore recommended that libraries should provide e-resources and e-services and encourage agricultural researches to make adequate use of these services to enhance the research productivity. It is therefore recommended that (a) agricultural research libraries should continue to improve the quality of library information services and resources; and (b) encourage respondents to adequately utilize electronic services and resource by of current awareness (CA) services.

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