
Research Output And Innovation In A Library School For Sustainable Development in the Federal University Of Technology Minna, Nigeria

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Keywords

Research Outputs, University, Sustainable Development, Innovations.

Abstract

The study investigated the research outputs and innovations in the Department of Library and Information Technology, Federal University of Technology Minna, Nigeria. Quantitative and qualitative methods were used in data collection. Data gathered were analyzed by simple tabulation, frequency counts and percentages. Higher degree research work involves topic selection, research proposal, data collection, post-field seminar and oral examination. The findings had shown innovative area of ICT application in libraries and none in the area of entrepreneurship. The completed research works are packaged in hard/softcopies. The completed research works were subjected to preservation through the use of softcopies and shelving of the research works in university library.

Introduction

Sustainable development in any society or nation revolves around socio-cultural, economic, health, education, research, science and technology. However these factors can be used

to categorize countries into developed, underdeveloped, developing and third world respectively. This means that these factors or developmental indices to some extent depends on the degree of researches being conducted in any given country. According to Saka, Majinson and Abubakar (2015) the researches being conducted in any given country are meant for national development but in most cases in Nigeria situation, researches are conducted to earn scholarship award or for the award of diplomas and degrees respectively though Adeoti (2016) was of the view that factors that accounted for innovation deficit including funding, misplacement of research priorities especially in universities, etc while researches are conducted for publications and promotions to next rank more so that universities worldwide are ranked based on research output.

Research as a concept is perceived as quest for knowledge, scientific method of investigation, investigation into existing phenomenon or systematic method of inquiring into existing phenomenon. The essence of any research is for national development and that is why Ibrahim (2013) consider it as a course which is being taught at both undergraduate and postgraduate levels and through research; identifying problem, stating the objectives, adopting strategies to collect data and its analysis couple with findings would in no doubt lead to innovation.

Innovation as a concept can be seen as new ideas, inventions, and discoveries from researches. The innovative variables can be used for national development. Innovation in research projects can be determined by two criteria. The criteria for measuring innovative researchers or innovations could be contribution to knowledge and originality of research works. On the other way round, research innovation can be disseminated to public and/or among information professionals through conferences, workshops, seminars, etc. which can be related to what Alao (2017) perceived in the curriculum innovation as funding the education sector.

Library science research within the context of this paper refers to researches conducted not

only for the award of degree and higher degree in library and information science discipline but also for national development. For sustainable development in library education research, there must be well-equipped libraries and Information and Communication Technology (ICT) library as well as information resources to support teaching –learning processes. However development according to Akanbi and Ridwan (2014) is measured by economic growth i.e. changes that touches the lives of people thereby improve the society.

It should be noted however that regardless of any programme being run in universities, the curriculum is usually designed to accommodate course title: “research methods or research methodology in library and information science. According to Ibrahim (2013), research methodology can be viewed as a course being studied at undergraduate and postgraduate level; students write and produce research projects though with difficulties in the project write-up.

The Department of Library and Information Technology in FUT Minna established in 2001 with the commencement of B.Tech programme and in 2013/2014 and 2015/2016 MTech, PGD and PhD programmes commenced respectively. It is interesting to note that postgraduate programme in LIT department of the university is attracting the attention of many candidates for admission from different parts of Nigeria, thus the 2017/2018 PG applications for admission to FUT, Minna has demonstrated that LIT department is advancing in both undergraduate and postgraduate programmes as shown hence out of 94 candidate that applied for postgraduate admission, 79 were qualified while 25 of the candidate were admitted to M.Tech and PhD programmes in Library and Information Technology. None of the candidates was admitted to PGD programme due to inability of the department, to meet the requirement of having five qualified PGD candidates.

Despite effort by institutions of higher learning particularly those running library and information science to actualize their teaching and research functions, there are still challenges to effective research which has affected the

development of socio-economic/cultural, scientific, technological and political sectors in Nigeria. This might be linked to opinion expressed by Adeoti (2016), when the writer observed that Nigeria being the largest African country with 20 percent continent’s population has 15 scientists and engineers engaged in Research and Developments (R&D) per million persons. This low number of scientists and engineers that are engaged in R&D might be connected to low investment in university research and only 0.02 percent of Nigeria’s Gross Domestic Products (GDP) is devoted to R&D funding globally. Researches are being conducted for academic publication for promotion among faculty members (Adeoti, 2016) and thus, the effect of research findings in any society is defeated of which according to Aina (2004) perceived as due to lack of government support, inadequate facilities for research as well as inadequate outlet for scholarly communication of research results.

Statement of the Problem

Library education or library schools are established to train individuals into professional and para-professional cadres and part of the curriculum is on research methods and project write-up. The piece of research reports contain the innovation and findings which are to be used for national development be it social, economic, cultural, political, scientific and/or technological development. Observations and experiences has shown that most researches conducted at undergraduate and postgraduate levels do not yield/produce innovations that will lead to national development as most of them do not receive the attention of government in terms of the implementation of major research findings to positively affect the life of the citizens of a nation. These pieces of research report are only consulted by post graduate students, researchers and others for academic research. They are not consulted for development programmes or programmes implementation purposes. This may partly be attributed to inadequate teaching staff and supervisors and above all government support. It is to this backdrop that the researcher intends to investigate the academic staff strength by ranks, research output, innovative areas and

preservation techniques of the completed and submitted research works respectively.

Research Objectives

The study was designed to achieve the following specific objectives:

1. To investigate the academic staff situation in the Department of Library Information Technology.
2. To determine the procedures for producing innovative researches at undergraduate and postgraduate levels in the Department of Library and Information Technology
3. To find out the research output in the Department of Library and Information Technology.
4. Determine the areas of innovations in the research output in the Department of Library and Information Technology.
5. To determine the method of preserving completed research output in PG school and University library.

Research Questions

In order to effectively conduct the research, the below questions were formulated and posed:-

1. What is the academic staff situation in the Department of Library and Information Technology?
2. What are the procedures for producing innovative research at different levels?
3. What are the research output and innovative areas in the Department of Library and Information Technology?
4. What are the innovative areas/innovations discovered from the research output in the Department of Library and Information Technology?
5. What methods are used in preserving completed research output in PG school and University library?

Literature Review

Benson, Victor, Uwezio and Nwauwa (2016) investigated areas of priorities and challenges in the actualization of sustainable development goals among 62 information professionals in Owerri, Imo State, Nigeria. Survey research method and a total of 62 library and information professionals as well as questions were used for

the study. Frequency and percentage showed that promotion of social and economic activities; empower females; global partnership and foster innovation. Study revealed lack of accurate and reliable data, indifference of government towards library profession major obstacles towards effective contribution of library and information profession to the research of Sustainable Development Goals.

In a collaborative study by Babalola, Abifarin and Adamu (2016) to determine the quality control in Postgraduate supervision in department of Library and Information Technology, FUT, Minna, it was reported that the number of supervisors available and the appointment of co-supervisors/supervisory committee has yielded quality of supervision in the postgraduate programme of the department.

In a research to determine the application and utilization of ICT facilities by researchers in Research Institutes in Zaria, Kaduna State, Nigeria, Mohammed and Shuaibu (2016) reported part of findings to reflect the response rate of staff according to their ranks. It was discovered that out of 300 respondents, 116 (38.7%) of the respondents were on the rank of Lecturer II, the lower frequencies of 6 (2%) and 8 (2.6%) were discovered from Reader and Professorial Cadre respectively.

Saka and Aliyu (2017) conducted a study to determine the resource availability and needs of undergraduate students in the department of library and information science, universities of technology in Nigeria. Findings showed that there was 59 academic staff in four library schools with inadequate collections to meet the information and research needs of undergraduate students. Saka and Aliyu (2017) examined the application ICT in library operations and services in three private universities in FCT Abuja using mobile phone to interview the respondents. The result showed that ICT is being used in the acquisition, cataloguing, circulation, reference services. The study further revealed innovation in the areas of the use of integrated software packages and Radio Frequency Identification (RFID) in one of the studied university libraries. This was as a result of the research being conducted.

Looking at the international scene, a collaborative research was conducted to find out the types of programme covered; format of research output, methods of -preserving research output in university libraries of the capital cities of Kenya and Nigeria using survey research and structured questionnaire. Tabulation was used to analyze data. Results showed that the research output covered both undergraduate and postgraduate programmes and were in softcopies, while four university libraries in the two countries shelve their research output (Saka, Abbas and Salman, 2017).

Methodology

Mixed methods were used in the study and they include; case study, documentary analysis as well as interview, quantitative and qualitative research. The total population for the study consisted of 551 completed projects/theses with a breakdown of 529 undergraduate project and 22 M.Tech theses and were all adopted for the study hence none was sampled. Documentary sources were used to conduct the research. This involves going through individual undergraduate projects and Master of Technology (M.Tech)

thesis submitted to the Department as well as going through the relevant pages of the Postgraduate Prospectus 2014-2019. Unstructured interview was conducted for staff in-charge of projects and theses at PG school and the university library respectively. Data analysis was carried out through frequency counts and percentages, tabulation of procedures for conducting researches and titles/innovative areas discovered at undergraduate/postgraduate researches respectively. Brief documentation of the explanation from the respondents on preservation of research works at postgraduate school and university library was documented. It is a case study as it involves only LIT department within FUT, Minna. The above stated procedures and methods used in data collection was expressed by Igwe, Bassey, Uzuegbu and Adebayo (2015) as qualitative research and quantitative research.

Results and Discussion

Research Question One: What is the academic staffing situation in the department of LIT?

Table 1:- Academic Staff Situation in the Department of Library and Information Technology, Federal University of Technology Minna as at October, 2017

S/N	Rank	Frequency	%	% Category
1.	Professor	01	6	
2.	Associate Professor	04	23	53
3.	Senior Lecturer	04	23	
4.	Lecturer I	02	12	
5.	Lecturer II	01	6	
6.	Assistant Lecturer	03	18	47
7.	Graduate Assistant	02	12	
	Total	17	100	100

As at October, 2017, the academic staff situation in the Department of Library and Information

Technology of FUT Minna stood at 17 with five at professorial cadre, four at Senior Lecturer

Cadre and eight are between the ranks of Lecturer I and Graduate Assistant. The table revealed that 9 (53) of academic staff are between Professional and Senior Lecturer cadre. This has shown that lecturers in the Department are capable of supervising/producing innovative researches at both undergraduate and postgraduate levels.

Research Question Two: What are the procedures for producing innovative researches in LIT Department?

Procedures for producing innovative researches at undergraduate and postgraduate levels in L.I.T Department are spelt out in Table 3 below:

Table 2: Procedures for producing innovative research at undergraduate and postgraduate level

S/N	Undergraduate Level	M.Tech Level	PhD Level
1.	Teaching of LIT 414 Research methods	Teaching of LIT 722 Research Methods	Teaching of LIT 722 Research Methods
2.	Allocation of supervisor/Topic Selection in conjunction with the Supervisor	Submission of Topic to PG coordinator	Submission of topics to PG coordinator
3.	Writing of Chapters I,II, &III and Submission to supervisor	Writing of research proposal chapters 1-3	Constitution of supervisory committee in relation to area of specialization of candidate
4.	Data collection, analysis and report of findings (chapters 4 & 5)	Presentation of research proposal at Departmental level Effect Corrections	Presentation of mini research proposal at Departmental level
5.	Presentation of the entire research work at the Departmental level (internal defense)	2 content readers/internal assessors to ensure that observations /comments are effected	As above
6.	Oral examination to be presided over by external examiner on a rank of professor. Moderate the project score.	Data collection, analysis and report of findings on chapters 4 & 5 guided by the supervisor (PhD holders)	Writing of full length research proposal chapters 1-3 guided by 3 Supervisor (PhD holders)
7.	Corrections effected, submission of 3 hard and softcopies	Presentation of post-field seminars at Departmental level	Presentation of research proposal chaired by Dean of School and examined by PG Representative and noting by comments by two (2) internal assessors from the Department
8.		Submission of one major and alternate External Examiners (per 4 or 5 M.Tech students) to Departmental/school and PG board recommendation for Senate approval.	
9.		M.Tech students are require to produce at least conference paper in the proceeding	
10.		Oral examination of the 4 or 5 M.Tech students before	Corrections effected by the candidate and checked by the 2

		panelist comprises the examiner; supervisors, internal examiner and HOD as chairman of the panel. Student effect all corrections in conjunction with supervisors.	internal Assessor
11.		Submission of corrected copy to the internal examiner for checking	Submission of report by the PG representative, one of the supervisors and HOD to PG school
12.		Production of both hard and soft copies to PG board through Departmental PG coordinator	PG Board meet to consider the report and ensure that report from both parties (supervisors, PG representative and HOD are uniform
13.	Entire work is subjected to turn-it-in at least 20% tolerable level before oral/ external defense/ examination.	Entire work is subjected to turn-it-in at least 15% tolerable level before oral examination.	Based on the satisfaction of PG Board, approval in given to candidate to go to field
14.			Three Progress seminars be presented by the candidate before oral examination
15.			PhD candidate is required to publish at least a paper in relevant Journal.
16.			Entire work is subjected to turn-it-in at least 10% tolerable level before oral examination.

Research Question Three: What are the research output(s) in LIT Department?

Table 3A: Undergraduate Research output in LIT Department

S/N	Area of Research	F	%
1.	Information and Communication Technology	176	33
2.	Traditional Librarianship (core areas of Librarianship)	68	13
3.	Library Management/ Administration	66	12
4.	User studies	82	16
5.	Others	137	26
6.	Entrepreneurship	-	-
		529	100

Source: Document Analysis: 2017.

The undergraduate research output (projects) as at 2017 were 529 in number and 22 M.Tech Theses were produced as at July, 2017. The highest number of bachelor degree projects was attributed to the fact that the department has been graduating students for a decade now. The M.Tech theses were 22 in number which was attributed to the commencement of M.Tech programme in 2013/2014 session and the researchers to this research works were the first batch of the M.Tech Programme in the Department.

Table 3B: List of completed and submitted M.Tech Research Workss (Theses)

S/N	Title	Year of Completion
1.	Impact of quality information resources and its utilization on students' academic performance in tertiary institutions in Niger State.	2016
2.	Influencing of accessibility and use of Nigeria collection on users satisfaction in National Library of Nigeria, Public Service Department Abuja	2016
3.	Availability and Utilization of E- Information data bases for research by Agricultural scientists in Agricultural Libraries in North central Nigeria.	2016
4.	Staff attitude, book theft and library policies as functions affecting lending services to students in two state University Libraries in North-Central Nigeria	2016
5.	Assessment of Reference sources, services provision and use in Academic Libraries in Sokoto State	2016
6.	Evaluation of awareness and use of online public Access catalogue (OPAC) in university libraries in North central Zone of Nigeria	2016
7.	Performance testing of the effectiveness of Greenstone and the space in Handling rich text data in FUT, Minna, Nigeria	2016
8.	Influence of job satisfaction on the performance of Librarians in Niger State, Nigeria	2016
9.	Personal records management and Information retrieval in Government Ministries in Niger State, Nigeria	2016
10.	Migrating from traditional to web based readers services in university libraries in Niger State, Nigeria	2016
11.	Effects of academic staff competence and internet services on the use of open access Journal in Federal Universities in North Central Nigeria.	2016
12.	Library policies, students' residence and recency as factors affecting use of resources by undergraduate students in two Universities in North Central, Nigeria	2016
13.	Relationship between staff development and job performance among academic librarians in Niger State	2016
14.	Relationship between motivational factors and job performance of librarians in North Central Nigeria	2016
15.	Impact of leadership styles and communication patterns on job performance of Staff in academic Libraries in Niger State.	2016
16.	Evaluative study of the preservation and use of information resources in academic Libraries in Niger State, Nigeria.	2016
17.	Influence of training and promotion on the job performance of professional and para professional Library Staff in tertiary institutions in Niger State, Nigeria	2016
18.	An assessment of the availability and utilization of ICT for Information provision in University Libraries in Abuja, Nigeria.	2017
19.	Information needs and utilization as correlates of job performance among media practitioners in North Central	2017

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| 20. | Application of ICT as a correlate of records management in academic activities in selected Federal Universities in Northern Nigeria | 2017 |
| 21. | Comparative study of user satisfaction with electronic Library resources and services in two Universities in Northern Nigeria | 2017 |
| 22. | Effects of access and utilization E-resources on academic performance of PG students in selected Universities in North Central, Nigeria | 2017 |

Source: Document Analysis 2017

Table 5A: Innovative areas in B.Tech Research Work in LIT Department

S/n	Innovative Areas
1.	ICT application in library banks, hospitals, job performance, business tertiary institutions, industry, course registration, results caputations.
2.	Academic, national, public, academic and school libraries

- | | |
|----|--|
| 3. | Staff training, job satisfaction, performance, information management, preservation/conservation |
| 4. | Use of information resources, attitude of users in libraries, etc. |
| 5. | Archive administration, library building, theft and mutilation, book trade, security |
| 6. | None for entrepreneurship in librarianship |

Source: Document Analysis 2017

Table 5B: Innovation in M.Tech Research work in LIT Department

S/N	Originality/Innovation
1.	Currency, relevancy of information resources
2.	Collections pertinent to Nigeria scene.
3.	Use of AGRIS, Agricola
4.	Staff attitude, book theft and Library policies negatively affect lending of collection to use
5.	Traditional and online reference sources/services
6.	Access to Information through OPAC
7.	Software testing
8.	Job satisfaction is a condition to Job performance
9.	Use ICT in Records Management
10.	Shift from traditional to ICT aspect of Librarianship
11.	ICT Literacy
12.	Close proximity of students' residence to University Library
13.	Training can lead to efficient job performance
14.	Environment is important in the Librarians performance.
15.	Good Leadership styles and qualities promote effective common leading to high performance
16.	Digitization and proper strong of AVM
17.	Extrinsic motivation
18.	Sophisticated ICT facilities
19.	Information is regarded as vital ingredient in all facets of man's life.
20.	ICT use in Records Management.
21.	E-Library resource utilization
22.	Improved academic performance of PG students through use of E-resources

Source: Document Analysis 2017

Innovative areas in both undergraduate and postgraduate researches can be measured in terms of their contributions to the existing knowledge and the originality of the research work. Based on the documentary analysis it was discovered that ICT aspect was the dominant area in the research work at degree and masters levels. The statistical analysis showed that at B.Tech (LIT) level 176 (33%) completed projects were on ICT application in Libraries, banks, hospitals, job performance, tertiary institutions, industries, course registration and result computation. This may be due to the fact that ICT is now used in every aspect of human life. Library studies, traditional librarianship and library administration and management were few compared to ICT. In the same vein, archive administration, library building, theft and mutilation, book industry and security- all combine to produce 137 (26%) of the research works. At M.Tech (LIT) research works, ICT was also a dominate aspect with 13 out of 22 theses examined, while other aspects such as library administration and management, quality of collections and environment were very few. None of the researches was conducted in the area of entrepreneurship in relation to librarianship.

Response from the research question five on the interview conducted for the custodians of projects and theses in PG school and university library revealed that LIT Department packaged completed research works and submitted in both hard and soft copies to PG school and university library respectively. The two important units of the university equally preserved the submitted research works in the same formats at the same time are currently being digitized by the University library for onward input to the proposed Institutional Digital Repository (IDR).

Discussion of Results

Research question one sought to find out the academic staff situation in library school. This is to find out the quality and quantity of academic staff in relation to the quality of research output. The assault showed that the library school possessed adequate academic staffs that are capable of teaching supervising and producing innovative research output. This findings is in

support of findings of Babalola, Abifarin and Adamu (2016) but disagreed with that of Mohammed and Shuaibu (2016) respectively hence, the former co-researchers discovered that the number of supervisors available and the appointment of co-supervisors/supervisory committee have yielded quality of supervision. The later co-researchers discovered that the highest number of respondents were on the rank of Lecturer II, while the lower number of respondents were discovered from the ranks of Reader and Professor in the Research Institutes, in Zaria, Kaduna State, Nigeria.

Research question two sought to find out procedures for producing innovative researches at both undergraduate and postgraduate levels. The results showed that oral examination at undergraduate level is conducted by random selection of students to appear before external examiner and moderate project scores while at postgraduate level (M.Tech), individual candidate is being examined (orally) by the external examiner and other panel members such as Head of Department (HOD), internal examiner and postgraduate co-coordinator) make their contributions.

Research question three sought to find out the research output and the result showed that 529 undergraduate projects were produced between year 2007 and 2016 while, 22 M.Tech theses were produced between year 2016 and 2017 respectively. This finding contradicts the finding by Saka and Aliyu (2017) who reported inadequate collections in four University of Technology-based-library schools in Nigeria.

In an attempt to answer research question four, areas of innovation was investigated in terms of B.Tech and M.Tech research works with ICT having 176(33%) projects with innovative areas in ICT application in the various aspect of human life. At M.Tech level, ICT was also the dominant area covering 50% of the collection and the innovative areas include those of databases, software testing, Online Public Access Catalogue (OPAC), sophisticated ICT facilities, ICT in records management.

Research question four discovered the innovative areas/innovations in both

undergraduate and M.tech research works mainly the ICT applications in libraries, hospitals, banks, etc. That is ICT has permeated every aspects of man's life. This finding corroborates the findings by Saka and Aliyu (2017) as being reported to discovered the use of integrated library software and the use of Radio Frequency Identification (RFID) in private university libraries in FCT, Abuja.

Research question five sought to find out methods of preserving completed and submitted research works. Through interview, it was discovered that the completed research works submitted to PG school and university library were in both hard and soft copies. No wonder some universities in Nigeria are currently undergoing retrospective conversion of previously acquired hardcopies of their collection. As at now, softcopies of the completed research works are required by PG School and the University Library. This findings is in line with the research findings of Saka, Abbas and Salman (2017) while Saka and Aliyu (2017) partly agree with the present finding. The former co-researchers discovered university libraries in Kenya and Nigeria to preserve the completed research works in both hard and soft copies as well as through shelving respectively. The later co-researchers, Saka and Aliyu (2017) discovered that the three private university libraries do not only preserved research works in hard and soft copies but also secured their collection through Radio Frequency Identification (RFID), security circuit and security men stationed at the entrance and exit of the university libraries.

Conclusion

The study has established that research at both undergraduate and postgraduate level contains series of procedures to be followed which has led to producing research output with innovations and these/projects be preserved for future use and for sustainable national development. Completed research output can be used for further research by scholars as well as scientific, technological, socio-economic/cultural and political development of any nation.

Below recommendations:

1. LIT Department in the university should ensure that allocation / appointment of supervisors to students should be based on supervisor's field of specializations in relation to projects titles submitted by students
2. LIT Department in the university should ensure that Research methodology as a course at both undergraduate and postgraduate level should incorporate contemporary issues/areas e.g. entrepreneurship, knowledge management so as to broaden students' knowledge while selecting topics for project write-up; the researches into entrepreneurial aspect of librarianship would play a great role in equipping undergraduate and postgraduate students the basics skills that would enable them to be self-reliant so that they can be job creators and not job seekers on graduation.
3. The management of FUT Minna in conjunction with the library school should ensure that the completed research works be preserved in softcopies and incorporated into institutional Digital Repository (IDR) to enable public have access to local content of the university.
4. The management of the university should ensure that the list of completed projects/ theses submitted to PG school should be on the university website so as to avoid duplication of earlier completed and submitted research works.

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