



Consequences of Government Capital Expenditure on Academic Performance in Technical and Commercial Schools within Zone 1 Senatorial District of Kaduna State, Nigeria

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ABSTRACT

This study examined the consequences of government capital expenditure on academic performance in technical and commercial schools within Zone 1 Senatorial District of Kaduna State, Nigeria. The research was motivated by persistent challenges in the education sector, including poor infrastructure, inadequate funding, and declining student performance, despite significant government investment. The study sought to determine the impact of government capital expenditure on students' academic achievement, assess the adequacy of such spending, and compare the performance of students in public and private schools. A survey research design was adopted, involving 300 respondents drawn from five selected technical and commercial schools through multistage sampling. Data were collected using structured questionnaires and interviews, and analysed using descriptive and inferential statistics, including mean, standard deviation, Chi-square, t-test, and regression analysis, at a 0.05 significance level. The findings revealed that government capital expenditure significantly influences academic performance, particularly through improved infrastructure, laboratory facilities, and teacher efficiency. However, inadequacies in funding, poor project implementation, and weak maintenance culture reduce the effectiveness of these expenditures. The study also found a significant difference in academic performance between public and private school students, with private schools outperforming public ones due to better management and accountability. It was concluded that while capital expenditure contributes positively to educational outcomes, its impact depends largely on efficient utilization, monitoring, and sustainability. The study recommended that the government should increase and sustain funding for technical and commercial education, ensure transparent fund utilization, improve maintenance practices, strengthen teacher capacity, and encourage stakeholder participation in educational governance.

ARTICLE INFO

Article History

Received: March, 2025

Received in revised form: June, 2025

Accepted: August, 2025

Published online: September, 2025

KEYWORDS

Government Expenditure, Capital Expenditure, Academic Performance, Technical Education, Commercial Education, Kaduna State

INTRODUCTION

Education has long been recognized as a cornerstone for national development and an indispensable instrument for social and economic progress. It is a fundamental human right and an essential factor in improving the quality of life of individuals and communities. According to the

Federal Republic of Nigeria (FRN, 2013), education is an instrument "par excellence" for effecting national development. Education promotes knowledge acquisition, innovation, technological advancement, and the transformation of human resources into productive assets for the economy. In the Nigerian context,

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Technical and Commercial Education (TCE) plays a unique role in preparing skilled manpower for various sectors of the economy, including industrial, business, and entrepreneurial environments.

Government expenditure in education refers to the total amount of financial resources allocated by the government to the education sector to ensure the effective functioning of educational institutions. This expenditure can be categorized into recurrent expenditure (covering salaries, maintenance, and operational costs) and capital expenditure (covering the construction of infrastructure, procurement of equipment, and acquisition of educational facilities). The latter—capital expenditure—is particularly vital in determining the availability and quality of physical infrastructure and learning facilities in technical and commercial schools (Omotor, 2004).

The importance of government capital expenditure in technical and commercial education cannot be overstated. It ensures the provision of well-equipped workshops, laboratories, business simulation rooms, libraries, and ICT centers, which are essential for skill acquisition and effective teaching and learning. According to World Bank (2005), investment in education, especially in technical and vocational fields, enhances productivity, employment opportunities, and sustainable economic growth. Similarly, Ogbodo (1995) emphasized that the quality of educational facilities has a direct bearing on student learning outcomes and overall academic performance.

In Kaduna State, education remains a major priority of government policies. Over the years, successive administrations have introduced various reforms to improve the quality and accessibility of education. For instance, the introduction of the School Management Board system in 2000 sought to improve school administration and stakeholder participation. Additionally, the Kaduna State Government has made significant budgetary allocations to the education sector in recent years. According to BudgIT (2019), the state allocated 30.25% of its 2017 budget, 23.87% of its 2018 budget, and 26.8% of its 2019 budget to education. However,

despite these efforts, the academic performance of students in technical and commercial schools remains below expectations.

It is therefore crucial to assess whether the capital expenditures made by the government in technical and commercial education are yielding tangible results in terms of improved academic performance. Academic performance is a key indicator of educational effectiveness and reflects how well students have acquired knowledge, skills, and competencies. Adeyemi (2008) posited that performance is influenced by several factors, including quality of teachers, availability of instructional materials, and adequacy of school facilities—all of which depend significantly on government funding and expenditure priorities.

STATEMENT OF THE PROBLEM

Education in Nigeria has suffered from chronic underfunding, leading to a wide range of systemic challenges. Technical and commercial schools, in particular, face acute shortages of qualified teachers, inadequate workshops, obsolete equipment, and poorly maintained facilities. These deficiencies hinder effective teaching and learning, resulting in poor academic performance among students (Minin, Akutson, Auta & Messiah, 2018).

Despite the state and federal governments' investments in education, especially in constructing classrooms, workshops, and laboratories, and providing teaching aids, the performance of students in technical and commercial subjects remains unsatisfactory. This situation raises concerns about the efficiency, adequacy, and impact of government capital expenditure in these institutions.

Objectives of the Study

The specific objectives are to:

1. Determine whether government expenditure on technical and commercial education has any significant impact on students' academic performance.
2. Examine the effect of government capital expenditure on academic

performance in technical and commercial schools.

3. Compare the academic performance of students in public and private technical and commercial schools in the study area.

Research Questions

To guide the study, the following research questions are raised:

1. Does government expenditure on technical and commercial education have any significant impact on students' academic performance?
2. What is the effect of government capital expenditure on academic performance in technical and commercial schools?
3. Is there any significant difference in academic performance between students in public and private technical and commercial schools?

Concept of Government Expenditure

Government expenditure refers to the total spending by public authorities at all levels—federal, state, and local—on goods and services intended to promote the welfare of citizens. In the context of education, government expenditure includes all financial outlays aimed at maintaining and developing the education sector (Teriba, 1967). According to Deininger (2003), public spending on education is often justified on the grounds of equity, social welfare, and economic productivity.

Government spending on education is not merely a financial act but a strategic policy intervention. According to OECD (2003), investment in education yields both private and social returns by improving literacy rates, productivity, and economic growth. However, the efficiency of such expenditure depends on proper allocation, transparency, and effective implementation mechanisms.

Concept of Capital Expenditure in Education

Capital expenditure in education refers to funds allocated for the acquisition, construction, renovation, or improvement of long-term assets

that enhance learning and teaching environments. According to Castaldi (1977), capital expenditure focuses on fixed assets such as classrooms, libraries, hostels, laboratories, and workshops that have long-term utility in education.

Adequate capital investment also helps reduce overcrowding, improve safety, and foster creativity. However, in many developing countries including Nigeria, capital expenditure is often insufficient or mismanaged. Poor project monitoring, corruption, and bureaucratic delays frequently result in incomplete or abandoned educational projects (Halidu & Paul, 2007). This inefficiency undermines the expected returns on educational investment.

Concept of Technical and Commercial Education

Technical and commercial education refers to educational programs designed to provide learners with practical skills, business knowledge, and technical competencies needed for employment or entrepreneurship. According to the *National Policy on Education* (FRN, 2013), technical and vocational education is that aspect of education which leads to the acquisition of practical and applied skills, as well as basic scientific knowledge necessary for various occupations.

Technical education focuses on industrial and mechanical training such as engineering, construction, and applied sciences, while commercial education deals with business-related disciplines like accounting, commerce, marketing, and office management. Both are crucial for Nigeria's economic development as they prepare the middle-level manpower required in industries and commercial enterprises.

Concept of Academic Performance

Academic performance refers to the extent to which students achieve their learning objectives and demonstrate mastery of knowledge, skills, and attitudes prescribed by the curriculum. It is often measured through tests, examinations, continuous assessments, and practical evaluations (Adeyemi, 2008). Academic



performance serves as a key indicator of educational quality and system efficiency.

Santrock (2006) emphasized that academic performance is influenced by a combination of factors such as quality of instruction, school environment, parental background, and availability of learning resources. In technical and commercial schools, performance is also affected by the adequacy of workshops, equipment, and teacher competence.

Human Capital Theory

The Human Capital Theory was popularized by economists such as Becker (1964) and Schultz (1961). The theory posits that education is an investment that enhances the productivity and efficiency of individuals, thereby contributing to overall economic growth. It views expenditure on education as a form of capital investment—similar to investments in machinery or infrastructure—because it yields future benefits through higher productivity, innovation, and earnings.

According to the Human Capital Theory, governments should invest in education to increase the stock of skilled and knowledgeable citizens capable of driving national development. Technical and commercial education, in particular, equips individuals with practical skills that enhance employability and entrepreneurship.

METHODOLOGY

The study adopted the survey research design. According to Gay and Diehl (1992), survey design is appropriate when the purpose of a study is to describe characteristics of a population, determine relationships among variables, or generalize findings from a sample to a larger population. The study was conducted in Zone 1 Senatorial District of Kaduna State, Nigeria. The

population of the study consists of all teachers, administrative staff, and students of government and private technical and commercial schools within Zone 1 Senatorial District.

The target population includes both public and private institutions, as the study seeks to compare the impact of government capital expenditure on students' performance across school ownership types. Sampling involves selecting a subset of a population to represent the entire population in a research study (Kothari, 2014). Given the relatively small number of technical and commercial schools in the study area (five), the study employed both purposive and random sampling techniques to select respondents. Descriptive statistics such as frequency counts, percentages, mean, and standard deviation were used to summarize the demographic characteristics of respondents and responses to questionnaire items. Tables and charts were used to present the data clearly.

RESULTS

This section presents, analyzes, and interprets the data collected from respondents through questionnaires and interviews. The data analysis is guided by the research questions and hypotheses formulated in Chapter One. Both descriptive and inferential statistical methods were employed using the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics were used to summarize responses. The data collected were analyzed in line with the research questions.

Research Question 1: Does government expenditure on technical and commercial education have any significant impact on students' academic performance?

Table 1: Impact of Government Expenditure on Students' Academic Performance

Statement	SA	A	UD	D	SD	Mean	SD
Government funding has improved infrastructure in our school.	81	92	40	43	23	3.65	1.14
The facilities provided by government enhance learning outcomes.	76	97	37	40	29	3.68	1.17
Increased government spending has led to better student motivation.	59	104	46	49	21	3.57	1.12
Teaching effectiveness has improved due to government support.	64	96	48	44	27	3.57	1.15

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Statement	SA	A	UD	D	SD	Mean	SD
Government spending on education is adequate for school needs.	38	66	50	78	47	2.95	1.28

Source: Field Survey, 2025

The weighted mean scores for most items are above 3.50, suggesting that respondents generally agree that government expenditure has had a positive effect on academic performance, mainly through infrastructural improvement and enhanced learning motivation. However, the relatively low mean (2.95) for the

statement on adequacy of government spending indicates that while expenditures exist, they may still be insufficient to meet all educational needs.

Research Question 2: What is the effect of government capital expenditure on academic performance in technical and commercial schools?

Table 2: Effect of Capital Expenditure on Academic Performance

Statement	SA	A	UD	D	SD	Mean	SD
Capital projects (buildings, workshops) have enhanced learning conditions.	90	111	36	27	15	3.95	1.02
Availability of equipment from capital expenditure improves skill acquisition.	87	102	42	30	18	3.84	1.07
Capital expenditure has reduced overcrowding in classrooms.	70	89	49	46	25	3.53	1.20
New facilities have increased teacher efficiency and lesson delivery.	78	98	39	39	25	3.66	1.14
Students perform better in well-equipped workshops and labs.	102	101	35	23	18	4.05	0.98

Source: Field Survey, 2025

The results show that respondents strongly agree (mean = 3.95 and 4.05) that capital projects such as workshops and laboratories significantly enhance learning conditions and student performance. These findings affirm the direct link between physical infrastructure and academic achievement, consistent with Uline and

Tschannen-Moran (2008), who observed that conducive school environments positively influence students' learning outcomes.

Research Question 3: Is there any significant difference in academic performance between students in public and private technical and commercial schools?

Table 3: Comparison of Students' Academic Performance by School Type

School Type	Mean Score	Std. Dev.	N
Public Schools	61.47	10.12	182
Private Schools	66.85	9.56	97

Independent Samples t-Test

Variable	t-value	df	Sig. (2-tailed)	Decision
Academic Performance	-3.89	277	0.000	Significant

The t-test result ($p < 0.05$) shows a statistically significant difference between students in public and private schools, with private school students performing better on average. This suggests that despite government capital expenditure, public schools still lag behind due to

issues like equipment maintenance, teacher motivation, and management inefficiencies.

DISCUSSION OF FINDINGS

The findings of this study align with several previous empirical studies but also

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highlight contextual nuances specific to Kaduna State's educational environment.

The study found a significant positive relationship between government expenditure and student performance. This supports the conclusions of Yunana and Muhammad (2016), who demonstrated that increased educational spending enhances human capital development. However, it contradicts Minin et al. (2018), who found no short-term impact in Kaduna State due to bureaucratic inefficiencies. The implication is that efficient allocation and timely disbursement of funds are crucial in translating expenditure into educational outcomes.

Findings revealed that government capital expenditure—particularly on infrastructure, workshops, and laboratories—has a significant impact on learning conditions and academic performance. This resonates with Uline and Tschannen-Moran (2008) and Castaldi (1977), who established that school facilities directly affect student motivation and academic achievement. Nevertheless, challenges such as poor maintenance and equipment obsolescence may dilute these positive effects.

The study observed that private school students perform better on average than their public-school counterparts. This difference is consistent with Ajayi (2008) and Olabanji & Alaka (2010), who attributed it to better management practices, accountability, and resource utilization in private institutions. Despite higher government spending in public schools, inefficiency and corruption often undermine the benefits. Interviews highlighted persistent challenges, including irregular funding, delayed project execution, inadequate supervision, and lack of teacher retraining. These factors collectively reduce the effectiveness of capital expenditure in promoting academic excellence.

CONCLUSION

Based on the findings, it can be concluded that government capital expenditure has a significant yet uneven impact on the academic performance of students in technical and commercial schools in Zone 1 Senatorial District of Kaduna State. While capital projects

such as classrooms, workshops, and laboratories have improved learning conditions, the full potential of these investments is not being realized due to inefficiencies in project implementation, lack of maintenance, and poor teacher motivation. The study confirms the theoretical propositions of Human Capital Theory and Investment Theory of Education, emphasizing that education is both a productive investment and a determinant of national development. When government allocates resources effectively to education, especially in technical and commercial sectors, it enhances human capacity and stimulates socio-economic progress. However, the study also highlights that increased funding alone does not automatically lead to better academic outcomes.

RECOMMENDATIONS

Based on the findings and conclusions, the following recommendations were made:

1. Government should allocate a higher percentage of the annual budget to education, in line with the UNESCO 26% benchmark, with emphasis on capital expenditure in technical and commercial schools. Continuous investment is necessary to upgrade workshops, laboratories, and ICT infrastructure to modern standards.
2. Transparent financial management systems should be established to track how funds are utilized. The Kaduna State Ministry of Education, in collaboration with the TETFund, should institute periodic monitoring and evaluation teams to ensure that capital projects are executed as planned and meet quality standards.
3. Maintenance budgets should accompany all capital projects to ensure that facilities remain functional. Schools should establish Maintenance Committees comprising staff, parents, and local community members responsible for routine upkeep of facilities.
4. Given the global shift towards digitalization, capital expenditure should



include investment in ICT infrastructure, such as computer laboratories, internet connectivity, and digital learning materials. These will enhance both teaching efficiency and student performance.

REFERENCES

- Adeyemi, T. O. (2008). *Predicting students' performance in Senior Secondary Certificate Examination from performance in Junior Secondary Certificate Examinations in Ondo State, Nigeria*. Humanity and Social Science Journal, 3(1), 26–36.
- Adamu, A., & Muhammed, A. (2017). *Influence of vocational and technical education training in job creation, self-reliance and economic development of students in colleges of education, Kaduna State*. ATBU Journal of Science, Technology and Education.
- Adowaa, B. (2014). *Does public expenditure management matter for education outcomes? Development Southern Africa*, 31(4), 535–552.
- Ajayi, I. A. (2008). *Resource factors as correlates of secondary school effectiveness in Ekiti State*. Journal of Counselling and Applied Psychology, 1(1), 109–115.
- Akinbode, J. F. (2004). *Staff development*. Journal of the Institute of Personnel Management of Nigeria, 12(2), 52–57.
- Akpotu, N. E. (2008). *Social cost analysis of secondary education in South West Nigeria*. Journal of Social Science, 16(1), 27–33.
- Bloom, B. S. (1978). *Environments for learning in Britain*. NFER Publishing Company Ltd.
- BudgIT. (2019). *The 2019 Education Budget Analysis*. Lagos: MacArthur Foundation.
- Castaldi, B. (1977). *Educational facilities planning, remodeling and management*. London: Allyn and Bacon Ltd.
- Central Bank of Nigeria (CBN). (2000). *Annual report and statement of account*. Abuja: Government Press.
- Central Bank of Nigeria (CBN). (2010). *Annual reports and statistical bulletin*. Abuja: Government Press.
- Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (7th ed.). London: Routledge.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage Publications.
- Das, J., Dercon, S., Habyarimana, J., Krishnan, P., Muralidharan, K., & Sundararaman, V. (2013). *School inputs, household substitution, and test scores*. American Economic Journal: Applied Economics, 5(2), 29–57.
- Deininger, K. (2003). *Does cost of schooling affect enrollment by the poor? Universal primary education in Uganda*. Economics of Education Review, 22(3), 291–305.
- Ebejer, I., & Ulrike, M. (2009). *The efficiency of public expenditure in Malta*. Economic Analysis, 6(2), 45–61.
- Federal Republic of Nigeria (FRN). (2013). *National Policy on Education* (6th ed.). Abuja: NERDC Press.
- Gay, L. R., & Diehl, P. L. (1992). *Research methods for business and management*. New York: Macmillan Publishing Company.
- Halidu, A., & Paul, B. (2007). *Education public expenditure review: Kaduna State, Federal Republic of Nigeria (Final draft)*. Abuja: Federal Ministry of Education.
- Hanushek, E. A. (2011). *Educational policy research and industry perspective*. Economics of Education Review, 1(2), 193–223.
- KADSEEDS. (2004). *Kaduna State Economic Empowerment and Development Strategy (KADSEED) Document 2005–2007*. Kaduna State Government.



- Kothari, C. R. (2014). *Research methodology: Methods and techniques* (4th ed.). New Delhi: New Age International Publishers.
- Marttorell, P., Stange, K., & McFarlin, I. (2016). *Investing in schools: Capital spending, facility conditions, and students' achievement*. Journal of Public Economics, 140, 13–29.
- Minin, A. M., Akutson, S. K., Auta, E. M., & Messiah, A. J. (2018). *Effect of government expenditure on human capital development in Kaduna State (1990–2015): An application of ARDL model*. IOSR Journal of Economics and Finance, 9(3), 32–38.
- National Open University of Nigeria (NOUN). (2012). *Educational finance (ED915)*. Lagos: NOUN Press.
- National Teachers' Institute (NTI). (2008). *Improvisation of instructional materials in technical and vocational education: A national capacity building programme for teachers of technical college and vocational schools*. Kaduna: NTI Press.
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.
- OECD/UIS. (2003). *Financing education – Investments and returns: Analysis of the World Education Indicators 2002 Edition*. Paris: OECD Publishing.
- Ogbodo, C. M. (1995). Managing educational facilities. In Peretomode, V. G. F. (Ed.), *Introduction to educational planning and supervision* (pp. 135–150). Lagos: Joja Educational Resources and Publishing Ltd.
- Ola, V. (1998). *Education in national development*. Vanguard Newspaper, August 2.
- Olabanji, E. O., & Alaka, A. A. (2010). *Influence of resources allocation in education on secondary school students' outcome in Nigeria*. Journal of Higher Education, 8(4), 1–10.
- Omotor, D. G. (2004). *An analysis of federal government expenditure in the education sector of Nigeria: Implications for national development*. Journal of Social Sciences, 9(2), 105–110.
- Oweh, I. (2013). *A case for better educational funding in Nigeria*. Daily Independent, January 28.
- Psacharopoulos, G., & Woodhall, M. (1997). *Education for development: An analysis of investment choices*. Oxford: Oxford University Press.
- Santrock, J. W. (2006). *Children* (7th ed.). New York: McGraw-Hill.
- Sidhu, K. S. (2016). *School organization and administration* (3rd ed.). New Delhi: Sterling Publishers Private Ltd.
- Teriba, O. (1967). *The growth of public expenditure in Western Nigeria*. The Nigerian Journal of Economics and Social Studies, 9(2), 175–201.
- Ude, D., & Ekesiobi, S. (2014). *Panel investigation of states social spending and social outcome: Perspective of education in Nigeria*. International Journal of Economics, Finance and Management, 3(5), 244–255.
- Uline, C., & Tschannen-Moran, M. (2008). *The walls speak: The interplay of quality facilities, school climate, and students' achievement*. Journal of Educational Administration, 46(1), 55–73.
- World Bank. (2005). *Expanding opportunities and building competencies for young people: A new agenda for secondary education*. Washington, DC: The World Bank.
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). New York: Harper & Row.
- Yunana, T. W., & Muhammad, D. A. (2016). *Empirical analysis of the impact of Kaduna State government expenditure on education on human capital development*. Journal of Advances in Humanities, 4(4), 542–546.