



Nigerian University Lecturers' Socio-Demographics on the Perceived Obstacles to the Use of Mobile Technologies for Research

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Abstract

This paper investigated Nigerian university lecturers' socio-demographics (specialization, academic status and years of teaching and research experience) on perceived obstacles to the use of mobile technologies for research. The study was descriptive of cross sectional survey type using structured questionnaire to collect data from the respondents. A total of 742 respondents were randomly drawn from 13 purposively sampled public universities in the South-west, Nigeria. The research instrument was validated and the reliability index yielded $r=0.92$ using Cronbach Alpha. 3 research questions and hypotheses were answered and tested respectively. Frequency counts, mean and percentages were used to answer research questions 1, 2 and 3; while hypotheses 1, 2 and 3 were tested using Analysis of Variance (ANOVA) at 0.05 level of significance. The study revealed that obstacles were encountered while using mobile technologies in facilitating research irrespective of lecturers' area of specialization, academic status and years of teaching experience. Based on these findings, the study therefore recommends among others that Nigerian university administrators should endeavor to provide institutional support, stable electricity, internet facilities and adequate mobile technologies to all lecturers. Also, workshops and seminars should be organized for lecturers on how to use mobile technologies in facilitating effective research.

access to information for teaching, learning and research irrespective of its demographic differences. Academic community has undergone tremendous changes due to recent technology-driven application of electronic resources. Electronic resources are invaluable research tools for modern sourcing and dissemination of information. E-resources may include e-journals, e-discussions, e-news, data archives, e-mail on line chatting, etc, that are available in various forms like e-books, digital libraries, online journal magazine, e-learning tutors and on line test [3].

Research and publication have been a critical factor to reckon with in the academic environment. The quality and quantity of an institution's research is one of the yardsticks for measuring its academic accomplishment and excellence. Research productivity rest largely on quality, and often the quantity of research published as textbooks, or chapters in books, journal articles, conference/workshop proceedings, occasional papers, monographs, edited books, bibliographies, abstracts, and indexes published [4].

Academic research plays a critical role in the creation of new knowledge, development of professional knowledge by exploring diverse of topics via literature in the order to determine the existing gap and thereafter proffer solutions. Electronic resources delivers the collection of information as full text databases, e-journals, image collections, multimedia in the form of CD, tape, internet, web technology etc. Yusuf and Onasanya [5] further affirmed that ICT provides quick and easy access to more extensive and current information, facilitate quick solving of complex mathematical and statistical calculations in research. Thus, provides researchers with a steady way for the dispersal of research reports and findings. Electronic information sources are perceived to be one of the most recent developments for accessing and disseminating information. An identified problem and solution can be discussed among researchers in order to improve upon the work of others with less stress via electronic manuscripts. The global trend of using mobile technologies for quick access of information and research materials anytime and anywhere makes it usage unbound to specific location. The interdisciplinary team work can prevent duplication of efforts,

Keywords: Mobile technologies; Lecturers; Area of specialization; Academic status; Years of experience

Introduction

The pursuit of knowledge is the principal reason for the existence of any university globally. Universities are traditionally regarded as ivory towers of knowledge, where information acquisition is generated for training and for solving problems that could result in economic and national advancement [1,2]. University education thrives on adequate

provides framework for the writing of papers and improvement of software and tools. Thus establishes good communication aid in project management [6]; irrespective of lecturers' socio-demographics factors.

Demographic factor has been associated with lecturers' research productivity. Bland and Ruffin [7] identified some characteristics that could affect research productivity as personal motivation, research training/mentoring, scholarly habit, socialization to academic values, collaboration of research with productive colleagues, resources and sustainable uninterrupted time. Considering years of experience with respect to research productivity, studies carried out by scholars revealed that years of experience is one of the criterion references for research productivity of academics [8,9]. Agber and Agwu [10] studies attested that productivity of the academic staff had great impact on the access and usage ICTs in facilitating research. Chukwuemeka [11] study revealed that less experienced teachers are more competent in the use of ICT and the Internet for teaching and accessing information than moderate and highly experienced teachers.

However, Sangowusi [12] found out that access and use of ICTs do not have significant difference and impact on the productivity of professors; due to the fact that they would grossly be carried away with teaching and administrative responsibilities and duties. Okebukola's [13] study revealed that poor motivation given to lecturers have resulted to degeneration in quality, quantity and consistency of research publications output Nigerian universities irrespective of lecturers' socio-demographics (gender, institution type, area of specialization academic status and years of experience). Edem and Atinmo [14] study revealed that researchers and academics' years of experience has a positive influence on their publication output. The authors buttressed that lecturers' early years of experience were used to acquire professional expertise which require keen interest and wide reading to enable them develop research skill and expertise of cultivating the habit of writing for publishing. Thus years of experience in relation to publishing is acquired and manifest with time. There is a common cliché that "experience is the best teacher." This assertion suggests the art of research publication may need professional maturity that is accompanied by years of accumulated experience on the job. Therefore, socio-demographics that were examined in this study are lecturers' area of specialization academic status and years of experience on the perceived obstacles encountered on the use of mobile technologies for research.

Statement of Problem

The issues on research publications have been a major concern to university lecturers irrespective of their area of specialization, years of experience and academic status. The quantity and quality of lecturer's publications in referred national and international journals as means of contributing to the body knowledge is one of the conditions attached to the rating of "high-class" universities and its lecturers. The dictum "publish or perish" exemplified great importance attached to

research publication in the academic community. Chiemeké, Longe, Longe and Shaib [15] averred research output to be very germane and consider such as a criterion reference for ranking "world class universities". Studies conducted by Okafor, Adeya and Oyelaran-Oyeyinka [16,17], revealed that the challenges encountered in the use of newer technologies for accessing information by tertiary institutions lecturers have no effect on their productivity. Ogunkunle and Fomis [18] identified irregular electric power supply and lack of access to Internet facilities as the major constraints for using the Internet for research by the lecturers. However, research on the challenges encountered on the use mobile technologies for accessing and dissemination of research outputs electronically were not carried out on the domain of academic staff's area of specialization, academic status and years of experience. Therefore, this study investigated the Nigerian university lecturers' socio-demographics on the perceived obstacles to the use of mobile technologies for research.

Research Questions

The following research questions were generated for the study:

- What are the differences that exist in the university lecturers' perceived obstacles to the use of mobile technologies for research based on their area of specialization?
- Does difference exist in the university lecturers' perceived obstacles to the use of mobile technologies for research based on their academic status?
- Is there any difference in the university lecturers' perceived obstacles to the use of mobile technologies for research based on their years of experience?

Research Hypotheses

The following null hypotheses were formulated from research questions 1-3.

Ho₁: There is no significant difference in lecturers' perceived obstacles to use of mobile technologies for research based on their area of specialization.

Ho₂: There is no significant difference in lecturers' perceived obstacles to use of mobile technologies for research based on their academic status.

Ho₃: There is no significant difference in lecturers' perceived obstacles to use of mobile technologies for research based on their years of experience.

Materials and Methods

Methodology

Sample: This study was a descriptive research of the cross-sectional survey type. Thirteen (13) public universities (comprising Federal and State government owned universities) in the six states of the South-west, Nigeria were involved in the

study. The South-western States in Nigeria comprised Oyo, Ogun, Ondo, Osun, Lagos and Ekiti states. A total of 742 respondents returned the copies of the questionnaires out of 1,013 university lecturers that were proportionally sampled out of 10,128 lecturers' staff strength. A total of 742 out of 1013 which translates to 73.25% copies of questionnaires were retrieved from the lecturers in the sampled universities. **Table 1** contained the samples of the respondents based on the lecturers' area of specialization, academic ranks (status) and years of teaching experience.

Instrumentation: structured questionnaire was employed to collect data on perceived obstacles to use of mobile technologies for research based on the variables used for the study. Stratified random sampling technique was employed to select lecturers based on their area of specialization, lecturers' academic status and years of teaching and research experience. Lecturers' area of specialization was classified as humanities, pure sciences and applied sciences. The lecturers' academic status or Rank was classified as professorial rank, senior lecturer, below senior lecturer (lecturer I and II) and others (assistant lecturer and graduate assistant). Also, the lecturers' years of teaching experience were ranged between 0-10 years, 11-20 years and 21 and above years.

The instrument was segmented into two sections. Section A collected the respondent's bio-data on: lecturers' area of specialization, academic status, and year of experience. Section B contained items on lecturers' perceived obstacles to the use of mobile technologies for research collaboration. Batteries of items contained in the instrument to elicit response are: cost of mobile network service providers; scholarly interactions are constrained by institutional support, extra training is required by the user, limited battery life span constitute problem for extensive use, power failure, unstable network connection, screen sizes are too small, difficulties experienced in using mobile technologies and the development of uncontrollable technical faults reduces usage.

The items were structure to elicit the respondents responses based on Likert rating scale of Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SA). Lecturers' responses on Strongly Agreed and Agreed were collapsed as 'Agreed', while Strongly Disagreed and Disagreed responses were further collapsed as 'Disagreed'. The research instrument was validated and the reliability index yielded $r=0.92$ at 0.05 level of significance using Cronbach Alpha. 3 research questions and hypotheses were answered and tested respectively. The data generated were collected, collated and analyzed using descriptive and inferential statistics. Frequency counts, mean and percentages were used to answer research questions 1, 2 and 3 on lecturers' area of specialization, academic status and years of experience; while hypotheses 1, 2 and 3 were tested using Analysis of Variance (ANOVA) at 0.05 level of significance.

Results

Table 1 depicts that the frequency counts and percentages of 293(39.50%), 206(27.80) and 243(32.70%) are university

lecturers in the department of humanities, pure sciences and applied sciences respectively. The lecturers' academic status (ranks) in the professorial rank were 140 (18.90%), senior lecturers were 206 (27.80%), below senior lecturers (i.e. lecturer I and II) were 282 (38.00%) and assistant lecturers and graduate assistants that are classified as others had the frequency counts of 114 that correspond to 15.40%. The frequency counts for less experience lecturers (0-10 years) were 369 (49.70%), experienced lecturers (11-20 years) were 250 (33.70%) and highly experienced lecturers (21 and above years) were 123 (16.60%).

Table 1: Frequency Distribution of University Lecturers' Demographic information.

Variables	Frequency	Percent (%)
Area of Specialization		
Humanities	293	39.5
Pure Sciences	206	27.8
Applied Sciences	243	32.7
Sum of the Respondents	742	100
Lecturers Academic Status		
Professorial rank	140	18.9
Senior Lecturer	206	27.8
Below Senior Lecturer	282	38
Others	114	15.4
Sum of the Respondents	742	100
Years of Experience		
0-10 Years	369	49.7
11-20 Years	250	33.7
21 and above	123	16.6
Sum of the Respondents	742	100

Research question one

What are the differences that exist in the university lecturers' perceived obstacles to the use of mobile technologies for research based on their area of specialization?

Table 2: Perceived Obstacles to the Use of Mobile Technologies for Research Based on the Lecturers' Area of Specialization.

Area of specialization	Freq.	Percent (%)	Sum of mean for POU	Mean (x)
Humanities	293	39.5	29.93	3
Pure Science	206	27.8	30.07	3.01
Applied Science	243	32.7	30.31	3.03

Total	742	100		
Note: the grand mean score for perceived obstacles to the use of mobile technologies based on lecturers' area of specialization was 3.01				

The lecturers' area of specialization mean score for perceived obstacles to the use of mobile technologies for research in humanities, pure sciences and applied sciences were 3.00, 3.01 and 3.03 respectively. The analysis therefore showed that irrespective of lecturers' area of specialization (humanities, pure sciences or applied science) perceived that some obstacles existed towards the use of mobile technologies for research with the mean score of 3.01 out of 4.00 (**Table 2**).

Research question two

Does difference exist in the university lecturers' perceived obstacles to the use of mobile technologies for research based on their academic status?

Table 3: Perceived obstacles to the use of Mobile Technologies for Research Based on the Lecturers' Academic Status (Rank).

Academic status (Rank)	No	Percent (%)	Sum of mean for POU	Mean (x)
Professorial	140	18.9	29.93	3
Senior Lecturer	206	27.8	30.05	3.01
Below Senior Lecturer	282	38	30.16	3.02
Others	114	15.4	30.22	3.02
Total	742	100		
Note: the grand mean for perceived obstacles to the use of mobile technologies based on the moderating effect of academic status was 3.01				

The mean score for perceived obstacles to the use of mobile technologies for professorial ranks, senior lecturers, below senior (lecturer I and II) and others (assistant lecturer and graduate assistant) were 3.00, 3.01, 3.02 and 3.02 respectively as shown in **Table 3**. It was deduced that all the lecturers irrespective of their academic statuses (ranks):

Table 5: Analysis of Variance of University Lecturers' Area of Specialization on Perceived Obstacles to Use of Mobile Technologies for Research.

	Sum of squares	Df	Mean Squares	F	Sig.	Remark
Between Groups	19.05	2	9.524	1.1	0.33	
Within Groups	6379.535	739	8.633			Not Rejected
Total	678345	742				

The analysis in **Table 5** reveals $F(2, 739) = 1.10$, $p = 0.33$ ($p > 0.05$) for lecturers' perceived obstacles to use of mobile technologies for research based on their area of specialization. This implies that the significant value (0.33) was greater than the alpha value (0.05). Thus, the stated null hypothesis was

not rejected. By implication, there was no significant difference in lecturers' perceived obstacles to use of mobile technologies for research based on area of specialization (humanities, pure sciences and applied sciences). Thus, lecturers in Humanities, Pure Sciences and Applied Sciences

Research question three

Is there any difference in the university lecturers' perceived obstacles to the use of mobile technologies for research based on their years of experience?

Table 4: Responses on Perceived obstacles the use of Mobile Technologies for Research Based on the Lecturers' Years of Experience.

Years of teaching experience	No	Percent (%)	Sum of mean for PU	Mean (x)
0-10 years	369	49.7	30.12	3.01
11-20 years	250	33.7	30.15	3.02
21 and above years	123	16.6	29.88	3
Total	742	100		
Note: the average mean for perceived obstacles to the use of mobile technologies based on lecturers' years of experience was 3.01				

From **Table 4**, it was shown that the less experience lecturers (0-10 years of experience) had the mean score of 3.01; experienced lecturers (11-20 years of experience) with the mean score of 3.02 while highly experienced lecturers had the mean score of 3.00 for perceived obstacles to the use of mobile technologies for research. It was deduced that all the lecturers perceived the existence of obstacles while using mobile technologies for research irrespective of their years of experience with the mean score of 3.01 out of 4.00.

Hypotheses one

H₀₁: There is no significant difference in lecturers' perceived obstacles to the use of mobile technologies for research based on area of specialization.

	Sum of squares	Df	Mean Squares	F	Sig.	Remark
Between Groups	19.05	2	9.524	1.1	0.33	
Within Groups	6379.535	739	8.633			Not Rejected
Total	678345	742				

not rejected. By implication, there was no significant difference in lecturers' perceived obstacles to use of mobile technologies for research based on area of specialization (humanities, pure sciences and applied sciences). Thus, lecturers in Humanities, Pure Sciences and Applied Sciences

have similar perception towards the challenges encountered while using mobile technologies for accessing and dissemination of research findings.

Hypotheses two

Ho₂: There is no significant difference in lecturers' perceived obstacles to use of use of mobile technologies for research based on academic status.

Table 6: Analysis of Variance (ANOVA) of lecturers' Perceived Obstacles to Use of Mobile Technologies Based on Academic Status.

	Sum of squares	Df	Mean Squares	F	Sig.	Remark
Between Groups	7.131	3	2.377	0.27	0.84	
Within Groups	6391.453	738	8.661			Not Rejected
Total	678345	742				

The analysis in **Table 6** reveals $F(3, 738)=0.27$, $p=0.84$ ($p>0.05$) for the lecturers' perceived obstacles to use of mobile technologies for research based on the moderating effect of academic status. This implies that the significant value (0.84) was more than the alpha value (0.05). This was found not to be significant and the stated null hypothesis failed to be rejected. By implication, there was no significant difference in lecturers' perceived obstacles to use of mobile technologies for research based on academic status (professors, senior

lecturers, lecturers I, lecturer II, assistant lecturers and graduate assistants).

Hypothesis three

Ho₃: There is no significant difference in perceived obstacles to use of mobile technologies for research collaboration based on lecturers' years of experience.

Table 7: Analysis of Variance (ANOVA) of the University Lecturers' Perceived Obstacle to Use of Mobile Technologies Based on Years of Experience.

	Sum of squares	Df	Mean Squares	F	Sig.	Remark
Between Groups	6.923	2	3.462	0.4	0.67	
Within Groups	6391.66	739	8.649			Not Rejected
Total	678345	742				

The analysis in **Table 7** reveals $F(2, 739)=0.40$, $p=0.67$ ($p>0.05$) for the lecturers' perceived obstacles to use of mobile technologies for research based on years of experience. This implies that the significant value (0.67) was greater than the alpha value (0.05). Thus the stated null hypothesis failed to be rejected. This implies that there was no significant difference in lecturers' perceived obstacles to use of mobile technologies for research collaborations based on lecturers' years of experience (less experience: 0-10 years; experienced: 11-20 years; and highly experienced: 21 and above years). This implies that lecturer had similar perception on obstacles encountered on the use of mobile technologies for accessing and dissemination of research outputs irrespective of their years of teaching experience.

Discussions

Academic research and publication plays a critical role in the creation of new knowledge, development of professional knowledge via the use of newer technological devices. However, literature established that there are numerous obstacles hindering their effective usage in carrying out research. The study agreed with Ogunkunle and Fomis and Samuel that university lecturers encountered obstacles like high cost of mobile network service provider, scholarly

interactions are constrained by institutional support while using mobile technologies for research, extra training is required by the lecturers to operate newer mobile technological devices and limited battery life span constitute problem for extensive use. This study further agreed with Ogunkunle and Fomis that irregular electric power supply and lack of access to Internet facilities was a major constraint for using the Internet for research by the lecturers.

The study concurred with Okebukola's findings that power failure and unstable network connection was one of the obstacles hindering the usage of mobile technologies. The study concurred with Samuel that challenges like screen sizes are too small, complexities of newer devices and the development of uncontrollable technical faults reduces their usage for research. By implication, lecturers encountered obstacles on the use of mobile technologies for research irrespective of their area of specialization academic status and years of experience. Also this study agreed with Ogunkunle and Fomis that lecturers needed research facilities and institutional support in boosting their research publication irrespective of their area of specialization academic status and years of experience. This study agreed with Ogbomo and Jung studies that year of experience is germane to research productivity of academics. However, lecturers experienced

some difficulties in the use of newer technologies for research irrespective of their area of specialization (humanities, pure sciences or applied science), academic statuses (ranks): professorial ranks, senior lecturer, lecturer I, II, assistant lecturer or graduate assistant and years of experience. Also, this study concurred with Agber and Agwu's studies that productivity of the academic staff had great impact on the access and usage ICTs in facilitating research despite the challenges encountered.

The study revealed that irrespective of lecturers' area of specialization (humanities, pure sciences or applied science), academic statuses (ranks): professorial ranks, senior lecturer, lecturer I, II, assistant lecturer or graduate assistant and years of experience had the mean score of 3.01 out of 4.00 in each case perceived that some obstacles existed towards the use of mobile technologies for research. Hence, high grand mean scores of 3.01 out of 4.00 in each case on the lecturers' perceptions on the obstacles encountered on the use of mobile technologies for research exemplifies high level of challenges encountered. The study therefore found out that the university lecturers are constrained by institutional support while using mobile technologies in facilitating scholarly interactions, high cost of mobile network service provider, difficulties encountered by the lecturers to use mobile devices required extra training, unstable electricity to power mobile devices, unstable network connection, the development of uncontrollable technical faults reduces usage and other related constraints hindered lecturers from maximizing the good use of mobile technologies for research.

Conclusion

The cliché of "publish or perish" that prevalent in the high institutions of learning mandates lecturers to develop good deal of interest in the use of newer mobile technologies in enhancing research. However, obstacles encountered towards the usage of newer technologies for research by university lecturers are constrained by institutional support while using mobile technologies in facilitating scholarly interactions, high cost of mobile network service provider, difficulties encountered by the lecturers to use mobile devices required extra training, unstable electricity to power mobile devices, unstable network connection, the development of uncontrollable technical faults reduces usage and other related constraints hindered lecturers from maximizing the good use of mobile technologies for research. The implication is that issues on challenges encountered by the university lecturers on the use of newer mobile technologies in facilitating research is a general phenomenon irrespective of area of specialization, academic status and years of experience. These hitches could therefore be remediated via collaboration with the Nigerian university administrators, government and non-government organizations in providing adequate institutional support, stable electricity, internet facilities and procurement of adequate mobile technologies to all academic staff.

Recommendations

The study recommends that:

Nigerian university administrators, government and non-government organizations should endeavor to provide institutional support, stable electricity, internet facilities and procurement of adequate mobile technologies to all lecturers regardless of their area of specialization academic status and years of experience.

Workshops and seminars should be organized for lecturers on how to use mobile technologies in facilitating effective research and collaboration irrespective of their area of specialization academic status and years of experience.

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