



PSYCHOLOGICAL VARIABLES AND RESEARCH SKILLS ACQUISITION AMONG POSTGRADUATE STUDENTS IN PUBLIC UNIVERSITIES IN CROSS RIVER STATE, NIGERIA

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ABSTRACT

This study assessed psychological variables and research skills acquisition among postgraduate students in public universities in Cross River State, Nigeria. Ex post factor 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 universities of the study. An instrument developed by the researcher and titled: "Research Skills Acquisition Questionnaire" (PVRSAQ), 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 simple linear regression analysis. The study revealed that psychological variables (attitude to; and, interest in research methods) significantly influence the postgraduate's education students' research skills acquisition. Based on the findings, it was recommended among others, that educators should consider focusing on developing intervention aimed at improving students' attitudes towards research and identifying best practices for enhancing research engagements in postgraduate education. Also, educators are encouraged to focus on identifying effective strategies to enhance research interest and explore the long-term impacts of these strategies on students' academic and professional success.

KEYWORDS: Research skills acquisition, problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting, attitude to; and, interest in research methods

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 reviews, 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..

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However, there are significant concerns regarding the preparedness of students to engage in rigorous academic research. These concerns include among others, the postgraduate students' attitude to; and, interest in research methods. (Suleiman et al., 2021).

The influence of attitude to; and, interest in research methods play significant roles in shaping research competencies among postgraduate students. 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 psycho variables such as attitude to; and, interest in research methods influence postgraduate students' learning styles and motivation levels. The attitude of students towards research methods plays a crucial role in shaping their ability to acquire essential research skills during their postgraduate studies (Patel & Kumar, 2020).

Attitude to research methods

Attitude refers to a psychological tendency expressed by evaluating a particular entity with some degree of favour or disfavour (Ajzen, 2021). In the context of education, students' attitudes towards research methods encompass their perceptions, beliefs, and feelings regarding the importance and relevance of research in their academic and professional lives. A positive attitude towards research methods is essential for students to engage meaningfully with the material, fostering a deeper understanding of research principles and practices. Conversely, negative attitudes can lead to anxiety, avoidance, and a lack of engagement, hindering skill acquisition (Bandura, 1977).

Furthermore, Gibbons and McNaught, (2018), opined that prior experiences with research, whether positive or negative, significantly influence students' attitudes. Students who have previously engaged in research projects may feel more confident and positive about research methods, while those with limited exposure may view research as daunting and irrelevant.

According to Whittaker (2020), the teaching methods employed in research methods courses can also shape student attitudes. Engaging, interactive, and relevant instructional practices tend to foster positive attitudes, while traditional, lecture-based approaches may lead to disengagement. Again, students are more likely to

develop a positive attitude towards research methods if they perceive them as relevant to their academic goals and future careers. Demonstrating the practical applications of research can enhance students' interest and motivation (Hsieh & Chen, 2019).

Furthermore, students with positive attitudes towards research methods are more likely to actively engage in learning activities, participate in discussions, and seek help when needed. This engagement is critical for the acquisition of research skills, leading to better comprehension and application of research techniques (Smith et al., 2019). Positive attitudes contribute to higher levels of confidence and self-efficacy regarding research tasks. Students who believe in their abilities are more likely to take on challenging research projects and persist through difficulties, enhancing their skill development (Bandura, 1997).

Positive attitudes can encourage collaborative learning among peers. Students who view research methods favourably are more likely to work together on research projects, sharing knowledge and skills, which can enhance their overall research competencies (Van der Meer, 2021). Incorporating real-world applications and case studies into research methods courses can help students see the relevance of research to their fields, fostering positive attitudes (Creswell, 2014). Creating a supportive and inclusive learning environment encourages students to express their concerns and challenges regarding research methods. Providing resources and support can help alleviate anxiety and improve attitudes (Smith & Turner, 2019). Mentorship from faculty members can positively influence student attitudes. Faculty who demonstrate enthusiasm for research and provide constructive feedback can inspire students and enhance their overall engagement with research methods (Lee & Chan, 2020).

In summary, the attitude of students towards research methods affects their acquisition of research skills in postgraduate studies. Positive attitudes foster engagement, confidence, and collaboration, all of which are essential for developing strong research competencies. By understanding and addressing the factors that influence student attitudes, educators can create an environment that promotes effective learning and skill acquisition in research methods.

Interest in research methods

Student interest in research methods is a critical factor influencing the development of research skills during postgraduate studies (Csikszentmihalyi, 1990). Interest can be defined as a psychological state that involves attention, curiosity, and engagement with a subject. In the context of research methods, student interest encompasses the motivation to learn about various research techniques, methodologies, and their practical applications (Eccles & Wigfield, 2022).

Research has consistently shown that student interest significantly affects academic performance, engagement, and persistence in learning. When students are genuinely interested in a subject, they are more likely to engage deeply with the material, leading to better understanding and skill acquisition (Deci & Ryan, 2000). Zhang et al., (2019), asserted that students are more likely to be interested in research methods when they perceive them as relevant to their personal and professional aspirations. Demonstrating how research skills apply to real-world problems and career opportunities can enhance student interest. Furthermore, the instructional methods used in research methods courses can significantly influence student interest. Interactive and engaging teaching practices, such as project-based learning, can increase student interest compared to traditional lecture-based approaches (Creswell, 2014).

Previous exposure to research, whether through undergraduate studies or practical experiences, can shape students' interest in research methods. Positive experiences can foster enthusiasm and motivation, while negative experiences may lead to disinterest (Matusovich et al., 2010). In a study not long ago by Hsieh and Chen (2019), they observed that students who are interested in research methods are more likely to engage actively in their learning. This engagement can include participating in discussions, asking questions, and seeking additional resources, all of which contribute to skill development.

Again, interest in research methods fosters intrinsic motivation, encouraging students to persevere through challenges. This persistence is crucial for mastering complex research techniques and methodologies (Smith & Turner, 2019). Students with a strong interest in research are more inclined to collaborate with peers on research projects.

Collaboration can enhance learning outcomes by allowing students to share knowledge, skills, and perspectives, ultimately improving their research competencies (Johnson et al., 2020). Integrating real-world applications and case studies into research methods courses can help students see the relevance of research, thereby increasing their interest (Creswell, 2014). Utilizing diverse teaching methods, such as hands-on workshops, group projects, and guest lectures from professionals in the field, can enhance student interest and engagement in research methods (Csikszentmihalyi, 1990). Providing mentorship opportunities can help students navigate their research interests effectively. Faculty who demonstrate enthusiasm for research and offer guidance can inspire students to develop a deeper interest in research methods (Deci & Ryan, 2020). In summary, student interest in research methods plays a vital role in the acquisition of research skills among postgraduate students. When students perceive research methods as relevant and engaging, they are more likely to invest time and effort into mastering these skills. By fostering interest through relevant curriculum design, engaging instructional practices, and supportive mentorship, educators can enhance the research capabilities of postgraduate students, ultimately contributing to their academic and professional success.

LITERATURE REVIEW

Interest

Attitude is defined as a psychological construct that influences behaviour and can significantly affect learning outcomes. According to Ajzen's Theory of Planned Behaviour, individuals' attitudes toward a behaviour (in this case, research) can predict their intention to engage in that behaviour, subsequently impacting their actual performance and skill development (Ajzen, 2021).

Onyekere (2018), investigated how students' attitudes toward research methods influence their acquisition of research skills. The research aims to identify the dimensions of attitude that most significantly affect skill development. In order to achieve this he went further to formulate four hypothesis to guide the study which were tested at .05 level of significance. The design adopted for the study was analytic descriptive survey.

The sample for the study was 300 undergraduate students from various disciplines in federal universities in Cross River State, Nigeria (2016/2017 academic session). The sample was selected using stratified random sampling technique. The instrument for data collection was a 15-item Likert scale measuring attitudes (e.g., enjoyment, perceived usefulness, anxiety) (1 = Strongly disagree - 5 = Strongly agree) and a 10-item scale assessing self-reported proficiency in skills such as literature review, data collection, and analysis (1 = Very poor- 5 = Excellent). Data collected were tested using correlation and multiple regression analyses to explore the relationship between attitudes and research skills acquisition. The results of the study shows from the correlation analysis a strong positive correlation between positive attitudes toward research methods and research skills acquisition ($r = 0.70$, $p < 0.001$). And from the regression analysis a positive attitudes explained 48% of the variance in research skills acquisition ($\beta = 0.68$, $p < 0.001$). Specifically, perceived usefulness and enjoyment had the most significant contributions to skill acquisition.

The findings of the study suggest that positive attitudes toward research methods significantly enhance the acquisition of research skills. Educational institutions should focus on strategies to improve student attitudes, such as emphasizing the relevance and applicability of research methods in real-world contexts.

In a research by Nwafor and Eze, (2020), they examined the influence of students' attitudes toward research methods on their development of essential research skills. Their objective was to identify how various aspects of attitude correlate with skill proficiency. They employed a mixed-methods approach combining quantitative and qualitative data. Survey and semi-structured interviews were used to assess students' perceptions of their competence and attitude towards research. Purposive sampling techniques was used to sample 250 undergraduate students enrolled in research methods courses and 15 faculty members in university of Nigeria Nsukka (2018/2019 academic session). The instrument used for data collection was titled: "Attitude towards Research methods questionnaire (ATRMQ). It consisted of a 12-item scale assessing students' feelings about research (e.g., confidence, anxiety, motivation) and "Research Skills Development Questionnaire" (RSDQ)

consisting of 12-item scale evaluating self-assessed proficiency in skills such as hypothesis formulation, statistical analysis, and reporting findings. The data collected were subjected to analysis using descriptive statistics, Pearson correlation, and hierarchical regression analysis to assess the relationship between attitudes and skill development. The results of the study from the correlation showed a significant positive correlation was observed between positive attitudes and the development of research skills ($r = 0.75$, $p < 0.001$) while from the regression analysis showed that attitude toward research methods accounted for 55% of the variance in research skills development ($\beta = 0.75$, $p < 0.001$), highlighting that higher confidence and lower anxiety were particularly influential. This study reinforces the importance of fostering positive attitudes toward research methods to enhance research skill development. Academic programs should implement initiatives that boost student confidence and reduce anxiety related to research activities, thereby facilitating better skill acquisition.

A similar by Ijeuwa, (2020) on a comparative analysis of students' attitudes toward research in federal and state universities. Ijeuwa employed a comparative analysis using a cross-sectional survey design. They used a questionnaire measuring attitudes toward research and self-reported research skills. Cluster sampling technique was used to sample 400 postgraduate students from federal and state universities. Their findings indicated that students in federal universities, who generally had more access to resources and mentorship, exhibited more positive attitudes toward research. This positive attitude was linked to higher levels of research skill acquisition compared to their counterparts in state universities, where limited resources often led to frustration and negative attitudes toward research. The studies also show that students' perceptions of their own competence can significantly influence their attitude toward research. Ijeuwa, (2020) noted that students who believe they possess the necessary skills and knowledge to conduct research are more likely to engage in research activities. This self-efficacy is closely tied to skill development, as confident students are more willing to take risks and explore complex research topics.

In summary, the reviewed literatures indicate a strong relationship between students' attitudes toward research and their acquisition of research skills among postgraduate students in public universities in Cross River State. Positive attitudes enhance motivation, engagement, and resilience, facilitating skill development, while negative attitudes can hinder progress. Addressing barriers to positive attitudes such as lack of support, inadequate resources, and cultural perceptions is essential for fostering an environment that promotes research skill acquisition. Future research should focus on developing interventions aimed at improving students' attitudes toward research and identifying best practices for enhancing research engagement in postgraduate education.

Interest

Interest is defined as a psychological state characterized by a feeling of curiosity or engagement towards a subject or experience. It involves a desire to learn more or participate in something, often leading to sustained attention and motivation. Interest can be intrinsic, driven by personal enjoyment or curiosity or extrinsic, influenced by external factors such as rewards or social recognition. (Rasheed, et al., (2018). Interest plays a crucial role in development of research skills among postgraduate students.

A study by Ekanem, (2022), explored the influence of students' interest in research methods on their development of research skills using a survey-based approach. The goal is to identify how varying levels of interest affect students' self-assessed research competencies in universities in Cross River State. In order to achieve this, six hypothesis were formulated and tested at .05 level of significance. The design adopted for the study was survey method. The sample of the study consisted of 350 undergraduate students from different faculties in universities in Cross River State in 2020/2021 academic session. The sample was selected using stratified random sampling technique. The instrument used for data collection for this study was a 12-item scale evaluating students' perceived skill levels in areas such as literature review, hypothesis formulation, and statistical analysis. The data collected were subjected to statistical analysis using descriptive statistics, Pearson correlation, and hierarchical regression analysis. The results obtained among others revealed that a significant positive correlation was observed between interest in

research methods and research skills development ($r = 0.72$, $p < 0.001$). The regression Analysis reveals that interest in research methods accounted for 52% of the variance in research skills development ($\beta = 0.72$, $p < 0.001$), indicating that greater interest leads to enhanced skills. The research reinforces the notion that a strong interest in research methods is crucial for the effective development of research skills among students. To foster skill acquisition, academic programs should cultivate student interest through innovative teaching methods and practical research opportunities.

Njah, et al., (2020) carried out their study to investigate how students' interest in research methods influences their acquisition of essential research skills. The study aims to determine the strength of this relationship across various academic disciplines in universities across Cross River State, Nigeria. The used six hypothesis which were tested at .05 alpha level. The sample for the study consisted of 400 undergraduate students from multiple disciplines (social sciences, natural sciences, and humanities) in universities in Cross River State (2018/2019 academic session). The design for the study was a structured survey. The instrument for data collection was a 10-item Likert scale assessing self-reported proficiency in skills such as data collection, analysis, and reporting (1 = Very poor, 5 = Excellent). The data collected were subjected to statistical analysis using correlation and regression analyses to explore the relationship between interest in research methods and the acquisition of research skills. The results of the study revealed that a strong positive correlation was found between interest in research methods and research skills acquisition ($r = 0.68$, $p < 0.001$). The regression analysis revealed that interest in research methods explained 45% of the variance in research skills acquisition ($\beta = 0.67$, $p < 0.001$), indicating that higher interest significantly predicts better skill acquisition.

The findings of this study suggest that students with a higher interest in research methods are more likely to acquire essential research skills effectively. Educational institutions should focus on enhancing student interest through engaging curricula and practical experiences in research.

Rasheed et al., (2018) in their comparative analysis focused on the differences in research interest levels between postgraduate students in federal and state universities.

Utilizing a cross-sectional survey design, the researchers surveyed 400 postgraduate students using a questionnaire measuring interest in research and self-reported research skills. The results indicated that students in federal universities exhibited higher interest levels in research than those in state universities, which correlated with better research skill development. This finding suggests that institutional factors can influence students' research interests and subsequent skills.

In summary, the literatures indicate a strong correlation between students' interest in research and their acquisition of research skills among postgraduate students in Cross River State. Higher levels of interest foster greater engagement and skill acquisition, while a lack of interest can hinder development. To improve research competencies among postgraduate students, it is crucial to cultivate interest through supportive institutional practices, adequate resources, and encouragement from faculty. Future research should focus on identifying effective strategies to enhance research interest and explore the long-term impacts of these strategies on students' academic and professional success.

Hypothesis

1. There is no significant predictive relationship between attitude to research methods and the extent of acquisition of research skills among postgraduate students in public universities in Cross River State.
2. Interest in research methods does not significantly predict the extent of 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% of the postgraduate students from the departments in all the faculties in education. Purposive sampling technique was then used to administer the instruments to the respondents.

The instrument used for data collection in this study was a questionnaire titled: "Research Skills Acquisition Questionnaire" (PVRSAQ) 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 psycho variables (postgraduate attitude to and interest in research methods). Attitude and interest had five (5) items each which were measured continuously with Likert scale of four points: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1, making a total of ten (10) items. 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 section consisting of five (5) items, giving a total of thirty (30) items. 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

Hypothesis one

There is no significant predictive relationship between attitude to research methods and the extent of acquisition of research skills (problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition of research skills) among postgraduate students in public universities in Cross River State.

The independent variable in this hypothesis is attitude of students to research methods which is measured continuously, 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, attitude to research methods was compared with 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 simple linear regression. The result is presented in Table 1.

TABLE 1: Summary of simple linear regression analysis: attitude and the acquisition of research skills (in terms of problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition) (N=400)

Variables	Sum Squares	of df	Mean square	F	R	R Square	Adjusted R Square	Sig
Problem identification								
Regression	25.160	1	25.160	4.902	.110 ^a	.012	.010	.027 ^a
Residual	2042.840	398	5.133					
Total	2068.000	399						
Hypothesis formulation								
Regression	1.107	1	1.107	.162	.020 ^a	.000	.002	.688
Residual	2720.933	398	6.837					
Total	2722.040	399						
Literature review								
Regression	9.620	1	9.620	1.235	.056 ^a	.003	.001	.267 ^a
Residual	3099.620	398	7.788					
Total	3109.240	399						
Data collection								
Regression	116.980	1	116.980	12.724	.176 ^a	.031	.029	.000 ^a
Residual	3659.020	398	9.194					
Total	3776.000	399						
Data analysis								
Regression	139.317	1	139.317	10.930	.163 ^a	.027	.024	.001
Residual	5072.843	398	12.746					
Total	5212.160	399						
Research reporting								
Regression	59.174	1	59.174	6.483	.127 ^a	.016	.014	.011
Residual	3632.986	398	9.128					
Total	3692.160	399						
Overall acquisition								
Regression	1397.039	1	1397.039	7.166	.133 ^a	.018	.015	.008 ^a
Residual	77587.121	398	194.943					
Total	78984.160	399						

a. Predictors: (Constant), Attitude

b. Dependent Variable: problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition

Source: Field Work, 2025

The results of data analysis presented in Table 1 in terms of problem identification results revealed R-value of .110^a; $R^2 = .012$; adjusted $R^2 = .010$; $p < .05$ for relationship between attitude and acquisition of research skills (in terms of problem identification). The R-value (regression coefficient) of .110 shows a positive relationship between attitude and acquisition of research skills (in terms of problem identification) among students. The R^2 -Value of .012 implies that 1.2% of the total variance is accounted for by predictor variable (attitude). The regression ANOVA revealed that the P-value (.027) associated with the computed F (1, 398) 4.902; was less than .05 significant level, thus the null hypothesis was rejected. This implies that there is a significant positive linear association (relationship) between the predictor variable (attitude) and acquisition of research skills (in terms of problem identification) among students. The adjusted R^2 (.010) shows some shrinkage of the unadjusted value (.012) indicating that the model could be generalized on the population.

Also acquisition of research skills (in terms of hypothesis formulation) results revealed R-value of .020^a; $R^2 = .000$; adjusted $R^2 = .002$; $p > .05$ for relationship between attitude and acquisition of research skills (in terms of hypothesis formulation). The R-value (Correlation coefficient) of .020 shows a positive relationship between attitude and acquisition of research skills (in terms of hypothesis formulation) among students. This represents a standardized measure of an observed degree of relationship between variables. The R^2 -Value of .000 implies that 00.0% of the total variance is accounted for by predictor variable (attitude). The regression ANOVA revealed that the P-value (.668) associated with the computed F (1, 398) .162; was greater than .05 significant level, thus the null hypothesis was retained. This implies that there is no linear association (relationship) between the predictor variable (attitude) and acquisition of research skills (in terms of hypothesis formulation) among students. The adjusted R^2 (.002) shows some shrinkage of the unadjusted value (.000) indicating that the model could be generalized on the population.

More so, acquisition of research skills (in terms of literature review) results revealed R-value of .056^a; $R^2 = .003$; adjusted $R^2 = .001$; $p > .05$ for relationship between attitude and acquisition of research skills (in terms of literature review).

The R-value (Correlation coefficient) of .056^a shows a positive relationship between attitude and acquisition of research skills (in terms of literature review) among students. This represents a standardized measure of an observed degree of relationship between variables. The R^2 Value of .003 implies that 3% of the total variance is accounted for by predictor variable (attitude). The regression ANOVA revealed that the P-value (.267) associated with the computed F (1, 398) 1.235; was greater than .05 significant level, thus the null hypothesis was retained. This implies that there is no linear association (relationship) between the predictor variable (attitude) and acquisition of research skills (in terms of literature review) among students. The adjusted R^2 (.001) shows some shrinkage of the unadjusted value (.003) indicating that the model could be generalized on the population.

Furthermore, acquisition of research skills (in terms of data collection) results revealed R-value of .176^a; $R^2 = .031$; adjusted $R^2 = .029$; $p < .05$ for relationship between attitude and acquisition of research skills (in terms of data collection). The R-value (Correlation coefficient) of .176^a shows a positive relationship between attitude and acquisition of research skills (in terms of data collection) among students. This represents a standardized measure of an observed degree of relationship between variables. The R^2 -Value of .031 implies that 3.1% of the total variance is accounted for by predictor variable (attitude). The regression ANOVA revealed that the P-value (.000) associated with the computed F (1, 398) 12.724; was less than .05. Significant level, thus the null hypothesis was rejected. This implies that there is a linear association (relationship) between the predictor variable (attitude) and acquisition of research skills (in terms of data collection) among students. The adjusted R^2 (.029) shows some shrinkage of the unadjusted value (.031) indicating that the model could be generalized on the population.

In addition, acquisition of research skills (in terms of data analysis) results revealed R-value of .163^a; $R^2 = .027$; adjusted $R^2 = .024$; $p < .05$ for relationship between attitude and acquisition of research skills (in terms of data analysis). The R-value (Correlation coefficient) of .163^a shows a positive relationship between attitude and acquisition of research skills (in terms of data analysis) among students.

This represents a standardized measure of an observed degree of relationship between variables. The R^2 -Value of .027 implies that 2.7% of the total variance is accounted for by predictor variable (attitude). The regression ANOVA revealed that the P-value (.001) associated with the computed F (1, 398) 10.930; was less than .05 significant level, thus the null hypothesis was rejected. This implies that there is a linear association (relationship) between the predictor variable (attitude) and acquisition of research skills (in terms of data analysis) among students. The adjusted R^2 (.024) shows some shrinkage of the unadjusted value (.027) indicating that the model could be generalized on the population.

In addition, acquisition of research skills (in terms of research reporting) results revealed R-value of .127^a; $R^2 = .016$; adjusted $R^2 = .014$; $p < .05$ for relationship between attitude and acquisition of research skills (in terms of research reporting). The R-value (Correlation coefficient) of .127^a shows a positive relationship between attitude and acquisition of research skills (in terms of research reporting)) among students. This represents a standardized measure of an observed degree of relationship between variables. The R^2 -Value of .016 implies that 1.6% of the total variance is accounted for by predictor variable (attitude). The regression ANOVA revealed that the P-value (.011) associated with the computed F (1, 398) 6.483; was less than .05. Significant level, thus the null hypothesis was rejected. This implies that there is a linear association (relationship) between the predictor variable (attitude) and acquisition of research skills (in terms of research reporting) among students. The adjusted R^2 (.014) shows some shrinkage of the unadjusted value (.016) indicating that the model could be generalized on the population.

Lastly for the overall acquisition of research skills; results of data analysis as presented in Table 2 revealed R-value of .133^a; $R^2 = .018$; adjusted $R^2 = .015$; $p < .05$ for relationship between attitude

and acquisition of research skills (in terms of overall acquisition of research skills). The R^2 – value of .018 imply that 1.8% of total variance is accounted for by predictor variable (attitude).

The regression ANOVA revealed that the P-value (.000) associated with the computed F (1, 398) 7.166; was less than .05 Significant level, thus the null hypothesis was rejected. This implies that there is a linear association (relationship) between the predictor variable (attitude) and acquisition of research skills (in terms of overall acquisition of research skills) among students. The adjusted R^2 (.015) shows some shrinkage of the unadjusted value (.018) indicating that the model could be generalized on the population.

Based on the result, it was generally concluded that attitude significantly contribute to students acquisition of research skills (in terms of problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition).

Hypothesis two

Interest in research methods does not significantly predict the extent of acquisition of research skills (problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition of research skills) among postgraduate students in public universities in Cross River State.

The independent variable in this hypothesis is interest of students to research which is measured continuously, 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, interest of students in research was compared with 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 Simple linear regression. The result is presented in Table 2.

TABLE 2: Summary of simple linear regression analysis: interest and the acquisition of research skills (in terms of problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition) (N=400)

Variables	Sum of Squares	df	Mean square	F	R	R Square	Adjusted R Square	Sig
Problem identification								
Regression	221.168	1	221.168	47.663	.327 ^a	.107	.105	.000 ^a
Residual	1846.832	398	4.640					
Total	2068.000	399						
Hypothesis formulation								
Regression	203.946	1	203.946	32.235	.274 ^a	.075	.073	.000 ^a
Residual	2518.094	398	6.327					
Total	2722.040	399						
Literature review								
Regression	332.272	1	332.272	47.622	.327 ^a	.107	.105	.000 ^a
Residual	2776.968	398	6.977					
Total	3109.240	399						
Data collection								
Regression	320.138	1	320.138	36.869	.291 ^a	.085	.082	.000 ^a
Residual	3455.862	398	8.683					
Total	3776.000	399						
Data analysis								
Regression	262.883	1	262.883	21.140	.225 ^a	.050	.048	.000 ^a
Residual	4949.277	398	12.435					
Total	5212.160	399						
Research reporting								
Regression	416.517	1	416.517	50.608	.336 ^a	.113	.111	.000 ^a
Residual	3275.643	398	8.230					
Total	3692.160	399						
Overall acquisition								
Regression	10382.768	1	10382.768	60.237	.363 ^a	.131	.129	.000 ^a
Residual	68601.392	398	172.365					
Total	789784.160	399						

a. Predictors: (Constant), Attitude

b. Dependent Variable: problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition

Source: Field Work, 2025

The results of data analysis presented in Table 2 in terms of problem identification results revealed R-value of .327^a; $R^2 = .107$; adjusted $R^2 = .105$; $p < .05$ for relationship between interest and acquisition of research skills (in terms of problem identification). The R-value (Correlation coefficient) of .327 shows a positive relationship between interest and acquisition of research skills (in terms of problem identification) among students. The R^2 Value of .107 implies that 10.7% of the total variance is accounted for by predictor variable (interest). The regression ANOVA revealed that the P-value (.000) associated with the computed F (1; 398) 47.663; was less than .05 significance level, thus the null hypothesis was rejected. This implies that there is a significant positive linear association (relationship) between the predictor variable (interest) and acquisition of research skills (in terms of problem identification) among students. The adjusted R^2 (.105) shows some shrinkage of the unadjusted value (.107) indicating that the model could be generalized on the population.

Also acquisition of research skills (in terms of hypothesis formulation) results revealed R-value of .274^a; $R^2 = .075$; adjusted $R^2 = .073$; $p < .05$ for relationship between interest and acquisition of research skills (in terms of hypothesis formulation). The R-value (regression coefficient) of .274^a shows a positive relationship between interest and acquisition of research skills (in terms of hypothesis formulation) among students. This represents a standardized measure of an observed degree of relationship between variables. The R^2 -Value of .075 implies that 7.5% of the total variance is accounted for by predictor variable (interest). The regression ANOVA revealed that the P-value (.000) associated with the computed F (1; 398) 32.235; was less than .05 significant level, thus the null hypothesis was rejected. This implies that there is a linear association (relationship) between the predictor variable (interest) and acquisition of research skills (in terms of hypothesis formulation) among students. The adjusted R^2 (.073) shows some shrinkage of the unadjusted value (.075) indicating that the model could be generalized on the population.

More so, acquisition of research skills (in terms of literature review) results revealed R-value of .327^a; $R^2 = .107$; adjusted $R^2 = .105$; $p < .05$ for relationship between interest and acquisition of research skills (in terms of literature review).

The R-value (regression coefficient) of .327^a shows a positive relationship between interest and acquisition of research skills (in terms of literature review) among students. This represents a standardized measure of an observed degree of relationship between variables. The R^2 -Value of .107 implies that 10.7% of the total variance is accounted for by predictor variable (interest). The regression ANOVA revealed that the P-value (.000) associated with the computed F (1; 398) 47.622; was less than .05 significant level, thus the null hypothesis was rejected. This implies that there is a linear association (relationship) between the predictor variable (interest) and acquisition of research skills (in terms of literature review) among students. The adjusted R^2 (.105) shows some shrinkage of the unadjusted value (.107) indicating that the model could be generalized on the population.

Furthermore, acquisition of research skills (in terms of data collection) results revealed R-value of .291^a; $R^2 = .085$; adjusted $R^2 = .082$; $p < .05$ for relationship between interest and acquisition of research skills (in terms of data collection). The R-value (regression coefficient) of .291^a shows a positive relationship between interest and acquisition of research skills (in terms of data collection) among students. This represents a standardized measure of an observed degree of relationship between variables. The R^2 -Value of .085 implies that 8.5% of the total variance is accounted for by predictor variable (interest). The regression ANOVA revealed that the P-value (.00) associated with the computed F (1; 398) 36.869; was less than .05 significant level, thus the null hypothesis was rejected. This implies that there is a linear association (relationship) between the predictor variable (interest) and acquisition of research skills (in terms of data collection) among students. The adjusted R^2 (.082) shows some shrinkage of the unadjusted value (.085) indicating that the model could be generalized on the population.

In addition, acquisition of research skills (in terms of data analysis) results revealed R-value of .225^a; $R^2 = .050$; adjusted $R^2 = .048$; $p < .05$ for relationship between interest and acquisition of research skills (in terms of data analysis). The R-value (regression coefficient) of .225^a shows a positive relationship between interest and acquisition of research skills (in terms of data analysis) among students.

This represents a standardized measure of an observed degree of relationship between variables. The R^2 -Value of .050 implies that 5.0% of the total variance is accounted for by predictor variable (interest). The regression ANOVA revealed that the P-value (.000) associated with the computed $F(1; 398) 21.140$; was less than .05 Significant level, thus the null hypothesis was rejected. This implies that there is a linear association (relationship) between the predictor variable (interest) and acquisition of research skills (in terms of data analysis) among students. The adjusted R^2 (.048) shows some shrinkage of the unadjusted value (.050) indicating that the model could be generalized on the population.

Furthermore, acquisition of research skills (in terms of research reporting) results revealed R-value of .336^a; $R^2 = .113$; adjusted $R^2 = .111$; $p < .05$ for relationship between interest and acquisition of research skills (in terms of research reporting). The R-value (regression coefficient) of .336^a shows a positive relationship between interest and acquisition of research skills (in terms of research reporting) among students. This represents a standardized measure of an observed degree of relationship between variables. The R^2 Value of .113 implies that 11.3% of the total variance is accounted for by predictor variable (interest). The regression ANOVA revealed that the P-value (.000) associated with the computed $F(1; 398) 50.608$; was less than .05 Significant level, thus the null hypothesis was rejected. This implies that there is a linear association (relationship) between the predictor variable (interest) and acquisition of research skills (in terms of research reporting) among students. The adjusted R^2 (.111) shows some shrinkage of the unadjusted value (.113) indicating that the model could be generalized on the population.

Lastly for the overall acquisition of research skills; results of data analysis as presented in table 3 revealed R-value of .363^a; $R^2 = .131$; adjusted $R^2 = .129$; $p < .05$ for relationship between interest and acquisition of research skills (in terms of overall acquisition of research skills). The R^2 – value of .131 imply that 13.1% of total variance is accounted for by predictor variable (interest).

The regression ANOVA revealed that the P-value (.000) associated with the computed $F(1; 398) 60.237$; was less than .05 significant level, thus the null hypothesis was rejected. This implies that there is a linear association (relationship) between the predictor variable (interest) and acquisition of

research skills (in terms of overall acquisition of research skills) among students. The adjusted R^2 (.129) shows some shrinkage of the unadjusted value (.131) indicating that the model could be generalized on the population.

Based on the result, it was concluded that interest significantly contribute to students acquisition of research skills (in terms of problem identification, hypothesis formulation, literature review, data collection, data analysis, research reporting and overall acquisition).

DISCUSSION OF FINDINGS

Hypothesis 1

Attitude of students to research and acquisition of research skills.

The result of the first hypothesis revealed that attitude of students to research significantly influenced acquisition of research skills. The findings are in line with the findings of the following researchers: Onyekere, (2018), Nwafor and Eze, (2020) and Ijeuwa, (2020) which revealed that positive attitudes toward research methods significantly enhance the acquisition of research skills.

Furthermore, Ijeuwa, (2020) noted that students who believe they possess the necessary skills and knowledge to conduct research are more likely to engage in research activities. This self-efficacy is closely tied to skill development, as confident students are more willing to take risks and explore complex research topics.

In summary, negative attitudes hinder the development of essential research skills. The study called for improved institutional support and resource availability to foster a more positive research environment for students. Ijeuwa, (2020) asserted that despite the advantages of a positive attitude, various factors can hinder students' engagement with research. He pointed out that inadequate support from faculty and insufficient access to research resources can lead to frustration and a negative attitude toward research. This negativity can result in lower motivation and reduced skill acquisition, creating a cycle that perpetuates poor research outcomes.

Hypothesis 2

Interest of students in research methods and acquisition of research skills.

The result of the second hypothesis indicated that, interest of students to research significantly influenced acquisition of research skills.

The findings are in line with the view of Ekanem, (2022) and Njah et al., (2020) that suggest that students with a higher interest in research methods are more likely to acquire essential research skills effectively.

Furthermore, Rasheed et al., (2018), study indicated that students in federal universities exhibited higher interest levels in research than those in state universities, which correlated with better research skill development. This finding suggests that institutional factors can influence students' research interests and subsequent skills. The study also revealed that a lack of interest in research negatively impacted students' research skill development. The researchers concluded that improving students' interest in research is essential for enhancing their research skills, particularly in the face of challenges.

CONCLUSION

The study found that postgraduate students' psycho variables (postgraduate students' attitude to; and, interest in research methods) influenced their acquisition of research skills. These findings revealed that students' psycho variables play a crucial role in shaping their research skills.

The influence of postgraduates students' attitude to; and, interest in research methods 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. Educators should consider focusing on developing intervention aimed at improving students' attitudes towards research and identifying best practices for enhancing research engagements in postgraduate education.

2. Educators are encouraged to focus on identifying effective strategies to enhance research interest and explore the long-term impacts of these strategies on students' academic and professional success.

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