

INTERSECTION OF RESOURCE MANAGEMENT, DEMOGRAPHICS AND INTERNAL EFFICIENCY OF JUNIOR SECONDARY EDUCATION IN IMO STATE, NIGERIA

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Abstract

The main purpose of the study was to investigate the relationship between resource management, school demographics and internal efficiency of secondary schools in Imo State. Three research questions and three hypotheses tested at 0.05 level of significance guided the study. The correlational research survey design was adopted. The population of the study was 716 secondary schools; made up of 309 public secondary schools and 407 private secondary schools. Using a proportionate stratified random sampling technique, the sample size of 257 secondary schools was constituted. The Resource Management and Internal Efficiency Questionnaire (RMIEQ) for the principals was used to collect data. The instruments were validated by three experts in the Faculty of Education, University of Nigeria, Nsukka. The overall reliability coefficients for RMIEQ was .904. Spearman rho was used to answer the research questions 1, 2 and 3 while Multiple regression associated with ANOVA and t-tests were used to test the hypotheses at 0.05 level of significance. The correlation was not found between the availability of resources, grade survival rate and examination pass rate, among others. It was recommended that the government and school authorities should ensure adequate availability of resources to improve the internal efficiency of the junior secondary schools in Imo State. The study indicated that resource management practices, such as resource adequacy, utilization and demographics relate to internal efficiency in junior secondary schools.

Keywords: Resource management, demographics, internal efficiency

Introduction

Education is a key instrument for national development, leading individuals, organizations, and governments to establish institutions, ranging from basic to tertiary levels, for the acquisition of knowledge, skills, values, and attitudes. The secondary level of education occupies a strategic position in the nation's educational system. The National Policy of Education (2013) defined secondary education as the education children receive after primary education and before the tertiary stage. Secondary education, positioned between primary and tertiary levels, is particularly strategic as it serves as a foundation for future professionals and the exploration of career paths, comprising three-year junior and senior secondary stages. At the lower secondary level, as outlined in Nigeria's National Policy on Education (FRN, 2013), students receive academic and pre-vocational training to prepare them for productive living in society. A crucial factor in the functioning of junior secondary schools is the availability and use of resources, which encompass human, physical, and material inputs that are technologically accessible, economically viable, and culturally sustainable. These resources, which vary in distribution, quantity, quality, and value, play a vital role in enhancing knowledge, skills, and abilities for learners' holistic development.

Human resources (HR) is the set of people who make up the workforce of an organization, business sector, industry or school organization. HRs consist of school

administrators, teachers, clerks, among others (Irondi, 2019). Human resources form the backbone of the education system, encompassing teaching and non-teaching staff such as administrators, teachers, clerks, cleaners, and security personnel, whose competence and commitment directly influence student outcomes (Adeosun, 2020). Alongside these, physical resources, includes classrooms, laboratories, libraries, and sanitation facilities, provide the structural foundation for learning (Mucui, 2013), while material or instructional resources, such as teaching aids, equipment, and tools, enhance instructional delivery and student engagement (Ann, 2019). The effective functioning of junior secondary schools depends on the availability, adequacy, and utilization of these resources, as inadequate provision, poor maintenance, or underutilization can significantly undermine efficiency (Asiabaka, 2008). Resource management is the process of planning, allocating and optimizing resources such as people, money, time and materials for to achieve specific goals of a school within a given time-frame (Irondi, 2019). Effective resource management, encompassing planning, acquisition, allocation, utilization, and evaluation, is therefore essential for achieving educational goals (Kinicki & Williams, 2018). Research shows that well-managed resources correlate positively with teacher commitment, student engagement, and improved curriculum implementation. It is believed that there is a relationship between resource management, demographics and internal efficiency in effective teaching and learning in secondary school.

Some studies provide empirical insights that help contextualize the relationship between resource management, school demographics, and internal efficiency in the Nigerian secondary education system. For instance, Atieno (2014) found that teaching and learning materials, when available were highly utilized in schools, particularly those directly related to classroom instruction such as textbooks, charts and laboratory apparatus. This suggests that when resources are accessible and aligned with curricular needs, teachers are more inclined to integrate them into daily lessons, thereby potentially enhancing learner engagement and comprehension. Atieno's findings underscore the importance of not only providing resources but also ensuring they are contextually relevant, up-to-date and well-suited to the instructional process. In contrast, Eze and Omeje(2018) reported a persistent scarcity of essential educational resources, including laboratories, libraries, staff offices, chalkboards, and computers, in the majority of secondary schools studied. Their work highlights the structural deficits that constrain teaching and learning processes in many Nigerian schools, indicating that inadequacy in core infrastructure directly limits opportunities for effective pedagogy and skill development. This aligns with the broader narrative that resource inadequacy, even in the presence of competent teaching staff, can undermine student achievement and internal efficiency.

However, it is important to note that availability of these resources is not all that matters but the provision of quality resources and adequate utilization is equally relevant. Hence, Iheunuekwu and Anyatonwu (2014) observed no significant relationship between the utilization of physical resources and students' academic performance in their study. This suggests that resource utilization alone may not automatically translate into improved learning outcomes, particularly if the resources are outdated, poorly maintained or misaligned with pedagogical objectives. Their findings imply that resource quality, teacher competency in resource integration and curriculum relevance may moderate the relationship between utilization and performance. Conversely, Ogundele et al (2019) found a positive and statistically significant relationship between resource availability and student performance in public colleges in South-West, Nigeria. Their results suggest that

in higher education contexts, or in environments where resource provision is systematically planned, availability can have a more direct and measurable impact on academic outcomes. This contrast with Iheunuekwu and Anyatonwu's (2014) work indicates that institutional type, governance, and the nature of academic programmes influence how resources affect efficiency and performance.

Ownership equally plays a part in all these, Ekundayo and Alonge (2012) concluded that human and material resources were not significantly related to student academic performance when analyzed based on proprietorship (public versus private). This finding implies that the efficiency challenge may be systemic rather than ownership-specific, reflecting national-level policy and funding constraints. However, Omachonu and Offorma(2017) reported a significant interaction effect between teaching method and school proprietorship on students' achievement, suggesting that ownership type can become a determining factor when combined with pedagogical approaches. This divergence indicates that ownership may indirectly affect performance through its influence on teaching practices, administrative styles and resource investment patterns.

Similarly, demographic factors such as location have been investigated with mixed results. Awodum and Oyeniyi(2018) found no statistically significant difference in the average achievement scores of male and female students in both urban and rural schools, indicating that gender disparities in performance are not necessarily driven by location. However, Ekpenyoung(2017) reported that school location had no significant influence on students' academic achievement, contradicting findings in the present study that suggest urban schools often exhibit higher examination pass rates than their rural counterparts. This disparity may be attributable to variations in local socio-economic conditions, infrastructure development and teacher distribution, factors that can moderate the impact of location on educational efficiency. Collectively, these studies reveal that while resource availability, adequacy and utilization are important, their relationship with internal efficiency is complex and mediated by multiple contextual factors, including resource relevance, institutional type, teaching practices and socio-geographic conditions. This underscores the need for nuanced policy interventions that address not only the provision of resources but also their contextual integration into teaching and learning processes across diverse ownership and location profiles in order to achieve internal efficiency.

Internal efficiency measures how effectively educational inputs, human, physical, and material resources, are transformed into outputs such as graduates, with minimal wastage through dropouts or repetitions (World Bank, 2021). Internal efficiency in education refers to how well a school utilizes its resources to achieve its educational goals. It focuses on the relationship between inputs (like teachers, materials and funding) and outputs (like student learning and graduation rates). It is typically assessed using indicators such as grade survival rate, graduation rate, and examination pass rate (Kolawole & Ogbiye, 2020). A school is considered internally efficient when it minimizes waste (such as dropouts and repeats) and maximizes the number of students successfully completing their education within the expected timeframe. However, factors such as school ownership and location can moderate internal efficiency by influencing resource provision and utilization. Public and private schools in Nigeria differ in governance, funding, and operational practices (Okosun & Isabu, 2023), while urban schools often benefit from superior infrastructure and services compared to rural schools, where socio-economic challenges constrain resource availability (Wood, 2023). In Imo State, disparities in ownership and location significantly shape resource management outcomes, thereby impacting the internal efficiency and overall quality of secondary education.

Theoretical Framework

The study utilized the Resource dependence theory, Resource mobilization theory, theory of industry location, general systems theory and efficiency theory. The theory dependence theory was propounded by Pfeffer and Salancik (2003). It posits that resources are essential to an organization's success and that access to and control over these resources are fundamental sources of power. School owners, urban and rural environments provide different opportunities for accessing the resources. The theory provided a framework for examining the relationship between resource management, demographics and internal efficiency of secondary schools. The theory is validated by the findings, especially where the study found that the internal efficiency indicators are high due to the availability of instructional materials. However, the theory could be seen as partially refuted in areas where resources are found to be underutilized despite their availability. The theory of industry location was propounded by Weber (1909). The theory explains that the location of an industry is based on three economic factors: transportation costs, labour costs and agglomeration costs. The theory assumes that natural resources are unevenly distributed on the plain and that there is no regional variation in the costs of labour, equipment, or depreciation of fixed capital. In this study, location theory is applied to examine the geographical positioning of schools, specifically distinguishing between rural and urban areas.

Efficiency theory was developed by an American economist, Leibenstein, in the year 1983. The theory proposes that the general efficiency of an organization is its ability to transform inputs at minimum cost into maximum profit. The inputs and outputs are compared to ascertain the level of fairness in resource utilization. In the context of secondary schools, inputs consist of physical, human, material, and financial resources. Outputs, on the other hand, are the graduates produced by the system. The efficiency of a system is reflected in the ability of secondary schools in Imo state to produce a large number of graduates who acquire the necessary knowledge, values, and skills at minimal cost. Efficiency can be categorized as internal or external, with this study focusing on internal efficiency. A system is considered internally inefficient if it experiences high levels of wastage, such as dropouts, repetition, poor enrollment, low completion rates, low pass rates, and low graduation rates. Therefore, this study, which investigates the relationship between resource management, ownership, and location of secondary schools and their internal efficiency, is grounded in this theory.

Statement of the Problem

The Universal Basic Education reform of 2004 and the National Policy on Education of 2013 mandate that students' progress smoothly through the three-year Junior Secondary School cycle at no extra cost, yet Imo State continues to experience significant dropout rates and delays in graduation, with many students exceeding the prescribed timeframe for both junior and senior secondary education. Beyond retention, concerns also exist over low academic achievement in examinations and assessments, suggesting suboptimal internal efficiency. Factors such as resource management and school demographics, particularly ownership and location, may influence key efficiency indicators like grade survival rate, graduation rate, and examination pass rate. However, no prior study has examined how these variables interact to affect the internal efficiency of secondary schools in Imo State, prompting the research question: what is the relationship between resource management, ownership, location, and internal efficiency in secondary education in the state?

Purpose of the Study

The study's main purpose was to investigate the intersection of resource management, ownership, location and internal efficiency of secondary education in Imo State. Specifically, the study intended to:

1. ascertain the magnitude and direction of the relationship between ownership and internal efficiency of secondary schools in Imo State.
2. investigate the what is the magnitude and direction of the relationship between location and internal efficiency of secondary schools in Imo State.
3. determine the relationship between resource adequacy and the internal efficiency of secondary schools in Imo State.
4. find out the relationship between resource utilization and internal efficiency of secondary schools in Imo State.

Research Questions

The following research questions guided the study:

1. What is the relationship between resource adequacy and the internal efficiency of secondary schools in Imo State?
2. What is the relationship between resource utilization and internal efficiency of secondary schools in Imo State?
3. What is the magnitude and direction of the relationship between ownership and internal efficiency of secondary schools in Imo State?
4. What is the magnitude and direction of the relationship between location and internal efficiency of secondary schools in Imo State?

Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance

H0₁: There is no significant relationship between ownership, location, resource availability, resource adequacy, resource utilization and grade survival rate indicator of internal efficiency of secondary education in Imo State

H0₂: There is no significant relationship between ownership, location, availability, resource adequacy, resource utilization and pass rate indicator of internal efficiency of secondary education in Imo State.

Methods

This study used a correlational research design to examine the relationship between resource management, demographic factors, and the internal efficiency of junior secondary schools in Imo State. The population comprised 716 principals, 309 from public and 407 from private secondary schools, spread across urban (72 private, 99 public) and rural areas (308 private, 237 public). Using the Taro Yamane formula, a sample of 257 schools was selected through proportionate stratified random sampling based on ownership and location. Data were collected using the Resource Management and Internal Efficiency Questionnaire (RMIEQ), which had a Cronbach Alpha reliability coefficient of .912 and was face-validated by three experts from the University of Nigeria, Nsukka. After obtaining ethical clearance, the researcher and 12 trained assistants administered the questionnaire on-site. Spearman's rho was used to analyze the research questions, with correlation coefficients ranging from -1 (perfect negative) to +1 (perfect positive). Multiple regression with ANOVA was used to test the corresponding hypotheses

Results

The results were presented and interpreted in tables according to the research questions and hypotheses.

Research Question 1: What is the magnitude and direction of the relationship between ownership and internal efficiency of secondary schools in Imo State?

Table 1: Correlation (r) and coefficients of determination (r^2) between ownership and internal efficiency.

Explanatory variable	Internal efficiency indicator	r	r^2	Remarks
Ownership	Grade survival rate	-.104	.01*	Weak relationship
	Graduation rate	.028	.00	No relationship
	Examination pass rate	.119	.01*	Weak relationship
	Completion rate	-.161	.03*	Weak relationship

*Small effect size

Data in Table 1 indicated that the r^2 between ownership and grade survival rate, graduation rate, pass rate and completion rate were .01, .00, .01 and .03 respectively. Therefore, there was a weak relationship between ownership and grade survival rate, pass rate and completion rate. There was no relationship between ownership and graduation rate.

Research Question 2: What is the magnitude and direction of the relationship between location and internal efficiency of secondary education in Imo State?

Table 2: Correlation (r) and coefficient of determinate (r^2) between location and internal efficiency

Explanatory	Internal Indicator	Efficiency r	r^2	Remarks
Location	Grade survival rate	-.039	.00	No relationship
	Graduation rate	-.016	.00	No relationship
	Examination Pass rate	-.200	.04*	Weak relationship
	Completion rate	-.047	.00	No relationship

*Small effect size

Data in Table 2 showed that the r^2 between location and grade survival rate, graduation rate, examination pass rate and completion rate were .00, .00, .04 and .00 respectively. Therefore, there was no relationship between location and grade survival rate, graduation rate and completion rate. There was a weak relationship between location and examination pass rate. Urban schools appeared to have higher examination pass rate than rural schools.

Research Question 3: What is the relationship between resource availability and internal efficiency of secondary education in Imo State?

Table 3: Correlation (r) and coefficient of determination (r^2) between availability and internal efficiency.

Explanatory Variable	Internal Efficiency Indicators	r	r^2	Remarks
Resource availability	Grade survival rate	.040	.00	No relationship
	Graduation rate	.098	.01*	Weak relationship
	Examination Pass rate	-.050	.00	No relationship
	Completion rate	.086	.01*	Weak relationship

***Small Effect Size**

Data in Table 3 indicated that the r^2 between resource availability and grade survival rate, graduation rate, examination pass rate, and completion rate were .00, .01, .00 and .01 respectively. Therefore, there was no relationship between resource availability, grade survival rate and examination pass rate. There was a weak relationship between resource availability, graduation rate and completion rate. Schools with more resources appeared to have higher completion and graduation rates than schools with fewer resources.

Research Question 4: What is the relationship between resource adequacy and the internal efficiency of secondary education in Imo State?

Table 4: Correlation (r) and coefficient of determination (r^2) between resource adequacy (physical and materials) and internal efficiency

Explanatory Variable	Internal Efficiency Indicator	r	r^2	Remarks
Resource adequacy (physical and material)	Grade survival rate	-.021	.00	No relationship
	Graduation rate	.006	.00	No relationship
	Examination Pass rate	.144	.02*	Weak relationship
	Completion rate	-.080	.01*	Weak relationship

***Small Effect Size**

Data in Table 4 showed that the r^2 between resource adequacy (physical and material) and grade survival rate, graduation rate, examination pass rate and completion rate were .00, .00, .02 and .01 respectively. Therefore, there was no relationship between resource adequacy (physical and material), grade survival rate and graduation rate. There was a weak relationship between resource adequacy (physical and material) and examination pass rate and completion rate. While schools with the more resource adequacy had higher examination pass rates than those with less resource adequacy the reverse was the case for completion rate.

Table 5: Correlation (r) and coefficient of determination (r^2) between resource adequacy (Human) and internal efficiency

Explanatory Variable	Internal Efficiency Indicators	r	r^2	Remarks
Human resource adequacy (student-teacher ratio)	Grade survival rate	-.004	.00	No relationship
	Graduation rate	-.109	.01*	Weak relationship
	Examination Pass rate	-.095	.01*	Weak relationship
	Completion rate	.071	.01*	Weak relationship

***Small effect size**

Data in Table 5 indicated that the r^2 between human resource adequacy (student-teacher ratio) and grade survival rate, graduation rate, examination pass rate and completion rate were .00, .01, .01 and .01 respectively. Therefore, there was no relationship between human resource adequacy (student-teacher ratio) and grade survival rate. There was a weak relationship between human resource adequacy (student-teacher ratio) and graduation rate, examination pass rate and completion rate. While schools with

high student-teacher ratios appear to have higher completion rates, than schools with low student-teacher ratios, the reverse was the case for graduation rates and examination pass rates.

Research Question 6: What is the relationship between resource utilization and internal efficiency of secondary education in Imo State?

Table 6: Correlation (r) and coefficient of determination (r^2) between resource utilization and internal efficiency

Explanatory Variable	Internal Efficiency Indicator	r	r^2	Remarks
Resource utilization	Grade survival rate	.017	.00	No relationship
	Graduation rate	.007	.00	No relationship
	Examination Pass rate	.155	.02*	Weak relationship
	Completion rate	-.013	.00	No relationship

***Small effect size**

Data in Table 6 showed that the r^2 between resource utilization and grade survival rate, graduation rate, examination pass rate and completion rate were .00, .00, .02, and .00 respectively. Hence, there was no relationship between resource utilization, grade survival rate, graduation rate and completion rate. There was a weak relationship between resource utilization and examination pass rate. Schools with high resource utilization had higher examination pass rates than schools with low resource utilization

Discussion

There was no significant relationship between resource adequacy and grade survival rate, graduation rate, completion rate and examination rate, that examination rate tended towards significance. This indicates that resource adequacy may positively relate to the examination pass rate. It was found that schools with a low student ratio had higher graduation and examination pass rates. The result is indisputable because schools with a low teacher-student ratio could be able to handle their students than schools with a high teacher-student ratio. This might have been due to the manageable nature of small groups. These findings agreed with Atieno (2014) who found that teaching and learning materials available were highly utilized in schools, especially those used for classroom instruction. However, the findings are not in tandem with Eze and Omeje (2018) who found that educational resources such as laboratories, libraries, staff offices, chalkboards and computers were unavailable in most secondary schools. Usually, material resources are inadequate because they are not provided or those provided are either wasted or outdated. The weak relationship suggests that adequate resources need to be integrated into the educational process to impact efficiency positively.

There was no relationship between resource utilization and grade survival rate, graduation rate and completion rate but there was a weak relationship between resource utilization and examination pass rate. Therefore, schools with high resource utilization had higher examination pass rates than those with low resource utilization. However, when the resources are utilized appropriately teaching and learning could be enhanced. This was the reason why schools with high utilization of resources had higher pass rates than schools with low utilization of resources. These findings are in agreement with Iheunuekwu and Anyatonwu (2014), whose findings showed no significant relationship between utilization of physical resources and students' academic performance. However, there was a tendency

towards the inverse relationship, but the magnitude of the coefficient (-0.17) was not strong enough to establish a relationship.

The finding is also in agreement with Ogundele et al (2019) whose study showed that a positive and significant relationship existed between resource availability and students' academic performance in public Colleges of Education in Southwest, Nigeria. The weak overall relationship between resource utilization and most internal efficiency indicators indicates that effective utilization is necessary to impact internal efficiency positively. The study's results revealed no relationship between ownership and graduation rate. However, there was a weak relationship between ownership and grade survival rate, pass rate, and completion rate. This means that although private schools had higher pass rates, public schools had higher grade survival and completion rates. This finding is in agreement with that of Ekundayo and Alonge (2012) study which showed that human and material resources were not significantly related to student's academic performance in secondary schools based on ownership. However, the finding disagreed with that of Omachonu and Offorma (2017) who found a significant interaction effect of method and school proprietorship on students' achievement. The lack of a significant relationship between school ownership and internal efficiency indicators (such as grade survival rate, graduation rate, and completion rate) suggests that ownership type (public vs. private) may not be a primary factor influencing the efficiency of secondary education.

There was no significant relationship between location, grade survival, survival and graduation rates. There is a significant relationship between location and examination pass rate indicator of internal efficiency of secondary education in Imo State. Urban schools appeared to have more resources than rural schools. Schools with more resources do perform better than schools that do not have enough resources. This finding aligns with Awodum and Oyeniyi (2018), who also reported no statistically significant difference in the average achievement scores of male and female students in both urban and rural schools. It, however, disagreed with the finding of Ekpenyoung (2017) which indicated that school location has no significant influence on students' academic achievement. The significant relationship between location and examination pass rates indicates that urban schools tend to have higher pass rates compared to rural schools. This suggests a disparity in academic performance based on geographic location, which may be attributed to differences in resource availability, teaching quality, or other location-specific factors.

Contribution to knowledge

This study contributes to the theoretical understanding of educational management by integrating concepts of resource management, ownership structures, and locational considerations within the context of secondary education in Imo State, Nigeria.

Conclusion

This study, using a correlational design, examined how resource management, school ownership, and location influence internal efficiency in Imo State secondary schools, revealing that resource utilization, ownership structures, and rural-urban disparities significantly affect educational outcomes and quality.

Recommendations

1. There is also an urgent need for an inter-sectoral budget restructuring to release more resources for education this will go a long way in meeting both students' and teachers' requirements for effective service delivery in improving the school system efficiency.

2. Principals should judiciously utilize available funds at their disposal and acquire innovative facilities to enhance internal efficiency in Imo State secondary schools, especially in public and rural schools.
3. The government should evolve a more radical method of allocating funds to schools.

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