

FUNDING MODELS AND RESEARCH OUTPUT IN UNIVERSITIES IN CROSS RIVER STATE, NIGERIA

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Abstract

This study investigated the relationship between funding models and research output in universities in Cross River State, Nigeria. Two research questions were raised, and two hypotheses were formulated for the study. Correlational research design was adopted for the study. The population for this study comprised all the 3,546 academic staff in public universities in Cross River State. The study adopted stratified random sampling technique to select 496 academic staff. A questionnaire titled “Funding Models and Research Output Questionnaire (FMROQ)” was designed by the researcher and used for data collection. The instrument was subjected to face validity and Cronbach Alpha reliability estimate, whose reliability coefficient ranged from .76 to .89. Pearson’s Product Moment Correlation analysis was used to analyze the data collected. The results revealed that funding models (TETfund support and public-private partnership) had a significant positive relationship with research output in universities in Cross River State, Nigeria. Based on the results of the study, it was concluded that in order to increase the research output of universities in Cross River State, there is a need for university management to provide various viable funding models for researchers and academic staff. It was recommended among others that government should increase the budgetary allocation for TETfund, especially for research. Stringent conditions (if any) that have hindered academic staff access to these funds should be relaxed, reviewed, and simplified.

Keywords: Funding; Research output; TETfund; Public-private partnership; Universities

Introduction

The cardinal role of academic institutions includes the generation, processing, sharing, and dissemination of knowledge. It is widely accepted that research advances knowledge and ensures progress in society. Universities undertake research in various fields for various reasons, and that propels the sustenance and progress of society. The drivers of these research activities are academics/researchers in academic institutions, especially universities. Research output denotes the mass of scholarly work generated by academic staff and researchers in an educational institution (Gbemi-Ogunleye, 2023). It encompasses journal articles, conference papers, books, book chapters, patents, and novel discoveries that enhance knowledge across diverse fields. In public universities, research production serves as a fundamental metric of institutional performance, affecting global university rankings, accreditation, and general academic reputation. The volume of research output differs markedly among institutions due to variables such as funding, infrastructure, governmental policies, and institutional support systems (Aina, 2019). However, there seems to be a serious decline in the research productivity of university lecturers, as evidenced by the quantity of publications. Furthermore, preliminary assessments of the quality of research among academics in Cross River State, Nigeria, tend to give a weak impression of their reputation. While it is possible to see many scholars elsewhere with an h-index higher than 300, most scholars in Cross River State are still struggling to reach an h-index of 5. Similarly, many academic staff in the study area are yet

to win a grant even after attaining professorial status. Most junior and senior academic staff of universities are often seen struggling to publish in highly rated peer-reviewed journals, especially those published by well-respected publishers such as Elsevier, Nature, Springer, Sage and so on (Owan et al, 2023). Furthermore, the rate at which some academics rely on what may be termed as “the put my name syndrome” in climbing their career trajectory seems to be high.

Similarly, the ‘publish or perish’ dictum and the frustrations associated with peer review have driven lecturers to invent and utilize dubious means to achieve their targets. One such means is the use of predatory journals. According to Owan et al (2023), predatory journals take advantage of the authors by charging article handling fees without providing credible editorial and publishing services. They further explain that predatory journals recruit articles through aggressive marketing and spam emails, promising quick review and open access publication for a price. There is little quality control, if any, and virtually no transparency about the editorial processes and fees. Their main motive is financial gain. Unfortunately, such publications generate minimal scholarly value for scholars. Such scholars can be said to be publishing yet perishing.

Efforts at addressing the declining levels of research productivity of lecturers in Nigerian universities through training and retraining, and formulation of policies by the various universities, government and its agencies as well as provision of funding by government through the tertiary education trust fund (TETfund) and other means have not yielded any positive results in addressing this problem. Consequently, it is pertinent to suggest that there are other factors that need to be addressed to curb this declining trend in research output in universities in Nigeria. Nonetheless, despite the existence of esteemed institutions, research output continues to be inadequate. Numerous scholars encounter difficulties in obtaining contemporary research apparatus, laboratories are frequently understaffed, and access to academic periodicals and digital databases is sometimes insufficient. These limitations impede researchers' capacity to execute high-calibre investigations and publish in esteemed journals. It is worthy to note that the availability of funding is a primary predictor of research output. Research endeavours necessitate financial resources for laboratory experiments, fieldwork, data processing, and publication expenses which are either not available or inadequate. In Cross River State, Nigeria, public institutions depend significantly on government funding, which frequently proves inadequate for extensive research initiatives.

Similarly, universities rely on funding from entities such as the Tertiary Education Trust Fund (TETfund), international donor agencies, and partnerships with businesses. Access to this funding is frequently competitive, and bureaucratic delays in distribution may hinder research productivity (Olayemi & Adebayo, 2021). Ogunyemi (2020) contended that the availability of research facilities and resources is a crucial element influencing research productivity. Numerous universities in the study area are deficient in well-equipped laboratories, contemporary libraries, and access to digital research databases. This deficiency compels researchers to depend on obsolete resources, constraining the breadth and calibre of their study. Current research on university funding in Nigeria predominantly emphasises general educational funding and its effects on institutional efficacy. Nonetheless, a deficiency exists in the literature concerning the precise relationship between funding options and research output in public universities in Cross River State, Nigeria.

Funding models outline how universities acquire and manage financial resources. They define the sources and motivations behind funding, encompassing a range of options from grants and donations to equity financing and earned income. A sustainable funding model in universities requires a diversified approach, reducing reliance on government funding and embracing a combination of tuition fees, research grants, public-private partnerships, TETfund, and internally

generated revenue. It is imperative to note that Nigerian Universities are bedevilled with inadequate funding, which has adverse effects on research and teaching, based on the quality of research, which has been adjudged to be of low standard, when matched with their counterparts in other parts of the world (Ekundayo & Ajayi, 2009).

Public Private Partnership, according to Lawal (2023), is a set of arrangements in which the private sector carries out the role of the supplier of infrastructure assets and services that have traditionally been provided by the government. This agreement involves pooled public and private resources; shared responsibilities; complementary efforts; equity sharing (if there is government organ investment); formation of special purpose vehicles to develop, build, maintain, and operate for the contracted period. Public Private Partnerships (PPPs), according to Ogunode et al (2023) is an official agreement between two or more parties on the provision of services or projects with a defined operational, profit-sharing ratio, terms and conditions and ownership tenure. Public Private Partnerships (PPPs) can be seen as a formal arrangement and agreement between public institutions and private individuals on funding of infrastructure, provision of services and donation of facilities with a defined and spelt out policies on sharing formula of assets, profits and ownership.

Sulaiman et al (2024) assessed the impact of Tertiary Education Trust Fund (TETfund) intervention on academic staff research output in Ibrahim Badamasi Babangida (IBB) University, LAPAI. The findings established that TETfund has a positive impact on academic staff research output in IBB University. The findings also indicated that TETF had significantly contributed to the improvement of infrastructure and research capacity in Nigerian universities, which in turn enhanced the quality of education and academic outputs. In a study conducted by Ajayi and Afolabi (2020), the authors explored the impact of government intervention funds on the educational sector in Nigeria, specifically focusing on tertiary education. The study found that government intervention funds, particularly those channelled through the Tertiary Education Trust Fund (TETfund), significantly improved the quality of infrastructure and access to tertiary education. Dike (2019) explored the role of the Tertiary Education Trust Fund (TETF) in enhancing academic excellence in Nigeria through a case study approach. The findings suggested that TETF had played a crucial role in elevating academic standards by providing essential resources for teaching and research. The study highlighted significant improvements in library facilities, laboratory equipment, and research grants, which collectively contributed to better academic outcomes.

Abulaziz et al (2020) studied the conference grant interventions from TETfund and academic staff job performance. It was reported that in obtaining qualitative transformation of academic staff in Lagos State University, funding intervention was key to the provision of infrastructure for effective teaching and learning and more importantly conference grant was germane. Akomolafe and Bello (2019) gathered that problems in accessing TETfund have an important role in hindering academic staff training in southwest Nigeria universities. Also, Zabbey and Leyira (2019) affirmed that there was a positive and significant relationship between TETfund fund and staff training. Olorunsola and Aina (2023) examined the accessibility to Tertiary Education Trust Fund (TETfund) interventions and its effect on academic staff job performance in universities in Southwest, Nigeria. The results revealed that there was a positive relationship between research, conference, further study grants and academic staff job performance. It also revealed that the universities and the academic staff cannot easily access research grant, conference attendance grant and further studies grant that are provided through TETfund.

Udoh and Ikediugwu (2020) study centered on funding strategies adopted by university administrators for resource improvement in South-South geo-political zone of Nigeria. Findings

revealed that both administrators in federal and state universities agreed that they adopt the public-private partnership funding and tertiary education trust fund strategies for resource improvement in south-south universities. Niyi and Obiakor (2023) explored various public-private partnership funding models options for the funding of universities in Nigeria. The paper concluded that there are various Public- Private Partnership Funding Model options available for the funding of universities in Nigeria which include; Build, Operate, Transfer (BOT), Design, Build, Finance, Own (DFBO), Design, Build, Operate and Transfer (DBOT), Build, Own, Operate and Transfer (BOOT), Rehabilitate, Operate and Transfer (ROT), Joint Development Agreement (JDA), Operation and Maintenance (OM), Management/Lease Contract, Outsourcing, Leasing Contract, divestiture and concession.. The paper also established that universities in Nigeria can adopt public-private partnership funding models available to increase funds availability in the universities system, fund infrastructure facilities projects, increase research funding and increase community services to the host communities across Nigeria.

Siyanbola et al (2025) examined the funding models and research output of public universities in South West Nigeria, focusing on the interrelationship between financial resources and research activities. Findings indicate that while government funding remains the primary source of financial support, the dependency on this funding model has limited public universities' ability to consistently produce high-quality research. Additionally, the study revealed a growing reliance on partnerships with international organizations and the private sector to supplement research funding. Bengtsson (2023) highlights how funding fosters international collaborations, particularly in fields like biomedical research, where global partnerships accelerate the development of vaccines and medical treatments. Research funding often drives collaboration between academic institutions, government agencies, and the private sector. Public-private partnerships and international collaborations are increasingly common, particularly in fields such as healthcare, environmental sciences, and engineering. Funding from multiple sources can enhance the scope and impact of research, allowing for a broader exchange of ideas and the integration of diverse expertise.

Purpose of the study

The main purpose of this study was to examine the relationship between funding models and research output in universities in Cross River State, Nigeria. Specifically, the study investigated the relationship between:

1. TETfund supports and research output in universities.
2. Public-private partnership and research output in universities.

Research questions

The following research questions were raised to direct this study.

1. To what extent does TETfund support relate to research output in universities?
2. To what extent does public-private partnership relate to research output in universities?

Hypotheses

The following null hypotheses guided this study.

H₀₁ There is no significant relationship between TETfund support and research output in universities.

H₀₂ There is no significant relationship between public-private partnership and research output in universities.

Methods

The research design adopted for this study was the correlational design. Correlational research design is a research approach that attempts to find the nature of the non-causal relationship existing between a set of variables, of which cannot be determined by the researcher or manipulated, but presents naturally within a group or sample. It is appropriate when the interest of the researcher is to explore the nature of the relationship between variables to make predictions of future trends of the variables through such approaches as naturalistic observations, survey, and archival research (Isangedighi, Joshua, Asim & Ekuri, 2004). This design is considered appropriate because this research is designed to explore the nature of the statistical relationship between funding models and research output in universities in Cross River State within the period of the study (2024/2025 academic session). The population for this study comprises all the 3,546 academic staff in public universities in Cross River State. University of Calabar (Unical) has 2,650 academic staff, University of Cross River State (Unicross) has 896 academic staff. The study adopted stratified random sampling technique. The researcher divided the universities into 2 subgroups or stratum on the basis of ownership (federal and state) where the University of Calabar was in stratum 1, and University of Cross River State was in stratum 2. To ensure proportionality in the selection, the researcher was selected 14% of the staff from each institution in each of the stratum. In stratum one 371 respondents were selected from unical and 125 from unicross. A total of 496 respondents representing (14%) of the population of academic staff were randomly selected from the two universities in Cross River State. A questionnaire titled “Funding Models and Research Output Questionnaire (FMROQ)” was designed by the researcher and used for data collection. The instrument was constructed to cover two sections (A and B). Section A of the questionnaire was structured with six items each to reflect and measure the independent sub-variables (TETfund and public-private partnership) of the study, while Section B addressed research output with six items. The responses in the instrument were based on the four-point Likert-type scale, ranging from strongly agree, agree, disagree, and strongly disagree, and the respondents were expected to make their choices based on their degree of agreement or disagreement with each item. The instrument was subjected to face validity. The questionnaire was given to three research experts for vetting; eighteen out of twenty-eight items were appropriate for the instrument. This was done to ascertain the level of validity and to ensure that the items constructed measured what they intended to measure. The items were certified, unambiguous, and relevant. For this research, the Cronbach Alpha reliability estimate was used to ascertain the reliability index. The reliability coefficient ranged from .76 to .89, and the coefficients obtained from each of the sub-variables indicated that the instrument is reliable and appropriate to be used for this study. Pearson’s Product Moment Correlation analysis was used to analyze the data collected.

Results

Hypothesis one

There is no significant relationship between TETfund support and research output in universities. To test this hypothesis, Pearson’s Product Moment Correlation analysis was used to analyse the data. The result of the analysis is presented in Table 1. Table 1 shows the correlation coefficient between TETfund support and research output in universities. The result shows a correlation coefficient of $r = 0.719$, $p < 0.05$. The correlation coefficient was statistically significant, high and positive. Based on this result, hypothesis one was rejected. This implies that TETfund support significantly relates to research output in universities in Cross River State.

Table 1: Summary of correlation between TETfund support and research output in Cross River State. (N=496)

Variables	$\bar{X}$	SD	r	p-value
TETfund support (X_1)	19.177	1.319		
Research output (Y)	21.371	3.137	.719*	.000

*Significant at $p < .05$

Hypothesis two

There is no significant relationship between public-private partnership and research output in universities. To test this hypothesis, Pearson's Product Moment Correlation analysis was used to analyse the data. The result of the analysis is presented in Table 2. Table 2 shows the correlation coefficient between public-private partnership and research output. The result shows a correlation coefficient of $r = 0.837$, $p < 0.05$. The correlation coefficient was statistically significant, high and positive. Based on this result, hypothesis two was rejected. This implies that public-private partnership significantly relates to research output in universities in Cross River State.

**Table 2
Summary of correlation between public-private partnership and research output in Cross River State (N=496)**

Variables	$\bar{X}$	SD	r	p-value
Public-private partnership (X_2)	19.923	1.431		
Research output (Y)	21.371	3.137	.837*	.000

*Significant at $p < .05$

Discussions

The analysis of the first hypothesis which stated that there is no significant relationship between TETfund support and research output in universities revealed that TETfund support had a positive significant relationship with research output in universities in Cross River State. This result is not surprising given that TETFund (Tertiary Education Trust Fund) provides significant support for research in Nigerian public tertiary institutions through various interventions. These include the National Research Fund (NRF), Institution Based Research (IBR), and support for Academic Research Journals (ARJ). TETFund's research support aims to enhance research capacity, address national priorities, and contribute to socio-economic development.

This supports the position of Sulaiman et al (2024) who opined that TETfund has a positive impact on academic staff research output. In the same vein, the findings asserted that TETfund had significantly contributed to the improvement of infrastructure and research capacity in Nigerian universities, which in turn enhanced the quality of education and academic outputs. Additionally, Ajayi and Afolabi (2020) averred that government intervention funds, particularly those channelled through the Tertiary Education Trust Fund (TETfund), significantly improved the quality of infrastructure and access to tertiary education.

The analysis of the second hypothesis, which stated that there is no significant relationship between public-private partnership and research output in universities, revealed that public-private partnership had a significant positive relationship with research output in universities. This result is not surprising due to the fact that Public-Private Partnerships (PPPs) can be a valuable tool for

supporting research, particularly in areas where public funding is limited or where private sector expertise can be leveraged. These partnerships involve collaboration between public sector research institutions and private companies, often to leverage resources, expertise, and funding to achieve research objectives. This is in agreement with Udoh and Ikediugwu (2020), who asserted that both administrators in federal and state universities agreed that they adopt the public-private partnership funding and tertiary education trust fund funding strategies for resource improvement in universities. Niyi and Obiakor (2023) averred that that universities in Nigeria can adopt public-private partnership funding models available to increase funds availability in the universities system, fund infrastructure facilities projects, increase research funding and increase community services to the host communities across Nigeria. In the same vein, Siyanbola et al (2025) opined that while government funding remains the primary source of financial support, the dependency on this funding model has limited public universities' ability to consistently produce high-quality research.

Conclusion

Based on the results of the study, it was concluded that in order to increase the research output of universities in Cross River State, there is need for universities management to provide various viable funding models for researchers and academic staff.

Recommendations

Based on the result of this study, it was recommended that;

1. Government should increase the budgetary allocation for TETFund, especially for researches. Stringent conditions (if any) that had hindered academic staff access to these funds should be relaxed, reviewed and made simple.
2. Management of universities should endeavour to encourage private organizations/individuals to partner with their institutions in providing funds for research.

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