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Citation Analysis of Dissertations and Theses Submitted to the Department of Agricultural Economics And Extension, Federal University of Technology Akure, Nigeria

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Introduction

Agricultural Economics and Extension programme is an aspect of social science courses in the field of agriculture which prepares and trains individual as an expert or specialist that manage agricultural business using economic principles. In the course of achieving this aim for master's and doctoral students in an institution of higher learning, dissertations and theses are submitted in support of candidature for an academic degree or professional qualification presenting the author's research and findings (Wikipedia, 2011). There is no clear distinction between thesis and dissertation. Some institutions use thesis for master's and dissertation for doctoral while others use it vice-versa depending on the policy of individual higher institution. While in Federal University of Technology Akure (FUTA), dissertation is use for master's and thesis for Ph.D. Interestingly, authors make use of information materials available in the library to prepare these theses and dissertations. These information materials according to Dulle, Lwehabura, Matovelo and Mulimila (2004) include books, research reports, theses, conference proceedings and scientific journals, among others.

In identifying the impact of the information materials on dissertation and thesis submitted, citation can be used. Citation is an analytical tool for examining reference citation in bibliometric studies (Tunon and Brydes, 2005). Citation analysis is also a branch of information science in which the researcher studies the way article in scholarly field are accessed and referenced (Meho, 2007). Theses and dissertations reflect the scholarly communication process (Sudhier and Kumar, 2010). While, in Aina (2006) opinion, citation analysis helps to determine position of authors and can help to identify useful journal. Johnson (2000) noted that citation studies reveal much about scholarly communication and can guide collection development in academic libraries. In academics, a lot of citation analysis had been recorded in engineering, library and information science, health, chemistry and other discipline while few exist in agricultural economics and extension. In this regard, the Department of Agricultural Economics and Extension (AEE), Federal University of Technology Akure is not left out.

The Federal University of Technology, Akure (FUTA) came into being in 1981. This was as a result of the Federal government decision to establish a university of technology in each of the states of the federation that has no federal university in Nigeria as at that time. FUTA runs programmes that cut across; diploma, pre-degree, undergraduate and postgraduate studies. It has six Schools (Faculties) while AEE is among the first five (5) Schools established. It was formerly named Farm Management and Extension Education before

it was changed to Agricultural Economics and Extension in 1993. The department that started with two (2) academic and one (1) non-academic staff had produced several graduate and postgraduate students.

The main objective of its programmes is to train graduate and postgraduate students in the field of Agricultural Economics and Extension with emphasis on the application of economic principles to the management of agricultural business. The programme is fully accredited by the Nigerian University Commission (NUC). It is good to note that the number of students seeking for admission into master's and doctoral (M and D) programme in the university (FUTA) has increased. As such, requires a corresponding growth in the holdings of the University Libraries, School of Agricultural and Agricultural Technology (SAAT) Library and AEE Library. In achieving this, some questions like; what types of information materials do M and D students often use? How recent are the materials? Which journals are the most frequently cited, among others come to mind. It is against this background that this study examines the theses and dissertations of postgraduate students submitted between 2004 - 2009 at the Department of AEE, FUTA using citation analysis.

Purposes of the Study

The main purpose of this study is to determine the information materials used in dissertations and theses submitted in the department of AEE, FUTA during the period of 2004 - 2009. The specific objectives are to;

- identify the types of information materials cited by master's and doctoral (M and D) students in the department of AEE;
- determine the distribution of citations of M and D students by year;
- determine the most frequently cited journals in AEE dissertation and thesis;
- ascertain the recency of cited materials in the department of AEE ;
- examine the types of authorship cited by M and D students;
- identify the highest and lowest citations by individual dissertation and thesis and;
- identify the most cited authors in the dissertation and thesis of M and D students.

Literature Review

Momoh (1996) noted that several researchers have used citation analysis to look at subject focus of postgraduate students and determine their journal needs. Kushkowski (2003) conducted a longitudinal study of over 9100 citation from 629 master's and doctoral theses and found that authors favour current researches regardless of discipline. It was observed by Gooden (2006) that citation analysis were used by librarian in different fields to eliminate costly low use/unused journals, identify core journals needed for use and to purchase the needed materials. Gooden (2006) further carried out a citation analysis of chemistry doctoral dissertation as way of identify materials used at the Ohio State University between 1996 – 2000. The result showed that journal article is cited more frequently than monographs.

Similarly, Olatokun and Makinde (2009a) conducted a study on citation analysis of doctoral works accepted at the Department of Animal Science, University of Ibadan, Nigeria. Journal articles and textbooks were more cited while web resources had the lowest citations, probably the doctoral students were yet to appreciate web resources references or had little or no access to Internet according to Olatokun and Makinde. In the same vein, masters and doctoral students of Faculty of Agriculture of Tshwane University of Technology, South Africa hardly make any use of website and other electronic resources following the surveyed of Swanepoel (2008) on citation analysis of theses and dissertations submitted between 2004-2006 in the institution.

Nkiko and Adetoro (2007) who studied citation analysis of Covenant University Students' Research Project, Canaan Land, Ota, Nigeria found out that books were more cited and 36.5% of total citations were made between 2001 – 2006 which was at that time very recent. They concluded that a high citation count reflects depth and diversity in the literature review, as well as measure of honesty in research reporting. Moreover, on the recency of consulted information materials, Aina and Mabawonku (1997) worked on literature of information in Anglophone Africa and discovered that majority of publications used for research were published within ten years of their publication. Citation analysis which involves counting how many times a paper or researcher is cited, assumes that influential scientists and important works are cited more often than others, Meho (2007).

Williams and Fletcher (2006) performed a citation analysis on materials used by graduate students in

engineering and found that journals (38 percent), conference papers (19 percent), and books (18 percent) were the most heavily used formats, with books aging more slowly than other formats. Citation analysis of dissertations have been shown to be effective method of assessing quality of information materials because they are culminating experience of doctoral training which is deposited in dissertations (Herubel, 1991). Also, Buttler (1999) affirmed that doctoral dissertation is an evidence of author's ability to engage in extensive scholarly endeavor. Sudheir and Kumar (2010) noted that the subject field of dissertations, the number of citations, their distribution by type of source, years, and by numbers of authors among others which were citation characteristics of dissertations has been studied with the aim of determining the basic features of scholarly communication processed in the fields of study. Various studies on these citation have been carried out by several authors in different disciplines like agriculture and veterinary services (Krishna and Kumar, 2004), engineering (Chrzastowski and Joseph, 2006) and education (Okoye, 2003). Similarly, Chikate and Patil (2008) conducted a study in library and information science while Mangla and Seema (2002) carried out research in economics.

Methodology

The study used descriptive research design. Thesis and dissertation submitted for the award of Master's and Doctorate Degree between 2004 – 2009 in the Department of AEE, FUTA were examined. The materials were accessed at the School of Agricultural and Agricultural Technology (SAAT) Library and at the Departmental (AEE) Library. This was checked against the copies sent to the University Library and Records of AEE (M.Tech & Ph.D) graduands obtained from the School of Postgraduate Studies for those academic sessions under study. Sampling techniques used was purposive sampling. Citations were extracted from the title pages and reference lists of each of the thesis and dissertation examined. Data extracted included the year the materials were submitted, source of citations, recency of materials cited, most cited authors, types of authorship, types of journals and most cited journals.

The material cited were categories as; journals, books, conference proceedings, reports (including working papers, research paper, annual reports, and technical reports), theses and dissertations, web resources, government documents and miscellaneous (which includes year book, newspapers, manual, bulletins, guide, newsletters, FAO documents, magazine and lecture notes). Data obtained were from fifty-two (52) master's dissertations and sixteen (16) doctoral theses gathered and examined in seven (7) weeks between August and September, 2010. The data extracted were analysed using descriptive statistics which includes frequency and percentage presented in tables.

Findings and Discussion

A total of fifty-two (52) master's dissertations and sixteen (16) doctoral theses which produced sixty-eight (68) in all were gathered and analysed. Four thousand two hundred and twenty-seven (4227) citations were generated excluding one hundred and fifty-one (151) that were regarded as incomplete citations.

1. Citation According to Types of Information Materials

Table 1: Distribution of Citation According to Type of Materials

S/N	Source of Materials	Number of Citations		Total	Percent
		Master's	Doctoral		
1	Books	528	535	1063	25.15
2	Conference Proceedings	356	291	647	15.31
3	Government Documents	39	41	80	1.89
4	Journals	690	788	1478	34.97

5	Reports	277	201	478	11.31
6	Theses and Dissertations	110	80	190	4.49
7	Web Resources	51	12	63	1.49
8	Miscellaneous	156	72	228	5.39
	Total	2207	2020	4227	100
	No of Dissertation/Thesis	52	16	68	
	Average Citations	43	125	62	

In Table 1 above, nearly one-third of total citations were made to journal articles (34.97%), followed by citations to books having (25.15%) and conference proceedings (15.31%). The least came from web resources (1.49%). This is an indication that journals were more consulted by M and D Students compared to other information sources when carrying out research. The findings agreed with that of Olatokun and Makinde (2009a) and Gooden (2001). This could be because journal articles contain current issues and qualitative research work as supported by Olatokun and Makinde (2009b) who stressed that many citation analysis buttress the claim in their study that journals are the most used materials in any research field judging from the fact that they point to currency of research works. But, this submission was different from that of Nkiko and Adetoro (2007) who noted that books were most frequently cited materials. Moreover, this study shows that M and D students did not take much advantage of numerous on-line resources available on the web and Internet in their research work which corroborate the findings of Olatokun and Makinde (2009b) that discovered that 1% of web resources were used by the students from their findings. This was a surprise despite the presence of information and telecommunication technology which provide easy access and retrieval of information, worldwide.

2. Citation by Years

Table 2: Distribution of Citations by Years

Source Year	Books	Conference Proceedings	Government Documents	Journals	Reports	Theses & Dissertations	Web Resources	Miscellaneous	Total	Percentage
2004	292	173	21	439	125	42	4	65	1161	27.47
2005	168	125	6	182	64	33	3	39	620	14.67
2006	363	201	26	485	117	61	46	71	1370	32.41
2007	34	28	4	55	29	16	5	10	181	4.28
2008	138	57	5	339	79	29	13	24	684	16.18
2009	68	63	1	38	4	9	9	19	211	4.99
Total	1063	647	63	1538	418	190	80	228	4227	100

Distribution of citations by years was presented in Table 2 above where the highest citations were recorded in 2006 with 1370 citation counts followed by 2004 having 1161 citations. The least was recorded in 2007 having 181 citations. Probably the huge number noticed could be because the Department of AEE turned out more M and D graduands in that year than any other year in this study.

3. Most Frequently Cited Journals

Table 3: Most Cited Journals

Rank	Journal Title	Citations	Type
1 st	Journal of Agricultural Economics	104	Foreign
2 nd	American Journal of Agricultural Economics	46	Foreign
3 rd	Journal of Econometrics	37	Foreign
4 th	Applied Tropical Agricultural	30	Nigeria
5 th	Nigeria Economics & Financial Review	28	Nigeria
6 th	Agroforestry System	27	Foreign
7 th	Statistical Bulletin	26	Nigeria
8 th	Econometrica	25	Foreign
9 th	World Development	23	Foreign
10 th	Australian Journal of Agricultural Economics	19	Foreign
11 th	Quarterly Journal of International Agricultural	18	Foreign
12 th	Economics Development & Cultural Change	17	Foreign
13 th	Nigerian Agricultural Journal	16	Nigeria
14 th	Ife Journal of Poultry Science	15	Nigeria
15 th	Nigeria Journal of Poultry Science	14	Nigeria
16 th	Journal of Agricultural Administration	13	Foreign
17 th	Nigeria Journal of Rural Sociology	12	Nigeria
17 th	Journal of Applied Econometrics	12	Foreign
17 th	Canadian Journal of Agricultural Economics	12	Foreign

18 th	Journal of Food Agriculture and Environment	11	Foreign
19 th	International Economics Review	10	Foreign
20 th	Journal of Productivity Analysis	9	Foreign
21 st	Agricultural System	8	Foreign
21 st	Food Policy	8	Foreign
21 st	Nigerian Agricultural Development Studies	8	Nigeria

Table 3 reveals that Journal of Agricultural Economics was cited in 104 times followed by American Journal of Agricultural Economics (46) and Journal of Econometrics was cited in 37 times. Interestingly, eight (8) of the journals were Nigerian journals. Several notable and cited journals do not appear in this table because they received citation which is less than 8. However, Journals of Agricultural Economics was the most cited journals among other journals used by M and D students of AEE Department, FUTA. Some journals that were highly consulted as indicated by the study including the first five journals listed in the table may be because they were available in the Departmental (AEE) Library, while few could be located at the University Library. This does not necessarily imply that they are the best or their contents are of high quality than those that were less cited by the students. Nevertheless, the highly cited journals could be academically influential in the field of agricultural economics and extension as opined by Dilevko and Esther (2007) who asserted that the fact that a journal is cited frequently indicates that scholars in the field deem it to be influential.

Recency of Information Materials Cited

Table 4: Recency of Materials

Year	Recency	No of Citations	Percentage
Below 5	Very Recent	475	11.24
6 – 10	Recent	939	22.21
11 – 15	Not Very Recent	911	21.55
16 & Above	Not Recent	1902	45.00
Total		4227	100

The Table 4 above shows how recent the information materials consulted were from the year M and D students made use of the materials. Of 4227 citations, 475 (11.24%) were below the period of 5 years and classified as very recent, while the highest 1902 (45%) citations fell between 16 years & above and classified as not recent. The summation of citations obtained below 5 years and 6 – 10 years indicates that one-third of materials used in the field of Agricultural Economics and Extension (FUTA) were recent while the remaining two-third from 11 – 15 years and 16 years & above were not recent. This revealed that researchers in this discipline whose work is more of social-science oriented in nature were not really keen with the recency of researchable materials as opposed to the findings of Musser and Conkling (1996) and

Kushkowski (2003) who found that majority of reference materials cited in engineering from the citation analysis carried out were less than eight years old, indicating authors favour current researches regardless of their discipline from their studies carried out.

Types of Authorship Cited

Table 5: Distribution of Authorship

Authorship	Number of Citations		Total	Percent
	Master's	Doctoral		
Single	1205	1002	2207	52.21
Joint	739	673	1412	32.40
Corporate Body	394	214	608	14.38
Total	2338	1889	4227	100

Table 5 shows that slightly more than half of the total citations were from single authorship (52.21%). Joint authorship had 32.40% while corporate body (such as FAO, CBN, IITA, World Bank, NISER and UN) recorded 14.38%. It can be inferred from these findings that most of the authors that contributed to the work of M and D students in AEE were single authors. This could be for academic reasons where articles published by single authors attract more points during the assessment (promotion) of academic staff.

Highest and Lowest Citations by Individual

Table 6: Highest and Lowest Citations

Authorship	Highest			Lowest		
	Single	133	91	89	18	15
Joint	106	47	39	7	9	11
Corporate Body	6	2	9	10	8	6
Total	245	140	137	35	32	30
	Thesis			Dissertation		

From the individual thesis and dissertation examined, the highest citation of 245 was recorded from doctoral thesis while the next which has 140 citations was also from doctoral thesis. Thirty (30) which was the lowest citations was recorded from master dissertation. The high citation count in doctoral work must be due to the fact that their research is highly extensive and broad compared to the master's research that is slightly extensive. Though, both programmes involve thorough literature review. This view corroborates that of Nkiko and Adetoro (2007) who noted that a high citation count reflects depth and diversity in the literature review,

as well as a measure of honesty in research reporting.

Most Cited Authors

Table 7: Most Cited Authors by Master's and Doctoral students of AEE

Authors	No Cited	Authors	No. Cited	Authors	No Cited
Ajibefun, I. A.	74	Adesina, A. A.	60	Famoriyo, O. A.	43
Daramola, J. A.	71	Dittoh, J. S.	58	Aderinola, E. A.	39
Battese, G. E.	69	Adegeye, A. J.	58	Chamber, R. A.	35
Ojo, S. O.	67	Olayide, S. O.	56	Tewe, O. O.	32
Ojo, M. O.	65	Ewuola, S. O.	54	Limayem, M.	32
Olayemi, J. K.	65	Dixon, G. O.	52	Maxwell, D. G.	31
Idachaba, F. S.	63	Dillon, J. L.	50	Quiseembing, A. R.	29
Imoudu, P. B.	62	Coelli, T. J.	48	Xu, X.	29

The authors listed above in Table 7 were those that greatly contributed to the body of literature reviewed in the dissertations and theses of M and D students with their number of time cited, in the Department of Agricultural Economics and Extension, FUTA as discovered. These authors were more cited than those that were not included in the lists. They were highly notable, respected and influential scholars in the field of Agricultural Economics and Extension in Nigeria, Africa and beyond. Meho (2007) buttressed this by stressing that influential scientists and important works are cited more than others. This has hitherto improved the quality, contents as well as standard of thesis and dissertation accepted in the AEE Department.

Conclusion

The citation analysis of dissertations and theses conducted clearly identify the information materials mostly consulted by master's and doctoral students of the Department of Agricultural Economics and Extension (AEE) in Federal University of Technology, Akure (FUTA). It was discovered from this study that journals were the most consulted information materials, closely followed by books while resources from the web/Internet was least utilized by AEE students. It was reported that one-third of the materials used were recent and Journal of Agricultural Economics was the most cited journal. Since master's and doctorate programmes are research oriented, the study has identified important journals worthy of closer examination by librarians for acquisition purposes. With the analysis showing the research interest of the students, this study will eventually help the concerned libraries on how to improve on the existing collection development required by the master's and doctoral students of AEE in FUTA and beyond. The major constraint of this study was the unavailability of research materials that address citation analysis of agricultural economics and extension publications, thus it was not easy comparing the findings with other researches.

Recommendations

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

- i. The research methodology as a course, which is compulsory for postgraduates students should be strengthened to include formal training in literature searching and teaching of research skills needed by master's and doctorate students .
- ii. Supervisor should lay emphasis on giving preference to recent information materials by postgraduate students when reviewing literature.
- iii. There should be deliberate effort from faculty and department in organizing regular training/workshop on how to carry out effective literature review by the postgraduate students.
- iv. Necessary researchable materials and facilities such as Internet facilities, agricultural databases and web resources should be made available and easily accessible in all the libraries to support the research needs of the students.

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