

Accessibility and Utilization Pattern of Open Data among Agricultural Science Researchers in South Western Nigeria

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Abstract

The work is aimed at studying the accessibility and utilization pattern of open data among agricultural science researchers in South-Western Nigeria. This research was carried out in Osun, Oyo and Ekiti states. These states were randomly selected from South-Western states of Nigeria. Copies of well-structured questionnaires were used to elicit data from 113 Agricultural researchers and Lecturers both in Universities and research institutes in the study area. The finding of this study revealed that 51.3 % of respondents were aware of open data for research, 41.6 % of researchers agreed that data is open in Nigeria and 40.7 % were of opinion that data were inaccessible. The study concluded that researchers agitated more for open data for their research. It is therefore recommended that agencies responsible for uploading data should create more awareness on the importance of open data and see to it that research data were kept open. Also, government should help in the improvement of electric power supply and the availability of internet facilities in our research institutes and academic institutions for best utilization of open data.

Keywords: Accessibility, Utilization pattern, Open data, Researchers, Agricultural Science.

1. Introduction

The role of Open data in agricultural research cannot be overemphasized because Open data has the ability of transforming agriculture, provides adequate information for farmers and policy makers; as it also promotes efficient agricultural research advancement as posited by Woleki (2014). According to BAOI (2002) report during Budapest Declaration of 2002, " open access was expressed as freely available on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself". It is however, pertinent to point out that accessibility and utilization pattern of open data among Agricultural researchers in Nigeria particularly in the South-West States has not advanced much.

But nowadays, increasing journal subscription costs and decreasing government budgets to equip library both in research institutes and higher institutions of learning make it difficult for

researchers to discharge their responsibilities fully. Non openness of data or skyrocketing price of some journal might be a barrier to Agricultural research because acquisition of information enhances research. Therefore; removing access barriers to data flow will accelerate more scintillating researches not only in agriculture but also in other areas of life that matter to human existence. Even at global level, demands for open data are mounting everywhere, at a more practical and economical level as digital information continues to increase (Marco, 2011).

In spite of mounting cost pressures to access some journals, and other information; most agricultural NGOs like Global Open Data for Agriculture and Nutrition (GODAN), Consultative Group on International Agricultural Research (CGAIR) and Agriculture Information Management Standards (AIMS) have made efforts to make agricultural and nutritionally data available and accessible for unrestricted use worldwide because of non openness of data could lead to duplication of effort by other researcher who may not know that other researcher has worked on what he's trying to work out as reported by Woleki (2014). In this study, the accessibility and utilization pattern of open data in South-Western States of Nigeria were aimed at examining the utilization pattern of open data among agricultural science researchers, its effects on agricultural science research works and constraints among agricultural science researchers in South West area of Nigeria.

2. Methodology

The study was carried out in the South-Western part of Nigeria which consists of Oyo, Osun, Ekiti, Lagos, Ogun and Ondo States. Three (3) out of these six (6) states that make up South-Western Nigeria were randomly selected. The states selected were Osun, Oyo and Ekiti state. Agricultural Science Lecturers in the universities and researchers in the research institutions in these three states were the respondents.

In Osun state, University of Osun (UNIOSUN) and Obafemi Awolowo University (OAU) were chosen, while in Oyo state, Institute of Agricultural Research and Training (IART), Cocoa Research Institute of Nigeria (CRIN), *International Institute of Tropical Agriculture (IITA)*, Forest Research Institute (FRIN), National Horticultural Research Institute (NIHORT), Ladoke Akintola University of Technology (LAUTECH) and University of Ibadan(UI) were chosen. In Ekiti State, Ekiti State University (EKSU) and Federal *University, Oye-Ekiti (FUOYE)* were chosen. Altogether, one hundred and twenty one (121) copies of questionnaire were administered, eleven (11) questionnaires were allotted to each institution but only one hundred and thirteen (113) copies of the questionnaire were completed and returned.

Primary data for this study were collected from the respondents through structured interview schedule. This constituted both closed and open ended questions with respect to the objectives of this study. The statistical tools employed for the study includes both descriptive and inferential. The descriptive include frequency distribution and percentages, while chi square and correlation analysis were used to test the formulated hypotheses.

3. Results and Discussion

The findings of this study as presented in Table 1, reveals that majority of the respondents sampled were within the age ranges of 41-50 years. This shows that the agricultural science researchers were in their middle age. Majorities, (67.3 %) of the researchers were male, that there were more male researchers in the research institute than females. The finding is in line with what was reported by Adereti, Ibitunde & Oladipo, (2012) that majority of agricultural researchers in Nigeria are male and that 90.3 % of them were married and 61.9 % were PhD holders. This implies that majority of the researchers have attained the highest reduction qualification that requires frequent usage of data which will be more convenient when open.

Table 1: Distribution of Respondents according to Socio Economic Characteristics (Field Survey, 2015)

Characteristics	Frequency	Percentage (%)
Age		
≤ 30	14	12.4
31-40	26	23.0
41-50	51	45.1
51-60	21	18.6
61 above	1	0.9
Gender		
Male	76	67.3
Female	37	32.7
Marital Status		
Single	11	9.7
Married	102	90.3
Highest Education Qualification		
PhD	70	61.9
Master Degree	36	31.9
Bachelor Degree	7	6.2
Years of Experience		
0-5	12	10.6
6-10	33	29.2
11-15	21	18.6
16-20	24	21.2
21-25	20	17.7
26 and above	3	2.7
Type of Institution		
Research Institute	50	44.2
Academics Institute	63	55.8
Average monthly income		
101,000-150,000	13	11.5
151,000-200,000	31	27.4
≥ 201,000	69	61.1

This is in line with the work of Ayinde, Okorie, Torimiro & Ojide, (2011) which reported that there was positive relationship between the level of innovation management and educational level of the researchers. Table 1 also reveals that 29.2 % of the respondents had 6-10 years of experience and 44.2 % of them work in research institutes while 55.8% of them work in Universities. This means that most of the researchers were in academic set up. Moreover, majority of the sampled respondents (61.1%) collected two hundred and one thousand naira (₦201,000) as average monthly incomes.

Information in Table 2a shows that majority. (95.6%) of the researcher used internet and this make the internet usage as the major source of data used by the researchers. This is in line with the report of (Zaman & Hossain, 2012) who reported that majorities of researchers use internet for their researches.

Table 2a: Distribution of Respondents According to the Sources of Data used for Agricultural Science (Research Field Survey, 2015)

Sources of data used by the researcher	*Frequency	Percentage (%)
Internet	107	95.6
Library	72	63.7
Newspaper	28	24.8
Ministry	14	12.4
Software	40	35.4

*(Multiple Responses)

Table 2b further reveals that internet is frequently utilized as it occupied the 1st position in the ranking with mean score of 3.75, this is also in accord with the research of Ogunjobi and Fagbami (2012) who discovered that majority of researchers used internet as their source Agricultural information. The library usage was in the 2nd position with mean score of 2.75 and software with mean score of 2.20, newspapers with mean score of 2.17 and ministry with mean score of 1.94 occupying 3rd, 4th and 5th position respectively on the ranking. This implies that internet and library usage were the most frequent utilize data source among south west agricultural researchers.

Table 2b: Distribution of Respondents According to Data Source Usage by Agricultural Science Researchers (Field Survey, 2015)

Data Source Utilized	Always	Often	Rarely	Not at all	Mean Score	Ranking
Internet	89	20	4	0	3.75	1 st
Library	16	63	23	11	2.75	2 nd
Newspaper	20	20	33	40	2.17	4 th
Ministry	11	16	42	44	1.94	5 th
Software	20	26	23	44	2.20	3 rd

*(Multiple Responses)

Data presented in Table 3 shows that 42.48 % of the respondents indicated that data was accessible while 57.52 % indicated that data is not accessible. This indicates that majority of Agricultural science researchers are unable to access open data.

Table 3: Distribution of Respondents according to Accessibility of Data (Field Survey, 2015)

Accessibility of data	Frequency	Percentages
Accessible	48	42.48
Not Accessible	65	57.52

Table 4a shows 78.8, 43.4, 34.5, 27.4 and 65.5 % of Agricultural science researchers utilizes open data for research journal write up, writing inaugural speech, review research journal articles, writing text books and research works respectively 59.3 % of respondents utilized open data for writing theses and dissertations. This implies that majority of the researchers used open data for writing research journal.

Table 4a: Utilization Pattern of Open Data among Agricultural Science Researchers (Field Survey, 2015)

Utilization of open data	*Frequency	Percentage
Research journal articles	89	78.8
Review Research Journal Articles	39	34.5
Inaugural Speech	49	43.4
Books	31	27.4
Works	74	65.5
Theses and Dissertation	67	59.3

***(Multiple Responses)**

The results in Table 4b further shows that 37.2, 34.5 and 10.6 % of the researchers used Open data information weekly, daily and monthly respectively while 17.7 % used it occasionally.

Table 4b: Frequency of Open Data Usage among Agricultural Science Researchers (Field Survey, 2015)

How often do you use open data for your research	*Frequency	Percentage
Everyday	39	34.5
Weekly	42	37.2
Monthly	12	10.6
Occasionally	20	17.7

Information in Table 5 reveals that 54 % of the researchers were of the opinion that lack of internet access was their constraint to utilization of Open data while 31 % of researchers

believe that epileptic power supply was the constraint to open data utilization. Similarly, 15 % were of the opinion that the financial implication of accessing open data was the constraint to the utilization of open data. This implies that lack of internet access is the major constraint to utilization of open data by the Agricultural science researchers in South Western Nigeria

Table 5: Distribution of Respondents According to the Constraints to Utilization of Open Data by Agricultural Science Researchers (Field Survey, 2014)

Constraints	Frequency	Percentage
Epileptic power supply	35	31.0
Lack of Internet access	61	54.0
Financial constraint	17	15.0

4. Hypothesis Testing:

The result in Table 6 shows a significant relationship that existed between utilization patterns of open data and educational qualification, type of institution, years of experience, and average monthly income while age, gender and marital status are not significantly related. This implies that educational qualification, type of institution, years of experience, and average monthly income contributed significantly to utilization of open data among the agricultural science researchers in south west states of Nigeria.

Table 6: Correlation Analysis Showing Relationship between Some Selected Socioeconomic Characteristics and Utilization Pattern of Open Data (Field survey, 2015)

Variables	r-value	p-value	Decision
Age	-0.097	0.307	Not significant
Gender	-0.089	0.347	Not Significant
Marital Status	0.047	0.623	Not Significant
Educational Qualification	0.150	0.083	Significant
Type of Institution	0.127	0.079	Significant
Years of Experience	0.113	0.093	Significant
Average monthly income	0.160	0.090	Significant

Significant level = $P \leq 0.05$

5. Conclusion

The study concludes that agricultural researchers and Lecturers in selected institutions of South West States agitated for more access to open data for their researches as this would enhance their utilization pattern.

6. Recommendations

Based on the findings of this study, the following recommendations are made:

- i. Agencies responsible for uploading data and web developers should create more awareness on the importance of open data.
- ii. Government should help in the improvement of electric power supply and the availability of internet facilities in our research institutes and academic institutions as they serve as constraints to open data utilization.

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