

## INFLUENCE OF INFRASTRUCTURAL FACILITIES ON RESEARCH OUTPUT OF ACADEMIC STAFF OF UNIVERSITY OF IBADAN

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### **ABSTRACT**

*This study investigated the influence of infrastructural facilities on research output of academic staff of University of Ibadan, Nigeria. Descriptive survey research design was adopted for the study. Seven faculties, three institutes and two centres were purposively sampled out of the thirteen faculties, five institutes and three centres in the University. The population comprised academic staff of all the selected faculties. Thus, the total sample size for data collection was 302 lecturers. The questionnaire used for data collection was Influence of Infrastructural Facilities on Research Output of Academic Staff of University of Ibadan Questionnaire (IIFROASUIQ). Reliability coefficient obtained for the instrument was 0.84 using Cronbach's Alpha. Data were analyzed using descriptive statistics and Pearson Moment Correlation Coefficient (PPMC). The finding showed that there was no significant relationship between internet facilities ( $r = -0.158$ ,  $P < 0.05$ ); availability of office furniture ( $r = 0.009$ ,  $p > 0.05$ ) and lecturers' research output. The study recommended that all stakeholders in research and education should create conducive environment for researchers, through funding and providing the necessary facilities.*

### **Introduction**

Lack of adequate infrastructural facilities is a major factor or aspect that affects research output of academic staff of Universities around the world especially developing countries. Well-equipped libraries can be an important resource in institutions of higher learning in stimulating research. Libraries equipped with e-journal, high internet speed and other facilities can facilitate research. Journals provide a good avenue for academic staff to find out various research output and can be a very good source to find gaps for further research. Departmental stimulation through organizing of seminars and conferences can also enhance research output by equipping staff on how to undertake research.

Infrastructural facilities are very germane in educational institutions, particularly in the teaching-learning process (Monehin, 2003). It is unfortunate that inadequacy of infrastructural facilities such as classrooms, laboratories, libraries, staff offices, workshops among others characterized the public universities in Nigeria (Saint, Hartnett and Strassner, 2003). To worsen the situation, most of the available infrastructural facilities are in deplorable condition, which has been having negative effect on the training of students in the universities. The situation could be attributed to the poor funding of the universities by Government. Over the years, financial allocations to the universities are consistently inadequate in quantity and epileptic in supply thus making it difficult for the universities' administrators to put in place adequate and reliable infrastructural facilities for effective teaching of students.

Oyedemi (2012) observed that there is a close significant relationship between the infrastructural development and goals achievement variables of the tertiary institutions like; research publications, students' academic performance, lecturers job performance, school discipline and community services. Bello (2011) stated that infrastructural facilities are crucial for lecturers' job effectiveness. Bello further suggested that, the provision of infrastructures facilities like buildings, transportation, landscaping, equipment and instructional facilities have positive significant impacts on the academic goals achievements variables like research publications. The problem of inadequate infrastructural facilities is noticeable in Nigerian universities (Ayeni, Jayeoba and Atanda, 2008).

Aina (2002) as cited by (Ayeni, Jayeoba and Atanda, 2008) in one of his studies commented that lecturers would not be able to function properly and be productive because of lack of learned journals, non – attendance of conference either at the local or international level. This simply indicates that infrastructural facilities in Nigerian universities are in state of disrepair and new capital projects are not put in place, while the laboratories are ill equipped. Libraries are fully of empty shelves while the few available books are outdated and worst still, only few universities can take advantage of electronic interconnectivity (Ayeni, Jayeoba and Atanda, 2008). This is also corroborated by the observations of Ogunshye (2003) that some universities libraries are merely storehouse for outdated books.

Owuamanam (2005) pointed out that the inadequacy of necessary infrastructures has been a major problem facing Nigerian educational system in the past two to three decades. In that case, there was the gross inadequacy of teaching materials, office spaces and lectures spaces and under staffing. Libraries lack current books, journals, periodicals, ICT facilities, while laboratories and workshop were poorly equipped. The provision of these infrastructural facilities will enhance research activities of academic staff of universities. Owuamanam (2005) further added that universities are unable to pursue staff development policy, while post graduate studies and research are no longer attractive to graduates who could be prospective lecturers owing to lack of infrastructural facilities for research activities.

Libraries in universities are regarded as the most important pillar in academic research. For libraries to effectively support research, they need various resources that are needed in the library to support research. Among the library resources that need to be provided are labor, budget and book collection.

The library resources cannot be limited to the mentioned three. According to various statistical indicators stated in the Korean Library Yearbook 2009, there are more than 70 different types of university library resources that are needed to support research

Researchers have also tried to ascertain whether there exist relationship between books in libraries and research output. Some research has shown a positive correlation between the library resources in terms of book collections and research output. In trying to determine the relationship between the number of books in the library and research output, some researchers have concluded that collection of books in the library and research output are proportional (Lee, 2005). This implies that the faculty library with more book collections produce more research papers. In his research he concluded that there is a positive correlation between the number of books in the university library and the research achievements. In a similar study Han (2005) in her research on research and development universities in Korea found out that universities that invest in library resources are more likely to improve their research competitiveness. It is therefore necessary for universities to invest in resources that support academic research which

include books, journals both printed and electronic. In a similar study Ocholla (2007); Onyancha (2007); Sitieni and Ocholla (2010) emphasized that journal are the leading source of scholarly publications and quite often African scholars prefer to publish in foreign journal.

Without providing these resources universities research output will probably continue to be minimal from most universities. Provision of resources will act as catalyst as well as provide a basis for academic staff to engage in research.

The provision and efficient use of information resources in university libraries are central to any meaningful research, teaching, and community service delivery by academics in Nigeria universities. The use of information resources in whatever format by academics in Nigerian universities has been studied by Ehikhamenor 2003; Aduwa-Ogiegbaen and Stella 2006; Adogbeji and Toyo 2006; Ureigho, Oroke and Ekruyota 2006; Osunade, Phillips and Ojo 2007; and Popoola 2008. Shokeen and Kaushik (2002) note that social scientists of Haryana universities in India most frequently use current journals, textbooks and reference books. Agba, Kigongo-Bukenya, and Nyumba (2004) reason that the shift from print to electronic information implies that both academic staff and students in a university system must use these resources for better quality, efficient and effective research more than ever.

As academics get increased access to the Internet, ways to communicate with peers, other experts in their fields and colleagues have grown. There are many networked services such as electronic mail (email), distribution lists, bulletin boards and newsgroups which extend the invisible college of academics and researchers to anywhere in the world, whereas communication is almost instantaneous. Abels, Liebscher and Denham (1996) say networked services can benefit smaller institutions in particular, because academics and students have access to peers worldwide. They also have access to news and discussion groups, library catalogues of large research libraries, datasets (aggregated services) and databases and even public domain software packages for teaching and research.

In the University of Ibadan vision document for the 21st century, it was spelt out that the presence of the different infrastructural facilities is a *sine qua non* for the strengthening of the university's programmes. It was then noted that a good library and efficient information and

communication technologies (ICTs) are essential if University of Ibadan is to realize its stated 21st century objectives. The vision document emphasized the need for libraries to be stocked with up – to – date books, journals, periodicals, etc. The library, the document informed is hoped, will further be computerized to make information resources accessible through internet and intranet connectivity (Ayeni, Jayeoba and Atanda, 2008).

Therefore, this study intends to examine the relationship between infrastructural facilities (office space, academic journals, internet facilities) and academic staff research output in University of Ibadan.

### **Research Questions**

The following research questions were raised to pilot this study:

1. What is the level of research output of academic staff of University of Ibadan?
2. To what extents are infrastructural facilities are available in University of Ibadan?

### **Research Hypotheses**

The following hypotheses were raised to guide this study:

1. There is no significant relationship between academic staff research output and adequate internet facilities within the school.
2. There is no significant relationship between academic staff research output and availability of office furniture.

### **Methodology**

#### **Research Design**

The descriptive survey design was adopted for this study. This design was chosen because the researchers did not manipulate any of the variables in the study.

#### **Population and Sampling technique**

The population of the study comprised all grades of lecturers constituting the academic staff in University of Ibadan, there were 1,549 academic staff as at June 2015 when the study was being conducted. Through a multi stage sampling technique, a total of 340 respondents were sampled representing 22% of the entire population.

### **Instrumentation**

The instrument that was used for the conduct of this study was the questionnaire tagged ‘Influence of Infrastructural Facilities on Research Output of Academic Staff of University of Ibadan Questionnaire (IIFROASUIQ). The questionnaire was used to survey academics in University of Ibadan. The IIFROASUIQ has three sections. Section A attempts to elicit demographic information on age, gender, educational qualification and years of experience while Section B contains items on research output of academic staff, while Section C contains items on infrastructural facilities.

The instrument was given to four lecturers of the department of Educational management who made necessary corrections and all useful inputs were incorporated. The instrument was administered to 40 academic staff in one faculty that is not included in the study sample. The reliability coefficient obtained was 0.84. This indicates that the reliability of the instrument is high.

### **Administration of Instrument and Data Analysis**

The instrument was personally administered with the assistance of four (4) research assistants on the respondents. Out of 340 instruments distributed, 302 (representing 88.8% of the entire distribution) eventually returned their completed questionnaires.

Descriptive statistics of frequency count, simple percentages, mean and standard deviation were used to analyze research questions, while research hypotheses were tested using inferential statistics of Pearson Moment Correlation Coefficient. The research hypotheses were tested at 0.05 level of significance.

### **Results**

The results of this study are presented as follows:

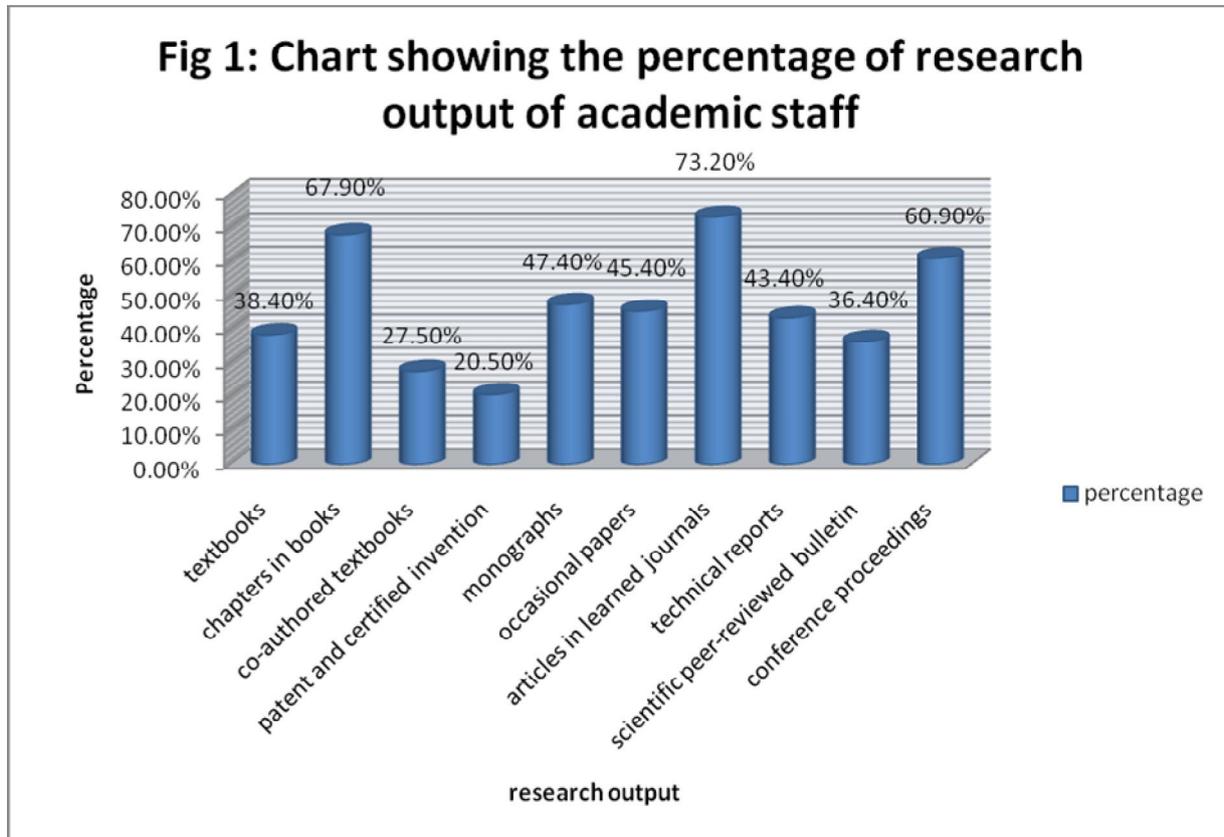
**Research Question 1: What is the level of research output of the academic staff of the University of Ibadan?**

**Table I: Research Output of Academic Staff of University of Ibadan**

S/N	Publication	Nil	1 – 4	5 – 9	10 and above	Average	Remarks
a.	Textbooks	186 (61.6%)	86 (28.5%)	20 (6.6%)	10 (3.3%)	116 (38.4%)	Fair
b.	Chapters in books	97 (32.1%)	162 (53.6%)	43 (14.2%)	-	205 (67.9%)	<b>Very Good</b>
c.	Co-authored textbooks	219 (72.1%)	61 (20.1%)	22 (7.3%)	-	83 (27.5%)	Poor
d.	Patent and certified invention	240 (79.5%)	44 (14.6%)	16 (5.3%)	2 (0.7%)	62 (20.5%)	Poor
e.	Monographs	159 (52.6%)	123 (40.7%)	18 (6%)	2 (0.7%)	143 (47.4%)	<b>Good</b>
f.	Occasional papers	165 (54.6%)	112 (37.1%)	21 (7%)	4 (1.3%)	137 (45.4%)	<b>Good</b>
g.	Articles in learned journals	81 (26.8%)	126 (41.7%)	59 (19.5%)	36 (11.9%)	221 (73.2%)	<b>Very Good</b>
h.	Technical Reports	171 (56.6%)	79 (26.2%)	36 (11.9%)	16 (5.3%)	131 (43.4%)	<b>Good</b>
i.	Scientific peer-reviewed bulletin	192 (63.6%)	84 (27.8%)	24 (7.9%)	2 (0.7%)	110 (36.4%)	Fair
j.	Conference proceedings	118 (39.1%)	143 (47.4%)	24 (7.9%)	17 (5.6%)	184 (60.9%)	<b>Very Good</b>

In order to determine the level of research output of the respondents within a 3 – year period (2011 – 2014), an average score of their research output was computed. In Nigeria, university regulations state that academic staff members are to be evaluated for promotion every three years.

Table I shows that 221 (73.2%) of the respondents had articles published in learned journals. Also, 205 (67.9%) had chapters in books. 184 (60.9%) respondents had conference papers. 116 (38.4%) had textbooks. However, only 62 (20.5%) had patents in terms of invention. This implies that copyrighted inventions were low among academics in University of Ibadan.



In other words, the research output of the academic staff in university of Ibadan is very good in the publishing of Journal articles, Chapters in books and Conference papers. It can be inferred that emphasis is placed on these three publication outlets (that is, Journal Article, Chapters in Books and Conference Proceedings). Also, their research output is good in the publishing of monographs, occasional papers, and technical reports.

Furthermore, the research output of the academic staff in university of Ibadan is fair in the publishing of Textbooks and scientific peer review but poor in Co-authored textbooks and Patents and certified inventions.

**Research Question 2:** To what extents are infrastructural facilities are available?

**Table II: Availability of Infrastructural Facilities**

<b>OFFICE FACILITIES</b>	<b>Great Extent</b>	<b>Some Extent</b>	<b>Little Extent</b>	<b>Not At All</b>	<b>Mean</b>	<b>SD</b>
I do not have an office to myself	50 (16.6%)	52 (17.2%)	75 (24.8%)	125 (41.4%)	2.09	1.116
There is no good ventilation in the office	53 (17.5%)	48 (15.9%)	109 (36.1%)	92 (30.5%)	2.21	1.062
The lighting in my office is poor	45 (14.9%)	72 (23.8%)	79 (26.2%)	106 (35.1%)	2.19	1.075
The office is not well furnished	59 (19.5%)	98 (32.5%)	84 (27.8%)	61 (20.2%)	2.51	1.024
The office is overcrowded	36 (11.9%)	78 (25.8%)	96 (31.8%)	92 (30.5%)	2.19	1.003
The furniture is comfortable enough that I can work without getting tired	59 (19.5%)	86 (28.5%)	89 (29.5%)	68 (22.5%)	2.45	1.045
The office environment influences my performance	98 (32.5%)	120 (39.7%)	43 (14.2%)	41 (13.6%)	2.91	1.003
<b>LIBRARY AND INTERNET FACILITIES</b>	<b>Great Extent</b>	<b>Some Extent</b>	<b>Little Extent</b>	<b>Not At All</b>	<b>Mean</b>	<b>SD</b>
I have access to relevant information sources	82 (27.2%)	104 (34.4%)	82 (27.2%)	34 (11.3%)	2.77	0.973
I have uninterrupted access to internet	48 (15.9%)	61 (20.2%)	114 (37.7%)	79 (26.2%)	2.26	1.018
I have ample time in doing my research work	22 (7.3%)	73 (24.2%)	139 (46%)	68 (22.5%)	2.16	0.857
I face problems in locating the most appropriate information resource	29 (9.6%)	94 (31.1%)	116 (38.4%)	63 (20.9%)	2.29	0.905
I have problems accessing the Internet	53 (17.5%)	95 (31.5%)	97 (32.1%)	57 (18.9%)	2.48	0.991
I face problems with the speed and the capacity of computers	30 (9.9%)	132 (43.7%)	84 (27.8%)	56 (18.5%)	2.45	0.905
The use of information resources has helped me to publish more scholarly papers	78 (25.8%)	129 (42.7%)	57 (18.9%)	30 (12.6%)	2.82	0.959
The library is well equipped for me to carry out my research work.	37 (12.3%)	101 (33.4%)	121 (40.1%)	43 (14.2%)	2.44	0.882
I can now do better research because of availability of information resources	73 (24.2%)	138 (45.7%)	59 (19.5%)	32 (10.6%)	2.83	0.914

Table II reveals that 66.2% (200) of the respondents disagreed that they do not have personal office ( $\bar{X}$  =2.09). 66.6% (201) of the respondents also disagreed that their office not well

ventilated ( $\bar{X} = 2.21$ ). 61.3% (185) of the respondents disagreed that the lighting in their office is poor ( $\bar{X} = 2.19$ ). 52% (157) of the respondents agreed that their offices are not well furnished ( $\bar{X} = 2.51$ ).

Also, 62.3% (188) of the respondents disagreed their offices are overcrowded ( $\bar{X} = 2.19$ ). While, 52% (157) of them disagreed that the furniture in their offices are comfortable enough that they can work without getting tired ( $\bar{X} = 2.51$ ) and 61% (218) agreed that the office environment influences their performance.

Based on the result from table IX, it can be deduced that office facilities are adequately available in the university except that the office furniture has to be improved upon.

More so, on libraries and internet facilities 61.6% (186) agreed that they have access to relevant information sources ( $\bar{X} = 2.77$ ). 63.9% (193) of the respondents disagreed that they have uninterrupted access to internet ( $\bar{X} = 2.26$ ). 68.5% (207) disagreed that they have ample time to do research and this may be due to excess workload ( $\bar{X} = 2.16$ ). In addition, 59.3% (179) disagreed that they face problems in locating the most appropriate information resource ( $\bar{X} = 2.29$ ). 51% (154) of the respondents disagreed that they have problems accessing the Internet ( $\bar{X} = 2.48$ ). 53.6% (162) of them claimed that they face problems with the speed and the capacity of computers ( $\bar{X} = 2.45$ ).

68.5% (207) claimed that the use of information resources has helped them to publish more scholarly papers ( $\bar{X} = 2.82$ ), 54.3% (164) disagreed that the library is well equipped for them to carry out research ( $\bar{X} = 2.44$ ) while 69.9% (211) of the respondents agreed they can now do better research because of availability of information resources ( $\bar{X} = 2.83$ ).

**Hypothesis 1:** There is no significant relationship between academic staff research output and adequate internet facilities within the school.

**Table III: Test of relationship between internet facilities and research output of academic staff of University of Ibadan**

Variable	N	Mean	S D	R	Sig(P)	Remarks
<b>Internet facilities</b>	302	10.02	2.226	-0.158	0.006	Significant
<b>Research Output</b>		16.14	3.492			

(P< .05)

From table III there was a negative relationship between adequate internet facilities and research output of academic staff of University of Ibadan  $r = (-0.158)$ ,  $0.006$ ,  $P < .05$ . Based on this analysis, hypothesis 3 which states that there is no significant relationship between adequate internet facilities and research output was therefore rejected. This indicates that there is an inverse but significant relationship between adequate internet facilities and research output of academic staff of University of Ibadan, which implies that adequate internet facilities may not necessarily lead to better research output among academic staff.

**Hypothesis II:** There is no significant relationship between academic staff research output and availability of office furniture.

**Table IV: Test of relationship between availability of office furniture and research output of academic staff of University of Ibadan**

Variable	N	Mean	Std.Dev.	R	Sig(P)	Remarks
availability of office furniture	302	9.00	3.220	0.009	0.878	Not Significant
Research Output		16.14	3.492			

(P>0 .05)

The findings presented in table IV above showed a non significant and low relationship between availability of office furniture and research output of academic staff of University of Ibadan ( $r = 0.009$ ,  $0.878$ ,  $p > 0.05$ ), which implies the acceptance of the posited hypothesis. This indicates that availability of office furniture does not influence the research output of academic staff of University of Ibadan. And this may be because of adequate availability of office furniture.

### Discussion of findings

Hypothesis one revealed that there is a negative relationship between adequate internet facilities and research output of academic staff of University of Ibadan. This finding is in tandem with the

findings of Ayeni, Jayeoba and Atanda (2008), they found out that non-significant but high relationship exist between internet facilities and productivity of academic staff of department of Human Kinetics and Health Education, University of Ibadan. Whereas the finding was at variance with Riahinia and Azimi (2008), whose study shows that there is a significant relationship between female academics' use of the Internet and their social ranking and that of Igbeka (2001) that found that information technology enhance the quality of agricultural engineers production. The finding reveals that as users navigate through the Internet, they find more hidden threats and vague contents.

Hypothesis two revealed that a non significant relationship exists between availability of office furniture and research output of academic staff of University of Ibadan. This implies that availability of office facilities does have relationship with academic staff output but the relationship is not significant and too weak. This was in agreement with the findings of Ayeni, Jayeoba and Atanda (2008), they found that non-significant and negative relationship exists between office and productivity of academic. This was at variance with the findings of Owuamanam (2005) who found that availability of facilities such as office space, furniture etc enhance the integrity of academic activities and productivity level of academic staff.

### **Conclusion**

From the findings of the study, the researchers arrived at the following conclusions about the study.

The research output of the academic staff in the university of Ibadan is very good in the publishing of Journal articles, Chapters in books and Conference papers. Although their research output is good in the publishing of monographs, Book chapters, scientific peer-reviewed bulletins and technical reports, their research output is rather poor in the publishing of Textbooks or Co-authored textbooks, Monographs, and Patent and certified inventions.

There was a negative relationship between internet facilities and research output of academic staff of University of Ibadan which implies that internet facilities in the University should be improved upon.

Finally, there was a non significant relationship between availability of office furniture and research output of academic staff of University of Ibadan which implies that office furniture does not influence research output of academic staff.

### **Recommendations**

All stakeholders in research and education should create conducive environment for researchers, through funding, providing the necessary equipment, necessary information materials by equipping the libraries etc. Exposure of researchers through sponsorship to local, national and international conferences and workshops. This will help the researchers in their field and enhance publishing within and outside Nigeria.

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