

INFORMATION LITERACY SKILLS AND RESEARCH PRODUCTIVITY AMONG POSTGRADUATE STUDENTS IN PUBLIC UNIVERSITIES IN CROSS RIVER STATE, NIGERIA

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ABSTRACT

This study examined the relationship between information literacy skills and research productivity among postgraduate students in public universities in Cross River State, Nigeria, with specific emphasis on digital literacy skills. A correlational survey research design was adopted. The population comprised 740 postgraduate students from three public universities, from which a sample of 370 students was selected using proportionate stratified and accidental sampling techniques. Data were collected using the “Information Literacy and Research Productivity Questionnaire” (ILRPQ). The instrument was validated by experts in Library and Information Science and Test and Measurement. Reliability was established using Cronbach’s alpha, with coefficients of .78 for digital literacy skills and .78 for research productivity. Data were analysed using simple linear regression at the 0.05 level of significance. The finding revealed a significant positive relationship between digital literacy skills and research productivity ($R = .784$, $R^2 = .615$, adjusted $R^2 = .614$, $F = 588.399$, $p < .05$). The study concluded that digital literacy skills contribute significantly to postgraduate students’ research productivity. It recommended regular digital literacy training and improved digital research infrastructure, internet access, computer facilities, and technical support in public universities.

Keywords: digital literacy skills; information literacy; research productivity; postgraduate students; public universities.

Introduction

Research productivity is a central expectation of postgraduate education because postgraduate programmes are designed not only to deepen disciplinary knowledge but also to develop the capacity to produce new knowledge through systematic research. Among postgraduate students, research productivity may be understood as the extent to which students successfully engage in and complete research-related outputs such as theses, dissertations, journal articles, conference papers and other scholarly products. Uwizeye et al. (2022) noted that research productivity in higher education is commonly assessed through scholarly outputs such as journal publications and conference proceedings. For postgraduate students, productivity also involves the ability to complete research activities within the expected period, make effective use of scholarly literature and communicate findings through recognised academic channels.

Research productivity among postgraduate students is important because postgraduate research contributes to the knowledge base of universities, strengthens institutional research performance and provides evidence that may be applied to social, scientific and economic problems (Uchegbue et al., 2026; Ubi et al., 2026). Where postgraduate students consistently produce quality research, universities are better positioned to expand scholarly knowledge, strengthen academic visibility and develop future researchers. Conversely, weak research productivity can result in prolonged postgraduate programmes, abandoned research projects, limited publication output and reduced contribution of universities to knowledge production. Uwizeye et al. (2022) observed that low research productivity in African higher education institutions remains a concern because inadequate research output may weaken the contribution of universities to national and continental development.

The consequences become more serious when low research productivity persists among postgraduate students. Students who experience difficulty progressing with their research may

spend longer periods completing dissertations and theses, incur additional financial costs and leave postgraduate programmes without developing sufficient research competence (Otu et al., 2026; Okere et al., 2026). At the institutional level, persistent low productivity can reduce the volume and quality of research emerging from postgraduate programmes, weaken publication activity and limit the development of a sustainable pool of researchers. Oluwasanu et al. (2019), in a study involving postgraduate scholars and early-career researchers in Nigeria, identified poor research productivity as a significant concern and associated it with limited specialised skills, inadequate infrastructure, poor research funding and weak research capacity. Although the study predates 2020, its findings remain relevant because they directly demonstrate the consequences of weak research capacity among Nigerian postgraduate researchers.

Globally, postgraduate research increasingly takes place within digital environments. Literature searches, retrieval of journal articles, communication with supervisors, data collection, statistical analysis, reference management, collaborative writing and dissemination of findings are increasingly supported by digital technologies (Nwachukwu et al., 2026; Ndarake et al., 2026). This means that postgraduate students require more than conventional research knowledge to function effectively. Bell (2021), in a study of doctoral students, found that digital tools and digital skills were important components of doctoral research workflows and research success. The study showed that differences in students' digital abilities could affect their capacity to engage effectively with contemporary research processes.

Within Africa, the problem of research productivity is influenced by both institutional and individual conditions. Uwizeye et al. (2022), after reviewing studies on research productivity in African higher education institutions, identified research funding, institutional networking, collaboration, research training, internet connectivity, mentorship and research self-efficacy among the factors associated with research productivity. Their findings indicate that research productivity is not determined only by students' willingness to conduct research;

it also depends on whether researchers possess the competencies and resources required to navigate contemporary research environments (Ita et al., 2025; Eze et al., 2026). Where postgraduate students lack relevant research and digital competencies, access to electronic resources and research-support systems may not translate into meaningful scholarly output.

This concern is particularly relevant in Nigeria, where postgraduate students are increasingly expected to use electronic databases, online journals, institutional repositories, digital research tools and web-based academic platforms. Oseghale (2023) examined digital information literacy skills among graduate students at the University of Ibadan and found that digital information literacy was closely connected with students' capacity to locate, evaluate and utilise electronic information resources. The study demonstrates that access to electronic resources alone is insufficient if postgraduate students cannot search effectively, assess retrieved information and apply digital information appropriately to their academic work.

Research productivity, therefore, may be affected by the level of information literacy skills possessed by postgraduate students. Information literacy skills refer to the competencies required to recognise an information need, locate appropriate information, evaluate its credibility and relevance, organise retrieved information and use it ethically and effectively. In postgraduate research, these skills are particularly important because students must identify scholarly sources, distinguish credible academic materials from unreliable information, synthesise existing literature, acknowledge sources correctly and apply information to the development of research arguments (Anele et al., 2024; Adie et al., 2026). Effiong and Akwang (2024) examined information literacy indicators in relation to research productivity among postgraduate students in public universities in Akwa Ibom State and found relationships between aspects of information literacy and postgraduate research productivity. Their study reinforces the view that the ability to deal effectively with scholarly information may influence the quality and quantity of research produced by postgraduate students.

A specific dimension of information literacy that has become increasingly important is digital literacy skill. Digital literacy skills refer to the ability to use digital devices, applications and online environments effectively for locating, evaluating, managing, creating and communicating information. Within postgraduate research, this includes competence in searching scholarly databases, retrieving electronic publications, using academic search engines, operating reference-management applications, applying data-analysis software, communicating through digital platforms and using other technology-based research tools (Adie et al., 2026). Bell (2021) showed that doctoral researchers depended on different digital tools throughout their research activities, while Oseghale (2023) found that graduate students' digital information literacy skills were important to their use of electronic scholarly resources.

The relationship between digital literacy and research productivity becomes clearer when the actual research process is considered. A postgraduate student who cannot conduct an effective database search may overlook important literature; one who cannot evaluate online information may rely on weak or inappropriate sources; and one who lacks competence in reference-management, data-analysis or digital writing tools may spend excessive time performing research tasks manually. Such difficulties can delay completion, weaken the quality of literature reviews, increase referencing errors and reduce opportunities to convert dissertations into journal articles or conference papers. Innocent and Bupo (2025) found that the utilisation of technological tools such as citation-management systems, data-analysis software and grammar-checking applications was related to academic research productivity among postgraduate students in Rivers State universities.

In Nigeria, evidence directly connecting information literacy with postgraduate research productivity is emerging but remains geographically limited. Effiong and Akwang (2024) investigated postgraduate students in public universities in neighbouring Akwa Ibom State and reported that information literacy indicators were associated with research productivity.

Oseghale (2023), however, concentrated on digital information literacy and the use of electronic resources among humanities graduate students at the University of Ibadan rather than research productivity itself. These studies establish the importance of information and digital competencies but leave questions concerning whether digital literacy skills are significantly related to the actual research productivity of postgraduate students in other university contexts.

The concern is therefore relevant to public universities in Cross River State, where postgraduate students are also expected to undertake independent research, complete theses and dissertations and, increasingly, produce publishable scholarly work. If postgraduate students lack adequate digital literacy skills, difficulties in accessing literature, managing references, analysing data and using digital research platforms may continue to undermine research completion and scholarly output. If this problem is not addressed, universities may experience prolonged postgraduate completion periods, limited student publication output and reduced development of competent future researchers. Despite the importance of the issue, there remains limited empirical evidence specifically establishing the relationship between digital literacy skills and research productivity among postgraduate students in public universities in Cross River State. This gap therefore justifies the present study, which seeks to examine whether digital literacy skills are significantly related to research productivity among postgraduate students in public universities in Cross River State, Nigeria.

Aim and objective of the study

The main aim of this study is to examine the relationship between information literacy skills and research productivity among postgraduate students in public universities in Cross River State, Nigeria. Specifically, the study seeks to:

1. Examine the relationship between digital literacy skills and research productivity among postgraduate students in public universities in Cross River State, Nigeria.

Research Question

The following research question was formulated to guide the study:

1. What relationship exists between digital literacy skills and research productivity among postgraduate students in public universities in Cross River State, Nigeria?

Research Hypothesis

The following null hypothesis was formulated to guide the study and tested at the 0.05 level of significance:

1. There is no significant relationship between digital literacy skills and research productivity among postgraduate students in public universities in Cross River State, Nigeria.

Methodology

The study adopted a correlational survey research design to examine the relationship between information literacy skills and research productivity among postgraduate students in public universities in Cross River State, Nigeria. For the purpose of the present study, digital literacy skills constituted the independent variable, while research productivity constituted the dependent variable. The population of the study comprised 740 postgraduate students enrolled in three public universities in Cross River State, namely the University of Calabar, University of Cross River State, and University of Education and Entrepreneurship, Akamkpa. The population consisted of 160 Postgraduate Diploma students, 420 master's students, and 160 doctoral students. A sample of 370 postgraduate students, representing 50% of the total population, was used for the study. A multi-stage sampling procedure involving proportionate stratified and accidental sampling techniques was adopted. Proportionate stratified sampling was used to ensure representation across the universities and levels of postgraduate study, while

accidental sampling was used to select available postgraduate students during questionnaire administration.

Data were collected using a researcher-developed questionnaire titled “Information Literacy and Research Productivity Questionnaire” (ILRPQ). The instrument contained sections on respondents’ demographic information, digital literacy skills, and research productivity. The items were structured on a four-point rating scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The instrument was subjected to face and content validation by three lecturers in Library and Information Science and two experts in Test and Measurement. A trial test was conducted using postgraduate students from the University of Uyo who were not part of the main study. Reliability was established using the Cronbach’s alpha method. The digital literacy skills scale recorded a reliability coefficient of 0.78, while the research productivity scale also recorded a reliability coefficient of 0.78, indicating acceptable internal consistency. Data collected were analysed using simple linear regression to determine the relationship between digital literacy skills and research productivity among postgraduate students. The null hypothesis was tested at the 0.05 level of significance, and was rejected where the p-value was less than 0.05 and retained where the p-value was greater than or equal to 0.05.

Presentation of results

Hypothesis one

There is no significant relationship between digital literacy skills and research productivity of postgraduate students in public universities. The independent variable in this hypothesis is digital literacy skills; while the dependent variable is research productivity of postgraduate students in public universities. Simple regression analysis was employed to test this hypothesis. The result of the analysis is presented in Table 1. The simple regression analysis of the relationship between digital literacy skills on the research productivity of

postgraduate students in public universities yielded a coefficient of multiple regression (R) of .784 and a multiple regression R-square (R^2) of .615 and an adjusted R^2 of .614. The adjusted R^2 of .614 indicated that Digital literacy skills account for 61.4% of the variance in research productivity of postgraduate students in public universities in the study area. This finding is a critical indication that digital literacy skills is relatively high in the area of the study. The F-value of the Analysis of Variance (ANOVA) obtained from the regression table was $F = 588.399$ and the sig. value of .000 (or $p < .05$) at the degree of freedom (df) 1 and 368. The implication of this result is that digital literacy skills have a significant relationship with research productivity of postgraduate students in public universities. The identified equation to understand this relationship was that research productivity of postgraduate students in public universities = $12.177 + 1.377$ (digital literacy skills).

Table 1: Simple regression result of the relationship between digital literacy skills and research productivity of postgraduate students in public universities

Model	R	R. square	Adjusted R. square	Std error		
1	.784(a)	.615	.614	1.81553		
Model	Sum of square	df	Mean square	F	p-value	
Regression	1939.450	1	1939.450	588.399*	.000(a)	
Residual	1212.982	368	3.296			
Total	3152.432	369				
Variables	Unstandardized B		Standardized	Beta	t	p-value
(Constant)	12.177		1.008		12.084	.000
Digital literacy skills	1.377		.057	.784	24.257	.000

* Significant at .05 level.

Discussion of finding

The result of the first hypothesis revealed that digital literacy skills had a significant positive relationship with research productivity among postgraduate students in public universities in Cross River State, Nigeria. This implies that postgraduate students who possess adequate digital literacy skills are more likely to perform research activities effectively and produce better research outputs. Digital literacy enables students to search for scholarly

information through electronic databases, retrieve and organise relevant literature, use digital research and reference-management tools, communicate with supervisors and other researchers, analyse research information and prepare scholarly documents. Consequently, postgraduate students with stronger digital literacy skills may experience fewer difficulties in carrying out literature searches, managing research materials, completing theses and dissertations and preparing journal articles or conference papers. In contrast, inadequate digital literacy may restrict students' ability to use available electronic research resources and thereby delay or reduce their research productivity.

The finding agrees with Effiong and Akwang (2024), who found that information literacy competencies were related to research productivity among postgraduate students in public universities in Akwa Ibom State, Nigeria, and stressed the importance of developing students' information skills for improved research output. Similarly, Jatto et al. (2025) reported a significant positive relationship between information literacy skills and research output among Library and Information Science postgraduate students at the University of Ibadan, indicating that students with stronger information competencies were better positioned to undertake scholarly research. The finding is also supported by Li et al. (2026), who found that digital literacy was positively associated with scientific research ability among postgraduate nursing students, with research self-efficacy and deep learning contributing to the relationship. In addition, Pelemo et al. (2020) established that information literacy skills were associated with scholarly research among postgraduate students at the Federal University of Agriculture, Abeokuta, demonstrating that the ability to locate, evaluate and effectively use information contributes to postgraduate research activities. These studies support the present finding that competence in digital and information environments can strengthen postgraduate students' ability to undertake research and produce scholarly outputs.

Conclusion

The study concluded that digital literacy skills have a significant positive relationship with research productivity among postgraduate students in public universities in Cross River State, Nigeria. Postgraduate students who possess stronger digital literacy skills are better able to search for relevant scholarly information, use electronic databases and digital research tools, organise research materials, analyse information, and prepare academic outputs. These competencies can support timely completion of research activities, improve the quality of theses and dissertations, and increase students' capacity to produce journal articles, conference papers, and other scholarly outputs. The study therefore established that strengthening digital literacy skills is important for improving the research productivity of postgraduate students.

Recommendations

1. Public universities in Cross River State should organise regular digital literacy training for postgraduate students, with emphasis on the use of electronic databases, digital research tools, reference-management software, academic search engines, and other technologies required for effective research.
2. University management and libraries should provide adequate digital research infrastructure, reliable internet access, functional computer facilities, and continuous technical support to enable postgraduate students to apply their digital literacy skills effectively in conducting and completing research.

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