

DEMOGRAPHIC DETERMINANTS OF RESEARCH SKILLS ACQUISITION AMONG POSTGRADUATE STUDENTS IN THE UNIVERSITY OF CALABAR, NIGERIA

Veronica Akwenabuaye Undelikwo*

Department of Sociology, University of Calabar, Nigeria
vundelikwo@unical.edu.ng

Ibok, Ekpenyong Effiong

Department of Science Education, University Of Calabar
ekpenyongibok@unical.edu.ng

Lilian Otu Ubi

Department of Sociology, University of Calabar, Nigeria
lilianubi@unical.edu.ng



Abstract

This study examined the demographic determinants of research skills acquisition at the University of Calabar in Cross River State, Nigeria. The study was a questionnaire based that adopted the survey research design. The study formulated two hypotheses. A total sample of 150 postgraduate students was selected via proportional stratified random sampling and purposive sampling technique in the Faculties of Education and Social Sciences in their research stages for the 2019/2020 academic session for the study. Independent t-test was the statistical technique adopted to test the hypotheses at a .05 level of significance. The result of the analysis revealed a significant influence of gender and academic discipline on research skills acquisition (in terms of problem identification, literature review, research design, instrumentation, sampling, data collection, analysis and interpretation of results, and author citing and referencing) among postgraduates students in University of Calabar Cross River State. Based on these findings, the school management should regularly conduct workshops, conferences, and seminars to enable lecturers and students to update their knowledge to produce cross-cutting research for societal development.

Keywords: Research, Skills Acquisition, Gender, Academic discipline, postgraduate



Introduction

The future of any society lies in knowledge. However, generating new knowledge and using it innovatively depends on sound research. Although people learn throughout their lives, good research is a vital preparation for scientific literacy in later life. However, despite its importance to a nation's economic growth and development, the Nigerian education system is laden with students who need more basic research skills. Many Nigerian students need to understand research, its essential characteristics, how it influences society, and

how people can and do affect its development (Olibie, Agu & Uzoechina, 2015).

The product of Universities in recent times needs to improve skills. A requirement for the fulfillment of the award of a postgraduate degree is the submission of an original essay by the student, commonly known as a project, dissertation report, or thesis (Olibie *et al.*, 2015). Every student in the final level of any academic programme (Postgraduate studies inclusive) in higher learning institutions are expected to conduct research and arrive at some verifiable findings (new truths), conclusion, and generalization.

Still, most postgraduate students need more basic research skills. Providing students with research skills at the University may aid them in becoming self-sufficient, valuable, and productive members of society, whether working for the government or as entrepreneurs. If research skills are acquired and applied appropriately, policymakers and other beneficiaries might have confidence in the research outcome to solve problems (Mike, 2014). Sometimes, the society or accrediting agencies assess the success of tertiary institutions in meeting the needs and expectations of society through the production of graduates with high analytical skills in research. Some students abuse the research processes they employ in carrying out their research work. Research-related courses like research methodology have been introduced in the University curriculum, both at the undergraduate and postgraduate levels, to serve as prerequisites for writing research projects. Other measures include the oral defense of research projects, term papers, and presentations of seminars organized by lecturers. All these strategies are aimed at making the students realize the essence of carrying out good research work that could be reliable. More needs to be achieved because of all these efforts and the widespread concern about research outcomes. A deficiency in the student's research skills is evidenced in the poor quality of research work (Olibie et al., 2015). It has been noted that research conducted by undergraduate and postgraduate students in tertiary institutions is yet to make the needed contribution to the global growth in knowledge or in enhancing a country's economy (Bako, 2005). Since research results generally are the pillars on which new knowledge can be discovered and upheld, students should be conversant with the expected research skills during schooling and after graduation to positively impact society.

Research is a sine qua non to national development. An analysis of the development pattern in developed countries indicates a high premium on research (Ali, 2009). Research is a process through which we achieve systematically, with data support, to answer

questions and give solutions to a research problem. All final-year student or postgraduate student at the last level of their academics generally undertakes a research project to develop the mind of inquiry and the art of problem-solving via the scientific method. It is also part of the academic work necessary to award the degree sought by the student before graduation in tertiary institutions. Techniques and equipment are developed daily, and these are increasingly becoming sophisticated. The fundamental purpose of research is to establish a framework for acquiring solutions to inquiries by analytically examining the evidence within defined boundaries using scientific approaches. Research success requires adequate preparation in the plan and conduct of empirical research. This preparation equips the research students with the knowledge and skills to conduct a successful investigation. Critical skills necessary for conducting a fruitful investigation include formulating the problem; developing hypotheses; conducting a literature review; designing the investigation; selecting a suitable sample; designing and validating research instruments, collecting data; selecting and evaluating appropriate statistical methods; and interpreting findings and discussing research outcomes. According to Agu and Odimegwu (2014), concerns have been expressed in various quarters in Nigeria on the poor quality of doctoral students' dissertations, which points to poor research skills. They stated further that this is due to the quality of research training given to the students, including poor supervision.

Several factors may account for the disparity in students' research skill development. Gender difference exists in acquiring research skills among postgraduate students. In a study, Ibok, Thomas, and Nkereuwem (2019) reported that male students self-rated the quality of their research higher than the females and thus reported a gender difference in mathematics, research, and critical thinking between the males and the females. The opinions between the male and female students were evaluated by Ain, Sabir, and Willison (2019) regarding utilizing the

research skills developed during their undergraduate studies for further research, investigations, and continued learning to be up to date. Thematic analysis of the qualitative data demonstrated a significant resemblance between the male and female graduates in terms of their emphasis on four of the six researched skills, including generating and locating information, critical evaluation, reflection, organization, and management, as well as communication and application. Nonetheless, the skills that were less emphasized by graduates - initiating and defining tasks for men and analyzing and synthesizing for women. This indicates why the individuals interviewed may not possess, utilize, or transfer the complete skill set required to partake in inquiry and learning within workplaces, which could result in employers being less satisfied with their skills.

However, much has yet to be done in this respect. There is this belief that science, educational measurement, research, and statistics students possess more research skills than their counterparts in other disciplines. Some, however, have contrary opinions and oppose this idea. Kingsley (2015) also reported a significant influence of academic discipline on research skill acquisition in a study at the University of Port Harcourt, Nigeria. Students in education were found to acquire more research skills than those in other academic disciplines. Kimball and Friedensen's (2019) findings revealed that higher education is not a distinct discipline but assume some disciplinary characteristics predicated on specialized knowledge and recurrent discursive strategies. Le Roux, Taylor, Kloot, and Allie (2019) in their study found that areas of discipline significantly influence educational research in tertiary education. Hoffman, Antwi-Nsiah, Feng, and Stanley (2008) conducted library research skills of graduate students. Students in all four faculties (Engineering, health science, medicine, and science) identified challenges, such as choosing keywords and search terms, refining searches, and sorting through results to find relevant information. They had also recognized obstacles concerning the accessibility of the

library's collection, such as limited access to the complete texts of resources, dissatisfaction with off-campus access, and disappointment when the resources they required were not part of the collection. Difficulties locating information and retrieving materials in the library were infrequently mentioned. Hoffman et al. (2008) further found that other challenges mentioned were more discipline-specific (area of specialization). To illustrate, Engineering students frequently sought assistance composing theses, conference proceedings, or technical reports. Surprisingly, to Feldon, Maher, Hurst, and Timmerman (2014), only a few studies have assessed postgraduate students' skill development. We hypothesized that gender and academic discipline would positively influence the acquisition of research skills (problem identification, literature review, research design, instrumentation, sampling, data collection, analysis and interpretation of results, and author citing and referencing). In contrast, health sciences, medicine, and dentistry students needed help locating older materials, such as those dating back 30 years or pre-1950. Nonetheless, health sciences students also cited challenges in conducting comprehensive searches and locating reliable information.

Objectives of the Study

The study seeks to:

1. Determine the influence of gender on research skills acquisition
2. Determine the effect of academic discipline on research skills acquisition

Methodology

The study was conducted at the University of Calabar, Cross River State, Nigeria, using a questionnaire as the primary data collection instrument. The research adopted the survey design. Those included in the study were only full-time postgraduate students (Ph.D. and Masters Students) in the Faculty of Education and Social Sciences in the University at their research stages for the 2019/2020 academic session constituted the target population for the study. A multi-stage sampling technique via

proportional stratified random sampling and purposive sampling technique was used to identify postgraduate students from each faculty. A sample of 150 postgraduate students was selected. Fifty were selected from the Faculty of Education, while 100 were selected from the Faculty of Social Sciences.

Information collected was the respondents' bio-data, including gender and area of academic discipline. The primary variable was measured in problem identification, literature review, research design, and instrumentation, sampling and data collection, analysis and interpretation of results and author citing and referencing, and overall research skills acquisition among university postgraduate students. The data were analyzed using the statistical package for social sciences (SPSS), and an independent t-test was employed to test the hypotheses.

Results

Table 1 displays the results of the influence of gender on research skills acquisition (in terms of problem identification, literature review, research design and instrumentation, sampling and data collection, analysis and interpretation of results, and author citing and referencing) among postgraduates students in University of Calabar. Statistically significant influence of gender on research skills acquisition among

graduates students in the University of Calabar was problem identification ($t=4.135$; $p=0.000$); literature review ($t=3.582$; $p=0.000$); research design and instrumentation ($t=6.661$; $p=0.000$); sampling and data collection ($t=5.543$; $p=0.000$); data analysis and interpretation of result ($t=7.355$; $p=0.000$); author citing and referencing ($t=3.139$; $p=0.002$); and the overall research skills ($t=6.675$; $p=0.000$). Also, the mean score for male graduate students' six research skills and overall research skills was higher than those of female postgraduate students.

Table 2 shows a statistically significant influence of academic discipline on research skills acquisition among postgraduates students in the University of Calabar in terms of problem identification ($t=8.752$; $p=0.000$), literature review ($t=6.102$; $p=0.000$), research design and instrumentation ($t=11.663$; $p=0.000$); sampling and data collection ($t=3.783$; $p=0.000$); data analysis and interpretation of result ($t=5.603$; $p=0.001$); author citing and referencing ($t=4.143$; $p=0.000$); and the overall research skills ($t=8.035$; $p=0.001$). The result also indicates that the mean score for the six research skills and overall research skills of graduate students in education is higher than those in Social science.

Table 1: Independent t-test analysis of gender and research skills acquisition(N=150)

| Variables | Group | N | Mean | SD | t-value | p-value |
|--|--------|-----|--------|-------|---------|---------|
| Problem identification skills | Male | 65 | 14.815 | 2.249 | 4.135 | .000* |
| | Female | 85 | 13.447 | 1.803 | | |
| | Total | 150 | 14.040 | 2.114 | | |
| Literature review skills | Male | 65 | 14.862 | 1.878 | 3.582 | .000* |
| | Female | 85 | 13.765 | 1.843 | | |
| | Total | 150 | 14.240 | 1.931 | | |
| Research design and instrumentation skills | Male | 65 | 14.446 | 2.031 | 6.661 | .000* |
| | Female | 85 | 12.565 | 1.426 | | |
| | Total | 150 | 13.350 | 1.948 | | |
| Sampling and data collection skills | Male | 65 | 14.908 | 1.756 | 5.543 | .000* |
| | Female | 85 | 13.247 | 1.864 | | |

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|---|--------|-----|---------|--------|-------|-------|
| | Total | 150 | 13.967 | 1.991 | | |
| Analysis and interpretation of results skills | Male | 65 | 15.200 | 1.669 | 7.355 | .000* |
| | Female | 85 | 13.271 | 1.531 | | |
| | Total | 150 | 14.107 | 1.854 | | |
| Author citing and referencing skills | Male | 65 | 14.554 | 1.732 | 3.139 | .002* |
| | Female | 85 | 13.702 | 1.564 | | |
| | Total | 150 | 14.074 | 1.687 | | |
| Overall research skills | Male | 65 | 103.092 | 10.303 | 6.675 | .000* |
| | Female | 85 | 93.241 | 8.753 | | |
| | Total | 150 | 97.773 | 10.791 | | |

*significant @ p<0.05 level

Field work: 2021

Table 2: Independent t-test analysis of academic discipline and research skills acquisition(N=150)

| Variables | Group | N | Mean | SD | t-value | p-value |
|---|-----------------|-----|---------|--------|---------|---------|
| Problem identification skills | Education | 50 | 15.780 | 1.075 | 8.752 | .000* |
| | Social Sciences | 100 | 13.170 | 1.904 | | |
| | Total | 150 | 14.040 | 2.113 | | |
| Literature review skills | Education | 50 | 15.460 | 1.711 | 6.102 | .000* |
| | Social Sciences | 100 | 13.630 | 1.729 | | |
| | Total | 150 | 14.240 | 1.931 | | |
| Research design and instrumentation skills | Education | 50 | 15.380 | 1.565 | 11.663 | .000* |
| | Social Sciences | 100 | 12.430 | 1.327 | | |
| | Total | 150 | 13.350 | 1.948 | | |
| Sampling and data collection skills | Education | 50 | 14.800 | 2.271 | 3.783 | .000* |
| | Social Sciences | 100 | 13.550 | 1.696 | | |
| | Total | 150 | 13.967 | 1.991 | | |
| Analysis and interpretation of results skills | Education | 50 | 15.200 | 2.339 | 5.603 | .001* |
| | Social Sciences | 100 | 13.560 | 1.249 | | |
| | Total | 150 | 14.107 | 1.854 | | |
| Author citing and referencing skills | Education | 50 | 14.840 | 1.730 | 4.143 | .000* |
| | Social Sciences | 100 | 13.890 | 1.535 | | |
| | Total | 150 | 14.074 | 1.687 | | |
| Overall research skills | Education | 50 | 106.160 | 11.029 | 8.035 | .000* |
| | Social Sciences | 100 | 93.580 | 7.870 | | |
| | Total | 150 | 97.773 | 10.791 | | |

*significant @ p<0.05 level

Field work: 2021

Discussion of the Findings

The study identified the factors influencing research skills acquisition among the University of Calabar postgraduate students.

Research skills acquisition remains one of the critical boosters of societal development. As shown in the study results, gender, and academic discipline were statistically

significant in research skills acquisition. Also, male students and those in the faculty of education had higher mean scores in the six research skills indicators and overall research skills compared to female students and those in the faculty of social sciences, respectively. Bassey and Amanso (2017) argued that since humans have different physical and intellectual capabilities, males and females should not be expected to perform uniformly in inference-making skills, problem-solving skills, computation, and academic endeavours. They reported a statistically significant influence of gender on their science process skills acquisition in inference-making, problem-solving, and computation skills. Akuegwu and Nwi-we (2018) also found a significant difference in the acquisition of research skills between male and female students in time management and analytical skills, writing the research report, and information and communication technology skills. Others are organized ideas, organized information, a sense of direction, reading skills, communication, oral presentation, and methodological knowledge.

Regarding information gathering and critical thinking skills, males and females were similar. Findings from a study by Ekon and Eni (2015) disagree with this argument. They reported that the results of the hypothesis analyzed in their study revealed that gender does not significantly influence students' science process skills in the upper primary level of Universal Basic Education. Sulandari, Prihartanti, Ali, Salimah, Savitri, and Wijayanti (2020) found that in the completion period of Skripsi (minor thesis), there was no significant difference between the males and females. They found an average completion period of Skripsi (mean t-score of 351.38) for females and 382.69 for the male students indicating that it took the female students less time to complete their skripsi (minor thesis).

Academic discipline was also found to influence research skills acquisition statistically, possibly due to differences in human and available resources in the various disciplines. Studies have consistently shown the relationship between academic discipline

and research skills acquisition. Kingsley (2015), in a study, reported that students in education acquired more research skills than those of other disciplines. Olusejo (2013) also found a significant difference in the field of discipline in research skills acquisition among graduate students in Nigerian universities. Sern, Alias, and Faiz (2017) argued that the magnitude of the research challenges students face depends on the study discipline. They argued that compared to the more significant writing challenges faced by students in the social sciences, writing by students in engineering appeared to be straightforward and with fewer challenges.

Conclusion/ Recommendations

Our findings suggest that gender and academic discipline are determinants of research skills acquisition. Thus, lecturers and supervisors should sustain and maintain standards in lectures and research supervision. Also, workshops, conferences, and seminars should be conducted regularly to enable lecturers and students to update their research knowledge to produce cross-cutting research for societal development.

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