

Quality Research Skills and Economic Empowerment of Post Graduate Students in the University of Calabar, Cross River State, Nigeria.

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Abstract

The purpose of this study was to investigate quality research skills and economic empowerment of postgraduate students in the University of Calabar, Cross River State-Nigeria. To achieve the purpose of the study, two null hypotheses were generated to direct the study. Survey research design was adopted by the study. A sample of two hundred (200) post graduate students were randomly selected for study. Questionnaire was the main instrument used for data collection. The instrument was subjected to face and content validation by two experts in Measurements and Evaluation in the faculty of Education, University of Calabar. The reliability estimate of the instrument was established through split half reliability method. Simple regression analysis was the statistical analysis technique adopted to test the hypotheses under study. All hypotheses were subjected to testing at 0.05 levels of significance. The results of the analysis revealed that, quality research skills in terms of problem articulation and formulation of the hypothesis significantly influence economic empowerment of postgraduate students in the University of Calabar. Based on the findings of the study, it was recommended that post graduate students in the University of Calabar should adopt appropriate research work to enhance their economic empowerment.

Keywords: Quality Research skills, Economic Empowerment, Post-graduate Students. Articulation of research problem, Formulation of research hypotheses.

Introduction

Economic empowerment is the ability to make and act on decision that involves the control over and allocation of financial resources (Golla *et al*, 2011). Student as individuals require skill acquisition for financial autonomy, and for increase generation of income. Thus, research skills acquisition is a deliberate intervention that aim to increase the economic power of individuals such as students. Economic empowerment, particularly when linked with research investments directly generates income. Research skill mastery will help to reduce unemployment and poverty. Acquisition of quality research skills is a bold effort to economic empowerment intervention to get students possess ownership of economic opportunities, investment, economic decision and finances. This would contribute in reducing youth migration from rural sector to urban sector. Quality research skills as a strategy of economic empowerment would help to control the difficulties facing youths in getting jobs. The success of empirical research writing in education

serves as a means of economic empowerment. This successful research preparation essentially equips the research students with an essential and effective economic skill for carrying out a successful investigation. Among the skills that are essential in carrying out a successful investigation includes skills for research problem identification, articulation and hypothesis formulation.

Articulation of the research problem is a basis on which all other items in the whole research procedures and conclusion are to be made. Kerlinger (2016) stated that if one wants to solve a problem, it can be said that a large part of the solution lies in knowing what it is. Denga and Ali (2018) support this view when they reported that, “a promising research topic should be based on a problematic situation”. There is therefore the need for students in the tertiary institutions to acquaint themselves with logic of the problem articulation, since it is the basis on which the whole research is built. Denga and Ali (2018) observed that a problem identification is the first step in gaining knowledge of the problem which is required in order to define the problem and forecast its consequences. The assessment of research skills in articulating the research problem is the ability to define, analyze problems, create solutions, evaluate them and choose the best solution for a particular context. The assessment of research skills in problem articulation guides the researcher to examine the consequences of a particular solution against another. Problem articulation involves the background research skills of imagination and creativity, logic and reasoning, conceptual thinking and scientific experimentation. Problem articulation also involves searching for different approaches to a problem and trying to examine issues from a different point of view (Cleveland, 2014). This line of thought is predicated on the need to solve societal problem in which competitive advantage depends on access to skills and development of specialized skills and technological research innovation able to meet scientific needs of an organization (Strategic and Public Relation Group, 2016). To do this, it demands acquisitions of scientific research skills, and capability to identify problems, formulate research questions and testable hypotheses.

An important aspect of any scientific discipline is the search for answers through the raising of properly formulated questions and hypotheses. A hypothesis is developed as a preliminary, tentative answer to the question raised based on the information available at the time. If no information is available, students should have the skills to discard or modify hypothesis as new information arises so as to prove helpful in problem solving (Lubben & Sandar, 2015).

Isangedighi, Joshua, Asim and Ekuri (2014) reported that once the research question is stated, the subjects defined, and the variables identified, the next step is to generate a working hypothesis, and plan the statistical approach. Student with good research skills should be able to formulate testable hypothesis that will guide the research study and draw conclusion at the end of the study that answers the research question.

Statement of the Problem

Research is an investigation undertaken in order to discover new facts. Research activity could also target to get additional information. Conducting research is a requirement that every student

needs to fulfil before graduating. However, most graduate students in the University of Calabar find it a difficult task, despite their exposure to the fundamentals of research skills.

It is imperative to determine the level of research skills acquired by postgraduate students from University of Calabar, who are about to complete their research projects. It is observed, that Postgraduate students' research skills with regards to formulation of testable hypothesis is not concise, and literature review organization is not very impressive due to poor style of citation. The study also observed that student's choice of statistical analysis is very poor thus, affecting the interpretation of result and conclusion. It is reasoned that, the challenges facing University is the production of graduates who would meet the needs of society and industry; (Kranravee, Malai & Nataya, 2018). Therefore, students would be transformed for higher productivity if they were exposed to highly defined research skills, rather than relying on a single major field of study (Harvey, 2010; Bajuniu, 2014).

One important way of solving problem of inadequate utilization of research skills is to begin to make postgraduate students be exposed to research skill training. It is essential to note the right way of doing this (Koutsouris & Norwich, 2018). Acquisition and utilization of specific scientific research skills will go a long way to improve manpower quality and also enhances employability of postgraduate students.

Economic empowerment is the act of transferring vocational skills which are known for raising national productivity. The rapid technological progress noticed in more developed countries is characterized by mastering of high research skills and greater market competition. For less developed countries to survive for market competition and globalization, it requires individuals such as postgraduate students to learn and relearn skills (Ahmed, 2017). This study therefore investigates the relationship between quality research skills and economic empowerment of postgraduate students in the University of Calabar, Cross River state, Nigeria.

Objective of the Study

The general objective of the study is to investigate, if quality research skills have influence on economic empowerment of post-graduate students in university of Calabar, Cross River State Nigeria. While, the specific objectives of the study were:

- i. To determine if students' research skills in terms of problem articulation influence their economic empowerment.
- ii. To determine if student's research skills in terms of formulation of hypotheses influence their economic empowerment.

Research Questions

The following research questions were posed in this study:

- i. Do students research skills in terms of problem articulation influence their economic empowerment in university of Calabar.?

- ii. Do students research skills in term of formulation of hypotheses influence their economic empowerment in university of Calabar.?

Research Hypotheses of the study

The following hypotheses were formulated to guide this study:

HO₁: Students research skills in terms of problem articulation do not significantly influence their economic empowerment in University Calabar.

HO₂: Students research skills in terms of formulation of hypotheses do not significantly influence their economic empowerment in University of Calabar.

Literature Review

Research skills are defined as ascertain abilities, actions or tasks that can be taught, practiced, and performed to establish facts, postulate new ideas, and test ideas through collection of data, and analyzes of data. This definition highlights that research skills encompass more than getting information on a problem. Utilisation of research skills involves transformation of diverse sources of information to get solution that solves problems. Considering the vast quantity of data on the internet and libraries, students should develop the skills of problem identification, articulation, organization and analysis to carry out meaningful research.

Empowerment is the act of giving someone a position of making decision that involves allocation of scarce resources to produce goods and services. Empowerment is needed in the period of unemployment and underutilisation of economic resources. Empowerment is directly linked with building mental and physical abilities that leads to self-reliance (Upadhayay et. al.). Getting individuals participate in allocation of productive resources is linked with imparting in the young and adolescent learners research skills such as ability to raise research question and formulate testable hypothesis about social and economic problems. The process of productive life demands that individuals require to build up economic abilities such as acquisition of high-quality research skills.

Economic empowerment refers to a condition of building social-economic capabilities that make individuals to achieve self-reliance and to be a productive member of the society. As Lal and Badyinarayan (2011) reported, skill, knowledge and adaptability are the most important reasons for emergence of individuals into business vocations.

Postgraduate students are adolescent and adult individuals in the society who had already completed at least first degree programmes in a higher institution and are currently undergoing a master's and doctoral degree programme in a university or any other equivalent formal educational institution. Therefore, to assess the effectiveness of their training and education, the researcher intends to measure and determine if imparting quality research skills in their training will lead to their economic wellbeing and economic empowerment.

The theoretical and empirical research reports show that research skills for problem solving are poorly acquired. This raises a concern on the need to learn research skills. Bandura (1962) propounded social learning theory which posits that human beings learn by observations and imitation. This implies that individuals are able to learn and adopt new skills and knowledge to do useful things. By social learning theory, man is able to learn through social interactions to acquire research skills such as research problem identification, articulation of research questions and hypothesis formulation.

Several empirical studies have been carried out to examine influence of research skills on economic empowerment (Mataniari & Cremin, 2020; Kucirkora & Cremin, 2020). Research skills training are seen as a means to empower individuals, improve quality of work and enhance national productivity in an increasingly integrated world (International Labour Organization, 2008).

The need for research problem articulation is not studied in isolation without linking it to economic empowerment. Hendriarto, Musidi, Kal buana, Aini and Aslan, (2021) in their empirical study entitled, Understanding the implication of research skills development: Framework for Indonesian Academic outcomes improvement. The main purpose of the study was to determine research skill framework for Indonesian master students' academic achievement. The research design was qualitative document survey. The data analysis were the use of descriptive statistic and text analysis, to answer research questions. Findings revealed that development of research skills for academic and educational needs are very vital and beneficial in completing task that requires skill and to find answers.

The present study is similar to the works of Hendriarto *et al* (2021) in terms of the research problem which is research skill development, and the unit of analysis was masters' postgraduate students. More so, the institution of the study was universities. However, Hendriarto *et al* (2021) empirical study differed from the present study as their work was not directly focused on economic empowerment.

Upadhyay and Shyan (2020) conducted their empirical study entitled: Economic Empowerment of women through skill development and entrepreneurship. The main purpose of the study was to find out if women could participate in economic ventures through exposing them to research skills. The research design used was comparative survey. The sample for the study was 943 females per 1000 male obtained through census report in India. Descriptive statistic such as percentage was used to answer research questions. It was found that disparity between female and males were in terms of low literacy rate among women, lack of employment opportunities for women and skill gap among women.

Friedman (2009) in his empirical study titled, gender differences in research grants. The main purpose of the study was to raise a hypothesis that will be testable and usable. The research design was descriptive survey, using Boston University students. The sample size of the study was 55 students. Descriptive and inferential statistics were used to answer research question and to test hypothesis. Findings of the study revealed that their research hypotheses were testable, and concludes that the null hypothesis has the phenomenon of interest in the study.

Nenty (2018) in his empirical study, entitled; introduction to research theory reported that formulation of good research question and research hypotheses were vital components of mastery of research skills. Hypothesis are valuable tools of research. The study concludes that a well-stated hypothesis is testable since what is actually tested is the relationship expressed in the hypotheses. Hypotheses give the researcher some clues as to the right type of descriptive and inferential statistics the researcher could use.

Ahmed (2017) in his empirical study entitled: Economic empowerment of women through research skill enhancement and entrepreneurship. The research design was quantitative research. The sample of 300 made of 250 women from skills development centers and 50 school bag workers from established industrial homes in Punjab and Sindh were selected for the study through the use of proportional and systematic random sampling, techniques. The instrument for data collection was questionnaire, in depth interview and case study. The result of the findings revealed that skill development centers play vital role in the provision of skills training for effective empowerment.

From the above observations, the question that arises is, to what extent do postgraduate students in the University of Calabar apply research skills in terms of problem articulation and formulating hypothesis in their research? This constitutes the problem this study is seeking to find solution, since past empirical studies have not focused on postgraduate students.

Research methodology

The research design adopted for this study was ex-post facto design. According to Kerlinger (2016) an ex post facto design is one in which the manifestation of the phenomenon has already occurred in which the researcher has no control over the independent and dependent variables but to manipulate the independent variables as they are so as to establish cause and effect relationship. The sample size for the study was two hundred (200) postgraduate students selected by purposive and simple random sampling techniques. This represents 92% of the total population of the study. Simple random sampling was adopted to give every member an equal chance of being selected, (Isangedighi, Joshua, Asim, & Ekuri, 2017).

The main instrument used for data collection was an adapted University of Calabar assessment scale. Face validity and content validation were established by using experts in Measurements and Evaluation in the Faculty of Education.

Split-half method of reliability was used to determine the reliability estimate of the instrument. The reliability coefficient derived ranges from 0.78 to 0.84. Simple regression analysis was adopted to test the hypotheses. All the hypotheses were tested at 0.5 level of significance.

Result of the Findings

This section presents the result of the statistical analysis of data gathered for this study as well as the discussion and interpretations. The presentation of the data was done following the trend of the two hypotheses directing the study.

Presentation of Results

In this section, each of the hypothesis of the study was re-stated, and the results of data analysis carried out were presented and interpreted. Each of the hypothesis was tested at 0.5 level of significance.

Hypothesis One

Students’ research skills in terms of problem articulation do not significantly influence their economic empower in the University of Calabar.

The independent variable in this hypothesis is students’ research skills in terms of problem articulation; while the dependent variable is economic empowerment. Simple regression analysis was the employed to test this hypothesis. The result of the analysis was presented in Table 1.

Table 1: Simple regression result

R	R Square	Adjusted R Square	Std. Error of the Estimate		
.324a	.106	.100	2.09422		
	Sum of Squares	Df	Mean Square	F	Sig
Regression	101.539	1	101.539	53.603	.000
Residual	868.381	198	4.386		
Total	969.920	199			

a. Dependent Variable: economic empowerment

b. Predictors: (constant), Students’ research skills in terms of problem articulation

The simple regression analysis of the relationship between students’ research skills in terms of problem articulation and their economic empowerment produced an adjusted R² of .100. This indicated that the research skill problem articulation training objective accounted for 10.0% of the determinant of economic empowerment in the study. This finding is a critical indication that research skills training objectives is relatively high in the area of the study. The F-value of the Analysis of Variance (ANOVA) obtained from the regression table was F=53.603 and the sig. value of .000 (or p<.05) at the degree of freedom (df) 1 and 198. The implication of this result is that the null hypothesis is rejected and the findings drawn from the result is that there is significant and high positive relationship between students’ research skills in terms of problem articulation and their economic empowerment.

Hypothesis two

Students’ research skills in terms of formulation of hypotheses do not significantly influence their economic empowerment in the University of Calabar. The independent variable in this hypothesis is students’ research skills in terms of formulation of hypotheses; while the dependent variable is

economic empowerment. Simple regression analysis was the employed to test this hypothesis. The result of the analysis is presented in Table 2.

Table 2: Simple regression result

R	R Square	Adjusted R Square	Std. Error of the Estimate		
.744a	.553	.551	1.47982		
	Sum of Squares	Df	Mean Square	F	Sig
Regression	536.325	1	536.325	244.912	.000
Residual	433.594	198	2.190		
Total	969.920	199			

- a. Dependent Variable: economic empowerment
- b. Predictors: (constant), Students’ research skills in terms of formulation of hypotheses

The simple regression analysis of the relationship between students’ research skills in terms of formulation of hypotheses and their economic empowerment produced an adjusted R² of .551. This indicated that the research skill hypotheses formulation objectives accounted for 55.1% of the determinate economic empowerment in the study area. This finding is a critical indication that research hypotheses training objectives is relatively high in the area of the study. The F-value of the Analysis of Variance (ANOVA) obtained from the regression table was F=244.912 and the sig value of .000 (or p<.05) at the degree of freedom (df) 1 and 198. The implication of this result is that null hypothesis was rejected and the finding drawn from the result is that there is significant and high positive relationship between students’ research skills in terms of formulation of hypotheses and their economic empowerment. Therefore, the present finding is linked to economic empowerment of postgraduate students since possession and acquisition of high research skills is one bold condition to make an effective entrepreneur.

Discussion of findings

The result of the first hypothesis indicated that assessment of students’ research skills in terms of problem articulation significantly influence their economic development. The findings were in line with the view of Kerlinger (2016) who stated that if one was to solve a problem, one must generally know what the problem is therefore, acquisition of research skills is a part of effort toward economic empowerment and economic problem solving. It can be said that a large part of the solution lies in knowing what it is. Denga and Ali (2018) supported this view when they stated that, “a promising research problem topic should be based on a problematic situation. There is the need for students in tertiary institutions to acquaint themselves with the social and economic research skill and logic of problem articulation, since it is basis on which the whole economic empowerment research is built. Mormer (2013) also observed that problem identification is the first step in problem solving effort. To rightly define a research problem is however not simple. A

strong conceptual knowledge is required in order to be able to define the problem and forecast its consequences to one's organization.

The findings of research hypothesis one confirms the report of international labour organisation (ILO, 2008) that identification and articulation of skill enhancement factors should focus question that include the acquisition of practical skill as a means to empower individuals. Nenty (1999) had reported that right articulation of problem helps to find solutions to problems. In this way problem articulation is interconnected with right raising of research question and the finding of right solutions or answers.

Education and training on research skill are a means of student's economic empowerment by providing insight for identification of occupational problems through observation and experience. Problems may also be selected from what other researchers have already done. To satisfy oneself that one's problem is researchable, the problem must be written in such a way that it appears clear, precise and expresses comprehensively what the researcher intends to do.

The result of the second hypothesis revealed that assessment of students' research skills in terms of formulation of hypotheses significantly influence their economic empowerment. The findings were in line with the view of Lal and Badrindirayan (2011) who reported that skills and knowledge are the most important reason for emergence of individuals into business vacations. Friedman (1995) noted that once the research question is stated, the subjects defined, and the variables identified, the next step is to generate a working hypothesis, and plan the statistical approach. Students with good research skills should be able to formulate testable hypothesis that will guide the development of business research and draw conclusions at the end of the study that answers the research question. Friedman study using 55 students research projects in a Boston University revealed that their hypotheses were testable in view of the fact that their hypotheses have the phenomenon of interest which is economic empowerment. The findings of hypothesis two also confirms the report by Hendriato *et al* (2021) that research skills development is beneficial Gold useful in working and completing tasks that require skills examining problems to find answers.

Joshua (2014) also reported that adequate assessment of research skills in hypotheses formation helps the researcher confirm or reject his proposition. This implies that researcher ideas merely remain untested until the idea were statistically tested. Thus, this cannot be taken as a piece of knowledge. Most inexperience researches encounter a greater deal of difficulty in their bid to formulate hypotheses. This means that there are adequate hypotheses and there are wrong ones. The ideas that hypotheses should not contradict already established theories inform us that hypothesis should be formulated in such a way that they agree with known theories.

Formulation of research question and hypothesis is a basis on which all the other items in the whole research procedures and conclusion are to be made. The reason why theory constructed skill is needed by the researcher is because hypotheses to form hypothesis one per-sub-problem. The hypotheses are reasonable guesses about possible and tentative solution to the sub-problem and provide answers to research question. Hypotheses are invaluable tools for research because they

serve to direct scientific investigations. The researcher is directed on what to do in his study by the relationship expressed in the hypothesis formed. The assessment of research skills in a well-stated hypothesis can be tested, and since what is actually tested is the relationship expressed in the hypotheses, then the hypotheses can give the researcher some clues as to the type of statistical measure the researcher could use appropriately.

Conclusion

This study has examined the quality research skills and economic empowerment of post graduate students in the University of Calabar, Cross River State, Nigeria. The findings of the study revealed that assessment of student's research skills in terms of problem articulation, and formulation of hypotheses would add to their skill for economic empowerment. The findings of the study also revealed that, postgraduate students in the University of Calabar adopt appropriate research skills in their work to enhance their economic empowerment. This is because appropriate training to acquire research skills will impact positively to their occupational empowerment. This will certainly contribute to the reduction in number of unemployed graduate students roaming on the streets for jobs.

Recommendations

Based on these findings of the study, the following recommendations were made;

- i. Postgraduate students should be encouraged to be more concerned with the issues affecting research skill problem formulation, through research skill workshops organized by Research and Development Institute of the University of Calabar.
- ii. It is recommended that the University consider the possibility of recruiting qualified research experts and psychometricians so as to impart the relevant research skills of problem articulation and hypotheses formulation. The task here is to offer early research training skills to students so as to enable students to be sound in the task of conducting research that would help in the economic empowerment of postgraduate students.

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