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Demographic Variables and Research Skills Acquisition among Post-Graduate Students in Public Universities in Cross River State, Nigeria

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Abstract
This study assessed demographic variables and research skills acquisition among postgraduate students in public universities in Cross River State, Nigeria. Ex post facto research design was adopted for the study, while stratified random sampling technique was used to select a sample of 400 from a population of 2,651 post graduate students in the public universities. An instrument developed by the researcher and titled: "Research Skills Acquisition Questionnaire" (RSAQ), duly validated with reliability estimates of the sub-variables between .72 and .81, was used to collect data for the study. The data collected were subjected to statistical analysis using t-test. The findings revealed that demographic variables (postgraduate students' gender and type of university) significantly influence their research skills acquisition. Based on the findings, it was recommended, among others, that educators should provide targeted support to students who may be struggling with research skills, giving attention to their gender and type of university.

Keywords: research skills acquisition, problem identification, hypothesis formulation, literature review, data collection

Introduction
In today's knowledge-driven society, research skills are fundamental for postgraduate students as they not only enhance their academic performance but also prepare them for professional careers. The ability to conduct independent research, critically analyze information, and effectively communicate findings are essential in various fields. Research skills encompass various competencies, including the identification of problems, formulation of hypotheses, conducting literature review, data collection, data analysis, and research reporting. These skills are essential for producing quality research that contributes to knowledge creation and societal development. In Nigeria, universities serve as key institutions for fostering these skills among students, particularly at the postgraduate level. However, there are significant concerns regarding the preparedness of students to engage in rigorous academic research (Suleiman *et al.,* 2021).

Moreover, the influence of demographic factors such as gender and the type of university play significant roles in shaping their research competencies. Understanding how these independent variables affect the acquisition of research skills is crucial for developing targeted interventions that can enhance the research capacities of postgraduate students in Cross River State. It is worthy of note that demographic variables such as gender and type of university influence postgraduate students' learning styles and motivation levels. Gender can influence students' confidence levels, engagements and research activities; for example, female students may face social or institutional biases that affect their participation in research-oriented activities. Additionally, the type of university (Federal or State) can shape the learning environment and available resources.

Gender influence can impact students' engagement with research activities. Research indicates that female students often face unique social and psychological pressures compared to their male counterparts (Turner, 2019). For instance, Jung and Lee (2019) found that female students are more likely to be influenced by risk perception and social factors when deciding to engage in research activities, which can affect their confidence and willingness to participate in research projects. This suggests that gender dynamics within academic environments can influence mentorship opportunities and peer support, which are critical for developing research skills.

Also, the type of university (federal or state) plays a crucial role in acquisition of research skills among postgraduate students (Barney, 2021). Studies have shown that federal universities tend to have more resources and better infrastructure, which can enhance research skills acquisition (Afolabi, 2015). On the other hand, state universities may face challenges such as inadequate funding and limited resources, which can hinder research skills acquisition (Adeyemi, 2012).

Gender refers to the social roles, behaviours, and identities that societies consider appropriate for men and women. It encompasses the norms, values, and expectations that a society ascribes to being male, female, or another gender identity. Unlike biological sex, which is based on physiological and genetic attributes, gender is shaped by cultural, historical, and social factors (Muller *et al.,* 2018). Baker and McDonald (2020) asserted that gender is a multifaceted concept that goes beyond biological sex and significantly influences various aspects of an individual's life, including education and research.

Furthermore, Johnson *et al.* (2021) emphasized that gender is widely recognized as a social construct; meaning it is created and shaped by societal norms, cultural practices, and historical contexts. These constructs define what is considered "masculine" or "feminine" and influence how individuals are expected to behave and interact within their communities. Socialization processes, including agents like family, education, media, and religion, play a significant role in reinforcing gender roles and expectations. Because gender is a social construct, its manifestations can vary significantly across different cultures and time periods.

Smith and Turner (2019) opined that gender plays a significant role in shaping educational experiences and outcomes, particularly in the context of postgraduate studies. In academia, understanding these distinctions is crucial for addressing disparities in educational attainment and experiences. Gender significantly impacts the acquisition of research skills in several ways: Gender can affect access to educational resources, funding, and professional networks, which are crucial for developing research skills. According to Zimmerman (2017), gender disparities exist in higher education, with variations in enrolment, completion rates, and fields of study. For example, women are increasingly represented in higher education but may still face challenges in fields traditionally dominated by men, such as STEM (Science, Technology, Engineering, and Mathematics).

In their opinion, Muller *et al.* (2018) explained that gender roles are the sets of expectations that societies impose on individuals based on their gender. These roles often lead to stereotypes, which are oversimplified and generalized beliefs about the characteristics and behaviours of different genders. Traditional gender stereotypes can limit individuals' opportunities and aspirations, particularly in fields like science and technology, where certain genders may be underrepresented due to these stereotypes. Such stereotypes can affect access to education, mentorship, and career advancement. Moreover, societal attitudes toward gender can influence the encouragement and support individuals receive from family, educators, and peers, shaping their confidence and interest in pursuing research. Gender imbalances in certain fields can affect participation rates and the development of research skills. For instance, STEM fields have historically seen lower representation of women, impacting the skills women acquire in these areas (Zimmerman, 2017).

Furthermore, Baker and McDonald (2020) revealed that gender bias can affect the evaluation of research proposals and the assessment of researchers, potentially disadvantaging individuals of certain genders in competitive funding and career

advancement processes. Therefore, understanding gender as a social construct, recognizing the impact of gender roles and stereotypes, and considering the importance of intersectionality are essential for exploring the influence of gender on research skills acquisition. By addressing gender disparities and promoting equitable opportunities, researchers can work towards creating a more inclusive and diverse research environment (Baker & McDonald, 2020).

Research skills are essential for postgraduate students, as they form the foundation for academic success and professional development. These skills include identification of problems, hypothesis formulation, literature review, data analysis and research reporting (Smith et al., 2019). However, studies have shown that male and female students may approach the acquisition of research skills differently. For instance, females often exhibit higher levels of collaboration and communication skills, while males may demonstrate more confidence in quantitative analysis. These differences can influence how students engage with research methodologies and the academic community (Baker & McDonald, 2020).

Gender socialization plays a critical role in shaping how students perceive and develop research skills. Traditional gender roles can lead to varying levels of encouragement and support for male and female students in their academic pursuits (Campbell, 2017). Access to mentors and role models significantly impacts the development of research skills. Female students, in particular, may benefit from mentorship by women in academia, which can enhance their confidence and research capabilities (Field, 2018).

Universities that provide tailored support services, such as workshops and resources focused on research skills, can help mitigate gender disparities. Programmes designed to foster inclusivity and address specific challenges faced by female students can lead to improved skill acquisition (Baker, 2016). Recognizing and addressing gender bias in academic settings is crucial for fostering an equitable environment. This includes implementing policies that promote diversity and inclusion, as well as providing equitable access to resources and opportunities for all students (Bryman, 2016). In summary, gender influences the acquisition of research skills among postgraduate students. By addressing gender disparities and fostering equitable access to resources, institutions can enhance the research capabilities of both male and female postgraduate students.

The type of university (federal or state) plays a significant role in shaping the educational experiences of postgraduate students, particularly in the acquisition of research skills

(Barney, 2021). Federal universities are institutions established and funded by national governments. They often have a broader scope of research funding and resources, which can foster a more robust academic environment. These universities typically have a diverse student body and faculty, promoting a range of research interests and interdisciplinary collaborations (Henson *et al.,* 2018).

Henson *et al.* (2018) also asserted that state universities, on the other hand, are funded primarily by state governments. These institutions often focus more on local and regional issues, and their research agendas may be aligned with state priorities. State universities may have fewer resources compared to federal institutions but often emphasize community engagement and practical applications of research.

Research opportunities can vary significantly between federal and state universities. Federal universities often have access to larger research grants, state-of-the-art facilities, and a wider array of collaborative projects. This environment can enhance the acquisition of research skills among postgraduate students (Thompson & Lee, 2020).

According to Henson *et al.* (2018), federal universities generally receive more substantial funding for research activities, allowing for more comprehensive research programmes and facilities. This funding can lead to more opportunities for postgraduate students to engage in research projects, thereby enhancing their skill sets. The expertise of faculty members also plays a critical role in research skills acquisition. Federal universities, often attracting high-profile researchers, provide students with access to leading experts in various fields. This mentorship can significantly impact students' research capabilities (Carter *et al.,* 2019).

Institutional support for research, including workshops, training programmes, and resources, can differ between university types. Federal universities often have dedicated offices for research support, offering students guidance on securing funding, navigating ethics, and enhancing research methodologies (O'Neil & Franks, 2021). A study by Lewis and Smith (2021), found that federal universities tend to have broader networking opportunities due to their diverse student populations and connections with national and international research organizations. These networks can facilitate collaboration and knowledge exchange, further enhancing research skills. State universities often emphasize applied research that addresses local community issues. This focus can provide students with practical experiences and skills that are directly applicable to real-world problems, cultivating a different set of research skills (Lewis & Smith, 2021).

In summary, Gibbons and McNaught (2018) revealed that the type of university (federal or state) significantly influences the acquisition of research skills among postgraduate students. Federal universities typically offer more extensive resources, funding, and faculty expertise, which can enhance research capabilities. In contrast, state universities provide unique opportunities for practical engagement and community-focused research. Understanding these distinctions can help students make informed decisions about their academic paths and research endeavours. It is on this backdrop that the researcher carried out this work to conduct a thorough assessment of the influence of demographic variables (gender and type of university) on the research skills acquisition among postgraduate students in public universities in Cross River State, providing valuable insights that can inform curriculum development, faculty training, and resource allocation in the pursuit of academic excellence.

This aspect of review is concerned with the influence of gender of students on their acquisition of research skills. Although much has not been done in this respect, the researcher however reviewed some studies that are focused on influence of gender in related areas as they provided insight to the present study. Keeves (2009) found that female teachers showed a more favourable attitude to applying testing skills than their male counterparts. With a sample of 78 teachers randomly drawn from six schools, the researcher discovered that while 62 percent of the females showed favourable disposition to testing of students, only 41 percent of the males did. In that study it was concluded that female teachers were likely to apply the skills of testing better than their male counterparts.

Again, Onyeukwu (2018), working with hospital patients, has shown that males are better able to retain new quantitative information than females when testing for immediate recall. That is to say, male students may remember techniques and research skill techniques taught far better than female counterparts. In a study carried out by Aimley and Fullerton (2000), to see the difference in the performance of teachers with respect to sex, it was found that with regards to the effective teaching of technical studies, 80 percent of students taught by male teachers performed creditably well, 65 percent in computer studies, and 67 percent in physical education. This is compared to the performance of those students taught by female teachers who in the same subjects scored 60, 52 and 71 percent respectively. From the presentation, the performance of students taught by male teachers was significantly higher than that of those taught by female teachers, except in physical education with performance of 67 and 71 percent in favour of students taught by female teachers. Although this study was not directly on research skills, it provides insight to the present study.

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In addition, a study carried out by Fredrick (2016) on acquisition of research skills in Department of Medicine, Harvard Medical School, Boston, revealed that gender influence existed in the application of research skills in articulating research problems, and formulating testable hypothesis. The study further highlighted significant influences of male students' acquisition of research skills. Similarly, a recent study on grant applications and funding outcomes across institutions at Harvard Medical School showed that female faculty members, particularly those at the lowest ranks, submitted fewer grant application than men. In both studies, women in the faculty requested less support and received less funding; although, the percentage of requested funding received was similar to men. According to Sommer in Ali (2009), working with hospital patients has shown that males are better able to retain new quantitative information than females when tested for immediate recall. That is to say, male students may remember techniques and research skills techniques taught far better than what female students can, in the context of this discussion.

Similarly, Falaye (2011) examined sex difference and research skills acquisition among university students in North-East region of Nigeria. The research design used was survey method. A sample of 450 students which include 250 females and 200 males was randomly drawn from undergraduate students using simple and stratified random sampling techniques. The instrument used for data collection was questionnaire. The data collected were analyzed using independent t-test. Amongst other findings, the results indicate that there is a significant influence of sex on research skills acquisition among Nigerian university students. This study provides insight to the present study. Furthermore, Asim et al. (2005) conducted a study on teachers' competency in Sciences, Technology and Mathematics Assessment (STMA), a case study of Primary Science Teachers in Cross River State. It was found that teachers' competency in STM assessment is a function of teacher's sex. That is, more females than males were found competent in STM assessment even though they found themselves in large classes and were generalist teachers like the males.

From the review, there is a significant difference between male and female students in acquisition of research skills and these differences are related to previous training, adequate usage of internet and high level of scholarly abilities in terms of paper writing. Women are more significantly less likely than men to indicate strong research career intentions and skills in research work.

On how university type affects the acquisition of research skills among postgraduate students, particularly in the context of public universities in Cross River State, Nigeria, Oduwole et al., (2018) conducted a study on assessing research skills among postgraduate

students in Federal and State Universities in Nigeria. Oduwole et al. employed a comparative survey design in his study using a sample of 500 postgraduate students from both federal and state universities in Nigeria. A structured questionnaire was used to assess students' research skills and descriptive and inferential statistics were applied. From the study, it was found that postgraduate students in federal universities demonstrated significantly higher research skills compared to their counterparts in state universities. Factors such as access to research facilities and mentorship were cited as key contributors.

It can be summarized from the above study that a key determinant of research skill development is access to academic resources, which varies between state and federal universities. Federal universities often have better funding, infrastructure, and library facilities, enabling students to engage in research more effectively. Oduwole et al. (2018) found that postgraduate students in federal universities reported higher levels of access to research materials, which significantly correlated with their research skill acquisition. In contrast, students in state universities often face limitations that hinder their ability to develop these skills.

Similarly, Nwafor and Eze (2020) carried out a study on the role of university type in the development of research competencies among graduate students. A mixed-methods approach combining qualitative and quantitative data was employed in their study. They used purposive sampling to select 300 postgraduate students and 20 faculty members as sample for the study. Data were collected using surveys and in-depth interviews. Data were analyzed using statistical analysis for quantitative data and thematic analysis for qualitative data. The research highlighted that federal university students benefited from more structured research training programmes, leading to better research competencies. Conversely, state university students reported feeling less prepared for research tasks.

Mentorship plays a crucial role in fostering research skills. Nwafor and Eze (2020) highlighted that federal universities tend to offer more structured mentorship programmes, guiding students through the research process. These programmes often include workshops, seminars, and one-on-one guidance from experienced faculty, allowing students to develop their research capabilities more fully. State universities, however, often lack such comprehensive support, leading to disparities in research competencies among students.

Another research was carried out by Akpan *et al.* (2021) on comparative analysis of research skills among postgraduate students in federal and state universities in Cross River State.

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They employed a cross-sectional study design using a cluster sampling technique. The sample size for the study was 400 postgraduate students. Data were collected using self-administered questionnaires. ANOVA was used to compare means between groups. The study revealed a significant disparity in research skills, with students from federal universities scoring higher on research-related tasks. Access to resources such as libraries and research funding was identified as a major differentiator.

The curriculum offered at different types of universities can also influence research skill development. Akpan et al. (2021) found that federal universities often incorporate more rigorous research methodologies and statistical analysis training into their curricula. This exposure equips students with essential skills for conducting independent research. Conversely, state universities may have less emphasis on research-oriented coursework, resulting in students feeling less prepared for research tasks.

Still on the influence of type of university on research skill acquisition among postgraduate students, a study was carried out by Effiom and Ojong (2022) on exploring the impact of university type on the research skillsets of postgraduate students in Cross River State. Effiom and Ojong employed a descriptive correlational study; using simple random sampling technique, they selected 250 postgraduate students for the study. Data were collected using questionnaire, complemented by focus group discussions. Correlation analysis and content analysis were used for data analysis. The study concluded that university type significantly influenced the research skillsets of students, with federal universities providing more opportunities for hands-on research experience and collaboration. Practical experience is vital for developing research skills. Effiom and Ojong (2022), from their study indicated that students in federal universities had more opportunities for hands-on research experiences, such as internships and collaborative projects. These experiences are crucial for applying theoretical knowledge and enhancing research competencies. In contrast, students in state universities often miss out on such opportunities, further widening the skill gap.

In summary, the reviewed studies collectively indicate that the type of university plays a critical role in shaping the research skills of postgraduate students. Federal universities tend to offer better resources, structured training, and mentorship opportunities that enhance students' research competencies. In contrast, state universities face challenges such as limited access to resources, which negatively impacts students' research skill development. These findings underscore the need for targeted interventions to improve research training

in state universities to ensure equitable skill development among postgraduate students in Cross River.

Hypotheses

Ho1: There is no significant gender influence on the extent of acquisition of research skills among postgraduate students in public universities in Cross River State.

Ho2: The type of university does not have significant influence on the acquisition of research skills among postgraduate students in public universities in Cross River State.

Methodology

The research design adopted for this study was the ex post facto. The area of this study was Cross River State, Nigeria. Cross River State is one of the 36 states in Nigeria with the state capital in Calabar, where the two universities under investigation are situated. The population of the study was made up of all postgraduate students in faculties of education in public universities in Cross River State. The universities that fall into this category are University of Calabar, Calabar (UNICAL) and University of Cross River State (UNICROSS). This was made up of 1,763 postgraduate students in UNICAL and 888 postgraduate students in UNICROSS, making a total of 2,651 postgraduate students in the 2023/2024 academic session. Then, proportionate stratified random sampling was used to draw approximately 15% (400) of the postgraduate students from the departments in all the faculties of education.

The instrument used for data collection in this study was a questionnaire titled: “Research Skills Acquisition Questionnaire” (RSAQ) developed by the researcher and validated by experts in Research, Measurement and Evaluation. It was sub-divided into two sections, section A and Section B. Section A elicited responses on demographic variables (gender and type of university). Section B elicited information on assessment of research skill acquisition among postgraduate students in public universities in Cross River state. It consisted of six parts: namely, problem identification, formulation of hypothesis, literature review, data collection, data analysis and research reporting, with each part consisting of five (5) items, giving a total of thirty (30) items. The response options were Very high extent (VHE) – 4, High extent (HE) - 3, Low extent (LE) - 2 and Very low extent (VLE) – 1.

The reliability coefficient of each of the six sub-sections and for the overall Section B were established using Cronbach Alpha reliability. The reliability estimates ranged from .72 to .81 respectively which were considered high enough to make the instrument reliable for use

in the study. The 400 copies of the questionnaire administered were retrieved, collated and the data therefrom was analyzed using independent t-test statistical tool.

Presentation of results

Ho1: There is no significant gender influence on the extent of acquisition of research skills among postgraduate students in public universities in Cross River State.

The independent variable in this hypothesis is gender which is categorized into two (male and female), while the dependent variable is acquisition of research skills in terms of problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition of research skills.

To test this hypothesis, each of the two categories of gender was compared on the basis of the seven dimensions of acquisition of research skills in terms of problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition of research skills using independent t-test research reporting. The result is presented in Table 1.

Table 1: Independent t-test analysis of gender influence on acquisition of research skills

Acquisition of research skills	**Gender**	**N**	**Mean**	**Std. Deviation**	**t-value**	**p-value**
Problem identification	Male	196	16.39	2.32	2.494	.013
	Female	204	15.82	2.21		
Hypothesis formulation	Male	196	16.51	2.27	4.456	.000
	Female	204	15.37	2.80		
Literature review	Male	196	16.14	2.55	3.657	.000
	Female	204	15.14	2.92		
Data collection	Male	196	15.78	2.65	3.726	.000
	Female	204	14.65	3.35		
Data analysis	Male	196	15.06	3.46	2.297	.022
	Female	204	14.24	3.72		
Research reporting	Male	196	16.00	2.89	4.210	.000
	Female	204	14.75	3.07		
Overall acquisition of research skills	Male	196	95.88	12.12	4.295	.000
	Female	204	89.96	15.19		

N=400, df = 398

The results in Table 1 revealed the influence of gender on overall acquisition of research skills to be; male – mean of 95.88 and female 89.96, t-value of 4.295, P <.05. This revealed that gender has a significant influence on the overall acquisition of research skills. On the contribution of the influence of gender on the acquisition of relative research skills, the following values were obtained; Problem identification – mean for male 16.39, and female 15.82; t-value of 2.494, P<.05. Hypothesis formulation: mean for male 16.51 and female 15.37; t-value of 4.456, P<.05. Literature review – mean for male 16.14, and female 15.14; t-value of 3.657, P<.05. Data collection – mean for male 15.78, and female 14.65; t-value of 3.726, P<.05. Data analysis - mean for male 15.06, and female 14.24; t-value of 2.297 P<.05. Research reporting - mean for male 16.00, and female 14.75; t-value of -4.210, P<.05.

Thus, the null hypothesis is rejected. Therefore, there is significant influence of gender on the extent of acquisition of research skills among postgraduate students in public universities in Cross River State.

Ho2: The type of university does not have significant influence on the acquisition of research skills among postgraduate students in public universities in Cross River State.

The independent variable in this hypothesis is type of university which is categorized into two (Federal and State), while the dependent variable is acquisition of research skills in terms of problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition of research skills. To test this hypothesis, each of the two categories of type of university was compared in terms of the seven dimensions of acquisition of research skills including problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition of research skills, using independent t-test research reporting. The result is presented in Table 2.

Table 2: Independent t-test analysis of the influence of type of university on the acquisition of research skills

Acquisition of research skills	Type of university	N	Mean	Std. Deviation	t-value	p-value
Problem identification	Federal	300	16.01	2.25	-1.32	.188
	State	100	16.36	2.34		
Hypothesis formulation	Federal	300	15.90	2.69	-.30	.757

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	State	100	16.00	2.38		
Literature review	Federal	300	15.36	2.80	-3.39	.001
	State	100	16.44	2.62		
Data collection	Federal	300	14.88	3.15	-3.65	.000
	State	100	16.16	2.62		
Data analysis	Federal	300	14.28	3.53	-3.49	.001
	State	100	15.72	3.67		
Research reporting	Federal	300	15.10	3.09	-2.91	.004
	State	100	16.12	2.78		
Overall acquisition of research skills	Federal	300	91.54	13.91	-3.27	.001
	State	100	96.80	13.89		

N=400, df = 398

The results in Table 2 revealed the influence of type of university on overall acquisition of research skills to be: federal university – mean of 91.55 and state university 96.80, t-value of -3.273, P <.05; The negative t-value means that mean of the former is less than the latter and that this difference was significant. On the contribution of the influence of type of university on the acquisition of relative research skills, the following values were obtained: Problem identification – mean for federal university 16.01, and state university 16.36; t-value of -1.32, P>.05. Hypothesis formulation – federal university 15.90 and state university 16.00; t-value of -.30, P>.05. Literature review – mean for federal university 15.36, and state university 16.44; t-value of -3.39, P<.05. Data collection – mean for federal university 14.88, and state university 16.16; t-value of -3.65, P<.05. Data analysis - mean for federal university 14.28, and state university 15.72; t-value of -3.49, P<.05. Research reporting - mean for federal university 15.10, and state university 16.12; t-value of -2.91, P<.05. Although, relatively, types of university did not reveal a significant influence on problem identification and hypothesis formulation but compositely it revealed that there was a significant influence of type of university (federal and state) on overall acquisition of research skills. Then the null hypothesis is rejected. Therefore, the type of university has significant influence on the extent of acquisition of research skills among post graduate students in public universities in Cross River State.

Discussion of the findings

The results of the first hypothesis revealed that gender significantly influences acquisition of research skills. The result can be justified by the view of Asim *et al.* (2005), who assert that more females than males were found competent in STM assessment even though they

found themselves in large classes and were generalist teachers like the males. The findings of this study are in line with studies carried out by Fredrick (2016), Falaye (2011), and Asim *et al.* (2005) which revealed that there is significant difference between male and female students in acquisition of research skills. This means that the women are more significantly less likely than men to indicate strong research skills in research work. However, from the study, the gender differences are related to previous training, adequate usage of internet and high level of scholarly abilities in term of paper writing. Women are more significantly less likely than men to indicate strong research career intentions and skills in research work.

The result of the second hypothesis revealed that type of university significantly influences acquisition of research skills among postgraduate students in public universities in Cross River State. This finding is upheld because postgraduate students in federal universities have higher levels of access to research materials in contrast with students in state universities who often face challenges such as limited access to resources, which negatively impacts students' research skill development and leads them to limitations that hinder their ability to develop research skills.

The finding of this study is in an agreement with the findings of the following researchers: Nwafor and Eze (2020), Akpan *et al.,* (2021) and Effiom and Ojong (2022) that revealed influence of type of university on research acquisition among postgraduate students in tertiary institution. Similarly, Nwafor and Eze's (2020) study revealed that federal university students benefited from more structured research training programmes, leading to better research competencies. Conversely, state university students reported feeling less prepared for research tasks. Furthermore, they found that students in federal universities had more opportunities for hands-on research experiences, such as internships and collaborative projects. These experiences are crucial for applying theoretical knowledge and enhancing research competencies. In contrast, students in state universities often miss out on such opportunities, further widening the skill gap.

In summary, a key determinant of research skill development is access to academic resources, which varies between state and federal universities. Federal university often have better funding, infrastructure and library facilities, enabling students to engage in research more effectively. These findings underscore the need for targeted interventions to improve research training in state universities to ensure equitable skill development among postgraduate students.

Conclusion

The study found that postgraduate students' demographic variables (gender and type of university) influenced their acquisition of research skills. These findings revealed that students' demographic variables play a crucial role in shaping their research skills. The influence of gender and type of university on research skills acquisition highlights the need for educators and policymakers to develop targeted strategies to support students from diverse backgrounds and promote a positive attitude towards research. The findings of the study also underscore the importance of research skills in today's knowledge-driven world. As students acquire research skills, they become equipped to contribute to the body of knowledge in their respective fields and address real-world problems. Therefore, it is essential for educators and policymakers to prioritize research skills development and provide students with the necessary support and resources to excel in research.

Recommendations

1. Universities should endeavour to give equal opportunities to both male and female students in carrying out research work.
2. There is need for targeted interventions to improve research training in State universities to ensure equitable skill development among postgraduates in Cross River State.

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