



Perceived Research Competence and Demographic Factors among Postgraduate Students in Selected Nigerian Public Universities

Siddiqah Olatope OYEDOKUN (PhD.)

Main Library, Olabisi Onabanjo Univesity, Ago-Iwoye, Nigeria

oyedokun.siddiqah@oouagoiwoye.edu.ng,

<https://orcid.org/0000-0001-5708-5656>

Mujidat Adeola BELLO (PhD.)

University Library, Fountain University Osogbo, Nigeria,

bello.mujidat@fuo.edu.ng,

bellomujidatadeola@gmail.com.

<https://orcid.org/0000-0002-4862-7924>

Olufemi Francis OLUSANYA

Olabisi Onabanjo Univesity, Ago-Iwoye, Nigeria

Olusanya.olufemi@oouagoiwoye.edu.ng

<https://orcid.org/0000-0003-1008-2516>

Fauziyah Olayinka ABDULLAH

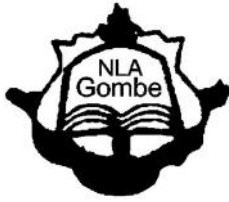
Tai Solarin University of Education, Nigeria

abdullahof@tasued.edu.ng

<https://orcid.org/0009-0002-1820-9454>

Abstracts

This study investigates perceived research competence among postgraduate students in selected Nigerian public universities, focusing on demographic factors. This study employed a descriptive survey research design. The population comprised 2,531 postgraduate students from the Federal University of Agriculture, Abeokuta (FUNAAB) and Olabisi Onabanjo University (OOU). A multi-stage sampling technique was used, beginning with the purposive selection of four colleges and faculties from each university. Proportionate stratified random sampling was then applied, and the Yamane (1973) formula determined a sample size of 337 students. Questionnaire was the instrument for data collection. Three hundred thirty-seven questionnaires were administered, with 331 successfully retrieved (98.2% response rate). Data analysis was conducted using descriptive and inferential statistics. Frequency, percentage, mean, and standard deviation were used for summarisation. All analyses were conducted at a 0.05 level of significance. The findings indicate a higher participation of males in the survey, aligning with previous research suggesting differing emphasis on research competence by gender. Overall, postgraduate students demonstrated strong skills in structuring research but require additional support in research design, data analysis, and result interpretation. Notably, the study reveals no significant gender differences in perceived



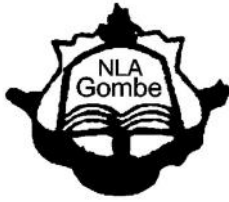
research competence, contradicting earlier claims of gender influence. Recommendations include prioritizing methodological training through workshops, mentorship, and practical sessions to equip students with essential research skills. The study concludes that integrating research competence development at all postgraduate levels is crucial, particularly for early-stage researchers in PGD and Master's programs.

Keywords: Perceived Research Competence, Demographic Factors, Postgraduate, Universities.

Introduction

Research is essential to postgraduate programs, as it is required to complete postgraduate studies in Nigeria successfully. Globally, a crucial competence of 21st-century postgraduate students is research competence. Research competence helps postgraduate students traverse the complexities of the evolving world of knowledge. The recent surge in the diversity of postgraduate students' research competence has developed a far-reaching complication for institutions that want students to complete their studies on time and gain beneficial research experience to get employment or advance their studies. Postgraduate students are expected to develop a certain level of research competency that will enable them to conduct research whose output will be able to fill the gap in society. The essence of research at the postgraduate level is to proffer solutions to developmental problems in society. Research competence has been defined as the possession of knowledge, skills and techniques for solving research problems. Research competence also involves possessing a certain level of technological skills with high analytical skills in research that would help decipher managerial problems, shape a personal career following the application of information communication technology to research activities, and gain personal knowledge on research. (Awodoyin, Olutoki, Osoba, 2024; Adeyeye and Ayodele, 2023; Undelikwo, Effiong & Ubi, 2022; Nguyen, 2025).

Postgraduate students are expected to have the wherewithal to conduct research effectively through the acquisition of skills like problem-solving skills, critical thinking, data analytics and research methodology. Postgraduate students must develop a high level of research competence to carry out independent research projects, which is usually a requirement for the award of the Master's or PhD in Nigerian universities. Literature has revealed several factors that could impact the perceived research competence of postgraduate students, including gender, age and programme of study. (Daniels, 2021; Christmann, 2017; Amparo et al., 2018). Demographic factors refer to features that describe the status of a person, such as age, gender, programme, or institution (El Refae, 2021). This study used gender, age, program and institution of postgraduate students as demographic characteristics. Gender denotes biological differences between males and females. Age refers to the oldness of the students, while the program connotes their choice of course offered at the university. Institution refers to the university where postgraduate studies are offered. Undelikwo, Effiong, Ubi (2022) opined that gender difference exists in acquiring research competence among doctoral students. Demographic characteristics demonstrated a significant impact on students' research competency and productivity. The implication of research competency of postgraduate students outlines professional competency, career path development, nation's growth and development, and most importantly, an increase in global research productivity. Adeyeye &



Ayodele, 2023) Looking into postgraduate students' research competence is important because the result will enable institutions to gain insight into addressing students' diverse learning needs and ensure adequate pedagogical teaching of research to graduate students.

Statement of the problem

Research is regarded as vigorous training for methodical knowledge in life. However, despite its significance in helping postgraduate students grow and develop scientific minds, universities are filled with doctoral students who need more basic research competence skills. Across the literature, there is a lack of clarity and consistency surrounding factors responsible for research competence among postgraduate students in Nigeria (Ayodele, 2022, Ekpoto & Robert, 2018). Much research has been conducted on the level of research competence of postgraduate students in Nigeria; however, none has been conducted to analyse the role of demographic factors on the research competence of postgraduate students in Nigeria. Therefore, this study seeks to provide insights into the demographic factors that influence the research competency of postgraduate students in Ogun State, Nigeria.

Research Question and Hypotheses

What is the perceived research competence of postgraduates in the two selected public universities in Ogun State, Nigeria?

There is no significant gender difference in the perceived research competence of the postgraduates in the two selected public universities in Ogun State, Nigeria.

There is no significant age group difference in the perceived research competence of postgraduates in the two selected public universities in Ogun State, Nigeria.

There is no significant difference in the perceived research competence of postgraduates in the two selected public universities in Ogun State, Nigeria, according to their programme of study.

There will be no significant difference in the perceived research competence of the postgraduates between the two selected public universities in Ogun State, Nigeria.

Literature Review

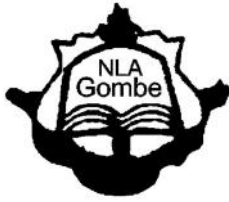
Several studies have examined postgraduate students' research competence across different contexts. Findings, however, remain inconsistent and reveal notable gaps. Research in Nigeria has provided varied insights. Undelikwo et al. (2022) found that gender and academic discipline significantly influenced postgraduate students' research competence, with male students and those in education faculties outperforming their counterparts. Similarly, Adeyeye and Ayodele (2023) reported above-average competence levels among postgraduate students in Lagos State, with strengths in methodological skills and ethical practices. Afolabi, Afolabi, and Aragbaye (2022) also observed a high level of competence among library and information science students in Southwest Nigeria, while Awodoyin et al. (2024) confirmed similar findings for LIS students. However, other studies point to uneven competence; Ciraso-Calí et al. (2022), in Spain, noted gaps in content knowledge, communication skills, and literature reviewing, while Daniel (2021), in New Zealand, found that postgraduate research competence was hindered by theory-heavy methodology courses detached from real-life application.



Contradictions are also evident in gender-related findings. While Undelikwo et al. (2022) and Ismail et al. (2018) reported that male students scored higher in competence indicators, Ain et al. (2019) and parts of Ismail et al. (2018) showed female students exhibiting stronger competence. These conflicting results suggest that gender influence on research competence may be context-dependent and shaped by institutional or cultural factors. Methodologically, many Nigerian studies rely heavily on self-reported questionnaires and descriptive surveys (Adeyeye & Ayodele, 2023; Afolabi et al., 2022). Only a few, such as Ismail et al. (2018), employed objective measures like grades as indicators of competence. This over-reliance on self-reporting raises concerns about inflated assessments of students' abilities. Scope also remains limited. Most studies are concentrated in Nigeria, with only a handful of comparative international perspectives (Daniel, 2021; Ciraso-Calí et al., 2022). As a result, generalisability across contexts is weak. Furthermore, the existing research tends to focus on demographic variables such as gender, age, and discipline, while structural and institutional factors like supervision quality, departmental support, and access to research funding are less explored (Daniel, 2021). Finally, across contexts, emerging competencies such as digital research literacy, proficiency in data analysis software, and the integration of technology into research practice are rarely addressed. This omission is significant given the increasing digitalisation of academic research.

Methodology

This study employed a descriptive survey research design to examine the perceived research competence of postgraduate students in two selected public universities in Ogun State, Nigeria. The population comprised 2,531 postgraduate students from the Federal University of Agriculture, Abeokuta (FUNAAB) and Olabisi Onabanjo University (OOU). A multi-stage sampling technique was used, beginning with the purposive selection of four colleges and faculties from each university. Proportionate stratified random sampling was then applied, and the Yamane (1973) formula determined a sample size of 337 students. Data were collected using the Postgraduate Perceived Research Competency Scale (PPRCS), adapted from Ugwu et al. (2015). The instrument comprised two sections: demographic information and a six-point Likert scale assessing research competence across six domains. Experts validated the questionnaire, and a pilot study confirmed its reliability, yielding a Cronbach's alpha of 0.89. Three hundred thirty-seven questionnaires were administered, with 331 successfully retrieved (98.2% response rate). Data analysis was conducted using descriptive and inferential statistics. Frequency, percentage, mean, and standard deviation were used for summarisation. At the same time, independent t-tests and one-way ANOVA examined differences in research competence based on gender, age, programme of study, and institution. All analyses were conducted at a 0.05 level of significance.



Presentation and interpretation of results

Table 1: Demographic Information

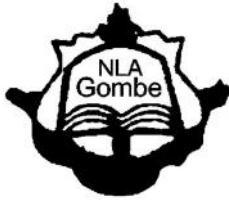
Demographic Variable	Frequency	Percentage
University		
Federal University of Agriculture, Abeokuta	173	52.27
Olabisi Onabanjo University, Ago-Iwoye	158	47.73
Gender		
Male	182	55.0
Female	149	45.0
Age Range		
20-29 years	28	8.5
30-39 years	134	40.5
40-49 years	134	40.5
50-59 years	35	10.6
Program of study		
PGD	18	5.4
Master	214	64.7
MPhil/PhD	76	23.0
PhD	23	6.7
Total	331	100

The demographic analysis shows that the study sample was nearly evenly distributed between the two selected universities, with 52.27% from the Federal University of Agriculture, Abeokuta, and 47.73% from Olabisi Onabanjo University, Ago-Iwoye. Male respondents (55.0%) slightly outnumbered females (45.0%). The majority of participants were aged between 30-39 years (40.5%) and 40-49 years (40.5%), while fewer were in the 20-29 years (8.5%) and 50-59 years (10.6%) age brackets. Most respondents were enrolled in a Master’s programme (64.7%), followed by MPhil/PhD (23.0%), PhD (6.7%), and PGD (5.4%), indicating a dominance of master’s-level students.

Table 2: Perceived Research Competence among Postgraduate Students

Research Competency	Mean	Std. Deviation
Competencies in Writing background of the study	4.86	0.85
Competencies in Writing Literature Review	4.79	0.83
Competencies in Writing Methodology	3.19	0.86
Competencies in Writing analysis and findings of the study	3.15	0.86
Competencies in Writing a summary of the findings of the study	4.80	0.84
Competencies in Writing references for the consulted materials	4.71	0.86
Test value = 3.50		Weighted Mean = 4.25

The weighted mean of 4.25 in Table 2 suggests a generally moderate to high level of perceived research competence among the respondents. The table also reveals variations in postgraduate students' perceived research competence across different aspects of academic writing. The highest mean score was recorded for competencies in writing the background of the study (M = 4.86, SD = 0.85), followed closely by competencies in writing the literature review (M = 4.78, SD = 0.83) and competencies in writing the summary of findings (M = 4.79, SD = 0.84).



This suggests that students feel more confident framing their research, reviewing relevant literature, and summarising their findings. Similarly, competencies in writing references for consulted materials ($M = 4.71$, $SD = 0.86$) indicate a strong understanding of citation and referencing practices.

In contrast, significantly lower mean scores were recorded in competencies related to writing methodology ($M = 3.19$, $SD = 0.86$) and writing analysis and findings ($M = 3.15$, $SD = 0.86$). Students may struggle with designing research methodology, selecting appropriate data collection techniques, conducting statistical analyses, and interpreting results. This result implies that while postgraduate students demonstrate strong competence in structuring their research, they require additional support in research design, data analysis, and result interpretation.

Table 3: Independent sample t-test showing significant gender differences in perceived research competence among the sampled postgraduates

Gender	N	Mean	SD	Std Error	t-cal	Sig
Male	182	201.08	18.14	1.34	1.64	0.10
Female	149	204.91	24.36	1.99		

The result in Table 3 reveals a non-significant outcome ($t = 1.64$, $p > 0.05$). This outcome implies that there was no significant gender difference in the perceived research competence of the postgraduates in the two public universities in Ogun State. Hence, it can be concluded that there were no significant gender differences in the perceived research competence of the postgraduates selected for the study. This suggests that research competence is not influenced by gender, implying that both male and female postgraduates have similar levels of perceived research competence.

Table 4: Analysis of Variance (ANOVA) showing age group differences in perceived research competence among the sampled postgraduates

Age	N	Mean	Std. Deviation	Std. Error	Df	F-cal	Sig of F
20-29 years	28	198.571	27.491	5.195	327	11.721	0.000
30-39 years	134	204.134	17.608	1.521			
40-49 years	134	207.052	18.265	1.578			
50-59 years	35	184.857	28.793	4.867			
Total	331	202.807	21.222	1.167			

Table 4 presents an ANOVA indicating significant differences in the perceived research competence of the postgraduates according to age groups. The result was vital ($F = 11.721$; $P < 0.05$). Data revealed that the mean perceived research competence of 198.57, 204.13, 207.05 and 184.857 for the age groups 20-29 years, 30-39 years, 40-49 years and 50-59 years, respectively, were significantly different. Perceived research competence was higher between the age group 30-49 years. Therefore, a significant difference existed in the level of research competence among the postgraduates in the selected institutions according to their age groups. In essence, the perceived research competence of postgraduates in the two public universities is sensitive to their age groups.

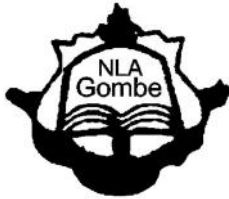


Table 5: Analysis of variance (ANOVA) showing significant differences in perceived research competence of the postgraduate students in the two selected public universities in Ogun State based on their programme of study

Programme	N	Mean	Std. Deviation	Std. Error	DF	F-Cal	Sig
PGD	18	210.333	12.243	2.886			
Masters	214	201.154	18.050	1.234			
MPhil/PhD	76	205.671	28.075	3.220	330	1.659	0.176
PhD	23	202.826	26.405	5.506			
Total	331	202.807	21.222	1.167			

Table 5 presents an analysis of variance (ANOVA) showing significant differences in the perceived research competence of the sampled postgraduates' according to the program of study. The result indicated a non-significant outcome (i.e., $F = 1.659$; $P > 0.05$). The mean perceived research competence of 210.33, 201.154, 205.67 and 202.83 for Postgraduate Diploma students, Masters students, M.Phil/Ph.D students and PhD students, respectively, were not significantly different from one another. Thus, information literacy skills scores were merely higher for Postgraduate Diploma students, followed by the M.Phil/Ph.D. students. Therefore, there is no significant difference in the perceived information literacy skills among the sampled postgraduate students according to the programme of study. This indicates that postgraduate students perceive their research skills similarly regardless of their programme level.

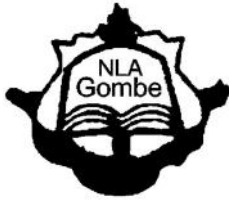
Table 6: Independent sample t-test showing significant differences in perceived research competence between the sampled postgraduates in the two selected university

University	N	Mean	SD	Std Error	t-cal	Sig
OOU	206	202.510	19.681	1.371	0.326	0.744
FUNAAB	125	203.296	23.619	2.113		

The result in Table 6 reveals a non-significant outcome ($t = 0.326$, $p > 0.05$). The outcome implied that there is no significant difference in the perceived research competence of the postgraduates in the two public universities in Ogun State. Hence, it can be concluded that there are no significant differences in the perceived research competence of the postgraduates in the two selected public universities in Ogun State. This suggests that both institutions provide similar research training and exposure to postgraduate students.

Discussion of findings

The result of the study revealed that more Males participated in the survey than females. This is in tandem with Ain et al. (2019), whose research competence was less emphasised for Males than females. The result of the study indicated that postgraduate students demonstrate strong competence in structuring their research; they require additional support in research design, data analysis, and result interpretation. This conforms to Adeyeye and Ayodele (2023) that the level of research competency among postgraduate students of universities in Lagos State, Nigeria, is above average. Also, the result of this study conforms to Afolabi, Afolabi, and Aragbaye (2022) that there is a high level of research competence by the postgraduate students in library schools in southwest Nigeria. The study also revealed that postgraduate students in library schools in Southwest Nigeria possess research competence traits, which include



knowledge of how to define a research problem, the ability to formulate research questions/hypotheses, the ability to develop conceptual models, the ability to explain the significance of the study, ability to develop research objectives, etc.

Furthermore, the result of the study that research competence is not influenced by gender, implying that both male and female postgraduates have similar levels of perceived research competence, negates Awodoyin et al. (2024) that based on gender, there is a significant difference in the research competence of the LIS postgraduate students. Also, the result of this study refutes Undelikwo, Effiong, and Ubi's (2022) submission that there is a significant influence of gender and academic discipline on research competence (about identification of the statement of the problem in a study, review of relevant and current literature, choosing the right and suitable research design, identification of standardised instrumentation and sampling and data collection methods, analysis and interpretation of data by postgraduates' students.

Conclusion

This study extends the literature on postgraduate research competence in Ogun State, Nigeria. Using a distinct approach to prior work that often relied on descriptive accounts or focused narrowly on gender differences, this study highlights the uneven distribution of competencies across specific domains, underscoring the need for targeted institutional interventions. The findings also engage with the contradictory evidence on gender differences, suggesting that competence patterns may be context-specific and shaped by local institutional factors rather than universal trends. The novel focus of this study is on postgraduate students in Ogun State and the identification of research areas where competence remains partial rather than comprehensive. By doing so, this study not only confirms earlier findings that postgraduate students possess essential competencies but also challenges the assumption in some literature that competence levels are uniformly high. Instead, the results reveal a more complex picture that calls for tailored interventions in methodological training, supervision quality, and digital research skills. Future research should build on this study by moving beyond self-reported measures to incorporate performance-based and mixed-method approaches. Moreover, as digital literacy and advanced research technologies increasingly shape academic inquiry, investigating these dimensions of competence will be crucial. In sum, this study contributes novel contextual evidence from Ogun State while sharpening the call for a broader, more nuanced understanding of how postgraduate research competence develops across different educational and cultural settings.

Recommendations

Based on the findings of this study and the gaps identified in existing literature, several recommendations are proposed to strengthen postgraduate research competence in Nigerian universities.

1. Universities management should prioritise methodological training through workshops, mentorship, and hands-on practical sessions to equip students with the necessary skills to conduct rigorous and well-structured research.
2. Universities management should maintain gender-inclusive research training and support programmes, ensuring that opportunities for research development are equally available to all students.



3. Research competence development should be integrated at all postgraduate levels to ensure uniform skill acquisition, particularly for early-stage researchers in PGD and Master's programmes.
4. The universities management should enhance research training programmes and ensure continuous improvement in postgraduate research capacity through workshops, seminars, and faculty mentorship initiatives.

References

- Adeyeye, S. and Ayodele, M. (2023) Research competency of postgraduate students of public universities in Lagos State, Nigeria. *Journal of ICT Development, Applications and Research*, 5(2), 59 – 73. DOI: <https://doi.org/10.47524/jictdar.v5i2.60>
- Afolabi, O E.; Afolabi, O. E; and Aragbaye, M.O. (2022) Research competence of postgraduate students in library schools in southwest Nigeria. *Library Philosophy and Practice (e-journal)* <https://digitalcommons.unl.edu/libphilprac/7181>
- Ain, C. T., Sabir, F. & Willison, J. (2019). Research skills that men develop at university are used in workplaces. *Studies in Higher Education*, 44(12),2346-2358
- Amparo, A. R., Smith, G., & Friedman, A. (2018). Gender and persistent grade performance differences between online and face-to-face undergraduate classes. In T. Bastiaens, J. Van Braak, M. Brown, L. Cantoni, M. Castro, R. Christensen, G. Davidson-Shivers, K. DePryck, M. Ebner, M. Fominykh, C. Fulford, S. Hatzipanagos, G. Knezek, K. Kreijns, G. Marks, E. Sointu, E. Korsgaard Sorensen, J. Viteli, J. Voogt ... O. Zawacki-Richter (Eds.), *Proceedings of EdMedia: World Conference on Educational Media and Technology 1935-1939. Association for the Advancement of Computing in Education (AACE)*. <https://www.learntechlib.org/primary/p/184430/>
- Awodoyin, A. F.; Olutoki, A. E.; Osoba, M.A. (2024) Research self-efficacy as Correlates of Research Competence of Library and Information Science Postgraduate Students' in Selected Universities in Southwest, Nigeria. *Communicate: Journal of Library and Information Science* 26(1)
- Ayodele M.O. (2022) Information Literacy Skills and Research Competence of Postgraduate Students in Selected Tertiary Institutions in Lagos State, Nigeria. Master Degree Thesis Submitted to the Department of Library and Information Science Faculty of Communication and Information Sciences, Lead City University, Ibadan, Oyo State
- Christmann, E. P. (2017). A comparison of the achievement of statistics students enrolled in online and face-to-face settings. *E-Learning and Digital Media*, 14(6), 323-330. <https://doi.org/10.1177/2042753017752925>
- Ciraso-Calí A, Martínez-Fernández JR, París-Mañas G, Sánchez-Martín A and García-Ravidá L.B. (2022) The Research Competence: Acquisition and Development among Undergraduates in Education Sciences. *Front. Educ.* 7:836165. doi: 10.3389/educ.2022.836165
- Daniel, B. K., (2021) The role of research methodology in enhancing postgraduate students' research experience. *The Electronic Journal of Business Research Methods*, 20(1), pp. 34-48, available online at www.ejbrm.com
- Ekpoto D.F., Robert A. I. (2018) Application of Research Skills Among Postgraduate Students in Terms of Problem Articulation and Literature Search in Universities in



- Cross River State, Nigeria. *International Journal of Contemporary Social Science Education*, 1(1), 41–46.
- El Refae G.A., Kaba A., and Eletter.S. (2021) The Impact of Demographic Characteristics on Academic Performance: Face-to-Face Learning Versus Distance Learning Implemented to Prevent the Spread of COVID 19. *International Review of Research in Open and Distributed Learning Volume 22, Number 1*
- Nguyen, T. T. (2024) Exploring Vietnamese EFL postgraduate students' competence in research writing. *Multidisciplinary Reviews*, 8(5), <https://doi.org/10.31893/multirev.2025148>
- Undelikwo V.A; Effiong I.E; Ubi L.O. (2022) Demographic determinants of research skills acquisition among postgraduate students in the University of Calabar, Nigeria *Inter-Disciplinary Journal of Science Education (IJ-SED) Vol. 4(1)*,