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**UNDERGRADUATE ENROLMENT AND ACADEMIC PROGRAMMES  
IN KADUNA STATE UNIVERSITY: AN EMPIRICAL INVESTIGATION****Peter Ayuba**Department of Mathematical Science,  
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Kaduna State University, Kaduna, Nigeria**Dogara Micah**Department of Economics  
Kaduna State University, Kaduna, Nigeria**ABSTRACT**

*The study examined empirically the impact of undergraduate enrolment on the academic programmes in Kaduna State University. Secondary data of students' enrolment and internally generated revenue of Kaduna State University from 2018 – 2023 sessions were obtained. The study employed both descriptive and inferential statistics in the analysis of the data collected. The descriptive result revealed the highest enrolment of students (35.47%) in 2019/2020 academic session of the 17,308 candidates that chose KASU as first choice. The ordinary least squares result revealed a positive relationship between the number of candidates that applied for admissions and students' enrolment, and the number of students enrolled and programmes of studies. However, there was a negative relationship between school fees paid and students' enrolment, and the number of students enrolled and internally generated revenue. There was a significant impact of the undergraduate enrolment on Academic programmes in Kaduna State University. Based on the findings therefore, the study recommended that there wis need to reduce the cost of students' school fees in order to encourage more enrolments into undergraduate programmes in KASU so as to have contribute to the socio-economic development of Nigeria.*

**Keywords:** Undergraduate Enrolment, Academic Programmes, Internally Generated Revenue

## 1. Introduction

The evolution of higher education institutions is intricately linked to the dynamic interplay between student enrolment patterns and the educational programmes they offer. Kaduna State University (KASU), established with the mission to provide high-quality education and contribute to the socio-economic development of Kaduna State and Nigeria at large, has witnessed a significant surge in undergraduate enrolment over the past decade. This trend raises critical questions about how the university's programmes of study are influenced by the changing demographic landscape of its student body.

KASU, like many other universities, faces the challenge of balancing the demands of a growing student population with the need to maintain the academic integrity and relevance of its programmes. The shift in undergraduate enrolment can be attributed to various factors, including demographic changes, government policies, economic shifts, and the evolving landscape of higher education preferences. Understanding the impact of this enrolment surge on the university's programmes of study is paramount for strategic planning, quality assurance, and in maintaining educational excellence. The criteria universities employ to select and admit students into their different academic programmes have an implication to the development of students' academic success and the universities' mission, "which implies admission practices and criterion are the key indicators of academic success" (Aboma, 2023).

The enrolment of students in tertiary institutions as being a thing of concern in recent times. Demand for admission into tertiary institutions in Nigeria is on the increase every session. A substantial number of candidates are unable to secure admission into universities of their choice while those who secure admissions end up reading courses they did not apply for. KASU is not exception to this trend. Enrolment has been on the increase since the establishment of KASU in 2005 with a large number of students enrolled into different programmes of study. In view of this, it has become imperative to examine the impact of undergraduate enrolment on programmes of study.

This study aimed to investigate the intricate relationship between undergraduate enrolment patterns and the programmes of study in KASU. By analysing the undergraduate enrolment trends across different disciplines in Kaduna State University, the research seeks to examine the determinants of decline in undergraduate enrolment of KASU so as to identify areas of concentration and divergence, shedding light on the factors that influence students' choices. Additionally, the study explores the impact of undergraduate enrolment on the academic programmes in Kaduna State University and evaluates the effect of undergraduate enrolment in KASU internally generated revenue.

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## 2. Literature Review

Simplified classifications have often led to college students being labelled as full-time or part-time students. However, student enrolment patterns can be much more complicated in many universities, as it is common for students to switch between full-time and part-time enrolment each semester based on finances, scheduling, or family needs. While previous studies have identified part-time enrolment as a risk factor to students' academic success, limited research has examined the impact of enrolment patterns or strategies on academic performance. Unlike traditional methods that use a single-period model to classify students into full-time and part-time categories (Boumi & Vela, 2021), this study employed the use of descriptive and inferential statistics.

Aboma (2023) determined the relationship between undergraduate students' admission practices and academic performance at Madda Walabu University. The participants of the study were 233 first and third-year undergraduate students who were selected from 13 academic Programmes. A mixed method was employed to analyse the data collected through Questionnaires. The study employed interviews, and documents. T-tests and Correlation Coefficients were utilized to analyse the differences between students' academic performance based on their selection and admission process. The study found significant positive relationship between the students' admission practice and their academic performances at Madda Walabu University. The study revealed that one of the factors impeding students' learning and academic performance at Madda Walabu University was the admission practice employed at this University to enrol students into different academic Programmes. Academic interest and aptitude were among the factors influencing students' academic performances in Madda Walabu University.

Boumi & Vela (2021) applied an advanced multi-period dynamic approach using a Hidden Markov Model to distinguish and cluster students' enrolment strategies into three categories: full-time, part-time, and mixed. Comparison were made on the academic performance outcomes of each group based on their enrolment strategies while taking into account student type first time-in-college students and transfer students. The undergraduate student data obtained from the University of Central Florida from 2008 to 2017 was used for analysis. The academic performance of first time-in-college students' who applied a mixed enrolment strategy was closer to that of full-time students, as compared to part-time students. Moreover, during their part-time semesters, mixed-enrolment students significantly outperform part-time students. Similarly, analysis of transfer students showed that used a mixed-enrolment strategy was correlated with similar graduation rates as the full-time enrolment strategy and more than double the graduation rate associated with part-time enrolment. Part-time students can achieve

better overall outcomes by increased engagement through occasional full-time enrolments.

Numa, Islam and Sadat (2007) focused on the analysis of students' enrolment trend of different programmes of Bangladesh Open University (BOU) and showed the projection of enrolment trend. Linear regression was employed in the analysis of year wise students' enrolment pattern in different programs of BOU. Every year students' enrolment rises for only four programmes and declines for the rest of the programmes. Some programmes have reached the border line of zero students' enrolment. Projection shows that if the trend continues, then students' enrolment of six of these programmes would reach nil in few years.

Orike (2019) investigated the impact of admission policy on academic performance of undergraduate students as perceived by academic staff, senior administrative staff and final year students in South-South Zone, Nigeria. The population of the study comprise of academic staff, senior administrative staff and final year students from six (6) Federal Universities of the South-South Zone of Nigeria. Data obtained from the respondents were analysed using the Mean and the Analysis of Variance (ANOVA) to test the hypothesis at 0.05 Level of Significance. The result showed that admission policies of university education have high impact on academic performance of undergraduate students of Federal Universities in South-South Zone, Nigeria. Though the Federal Government Policies on admission are targeted for National integration, emphasis should be placed more on merit to curb mediocrity and improve the quality of universities education in Nigeria.

An existing gap in the literature on the impact of undergraduate enrolment is the limited exploration of how increasing student numbers directly affect the structure, quality, and sustainability of academic programmes. While prior studies have predominantly focused on general enrolment trends, admission practices, and their correlation with academic performance (Aboma, 2023; Boumi & Vela, 2021; Orike, 2019), they often overlook the implications of enrolment surges on institutional capacities, programme diversity, and financial viability. Moreover, most research did not integrate financial data such as internally generated revenue to assess the fiscal consequences of enrolment. This study attempts to bridge that gap by combining enrolment data with revenue trends and programme availability, providing a more holistic and context-specific understanding of the challenges and opportunities posed by enrolment dynamics in KASU.

### 3. Methodology and Procedure

The study employed causal research design because the study examined the impact of undergraduate enrolment on the academic programmes in Kaduna State University, that is, the cause-and-effect relationships between undergraduate enrolment and academic programmes. Secondary data of students' enrolment were

obtained from admission, exams and record office and the internally generated revenue from the Bursary Department of Kaduna State University from 2018 – 2023. Below is model specification based on the specific objectives:

### **The Determinants of Decline of Undergraduate Enrolment in Kaduna State University.**

Thus, the model is specified in functional form as follows

$$ENROLMENT = F(APPLIED, FEES) \quad (1)$$

In mathematical form, equation (1) can be transformed as:

$$ENROLMENT_t = \beta_0 + \beta_1 APPLIED_t + \beta_2 FEES_t \quad (2)$$

The econometric form of the equation can thus be written as follows:

$$ENROLMENT_t = \beta_0 + \beta_1 APPLIED_t + \beta_2 FEES_t + \mu_t \quad (3)$$

Where:

$ENROLMENT$  = Number of students enrolled in KASU (Dependent Variable)

$APPLIED_t$  = Number of candidates that applied for admission in KASU

$FEES_t$  = School fees: 1 if hike in school fees discourages applicants, and 2 otherwise.

$\beta_0$  = Regression constant

$\beta_1 - \beta_2$  = Regression parameters to be estimated

$\mu_t$  = Error term measuring errors outside the model which is assumed to be normally distributed

### **The Impact of Undergraduate Enrolment on the Academic programmes in Kaduna State University.**

Thus, the model is specified in functional form as follows:

$$PROGS = f(ENROLMENT) \quad (4)$$

In mathematical form, equation (4) can be transformed as:

$$PROGS_t = \beta_0 + \beta_1 ENROLMENT_t \quad (5)$$

The econometric form of the equation can thus be written as follows:

$$PROGS_t = \beta_0 + \beta_1 ENROLMENT_t + \mu_t \quad (6)$$

Where:

$PROGS_t$  = Programmes of study in KASU (Dependent Variable)

$ENROLMENT$  = Number of students enrolled in KASU

$\beta_0$  = Regression constant

$\beta_1$  = Regression parameter to be estimated

$\mu_t$  = Error term measuring errors outside the model which is assumed to be normally distributed

**The Effect of Undergraduate Enrolment in Kaduna State University on Internal Generated Revenue.**

Thus, the model is specified in functional form as follows:

$$IGR = f(ENROLMENT) \tag{7}$$

In mathematical form, equation (4) can be transformed as:

$$IGR_t = \beta_0 + \beta_1 ENROLMENT_t \tag{8}$$

The econometric form of the equation can thus be written as follows:

$$IGR_t = \beta_0 + \beta_1 ENROLMENT_t + \mu_t \tag{9}$$

Where:

$IGR_t$  = Internally Generated Revenue of study in KASU (Dependent Variable)

$ENROLMENT$  = Number of students enrolled in KASU

$\beta_0$  = Regression constant

$\beta_1$  = Regression parameter to be estimated

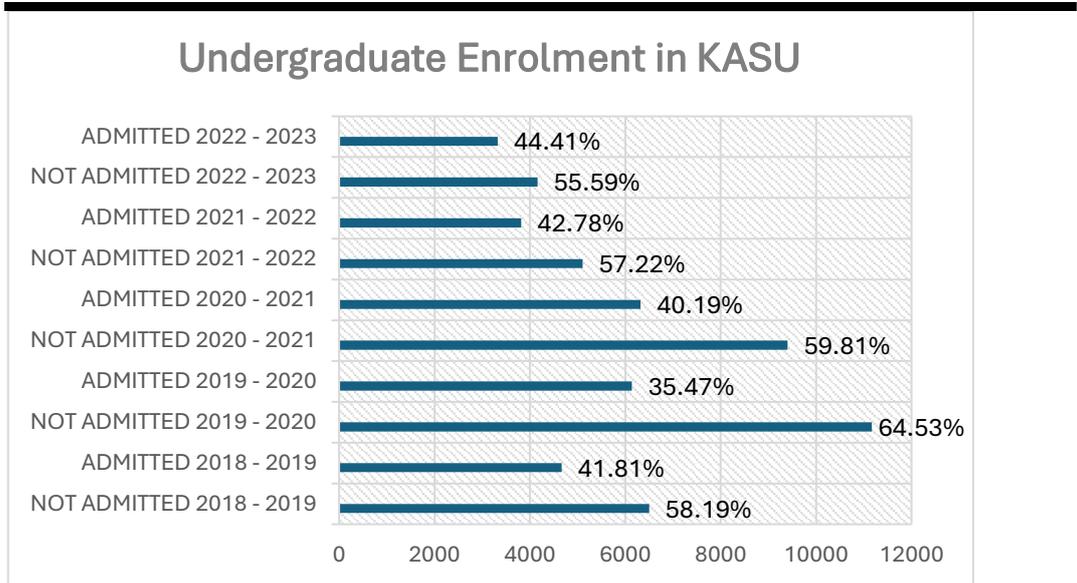
$\mu_t$  = Error term measuring errors outside the model which is assumed to be normally distributed

**4. Results and Discussion**

The section below present results and discussion on the impact of undergraduate enrolment on the academic programmes at Kaduna State University.

**The Trend of Undergraduate Enrolment in Kaduna State University**

The graph in Fig 1 shows the trend of undergraduate enrolment in Kaduna State University from 2018/2019 academic session to 2022/2023 academic session.



**Fig 1: Undergraduate Enrolment from 2018 – 2023 in KASU**

Figure 1 presents the trend of undergraduate enrolment in Kaduna State University from 2018/2019 academic session up to 2022/2023 academic session. It was revealed that in 2019/2020 academic session had the highest number of candidates that applied for admission in KASU of 17,308 candidates but only 35.47 percent was admitted, and 64.53 percent of the candidates was not admitted. The study further revealed that in 2020/2021 academic session followed with the number of candidates that applied for admission in Kaduna State University of 15,724 candidates but only 40.19 percent were admitted, and 59.81 percent of the candidates were not admitted. However, the study again revealed that in 2018/2019 academic session with the number of candidates that applied for admission in Kaduna State University stood at 11,170 candidates but only 41.81 percent were admitted, and 40.19 percent of the candidates were not admitted. Meanwhile, the study revealed that in 2021/2022 academic session with the number of candidates that applied for admission in Kaduna State University stance at 8,927 candidates but only 42.78 percent were admitted, and 57.22 percent of the candidates were not admitted. Lastly, the study revealed that 2022/2023 academic session had the least number of candidates that applied for admission in Kaduna State University of about 7,485 candidates but only 44.41 percent were admitted, and 55.59 percent of the candidates were not admitted.

**Table 1: Regression Estimate for the Determinants of Decline of Undergraduate Enrolment in Kaduna State University.**

Variables	B	Std. Error	t	Sig.
C	30.924	3.174	9.743	0.000
APPLIED	0.296	.007	40.762	0.000
FEES	-12.657	1.830	-6.916	0.000
R Square: 0.975		Adjusted R Square: 0.975		
F-Statistic: 1731.938		F - Prob: 0.000		Durbin-Watson: 1.666

Source: Authors' Computation with SPSS IBM version 26

Data collected were put into multiple regression model that measures the relationship between the dependent variable of the student's enrolment (ENROLMENT) and independent variables. Table 1 revealed that there are impacts of the explanatory variables on the dependent variable. It showed that independent variables number of candidates applied for admission (APPLIED) and school fees (FEES) were both positive and negative related to the dependent variable. Table 1 shows the summary of regression result on the determinants of decline of undergraduate enrolment in Kaduna State University.

The estimated coefficient of the variable number of candidates applied for admission (APPLIED) is positive and statistically significant at 5 percent level, to influence student's enrolment (ENROLMENT) in Kaduna State University. The number of candidates applied for admission with coefficient of 0.296 means that, with other variables held constant, a unit change in number of candidates applied for admission would result in about 0.296 percent increase in student's enrolment in Kaduna State University over the period under study and it is statistically significant at 5 percent. This suggests a positive relationship between number of candidates applied for admission and student's enrolment in Kaduna State University (Table 1).

The study found that an increase in the number of applicants significantly led to higher enrolment, as demonstrated by the positive coefficient of 0.296 for the "APPLIED" variable. This finding aligns with Aboma (2023), who found that admission practices and selection processes significantly influence students' academic success and enrolment outcomes. However, while Aboma emphasized the qualitative dimension of admission practices using merit and aptitude, the present study strengthens this argument with quantitative evidence, showing that the volume of applicants is a strong determinant of actual enrolment at KASU.

Furthermore, the estimated coefficient of the variable school fees (FEES) is negative and statistically significant at 5 percent level, to influence student's enrolment (ENROLMENT) in Kaduna State University. The school fees with

coefficient of -12.657 means that, with other variables held constant, a unit change in school fees would result in about -12.657 percent decrease in student’s enrolment in Kaduna State University over the period under study and it is statistically significant at 5 percent. This suggests a negative relationship between school fees and student’s enrolment in Kaduna State University (Table 1).

The negative relationship between school fees and student enrolment, with a significant coefficient of -12.657, suggests that high tuition costs deter prospective students from enrolling. This is consistent with Orike (2019), who argued that government policies on admissions and affordability significantly influence academic outcomes. While Orike focused on the perception of university staff and students, the present study quantifies the economic deterrent effect of high fees, providing a measurable basis for the claim that financial accessibility is critical to maintaining healthy enrolment levels.

**Table 2: Regression Estimate for the Impact of Undergraduate Enrolment on the Academic Programmes in Kaduna State University.**

Variables	B	Std. Error	t	Sig.
C	84.072	7.192	11.689	.000
ENROLMENT	0.296	.115	2.560	0.011
R Square: 0.027		Adjusted R Square: 0.023		
F-Statistic: 6.553		F - Prob: 0.011		Durbin-Watson: 2.005

Source: Authors’ Computation with SPSS IBM version 26

Data collected were put into multiple regression model that measures the relationship between the dependent variable of the Academic programmes in KASU (PROGS) and independent variable. Table 2 revealed that there were impacts of the explanatory variables on the dependent variable. It showed that independent variables number of student’s enrolled in KASU (ENROLMENT) was positively related to the dependent variable. Table 2 showed the summary of regression result on the impact of undergraduate enrolment on the academic programmes in Kaduna State University.

The estimated coefficient of the variable number of student’s enrolled in KASU (ENROLMENT) is positive and statistically significant at 5 percent level, to influence Academic programmes (PROGS)in Kaduna State University. The number of student’s enrolled in KASU with coefficient of 0.296 means that, with other variables held constant, a unit change in number of student’s enrolled in KASU would result in about 0.296 percent increase in Programmes of studies in Kaduna State University over the period under study and it was statistically

significant at 5 percent. This suggests a positive relationship between number student’s enrolled in KASU and Programmes of studies (Table 2).

The result showing a positive impact of undergraduate enrolment on academic programmes (coefficient = 0.296,  $p < 0.05$ ) implies that growing enrolment pressures likely drive the expansion or diversification of academic offerings. This result is not explicitly addressed in most of the literature reviewed, but it complements Boumi & Vela (2021), who used a Hidden Markov Model to analyse how varying enrolment strategies (full-time, part-time, mixed) affect academic performance and outcomes. While their study was more focused on the students’ academic paths and success metrics, this study highlighted how institutional programmes may evolve in response to those enrolment patterns.

**Table 3: Regression Estimate for the Effect of Undergraduate Enrolment in Kaduna State University on Internal Generated Revenue**

Variables	B	Std. Error	T	Sig.
C	18.061	.286	63.153	0.000
ENROLMENT	-0.026	.005	-5.609	0.000
R Square: 0.263		Adjusted R Square: 0.255		
F-Statistic: 31.462		F - Prob: 0.000		Durbin-Watson: 0.700

Source: Author Computation with SPSS IBM version 26

Data collected were put into regression model that measures the relationship between the dependent variable of the Internal Generated Revenue in KASU (IGR) and independent variable. Table 3 reveals that there are impacts of the explanatory variables on the dependent variable. It shows that the independent variable, number of students enrolled in KASU (ENROLMENT), is negatively related to the dependent variable. Table 3 shows the summary of regression result on the effect of undergraduate enrolment in Kaduna State University on internal generated revenue.

The estimated coefficient of the variable, number of students enrolled in KASU (ENROLMENT), is negative and statistically significant at 5 percent level, to influence internal generated revenue (IGR) in Kaduna State University. The number of student’s enrolled in KASU with coefficient of -0.026 means that, a unit change in number of student’s enrolled in KASU would result in about -0.026 percent decrease in internal generated revenue in Kaduna State University over the period under study and it is statistically significant at 5 percent. This suggests a negative relationship between number of student’s enrolled and internal generated revenue in Kaduna State University (Table 3). The finding revealed the negative relationship between student enrolment and internally generated revenue (IGR), with a coefficient of -0.026. One would expect increased enrolment to correlate

with higher revenue, but this result suggests potential issues such as unpaid tuition, government interference, fee waivers, or inefficiencies in revenue collection. This contradicts the assumption in many studies, including those like Numa et al. (2007), which assume that enrolment growth should support financial sustainability. The current finding revealed that enrolment alone does not guarantee financial health highlighting a gap in institutional autonomy and financial governance at KASU.

## **5. Conclusion and Recommendations**

### **5.1 Conclusion**

This study examined the impact of undergraduate enrolment on academic programmes in Kaduna State University (KASU). The findings revealed that the number of candidates who applied for admission significantly influenced actual enrolment, indicating strong demand for university education. However, the study also uncovered a negative relationship between school fees and enrolment, suggesting that higher tuition costs deter prospective students. Furthermore, while increased enrolment positively impacted the expansion of academic programmes, it unexpectedly had a negative effect on the university's internally generated revenue. This paradox may be attributed to issues such as fee defaults, limited institutional autonomy, and inefficiencies in financial administration. These results highlighted the complexities universities face in balancing access, academic growth, and financial sustainability.

### **5.2 Recommendations**

The study therefore recommended the following:

- i. On review and adjustment of tuition fees, there is need for the university to consider implementing a more flexible and affordable fee structure or expanding scholarship and instalment payment options to encourage higher enrolment, particularly among economically disadvantaged students.
- ii. There is need for the Kaduna State Ministry of Education to expand academic and physical infrastructure to accommodate the rising enrolment and ensure quality education, the university should invest in expanding classrooms, laboratories, lecture theatres, and staffing across departments.
- iii. There is need to expend both physical and academic structures to accommodate the increasing number of students enrolment in the university.
- iv. Government should allow the university management to take necessary action against fees defaulters rather than interference. This has made some students to graduate without settling their fees.
- v. The university should be given full autonomy to operate as other state universities in the country.

- vi. University management should expedite action to block leakages from internet scammers and internet fraud stars within and without.

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