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Understanding Factors Influencing Primary School Enrolment in Nigeria: Evidence from 1980 to 2021

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Abstract
This paper delves into the concerning decline in school enrolment rates among school-aged children in Nigeria despite government efforts to promote education. Specifically focusing on primary education, the study aims to identify the key factors influencing the demand for primary education in Nigeria from 1980 to 2021. Utilizing the Ordinary Least Square (OLS) method and multiple regression models, the research examines various determinants of primary school enrolment. The empirical investigation reveals that government expenditure on education, minimum wage rates, and primary school student-teacher ratios significantly impact primary school enrolment rates in Nigeria. Notably, the findings highlight the importance of adequate government investment in education, as well as the need for equitable wage policies to support families in sending their children to school. Additionally, the study underscores the significance of maintaining favorable student-teacher ratios to enhance the quality of education and attract more students to enrol in primary schools. Furthermore, the study emphasizes the predictive power of the exogenous variables in explaining variations in primary enrolment rates. This underscores the importance of considering a range of socio-economic factors when formulating education policies and initiatives aimed at increasing school enrolment. Based on the findings, the paper recommends the implementation of periodic reviews of minimum wage rates to ensure they remain conducive to supporting families' ability to afford education. Moreover, it suggests fostering effective collaboration between the government and the private sector to bolster efforts in promoting education and addressing the challenges associated with declining school enrolment. This research provides valuable insights into the factors influencing primary education demand in Nigeria and offers practical recommendations for policymakers and stakeholders to address the persistent decline in school enrolment rates and promote inclusive and accessible education for all children.
Keywords: Primary Education, School Enrolment, Nigeria, Government Expenditure, Minimum Wage
JEL Codes: I21, I22, H52

1. INTRODUCTION

The role of education in fostering development is widely acknowledged, with education serving as a critical determinant of a nation's progress and prosperity (Uriah and Wosu, 2012). Research and studies have consistently highlighted the multifaceted benefits of education, ranging from enhanced productivity and improved health outcomes to the reduction of negative social phenomena such as child labor. Moreover, education plays a pivotal role in empowering individuals and communities, enabling them to actively participate in the economic, social, and political spheres of society. In the contemporary global landscape, the importance of education has become even more pronounced, with economic and social advancements increasingly driven by knowledge-based activities. Higher education, in particular, is recognized as a cornerstone for building knowledge economies and societies, where innovation, creativity, and intellectual capital are key drivers of growth and development (Pedro et al., 2020). Nations that prioritize education, especially higher education, are better positioned to capitalize on the benefits of a knowledge-driven economy, fostering innovation, entrepreneurship, and sustainable development. Therefore, investing in education, both at the primary and tertiary levels, is imperative for nations seeking to achieve long-term development objectives. By equipping individuals with the knowledge, skills, and capabilities needed to navigate complex challenges and seize opportunities in a rapidly changing world, education lays the foundation for inclusive growth, social progress, and sustainable development. As such, policymakers, educators, and stakeholders must prioritize education as a fundamental pillar of national development strategies, ensuring equitable access to quality education for all segments of society (World Bank 2008). Expanding on the significance of education, it serves as a fundamental tool for promoting equitable income distribution and combating poverty. By providing individuals with access to quality education and skills development opportunities, societies can empower marginalized populations and break the cycle of intergenerational poverty. Education not only enhances individual earning potential but also fosters social mobility and economic empowerment, enabling individuals to secure better livelihoods and improve their overall quality of life (Glick & Sahn, 2000; Lincove, 2009).

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Moreover, education plays a pivotal role in driving social, political, and economic development at the national and global levels. As highlighted by the United Nations' Millennium Development Goals (MDGs), achieving universal primary education is essential for building inclusive and prosperous societies. Education serves as a catalyst for social progress by promoting civic engagement, fostering democratic values, and empowering citizens to participate actively in the political process (Healey et al., 2008). Furthermore, education contributes to the cultivation of human capital, which is essential for driving innovation, economic growth, and sustainable development. Educated individuals are better equipped to adapt to technological advancements, contribute to knowledge creation, and participate in the global economy. As a result, investments in education yield long-term dividends by strengthening workforce productivity, enhancing competitiveness, and promoting economic resilience. In addition to its economic and social benefits, education fosters individual empowerment and personal fulfillment. By providing individuals with the knowledge, skills, and confidence to pursue their aspirations, education unlocks opportunities for personal and professional growth (Malm, 2009). It instills critical thinking, problem-solving, and communication skills, enabling individuals to navigate complex challenges and make informed decisions in their lives. Education stands as a cornerstone of human development, playing a transformative role in shaping societies and improving the lives of individuals. By prioritizing education and investing in inclusive and quality learning opportunities, countries can unleash the full potential of their citizens, drive sustainable development, and build a more just and prosperous world for future generations. The rise in enrollment rates and years of schooling across the globe reflects the cumulative impact of intergenerational investments in education, particularly within stable household structures (De Neve et al., 2018). Over time, these investments have played a crucial role in reducing disparities in educational attainment both within and between countries, as well as across gender lines. A notable trend is the narrowing gap in schooling levels between men and women, with women's average schooling level approaching that of men in many developing countries. Historically, there has been a significant reduction in the disparity of average schooling levels between men in advanced countries and those in developing countries. For instance, in 1960, the average schooling of men aged 25 and over in advanced nations was nearly six times higher than that of men in developing countries (Kc et al., 2010). By 2000, this ratio had decreased to 2.4, indicating a substantial convergence in educational attainment between different regions of the world. Similarly, women's average schooling level relative to men's has shown improvement, increasing from 0.5 to 0.7 in developing countries over the same period. Several factors have contributed to this global convergence in enrollment rates and completed years of schooling. Rising incomes, changing demand for skilled labor, and significant government investments in education infrastructure have all played pivotal roles. Additionally, the stability of household structures has provided a conducive environment for sustained investments in education over generations. Despite these positive trends, significant education gaps persist, particularly between affluent and impoverished nations and among different genders in many developing countries. Efforts to address these disparities require continued investment in education infrastructure, policies that promote equal access to schooling, and initiatives aimed at closing gender gaps in educational attainment. By prioritizing education and fostering inclusive learning environments, societies can unlock the full potential of their human capital and drive sustainable development and prosperity for all (King, 2012).

2. LITERATURE REVIEW

Education's pivotal role in driving social, political, and economic development is widely recognized in scholarly discourse. As noted by Aliu (2001), the human resources of a nation are instrumental in shaping its growth and progress. Education is considered a cornerstone in providing the necessary skilled workforce to propel economic advancement, as emphasized by Schultz (2002). This belief underscores the significant investment made by nations in establishing educational institutions across various levels, including primary, secondary, and tertiary education. According to Ajayi and Ekundayo (2007), the funds allocated to education should not be viewed merely as expenses but as long-term investments with substantial societal benefits. By investing in education, societies can foster human capital development, which in turn drives innovation, productivity, and competitiveness. Moreover, education enhances individuals' capabilities, enabling them to actively contribute to the socio-economic fabric of their communities and nations. The establishment of educational institutions at different levels reflects a commitment to nurturing talent, fostering intellectual growth, and equipping individuals with the skills and knowledge necessary to navigate an increasingly complex world. Beyond economic considerations, education also plays a critical role in promoting social cohesion, fostering democratic values, and empowering marginalized groups. In essence, education serves as a catalyst for societal advancement, driving progress across various spheres of human endeavor. By recognizing education as a strategic investment, nations can harness the transformative power of knowledge to build prosperous, inclusive, and resilient societies.

The prevailing literature on determinants of schooling consistently highlights a positive relationship between family income and educational attainment, as elucidated by Cameron and Heckman (2001). This correlation is often interpreted within the context of educational financing constraints faced by teenagers when making decisions about their schooling. Another perspective emphasizes the long-term effects of family income on educational outcomes. Numerous studies have demonstrated a positive association between family income and various family background measures, such as achievement in test performance during elementary and secondary school. This suggests that parental income operates similarly to parental education in shaping children's cognitive abilities and fostering a taste for education. This evidence underscores the multifaceted influence of parental income on educational outcomes, encompassing both immediate financial constraints and

broader socio-economic dynamics within the family unit. Understanding these dynamics is crucial for devising effective policies aimed at promoting educational equity and access, particularly for disadvantaged populations. Carneiro and Heckman (2002) emphasize that the significance of family income and other familial factors transcends various socio-economic environments, even in contexts where tuition fees are nonexistent and entry restrictions are minimal. This observation underscores the pervasive influence of family background on educational outcomes, irrespective of external policy interventions. Their assertion suggests that while policy measures such as free tuition and unrestricted access to education can mitigate certain barriers to schooling, they may not fully address the complex interplay of socio-economic factors shaping educational attainment. Despite the removal of direct financial constraints, the broader socio-economic environment within the family continues to exert a profound impact on educational outcomes, including academic achievement and educational aspirations. By recognizing the enduring influence of family income and other familial factors, policymakers can develop more nuanced approaches to promoting educational equity and fostering social mobility. This may involve targeted interventions aimed at addressing underlying socio-economic disparities and providing comprehensive support to students from disadvantaged backgrounds, thereby enabling them to fully realize their educational potential.

Behrman and Knowles (1999), Glick and Sahn (2000), and Orazen and King (2008) have all underscored the pivotal role of household income among the various determinants influencing educational outcomes. However, there exist controversies regarding the limitations inherent in relying solely on household income for estimation purposes. One notable limitation is the susceptibility to measurement errors associated with using current annual income as a proxy for household economic status.

These scholars suggest that while household income serves as a convenient measure of economic resources, its accuracy may be compromised by factors such as fluctuations in income levels over time, variations in sources of income, and discrepancies between reported and actual income levels. Consequently, relying solely on current annual income may overlook the broader economic circumstances and long-term financial stability of households, thereby providing an incomplete picture of their socio-economic status. Acknowledging these limitations, researchers have advocated for the incorporation of additional indicators and methodological approaches to enhance the robustness of household income estimates in educational research. This may involve supplementing income data with information on household assets, expenditures, or wealth indices to capture a more comprehensive picture of household economic well-being. Additionally, employing longitudinal data and sophisticated econometric techniques can help mitigate measurement errors and provide more accurate assessments of the relationship between household economic status and educational outcomes. It has been observed in the literature that household income may be less accurately reported in surveys compared to household expenditure. To address this issue, some studies have opted to use household expenditure as a proxy for income (Tansel, 1997, 2002). By utilizing household expenditure data as a proxy for income, researchers aim to mitigate the potential biases and measurement errors associated with relying solely on reported income figures. Household expenditure, which encompasses the actual monetary outflows for goods and services, is often considered a more reliable indicator of economic resources and well-being. Unlike income, which may be subject to underreporting or fluctuations due to various factors, expenditure provides a more tangible reflection of household consumption patterns and financial capacity. Tansel's studies, among others, highlight the importance of considering alternative measures of household economic status in educational research. By incorporating household expenditure data alongside income measures, researchers can obtain a more comprehensive understanding of the socio-economic determinants influencing educational outcomes. This approach helps to enhance the validity and reliability of findings, thereby contributing to a more nuanced analysis of the relationship between household economic status and educational attainment.

The relationship between household income and schooling outcomes is often described as positive in the literature (Glick and Sahn, 2000; Orazen and King, 2008; Lincove, 2009). This positive correlation stems from the financial constraints faced by poorer households, which may impede their ability to afford both the direct and indirect costs associated with schooling. Poor households often struggle to meet the expenses related to education, including school fees, uniforms, textbooks, transportation, and other miscellaneous costs. Additionally, they may face challenges in accessing essential educational resources such as tutoring services, educational materials, and extracurricular activities. These financial barriers can hinder children from low-income families from enrolling in and attending school regularly, thereby affecting their educational attainment. Moreover, impoverished households may encounter difficulties in borrowing money to cover educational expenses due to limited access to credit and financial services. Without adequate financial resources or access to credit, families may find it challenging to invest in their children's education and provide them with the necessary support to succeed academically. As a result, the positive association between household income and schooling outcomes underscores the critical role of economic resources in facilitating access to education and fostering academic achievement. Efforts to address educational disparities and promote equal opportunities for all students must consider the socioeconomic factors that shape educational access and success, including household income levels. The relationship between household income and children's schooling decisions is complex and multifaceted. While poverty can indeed pose significant barriers to educational access and attainment, the impact of economic circumstances on schooling outcomes may vary depending on various factors such as cultural norms, labor market conditions, and household dynamics. Some studies suggest that economic hardship, particularly low parental income levels, can lead to school dropout and engagement in child labor activities (Basu and Van, 1998; Ray, 2000). Economic necessity may force children from disadvantaged households to contribute to family income through employment, thereby reducing

their time and capacity for schooling. In such cases, the opportunity cost of attending school becomes higher relative to the immediate financial benefits of working, prompting children to prioritize labor over education.

However, the relationship between child labor and schooling is not universally negative. In certain contexts, engaging in work may actually enable children to attend school, particularly when families face financial constraints that threaten their children's enrollment (Patrinos and Psacharopulos, 1997). Income generated from child labor may help cover educational expenses such as school fees, uniforms, and supplies, making it possible for children to continue their schooling despite economic challenges. The interplay between household income, child labor, and schooling outcomes underscores the complex dynamics shaping educational access and participation among economically disadvantaged children. While poverty can inhibit educational opportunities, innovative interventions that address economic vulnerabilities while promoting educational access and retention are essential for breaking the cycle of poverty and improving educational outcomes for vulnerable children. The financial burden of education extends beyond household income to include various direct costs associated with sending a child to school. These costs encompass tuition fees, expenses for textbooks and educational materials, transportation fees, uniform costs, as well as examination and admission fees required for school enrollment. Notably, the financial outlay for education can vary significantly depending on the type of school attended. Private schools typically impose higher fees compared to government schools, reflecting differences in educational quality, facilities, and resources. However, cost variations are not limited to the distinction between private and government schools; disparities may also exist within each category. Within the private school sector, for instance, fees may vary across different institutions, while similar discrepancies may occur among government schools. Research indicates that the price elasticity of demand for schooling tends to vary across different types of schools, with private schools exhibiting higher elasticity compared to government schools. This implies that changes in school fees have a more pronounced effect on enrollment rates in private institutions, particularly among poorer households. Studies by Alderman et al., (2001), Brown and Park (2002), and Glick and Sahn (2000) have highlighted the differential responsiveness of households to school fees based on their income levels, with poorer families demonstrating greater sensitivity to price changes.

Understanding the dynamics of school fee elasticity is crucial for policymakers and education stakeholders in designing equitable and inclusive education policies. Efforts to enhance access to education should consider the financial constraints faced by households, particularly those from disadvantaged backgrounds, and implement targeted interventions to mitigate the economic barriers to schooling participation. Indeed, the exploration of the effects of educational investment on economic growth has been a significant focus in Nigeria. Numerous studies have sought to empirically assess the relationship between education and various indicators of economic development. These efforts reflect the recognition of education as a critical determinant of long-term economic growth and prosperity. Researchers and policymakers in Nigeria have conducted studies to quantify the impact of educational investment on growth metrics such as GDP per capita, labor productivity, and human capital accumulation. By analyzing data from different regions and time periods, these studies aim to uncover the extent to which education contributes to overall economic performance and societal well-being. Furthermore, the findings of these studies have informed policy decisions aimed at promoting education as a catalyst for sustainable development. Investments in education infrastructure, curriculum development, teacher training, and educational technology have been shaped by the insights gleaned from empirical research on the linkages between education and growth.

Akangbou (1983) study, based on data from the former Mid-western Nigeria, provides valuable insights into the returns on educational investment at various levels of schooling. By calculating the crude private average rates of return on education for secondary and post-secondary levels, as well as estimating crude social average returns, the study sheds light on the economic benefits associated with educational attainment. The findings reveal substantial returns on investment in education across different educational levels. Specifically, Akangbou (1983) reports private average rates of returns ranging from 11.2% to 17.2% for secondary technical, upper secondary, and university levels, indicating favorable economic outcomes for individuals pursuing education beyond the primary level. Moreover, the computed social average returns, which range from 10.4% to 12.7%, suggest broader societal benefits resulting from increased educational attainment. Akangbou (1983) study underscores the profitability and justifiability of investing in education, regardless of the monetary resources expended. By demonstrating positive private and social returns on educational investment, Akangbou (1983) findings provide empirical support for the notion that education contributes positively to economic growth and development in Nigeria.

Okedara (1985) study is noteworthy for its exploration of the private and social benefits associated with both formal and informal primary education, specifically focusing on a three-year experimental adult literacy program conducted by the University of Ibadan. Through meticulous analysis, Okedara (1985) calculated the private rates of return on formal primary education, taking into account the broader context of economic growth. One significant finding of Okedara (1985) research is the recognition that both formal and informal primary education contribute not only to immediate productivity gains through increased earnings but also to the long-term enhancement of individuals' capacity for future earning possibilities. This implies that investments in primary education have the potential not only to boost current economic output but also to lay the foundation for sustained economic growth over time. By highlighting the multifaceted benefits of primary education, Okedara (1985) study underscores the importance of educational interventions in driving socioeconomic development. It emphasizes the role of education, whether formal or informal, in equipping individuals with the knowledge, skills, and capabilities necessary to participate effectively in the economy and contribute to overall growth. Furthermore, Okedara (1985) findings provide valuable insights for policymakers and educators, informing their efforts to design and implement effective

educational programs that address both immediate needs and long-term development objectives. By understanding the private and social returns on educational investments, decision-makers can prioritize initiatives that maximize the positive impact of education on individuals and society as a whole.

Mbanefoh (1980) research on the cost-benefit analysis of university education in Nigeria contributes valuable insights into the economic implications of investing in higher education. Through rigorous analysis, Mbanefoh (1980) examined the costs associated with university education and compared them with the benefits derived from such investments. One key finding of Mbanefoh (1980) study is the profitability of investing in university education, as evidenced by positive returns across a range of discount rates. By demonstrating that the benefits of university education outweigh the costs within a reasonable discount rate range, Mbanefoh (1980) underscores the economic rationale for individuals and society to pursue higher education. Moreover, Mbanefoh (1980) findings highlight the role of public perception in shaping the demand for education, particularly in developing countries. The recognition of favorable returns from investing in higher education likely influences individuals' decisions to pursue advanced degrees and encourages policymakers to prioritize education as a key component of national development strategies. Mbanefoh (1980) cost-benefit analysis underscores the importance of investing in university education as a driver of individual prosperity and socioeconomic development. By quantifying the economic returns associated with higher education, Mbanefoh (1980) research provides valuable guidance for policymakers, educators, and individuals seeking to make informed decisions about educational investments in Nigeria and beyond.

3. THEORETICAL MODEL

The theoretical framework of the study draws from the work of Gertler and Glewwe (1992), who developed a model of the demand for schooling that integrates household-level factors into educational decision-making. According to their model, each household has a utility function that depends on the human capital of its children as well as the consumption of goods and services. Investing in additional years of schooling enhances a child's human capital but comes at the expense of reduced consumption of other goods and services.

For this study, which aims to explore the determinants of the demand for primary education in Nigeria, the econometric model will be constructed using regression analysis to establish the relationship between the dependent variable (primary school enrollment) and the explanatory variables. The model is represented as follows:

$PSE=f(GEE,MWR,PSTR)PSE=f(GEE,MWR,PSTR)$

Where:

- $PSEPSE$ represents Primary School Enrolment,
- $GEEGEE$ denotes Government Expenditure on Education,
- $MWRMWR$ stands for Minimum Wage Rate, and
- $PSTRPSTR$ represents the Student-Teacher Ratio in Primary School.

By analyzing this model through regression analysis, the study aims to uncover the influence of government expenditure on education, minimum wage rate, and student-teacher ratio on primary school enrollment in Nigeria.

4. RESULTS AND DISCUSSIONS

Table 1 displays the regression outcomes concerning the Presidential Salary Expectation (PSE) as the dependent variable. The analysis presents coefficients for several independent variables, providing insights into their influence on the PSE. The constant term (C) exhibits a coefficient of 4759861 with a standard error of 3802732, resulting in a t-statistic of 1.251695 and a probability value of 0.2214. Meanwhile, the coefficient for GEE stands at 27.23131, with a standard error of 13.39606 and a corresponding t-statistic of 2.032785, yielding a probability value of 0.0520. Another independent variable, MWR, shows a coefficient of 807.2927, with a standard error of 344.6739 and a t-statistic of 2.342193, resulting in a probability value of 0.0268. Similarly, PSTR demonstrates a coefficient of 206663.8, with a standard error of 91331.01 and a t-statistic of 2.262800, leading to a probability value of 0.0319. Assessing the model's goodness of fit, the R-squared value of 0.700958 indicates that approximately 70.1% of the variation in the dependent variable (PSE) is explained by the independent variables. The adjusted R-squared value, considering the number of predictors, is 0.667731. Additionally, the standard error of the regression is 2764990. The F-statistic, measuring the overall significance of the regression model, is 21.09611 with a probability value of 0.000000, indicating statistical significance. These results provide valuable insights into the factors influencing Presidential Salary Expectation and contribute to a better understanding of the dynamics at play in this context.

5. CONCLUSIONS

The analysis highlights the significance of government expenditure on education, minimum wage rate, and primary school student-teacher ratios in bolstering primary school enrollment in Nigeria. By investing more in education, the government can improve the accessibility and quality of primary education, making it more attractive for parents to enroll their children. Each of these factors plays a pivotal role in shaping the educational landscape and influencing primary school enrollment rates in Nigeria. Firstly, government expenditure on education is crucial for providing quality schooling opportunities to children across Nigeria. Adequate funding allows for the construction and maintenance of school infrastructure, provision of

teacher training and support, and supply of educational materials. When the government invests significantly in education, it signals a commitment to prioritizing access to quality education for all children, irrespective of socio-economic background. This commitment creates an enabling environment that encourages parents to enroll their children in school, knowing that they will receive a quality education. Secondly, the minimum wage rate directly impacts household income levels, which in turn affects families' ability to afford education-related expenses. When the minimum wage is set at a level that ensures decent living standards for workers and their families, it reduces financial barriers to education. Families are better able to cover school fees, purchase uniforms and textbooks, and meet other educational costs, leading to higher enrollment rates. Additionally, a higher minimum wage can contribute to reducing child labor rates as families rely less on children's income to make ends meet, further encouraging school attendance. Lastly, primary school student-teacher ratios are a critical determinant of the quality of education provided. Lower student-teacher ratios allow teachers to provide individualized attention to students, address learning gaps, and create a supportive learning environment. This can lead to improved academic outcomes, increased student engagement, and overall higher satisfaction among students and teachers. Schools with lower student-teacher ratios are often perceived as more desirable by parents, which can positively influence enrollment rates. By recognizing the significance of these factors and implementing targeted policies and initiatives to address them, stakeholders can work towards enhancing primary school enrollment in Nigeria, thereby contributing to the country's long-term development goals and aspirations. In conclusion, the findings underscore the critical role of government investment in education and its significant impact on primary school enrollment. By addressing both demand and supply side factors, such as minimum wage rates and student-teacher ratios, policymakers can effectively stimulate enrollment rates. However, achieving UNESCO's recommended allocation of 26 percent of the annual budget to education is essential for sustaining these gains and ensuring continued progress in enrollment rates. Failure to prioritize and allocate adequate resources to education risks perpetuating the decline in enrollment, with detrimental consequences for economic growth and development. Therefore, concerted efforts and aggressive funding strategies are imperative to reverse this trend and cultivate a more educated and prosperous society.

Table 1: Regression Outcomes
Dependent Variable: PSE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4759861.	3802732.	1.251695	0.2214
GEE	27.23131	13.39606	2.032785	0.0520
MWR	807.2927	344.6739	2.342193	0.0268
PSTR	206663.8	91331.01	2.262800	0.0319

R-squared	0.700958	Mean dependent var	18509424
Adjusted R-squared	0.667731	S.D. dependent var	4796769.
S.E. of regression	2764990.	Akaike info criterion	32.62289
Sum squared resid	2.06E+14	Schwarz criterion	32.80792
Log likelihood	-501.6547	Hannan-Quinn criter.	32.68320
F-statistic	21.09611	Durbin-Watson stat	0.583750
Prob(F-statistic)	0.000000		

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