

REVENUE GENERATION STRATEGIES EMPLOYED BY TERTIARY INSTITUTIONS TO COPE WITH FINANCIAL CHALLENGES

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ABSTRACT

This study examines the revenue generation strategies employed by tertiary institutions to address financial challenges. The research highlights the increasing financial pressures faced by tertiary institutions due to reduced government funding, escalating operational costs, heightened competition for student enrollment, dynamic political atmosphere, the economic situation in the country, government policies, and so on. It is pertinent to conduct such research at this moment, due to the critical situations tertiary institutions are facing as a result of insufficient funds. This work employs a mixed-methods approach, combining quantitative data analysis of financial reports from selected institutions with qualitative insights from interviews with key administrative personnel. The case study areas are Federal Polytechnic Bauchi (FPTB) and Abubakar Tatari Ali Polytechnic (ATAP) Bauchi. The targeted population is the staff and students of these institutions, which is further broken into 1,000 respondents as the sample size for the study. Data collection was carried out using a self-study questionnaire which was randomly distributed across these tertiary institutions. The findings suggest that a multifaceted approach to revenue generation, tailored to the unique strengths and contexts of individual institutions, is critical for sustainable financial health such as commercialization of research and development, expansion of online and continuing education programs, and enhancement of alumni and philanthropic engagement. Additionally, partnerships with industry and the private sector, as well as the optimization of asset utilization such as campus facilities and intellectual property, are explored. The study concludes by providing recommendations for policymakers and educational administrators on best practices and innovative strategies to ensure the long-term viability of tertiary education institutions in a rapidly evolving financial landscape.

Keywords: Strategy, Tertiary institutions, Revenue Generation, FPTB, ATAP Bauchi.

1. INTRODUCTION

Financial sustainability has become a major issue for tertiary institutions globally. Growth in costs of higher education have been unprecedented, exceeding amounts sustainable by government funds (Leal Filho et al., 2018). Mahmud et al., (2022) concur that costs of education have 'grown unceasingly' in the United States and other countries.

This situation is further aggravated by the global economic crisis, dampening economic growth and contracting economies, and is worsened by the growth, globalization, increased competitiveness, and rapid massification of higher education (Erlangga, 2019; Richards, 2022; Tsuma, 2014)

This has exerted pressure on public higher institutions around the world to undertake revenue diversification and cost management initiatives to close budgetary gaps (Xiong & Mok, 2020). Failure to diversify their income streams can pose problems as expenditure levels rise faster than the growth level in the institution's income and these institutions are now faced with weaker financial statements compared to the past (Peter & Kamanzi, 2019; Pius Nudzor, 2021; Ziolo et al., 2019). This pressure for alternative sources of funding and a reduced dependence on government grants has also been acknowledged in so many actions of government in recent times, through so many policies.

The current financial situation of public tertiary institutions requires that senior officers recognize this and are supportive of financial sustainability efforts. Historically, public tertiary institutions around the world have been heavily underfunded by the government. Consequently, diversifying sources of revenue and managing costs strategically are fewer familiar tasks to senior officers. Currently, senior officers now increasingly need to develop an entrepreneurial mindset and a higher level of cost consciousness and prudence given the introduction of numerous reforms akin to a New Public Management (NPM) ideology or 'managerialism' in tertiary institutions in many parts of the Western world (Chronicle, 2019). Previously, officers could focus on academic-related matters and their financial responsibilities were largely limited to ensuring that the 'guaranteed' government funds were well allocated to the various activities (Hoy & Tarter, 2004).

Consequently, Almagtomea et al., (2019) to assert that public tertiary institutions, after years of being almost dependent on government funding, now need to shift their focus towards greater financial independence as a result of some of the

policies being introduced by the government. This has led to financial sustainability becoming a serious concern of the higher education system, in both developed and developing countries.

Consistent with these developments, Nigerian tertiary institutions, currently face the challenge of rising costs and budgetary cuts while being expected to deliver quality education and achieve high enrolment levels (Tsuma, 2014). These 'paradoxical' constraints have pushed the issue of financial sustainability of the Nigerian tertiary institutions to the forefront of the government's agenda.

This study will provide and analyze the sustainable revenue generation strategies employed by tertiary institutions to cope with financial challenges in the 21st century.

In recent times, tertiary institutions are faced with numerous financial challenges due to many reasons among which are poor attitude to entrepreneurship, poor management of resources, dynamic political atmosphere, the economic situation in the country, illiteracy on sustainability orientation, corruption, government policies, and so on. As a result, these institutions struggle to finance their expenses making important activities substituted with other activities, or the burden is shifted to parents/guardians of students. Recently, as a result of the recent strike by the university unions, tuition fees of some universities have increased exponentially beyond an ordinary citizen's capability which may result in students becoming dropout of school. This is due to massive dependence of these tertiary institutions on the government.

The Nigerian economy has faced periods of persistent instability, including fluctuating oil prices, which significantly affect government revenue. This, in turn, affects the amount of funding available for public institutions, including tertiary education. Tertiary institutions in Nigeria heavily depend on government budget allocations. In some cases, these allocations may not be sufficient to meet the growing demands of these institutions due to a variety of competing priorities.

High inflation rates can erode the purchasing power of allocated funds, making it challenging for institutions to maintain their operations and infrastructure with the same budget.

As the population grows and more students seek higher education, there is increased pressure on institutions to expand their facilities and services, which requires additional funding. The introduction of new policies by the government has significantly affected the funding of these institutions. These policies range from the introduction of an Integrated Personnel Payroll System (IPPIS), Single Treasury Account, and so on.

In this study, the authors intend to identify, compare to other institutions and with what is available, sustainable strategies used by tertiary institutions in curbing their financial challenges without extending the burden to parents/guardians or the government.

2. LITERATURE REVIEW

In the 21st century, abundant literature is available concerning the financial challenges faced by tertiary institutions and strategies adopted by the institutions. Some of the recent ones are discussed as follows:

Mahmud et al., (2022) were able to identify some of the strategies used in revenue generation by tertiary institutions. In this work, purposive sampling of 26 programs was used. Among the strategies, Government subsidy which takes care of tuition and day-to-day expenses, organizing conferences, seminars, workshops, building rent, laboratory services, scientific consultations, and ballroom rent were identified. These strategies, if adopted will supplement the budget of the institution by taking care of purchasing supplies, materials, and equipment, additional project personnel as well as strengthening facilities for training, instruction, productive activities, extension, and research. Good synergy in cooperation and partnership between the head of the institution and the stakeholders in charge of these units in which income can be generated internally is highly encouraged for effective sustainability and accountability.

Leal Filho et al., (2018) focused on the problems of planning a sustainable development and exploring the potential lessons that could help in upgrading the sustainability of tertiary institutions. The paper identified planning as one of the important parameters that determine the sustainability of tertiary institutions. Effective planning will go a long way in the integration of the three-set goals of developmental sustainability, which are social development, environmental protection, and economic development in tertiary institutions. The result shows that limited emphasis on approach, insufficient support, and planning from the institutions are among the challenges inhibiting the generation of revenue in these institutions. Some of the challenges faced by universities that are in the field are insufficiently trained personnel and limited available resources. The paper recommended sustainable opportunities that are not in full use like the UN programs.

Hoy and Tarter, (2019) considered the perception of senior staff on sustainability, essential revenue-generating activities, and cost management practices in universities. A survey was done using a questionnaire to draw data from both administrative and academic staff of 20 public universities located in Malaysia. A total of 275 questionnaires were distributed. Results indicated that the increase in tuition fees paid by students may not be a solution feasible for

enhancing the revenue capacity of public universities. The paper recommended that full utilization of income-generating sources must be made for a feasible revenue-generation strategy in tertiary institutions.

Xiong & Mok, (2020) employed 8 public universities that funded the establishment of the Hong Kong Consortium using Grants in Hong Kong. The paper aimed to examine the challenges and roles played by HKSCC towards Hong Kong's higher education institutes' sustainability efforts and bring out the achievements and good practices of the HKSCC through interviews. The findings revealed that the universities play significant roles in reaching their sustainability goals, but significant attention needs to be made to other external sustainability practices in society. It was recommended that the sustainable development of universities should be broadened to address the negative consequences of privatization, massification, and higher education's internationalization.

Ziolo et al., (2019) considered the influence of negative externalities on the affiliation between finance and sustainability and the affiliation between traditional finance among which are the economic, financial, social, and environmental development indicators from the perspective of sustainability with special emphasis on the externalities. The multi-faceted nomenclature was employed to study the variances between the EU nations belonging to the Organization for Economic Co-operation and Development in the areas of sustainable development and finance. Eurostat was found to have contained the pillars of sustainable development like social, environmental, and sustainable finance. Analysis of 23 countries was carried out in 2007, 2013, and finally in 2016. Based on the result obtained, a positive relationship among the indicators exists.

2.1 Traditional Funding System of Nigerian Tertiary Institutions

The traditional funding sources for the Nigerian public institutions (Federal and State) vary from the point of view of the proprietorship of the institutions. The federal universities are funded by the federal government via grants for personnel costs, research funding, and capital expenditures Adeniyi, A. A. (2018). It is on a statutory note that federal universities do not charge any tuition fees, dues, and several manners of levies. The state universities are primarily funded by the state government that established them.

The Nigerian Tertiary Institutions System which commenced in 1948 with the establishment of the Tertiary Institutions College of Ibadan as an affiliate to the tertiary institutions of London, being the only one in the country was adequately funded in all aspects of teaching and research by both governments of Nigeria and Britain. In addition, universities were established between 1960 and 1973 and were also adequately funded by the federal government. Akhigbe (2016) and Okobuka (2021). both affirmed that the universities were well funded, that even subventions, scholarships/bursaries were made available to poor students, and that there was no significant difference in the amount requested by universities and the amount received from the government. This was also the same with the first-generation state universities.

The financial problems of Nigerian universities started after the establishment of third-generation universities between 1975 and 1980. The sudden underfunding of universities at that time was linked to the depreciation in the country's economy evident in the downward trend in oil and non-oil exports, with rising import bills Osadebe, P. V. (2021). It stands to reason, therefore, that funding universities throughout the world has witnessed dramatic changes in the last decades of the 20th and 21st centuries. These changes are responses to a worldwide phenomenon of the rising cost of tertiary institutions' education over the corresponding rates of increase of available revenues. To cope with government funding reductions, universities worldwide now generate additional sources of funds (Whittington & Pany 2004).

Inadequate funding of universities has had a calamitous effect on teaching and research and universities themselves have been forced to embark on income-generating projects to source for funds. Therefore, the available revenue is spent on capital projects, administration, teaching, research, and welfare. Capital projects and salaries repeatedly take the bulk of the total revenue, while teaching and student welfare tend to be given less priority. This tends to be responsible for the incessant student/teacher riot and strike actions respectively Odesami, S. E. (2022).

With the reduction in the budgetary provision for education, the depreciation of the naira, and the low price of oil, Nigeria's main source of foreign currency earning, the provision of scientific and teaching materials has been drastically curtailed. Quality of teaching has fallen considerably, the libraries are hardly updated in terms of research materials, journals, and books, and the morale of staff is low Ehiaguina, S. O. (2018). Allocations to universities are going down, while students' enrolments continue to rise, capital projects cannot take off and in areas that they take off, they are allegedly abandoned due to lack of funds.

The by-effect of this dwindling finance in the Nigerian Tertiary institutions system is explicated in many adaptive mechanisms such as the curtailment of laboratory/practical classes, freezing of new appointments, a limited number of field trips, and low quality of research and teaching, among others. From this foregoing, it is evident that these effects as highlighted above cripple the ability to optimize the production of skilled output, and graduates, for the maximization of our ever-expanding economy and global productivity (Sanderson, M. 2007).

2.2 Sources of Internally Generated Revenue (IGR)

i. Fees: Fees encompass tuition fees, accommodation fees, development levy, ICT levy, sports and registration fees. There have been divergent opinions on the payment of tuition fees in tertiary institutions. While it is evident that students pay fees other than tuition fees in some federal tertiary institutions, there have been repeated calls for the introduction of tuition fees in such tertiary institutions by stakeholders in universities.

Ademola and Ukeki (2019) posited that the issue of tuition fees should not be politicized and made a non-serious issue. They pointed out cardinal issues that urgently needed attention from the tertiary institutions as the need to collaborate with banks to start special students account, innovative moves to attract more financial institutions to the campus, constitute an IGR Drive Committee, with improved friendly students' services. Aisabor (2020) asserted that fees, as a whole, are a major source of IGR, as concerted efforts were made to distinguish tuition fees from other fees. Other fees include hostel fees, ICT fees, health fees, etc. Aisabor (2020) observed that tuition fees are not paid in federal tertiary institutions, adding that fees collected by some federal tertiary institutions are higher than those collected by some state tertiary institutions that collect tuition fees. It is, however, the opinion of this paper that the word "fees" encapsulates all manner of fees paid in the tertiary institutions.

ii. Bookshop/Printing Press: Bookshops and Printing Press are another major source of raising funds for a tertiary institution. Since the tertiary institution is a learning and research Centre, there is a need for it to open and stock a bookshop with the necessary books and materials for its student's use. Instead of taking all printing jobs from staff, students, and departments, the tertiary institutions, can establish their printing press for all printing and publication jobs. There should also be a rule that all printing jobs from the tertiary institutions should be done in the tertiary institution's printing press (Odeniyi & Aina, 1999).

iii. Research, Contract and Consultancy Services: Tertiary institutions can also undertake research for big organizations like oil firms. Money accruing from this research can be used by the institutions. The tertiary institutions should canvass for research from industries and these industries should be ready to employ their services. Tertiary institutions can also vie for contracts and use the proceeds for its funding. Departments running professional courses should use their students as on-the-job training to do contracts. Various departments in tertiary institutions, like Accounting, Fine and Applied Arts, Architecture, Building, and Medical Laboratories should sell their services to the public by showcasing their findings and good works in exhibitions Ademola, P. and Ukeki, J. A. (2019).

iv. Demand Driven Courses/Certificates: Another great means of generating funds is for the tertiary institutions to offer demand-driven academic courses and programs. The courses could be at diploma or certificate levels. Practical and professional career courses and programs will sell themselves and attract students from within and without especially this time when the oil and global recession is affecting the global economy. It is opined that a prescription of demand rather than supply influences the academic curriculum. The influx of foreign exchange paid by foreign students will boost available revenue in Nigerian Tertiary institutions (Pettigrew 1979).

v. Tertiary Institutions Farms: The tertiary institutions can set up farms or reactivate ailing ones as a means of boosting income through the process of rearing breeds of animals and poultry to boost her income. Students in the Department of Agriculture should be made to work on the farms of the Tertiary institutions as their continuous assessment and proceeds from the farms can go a long way in helping the school and various departments. Tertiary institutions should play significant roles both in research work and practical agriculture in order to feed the growing population and reduce the nation's dependence on imported foods. Concentrating on this venture will yield handsome rewards and go a long way in ameliorating the funding problems of tertiary institutions (Mugenda 2003).

vi. Part-time, Remedial and Long-vacation Programs: Nigerian tertiary institutions undertaking to run part-time programs and remedial programs make revenues available for the institutions as it creates time and appointment for the working class and those who missed the first opportunities. This can either be evening part-time, weekend part-time, or long-vacation part-time programs. Such programs should be made in such a way that civil servants may be favored in terms of fees and lecture time. If conducive, more workers will further their education and at the same time make more money for the schools.

Remedial programs are undertaken in tertiary institutions for people who cannot meet entry requirements. Recently in some tertiary institutions, there has been the introduction of long vacation programs. These programs are run for students who cannot pass their examinations at a sitting. They are given make-up examinations which brings in more money into the tertiary institution's coffers.

vii. Establishment of Community Banks: The banking business is acknowledged as the vehicle of development in the economy. Since the services rendered by the public liability company, banks can also be performed by the Community Banks, and coupled with the fact that there is always a market for its existence, therefore, floating a community bank in

a tertiary institution with contributions from associations and individuals within the tertiary institution's community can be a better non-governmental source of funding the development of the tertiary institution's community and other staff within the community (Lee, 2015).

viii. Endowment Funds: An endowment scheme is a sort of fund to which donors contribute for purposes of re-investment. In other words, it is money that has been given to the tertiary institutions to be held in perpetuity. The management may not be spending it, but the income may be disbursed on operational projects. Many tertiary institutions do establish endowment funds where rich individuals or organizations assist in the development of quality education. Usually, prominent citizens donate money to the tertiary institutions to be held in their honor in perpetuity. The intention is that the donor's name be immortalized in the tertiary institutions. For example, lecture halls, stadiums, classroom blocks, etc are named after such persons. The publicity of these endowment funds is low. Tertiary institutions should publicize these through the media and the names of donors also be published to serve as an incentive for others to donate (Leal et al., 2015b).

ix. Alumni Association: The old students of tertiary institutions are usually very proud to remember their Alma Mata. Strong alumni associations should be formed in schools. Tertiary institutions should seek financial support from their alumni. Old students should be recognized and invited from time to time to deliberate on the position of their alma mata. The school authority should keep track and record of their old students to always know and follow up on their progress in life (Leal et al., 2015a).

x. Rent and Leasing of Equipment and Materials: In this era of dwindling financial resources in the federal and state tertiary institutions, leasing can be a vital source of finance for the system as the money that would have been tied down to some assets and properties is channeled to other sectors of the productive services. The most appropriate lease is the service lease because of its innovative nature and saving the tertiary institutions from utilizing absolute equipment and facilities. If the tertiary institutions are to remain the citadels of innovation in these harsh times, lease options may ensure that all necessary equipment is acquired without tying down their scarce resources and suffer the consequent loss. Also, it will conserve funds that will now be deployed to vital productive sectors of the establishment (Leal et al., 2015).

xi. Car Park: Car park services can be introduced by tertiary institution authorities in which staff, students, and visitors can be allocated separate parks. In the case of staff and students, theirs should not attract fees, while visitors to the tertiary institutions could be directed to park their cars at designated parks where a sum of money will be paid for security or services charges for the time and period. Coupons could be used to check the cars or vehicles. Also, motorcycles as popular means of transport are ubiquitous in every nook and cranny of tertiary institution campuses today. The tertiary institution's management can legalize their use within and around the tertiary institutions by designating parking lots for them and selling coupon tickets at rates determined by them. This will yield additional revenue to the tertiary institutions (Kiamba, 2003).

xii. Establishment of a Tertiary Institution Secondary School: Tertiary institutions can set up secondary schools as a means of generating funds. The school should be meant to accommodate staff children and members of the public for specific fees. The teachers should be employed on agreed salaries and not the tertiary institutions workers' salaries as currently happening in some tertiary institutions. Fees paid by the students can be a very important means of boosting the tertiary institution's funds (Hollowel et al., 2006).

xiii. Setting up Filling Stations: Tertiary institutions can set up viable filling stations for fund generation. This involves setting up petrol stations where staff, students, and members of the public can purchase their fuel and motor needs. This could be made to be in operation at all times so that the fund's generation can be sustained. The pump price should be made to be at par with what is obtainable in other filling stations. Sustaining this venture means that more fuel will always be available where more people will buy and more revenue generated for the tertiary institutions (Key, 1997).

xiv. Contributions by Parent-Teachers Association (PTA): Parents of the immediate beneficiaries of tertiary institutions should be made to contribute a little towards the funding of the school. Apart from meeting the needs of their wards, a little extra amount should be collected as equipment or development levies from these parents. This body can come under any form or name. Some schools call it the Parents Consultative Forum. This extra levy, while not too big to scare parents from sending their wards to such schools, should be used for the procurement of materials and equipment or for the purpose for which they were collected. Tertiary institutions or faculties can form Parents-Teachers Associations (PTA) or Parent Consultation Forums where interaction between the sponsors and school management can always take place (Iyer-Raniga & Andamon, 2016). The tertiary institutions can use this forum to appeal to parents/sponsors on their needs. Some of these parents/sponsors can be in positions to award contracts or change the fortune of the tertiary institutions. Some may donate buildings and equipment to the school. If the PTA can be very successful in the funding and running of secondary schools, it can also be good and useful in tertiary institutions.

xv. Car Washing Bay and Car Services: Considering the population of vehicles trooping the campus daily, which comprises of visitors' cars, staff and students' cars; setting up a car washing bay and car services would be a good source of revenue for the institutions. This strategy has numerous prospects as while staff and students are in the classroom delivering lectures and taking lectures, the security of their vehicles is fully guaranteed and being sanitized at a cheap rate. Hence, students and visitors will be more comfortable patronizing the services as compared to the outside environment. This strategy was employed by the Principal Investigator some years ago when he served as Head of Department of Mechanical Engineering, Federal Polytechnic Bauchi and proved to be very effective source of revenue for the institution.

2.3 Management Strategies of Internally Generated Revenue:

The management of IGR is an important aspect of the financial sustainability of tertiary institutions. To this end, scholars have proposed different strategies for effective management of IGR in tertiary institutions. Among the many strategies, the following are worth considering: -

- i. Centralized Financial Management System:** There is a need for the adoption of a centralized financial management system that ensures transparency and accountability in the use of IGR. This system involves the establishment of a financial management unit that oversees the collection, allocation, and utilization of IGR in a manner that aligns with the institution's strategic objectives. The financial management unit is responsible for ensuring that all revenue generated within the tertiary institutions is properly accounted for and utilized in a way that benefits the tertiary institutions community (Hinton, 2012).
- ii. Diversification of Revenue Sources:** Another strategy is the diversification of revenue sources to reduce reliance on a single source of internally generated revenue. This involves exploring alternative sources of revenue such as research grants, consultancy services, and partnerships with industry and other service providers. Diversification of revenue sources ensures that the institution is not over-dependent on a single source of revenue, which can be unpredictable and unstable (Helena, 2000).
- iii. Robust Financial Planning Process:** Effective management of IGR requires a robust financial planning process that takes into consideration the tertiary institutions' short-term and long-term financial goals. Financial planning involves the creation of a budget, setting financial targets, and monitoring progress towards achieving these targets. The budget should be used on a realistic projection of revenue and expenditure, taking into account factors such as inflation, changes in government funding, and other economic factors that may impact the tertiary institution's finances (Apergis, 2013).
- iv. Effective Communication and Collaboration:** Effective communication and collaboration between different units within the tertiary institutions are crucial for the management of IGR. This involves regular meetings and consultations between the financial management unit, academic departments, and other units within the institution to ensure that revenue generated is allocated and utilized in a way that aligns with the tertiary institution's goals and objectives (Bloom, 2005).

2.4 Problems of Internally Generated Revenue

Despite the anticipated benefits of internally generated revenue, the under-mentioned counterproductive issues are noteworthy:

- i. Outdated Collection Process:** The tertiary institution's IGR collection processes are often inefficient and outdated. For instance, the payment process is often manual, which makes it difficult for tertiary institutions to track payments, identify defaulters, and reconcile accounts. The absence of electronic payment options also limits the ability of students and other stakeholders who utilize tertiary institution's IGR sources to make payments conveniently. For instance, the absence of an electronic payment system makes it relatively difficult for tertiary institutions to collect payments conveniently and track transactions accurately (Burchardt, 2007).
- ii. Poor Management/Mismanagement:** Poor management of Internally Generated Revenue in tertiary institutions may hurt the products of the system vis-a-vis sustainable tertiary institutions education. It is alleged that the tertiary institution's IGR is often poorly managed, mismanaged, or underutilized. This leads to revenue losses and inefficiencies. For instance, tertiary institutions may not be effectively leveraging their facilities and resources to generate revenue.
- iii. Limited Revenue Sources:** Many institutions rely heavily on tuition fees as their primary source of IGR. This can be problematic if student enrollment drops or if there are caps on tuition fee increases. Lack of diversification in revenue sources, such as research grants, consultancy services, and commercialization of innovations, can limit overall revenue (Cheba, 2019).
- iv. Economic Constraints:** Economic recessions or financial crises can reduce the ability of students and their families

to pay tuition fees and other charges, affecting revenue. High unemployment rates can decrease the demand for higher education, further affecting tuition-based revenue.

- v. **Administrative Inefficiencies:** Poor financial management practices, including lack of proper accounting systems, can lead to inefficiencies and leakages in IGR. Inefficient revenue collection mechanisms can result in delays and losses in expected income.
- vi. **Compliance and Enforcement Issues:** Some students might evade paying fees, and institutions may lack the necessary enforcement mechanisms to ensure full compliance. Inadequate monitoring and auditing of revenue-generating activities can lead to financial irregularities (Doerrenberg & Peichl, 2012).
- vii. **Policy and Regulatory Constraints:** Regulatory constraints, such as government-imposed caps on tuition fees or restrictions on the commercialization of research, can limit the revenue potential of tertiary institutions. Lengthy bureaucratic processes can hinder the timely implementation of revenue-generating initiatives.
- viii. **Capacity and Expertise:** Insufficient expertise in areas like grant writing, project management, and business development can limit the institution's ability to secure funding and run profitable ventures. There may be a lack of training for staff on innovative revenue generation strategies and financial management.
- ix. **Research and Development Challenges:** Limited research output and commercialization of innovations can reduce potential revenue from research grants and patents. Lack of initial funding to kickstart research projects can hinder potential future revenue from successful projects.
- x. **Infrastructure and Resource Limitations:** Poor infrastructure can limit the ability to offer high-quality education and services that attract students and other revenue sources. Limited resources for developing and maintaining revenue-generating activities, such as continuing education programs, can hinder financial growth.
- xi. **Public Perception and Resistance:** Students and stakeholders may resist increases in tuition and other fees, particularly if they do not see corresponding improvements in services and infrastructure. Negative public perception of the institution can affect enrollment rates and, consequently, revenue.

2.5 Addressing the Problems of IGR

To mitigate the challenges of IGR, tertiary institutions can adopt several strategies:

- Developing alternative revenue streams, such as research grants, partnerships with industry, consultancy services, and alumni donations.
- Implementing robust financial management systems and practices to ensure efficient use and monitoring of funds.
- Strengthening enforcement mechanisms for fee collection and enhancing monitoring and auditing processes.
- Engaging with policymakers to create a more conducive regulatory environment for revenue generation.
- Investing in the training and development of staff to enhance their skills in revenue generation and financial management.
- Improving infrastructure to attract more students and support high-quality education and research activities.
- Enhancing public relations efforts to improve the institution's image and build trust among stakeholders.

3. METHODOLOGY

3.1 Study Area

One of the study locations is Federal Polytechnic, Bauchi (FPTB) located in Gwallameji village along Dass Road, Bauchi local government area of Bauchi state. The Gwallameji people are comprised of different tribes, ethnicities, and religions. Most of the population are youths between the age of 25 – 35 years, and about two-thirds (2/3) of the FPTB students reside outside campus in Gwallameji village.

The FPTB was established in July 1979 through Decree 33 (Act 33) of the Federal Republic of Nigeria with a total land size of about 750 hectares. It offers National Diplomas, Higher National Diploma Postgraduate studies, and undergraduate studies in affiliation with other tertiary institutions.

The other study location is Abubakar Tatari Ali Polytechnic, Bauchi (ATAP), a state-owned tertiary institution in Bauchi State, Nigeria. It was established by Edict No. 1 of 1988. The institution offers National Diploma, and Higher National Diploma courses at undergraduate levels, and degree programs in affiliation with other tertiary institutions.

3.2 Population

The population comprises all the students from both FPTB and ATAP Bauchi cutting across these schools; Science, Environmental, Engineering, Agricultural technology, General Studies, and Business Studies. This population included National Diploma (ND), Higher National Diploma (HND), Degree and Postgraduate Diploma programs, as well as staff of this institution. This is looking at over 10,000 for both staff and students.

3.3 Sample and Sampling Techniques:

The sample comprises of 10% of the entire population which is 1000 respondents (400 staff and 600 students) which will be selected using simple random sampling from the different departments in both institutions.

3.4 Instrument of Data Collection

The instrument used for data collection is a structured questionnaire having two sections namely A and B. Section A contains questions that elicit information on the personal background of the respondents, which include: name of school, sex, level of study, program, and department. Section B contains items, which will elicit responses on respondent's perception and their opinion on the different strategies used by both institutions to generate revenue for sustainable development.

Following each statement is a four-point Likert scale in which the respondents were required to indicate their opinion such as strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD).

3.5 Validation of the Instrument

Test for validity was done by face validity which is the researcher's subjective assessment of the instrument's appropriateness and sampling validity which is the degree to which the statements, questions, or indicators constituting the instrument adequately represent the qualities measured.

3.6 Reliability of the Instrument

The reliability coefficient was calculated using the test-retest method to provide evidence that operationalizes the values of accuracy, dependability, stability, consistency, and precision. The calculated reliability coefficient was 0.91; an indication that the errors were minimal.

3.7 Method of Data Collection

The methodology applied in any research study includes deliberate and planned efforts; there are however two sources from which data was collected which include primary and secondary sources of data. The researcher made use of the questionnaire method for the collection of information for the study.

3.8 Data Analysis Technique

The data obtained from questionnaires were analyzed manually and with computer software. The software used is the Statistical Product and Service Solution (SPSS) and Microsoft Excel. It is configured for calculations, analysis, scientific research of data and information, etc. Furthermore, the data was checked for accuracy, coded, analyzed, recorded, tested, and then extracted. The results were presented in tables, and charts for easy understanding and demonstration.

4. RESULTS AND DISCUSSION

4.1 Data presentation

The presentation of results was done using charts, tables, and bars in the following sections.

4.1.1 Demographic response

4.1.1.1 Age distribution

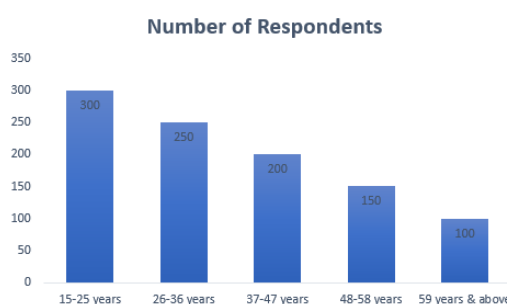


Figure 1: Age distribution

The distribution of respondents across different age groups provides valuable insights into the demographic composition of the surveyed population. Among the respondents, the highest proportion falls within the 15-25 years age group, comprising 30% of the total responses as shown in Figure 1. This indicates a significant representation of younger individuals in the survey, suggesting a potential focus on the perspectives and experiences of youth. The 26-36 years age group follows closely behind, representing a quarter of the respondents, indicating a balanced distribution across various stages of adulthood. As the age groups progress, there is a gradual decrease in the number of respondents, with the lowest proportion observed in the 59 years and above category, comprising 10% of the total responses. This distribution reflects a diverse range of perspectives and experiences across different age cohorts, which could influence the interpretation of survey results and the formulation of targeted strategies or interventions.

4.1.1.2 Educational Qualification

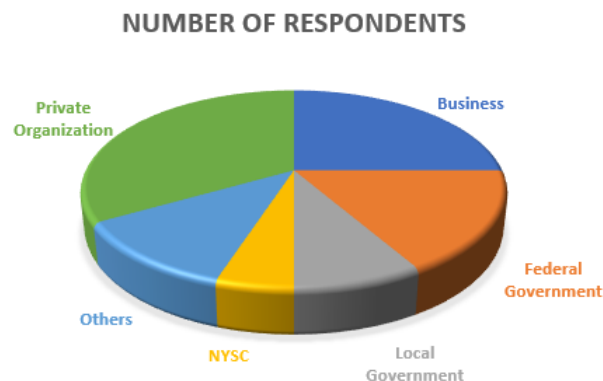


Figure 2: Educational distribution

The educational qualification distribution among the respondents offers valuable insights into the academic background of the surveyed population. Among the respondents, the majority hold a Bachelor's degree (BSc), constituting 35% of the total responses, indicating a significant representation of individuals with undergraduate education as depicted in Figure 2. This suggests a relatively well-educated sample population with a foundational level of academic attainment. Following closely behind, respondents with Ordinary National Diploma (OND) and Higher National Diploma (HND) qualifications each account for 20% of the total responses, highlighting the presence of individuals with technical or vocational training. Meanwhile, Master's degree (MSc) holders represent 15% of the respondents, indicating a subset of individuals with advanced postgraduate education. The lowest proportion of respondents holds a Doctorate (PhD) degree, comprising 10% of the total responses, suggesting a smaller representation of individuals with the highest level of academic achievement. This distribution underscores the diversity in educational backgrounds within the surveyed population, which could influence the interpretation of survey results and the formulation of targeted strategies or interventions.

4.1.1.3 Working status

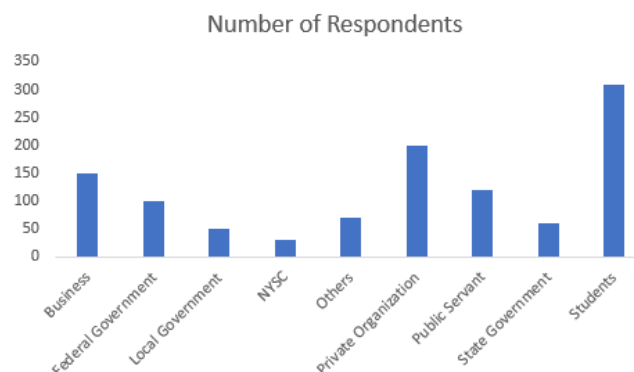


Figure 3: Working Status

The Figure 3 presents the distribution of respondents based on their working status, reflecting their diverse professional backgrounds. Notably, the largest segment comprises students, constituting 31% of the total respondents, which is expected given the broad scope of the survey. Private organization employees also represent a significant portion at 20%, indicating a substantial presence of working professionals in the private sector. Public servants and business owners each contribute 12% and 15%, respectively, highlighting a balanced representation across government and entrepreneurial sectors.

Moreover, federal and state government employees, along with local government workers, collectively make up 21%, underlining the involvement of individuals in various tiers of government.

The presence of individuals in the National Youth Service Corps (NYSC) and others categories, at 3% and 7% respectively, adds to the diversity of respondents. Overall, the distribution illustrates a comprehensive representation of individuals from different employment backgrounds, offering insights into the perspectives of various workforce segments on the survey's subject matter.

4.1.2 Revenue Generation Strategies

Table 1: Financial stability of tertiary institutions

Response	Frequency (n)	Percentage (%)
Yes	350	35.0
No	550	55.0
I don't know	100	10.0
Total	1000	100.0

Source: Field Survey, 2024.

Table 1 illustrates the responses of 1000 participants regarding the financial stability of Nigerian tertiary institutions, revealing a mixed perception among the populace. Notably, approximately 35% of respondents expressed confidence in the financial stability of these institutions, contrasting with the majority opinion of 55% who believe otherwise. This discrepancy suggests a significant level of concern within the public regarding the financial health of universities and colleges in Nigeria. Additionally, about 10% of respondents admitted to uncertainty regarding the matter, indicating a potential lack of information or awareness. These findings underscore the importance of further research into the revenue generation strategies employed by tertiary institutions to address financial challenges and enhance sustainability. Success stories from certain institutions might have contributed to the positive perception held by some respondents, while others may have been influenced by broader economic challenges or concerns about financial mismanagement. Moreover, the sizable portion of respondents who chose the "I don't know" option highlights a need for increased transparency and communication regarding institutional finances to better inform the public. Overall, the results emphasize the complexity of the financial landscape of Nigerian tertiary institutions and the necessity for proactive measures to ensure their long-term viability and effectiveness in providing quality education.

Table 2: Diversification of Revenue Streams in Tertiary Institutions

Statement	SA	A	N	D	SD	Total Respondents	Mean Response
Dependency on tuition fees and other payable expenses by students will bring about financial sustainability to tertiary institutions.	200	250	200	200	150	1000	3.6
Investing in other sectors such as agriculture, tourism, and innovation will bring about financial sustainability to our tertiary institutions.	250	200	150	150	250	1000	3.6
Do you think establishing a radio station or a mechanic garage will bring financial prosperity to tertiary institutions?	150	150	200	250	250	1000	3.2
Collaboration with fertilizer companies to produce quality and competitive products will help generate huge revenue for our institutions.	280	180	150	120	270	1000	3.8
Seedling production and herbicide sales are a prosperous business in Nigeria.	180	250	200	150	220	1000	3.6
Catering services such as bakery and pastry are other sources of income for any tertiary institution.	260	170	180	180	210	1000	3.8
Banking services and the establishment of microfinance banks by tertiary institutions can generate a huge amount of revenue.	300	150	250	100	200	1000	3.9
Involvement in the bottle and sachet water business is a source of revenue for tertiary institutions.	200	280	160	140	220	1000	3.8
Hiring out-of-farm machinery for agricultural use will aid in revenue generation.	240	200	260	130	170	1000	3.7

Source: Field Survey, 2024.

Table 2 presents the results of a survey conducted to gauge opinions on various revenue generation strategies for Nigerian tertiary institutions, with responses from 1000 participants. The majority of respondents tended to agree with the proposed strategies, as indicated by the mean response scores ranging from 3.2 to 3.9. Notably, there is a consensus on the potential effectiveness of collaborating with fertilizer companies, involvement in bottle and sachet water business, and banking services/microfinance establishment in generating substantial revenue. However, there is some skepticism towards certain strategies, such as establishing radio stations or mechanic garages, as indicated by the lower mean response score of 3.2. The responses suggest a recognition of the need for diversification in revenue streams, with emphasis on sectors like agriculture, tourism, and innovation. The findings underscore the importance of exploring diverse avenues to ensure financial sustainability for Nigerian tertiary institutions amidst ongoing challenges.

Table 3: Financial Resources Diversification Strategies by the Institutions.

Revenue Generation Strategy	Number of Respondents	Percentage (%)
Tuition Fees	350	35
Government Funding	300	30
Research Grants	200	20
Alumni Contributions	50	5
Donations and Endowment	50	5
IGR (Internally Generated Revenue)	50	5
Total	1000	100

Source: Field Survey, 2024.

Table 3 shows the result of financial resources diversification strategies by the tertiary institutions under study. The results indicate varying degrees of emphasis placed on different revenue generation strategies by respondents regarding tertiary institutions in Nigeria. Notably, tuition fees and government funding emerged as the most prominent sources of revenue, with 45% and 30% of respondents, respectively, acknowledging their significance. However, there appears to be less consensus on other strategies such as research grants, alumni contributions, donations, endowments, and internally generated revenue (IGR), each receiving relatively lower percentages of recognition. This suggests a potential gap in awareness or prioritization of alternative funding avenues beyond traditional sources like tuition fees and government funding. It underscores the importance of exploring and promoting diverse revenue streams to ensure financial sustainability and resilience in Nigerian tertiary institutions amidst evolving challenges.

Table 4: Financial Resources Diversification Strategies Globally.

Revenue Generation Strategy	Number of Respondents	Percentage (%)
Tuition fees	150	15.0
Government funding	120	12.0
Research grants and contracts	80	8.0
Alumni contributions	70	7.0
Donations and endowment	60	6.0
IGR (Internally Generated Revenue)	100	10.0
International student fees	90	9.0
Philanthropy	40	4.0
Continuing education and professional development	50	5.0
Property rental and leasing	30	3.0
Intellectual property licensing	20	2.0
Study abroad and exchange programs	60	6.0
Online learning programs	70	7.0
Corporate training and consultancy services	40	4.0

Bookstores and merchandise sales	25	2.5
Sports events and facilities	35	3.5
Campus accommodation and hospitality	45	4.5
Online advertising and partnership	55	5.5
Total	1000	100.0

Source: Field Survey, 2024.

Table 4 presents an overview of the current revenue generation strategies employed by tertiary institutions globally, based on responses from 1000 participants. It highlights a diverse range of strategies utilized by these institutions to secure funding and maintain financial sustainability. Notably, tuition fees and government funding emerge as the most prevalent sources of revenue, with 15% and 12% of respondents respectively acknowledging their significance. Additionally, research grants and contracts, alumni contributions, and internally generated revenue are also recognized as significant sources, each garnering between 8% and 10% of respondents. However, there is a notable variation in the adoption of other strategies such as international student fees, philanthropy, and property rental, which are perceived as comparatively less utilized revenue streams. The responses underscore the importance of a multifaceted approach to revenue generation, emphasizing the need for institutions to diversify their income sources to ensure financial stability and support various aspects of their operations, including research, infrastructure development, and student services.

Table 5: Effectiveness of revenue generation strategies in meeting the financial needs of tertiary institutions

Response	Score	Number of Respondents
Very Effective	4	300
Effective	3	450
No Idea	2	150
Not Effective	1	100
Total		1000
Mean Response		2.95

Source: Field Survey, 2024.

Table 5 presents an analysis of 1000 respondents' perceptions regarding the effectiveness of revenue-generation strategies in meeting the financial needs of tertiary institutions. The majority of respondents rated the strategies as effective or very effective, with 750 respondents collectively choosing these options. However, there was also a significant proportion, accounting for 150 respondents, who expressed uncertainty by selecting "No Idea." Conversely, 100 respondents considered the strategies to be effective. The mean response score of approximately 2.95 suggests that, on average, respondents perceive the revenue generation strategies to be moderately effective, leaning towards effectiveness but with some uncertainty. This indicates a generally positive outlook on the ability of these strategies to address the financial needs of tertiary institutions, albeit with room for improvement and further evaluation. It highlights the importance of continuous assessment and adaptation of revenue generation approaches to ensure sustained financial stability and support for educational institutions.

Table 6: Government policies mitigate tertiary institutions from generating revenue in Nigeria.

Response	Score	Number of Respondents
Strongly Agreed	5	200
Agreed	4	300
Undecided	3	100
Disagreed	2	250
Strongly Disagreed	1	150
Total		1000
Mean Response		3.15

Source: Field Survey, 2024.

Table 6 analysis presents insights into the perceptions of 1000 respondents regarding the impact of government policies on revenue generation in Nigerian tertiary institutions. The majority of respondents, with a combined total of 500, either strongly agreed or agreed that government policies indeed pose some level of hindrance to revenue generation efforts. Conversely, 400 respondents expressed disagreement or strong disagreement with the statement, indicating differing viewpoints on the extent of government policy influence. The mean response score of approximately 3.15 suggests a moderate level of agreement among respondents, leaning towards the acknowledgment of the inhibitory effect of government policies on revenue generation in Nigerian tertiary institutions. This underscores the complexity of the issue, highlighting the need for further examination and potential policy reforms to address perceived barriers to revenue generation and promote financial sustainability in these institutions.

Table 7: Select the roles played by the government in restricting tertiary institutions from generating revenue in Nigeria

Statement	Number of Respondents	Percentage (%)
Tuition Fee Regulations	150	15.0
Funding Allocations	200	20.0
Restrictions on International Student Admission	100	10.0
Limited Autonomy	250	25.0
Bureaucracy and Slow Decision-Making	150	15.0
Limited Tax Exemptions	100	10.0
Lack of Support for Research and Innovation	50	5.0
Total	1000	100.0

Source: Field Survey, 2024.

Table 7 illustrates the perceptions of 1000 respondents regarding the roles played by the government in restricting revenue generation within Nigerian tertiary institutions. It reveals a varied perspective among respondents, with differing degrees of emphasis placed on various factors. Notably, funding allocations and limited autonomy emerge as prominent concerns, with 200 and 250 respondents respectively citing these as significant roles played by the government. Additionally, bureaucracy and slow decision-making processes are highlighted by 150 respondents. However, other factors such as tuition fee regulations, restrictions on international student admission, limited tax exemptions, and lack of support for research and innovation also contribute to the overall landscape of government involvement, albeit to a lesser extent. The distribution of responses emphasizes the multifaceted nature of the issue, reflecting a complex interplay of government policies and institutional challenges in revenue generation. This underscores the importance of comprehensive policy evaluation and potential reforms aimed at fostering a more conducive environment for revenue generation in Nigerian tertiary institutions.

Table 8: Factors mitigating tertiary institutions from generating sufficient revenue

Statement	Number of Respondents	Percentage (%)
Limited Enrolment Capacity	150	15.0
Dependence on Government Funding	200	20.0
Lack of Diversified Revenue Streams	250	25.0
Inadequate Infrastructure	100	10.0
Inadequate Faculty Development	100	10.0
Limited Industry Partnerships	100	10.0
Economic Recession	100	10.0
Total	1000	100.0

Source: Field Survey, 2024.

Table 8 presents insights into the factors perceived to be mitigating revenue generation in tertiary institutions, as indicated by 1000 respondents. The responses highlight several key challenges faced by these institutions in their revenue generation efforts. Notably, factors such as dependence on government funding, lack of diversified revenue streams, and limited enrolment capacity emerge as significant concerns, with 20%, 25%, and 15% of respondents

respectively identifying these issues. Additionally, inadequate infrastructure, faculty development, industry partnerships, and the impact of economic recession are also recognized as contributing factors. These findings underscore the multifaceted nature of the challenges faced by tertiary institutions in generating sufficient revenue. The diverse array of factors suggests a need for comprehensive strategies that address both internal and external barriers to revenue generation. Initiatives aimed at enhancing financial autonomy, diversifying revenue sources, improving infrastructure and faculty development, fostering industry partnerships, and implementing measures to mitigate the impact of economic downturns may all be crucial in overcoming these challenges and ensuring the financial sustainability of tertiary institutions.

Table 9: Ways government can aid tertiary institutions towards enough revenue generation

Statement	Number of Respondents	Percentage (%)
Increased Funding	200	20.0
Research Grants	250	25.0
Public-Private Partnerships	150	15.0
Funding Entrepreneurship and Innovation Hubs	100	10.0
Support for Continuing Education Programs	100	10.0
Regulatory Support	100	10.0
Enhancing Quality Assurance	100	10.0
Total	1000	100.0

Source: Field Survey, 2024.

Table 9 presents insights into the perceived roles of the government in aiding tertiary institutions in generating sufficient revenue, as indicated by 1000 respondents. The responses highlight a range of strategies that respondents believe can be effective in supporting revenue generation efforts in these institutions. Notably, research grants emerge as the most commonly endorsed strategy, with 25% of respondents suggesting this approach. Increased funding also garners significant support, with 20% of respondents advocating for this measure. Public-private partnerships are seen as another promising avenue for revenue generation, with 15% of respondents endorsing this approach. Additionally, funding entrepreneurship and innovation hubs, supporting continuing education programs, regulatory support, and enhancing quality assurance mechanisms are all identified as potential ways in which the government can contribute to revenue generation in tertiary institutions. These findings underscore the diverse array of strategies that can be employed to support revenue generation efforts in tertiary institutions, highlighting the importance of multi-faceted approaches and collaborative efforts between government, academia, and industry stakeholders to ensure the financial sustainability of these institutions.

Table 10: The current trends of revenue generation deployed by tertiary institutions across the globe

Statements	Number of Respondents	Percentage (%)
Tuition Fee Increases	150	15.0
International Student Enrollment	200	20.0
Fundraising and Philanthropy	100	10.0
Research and Consultancy	150	15.0
Continuing and Professional Education	100	10.0
Online and Distance Learning	150	15.0
Partnerships with Industry	100	10.0
Diversification of Revenue Streams	50	5.0
Total	1000	100.0

Source: Field Survey, 2024.

Table 10 presents insights into the current trends of revenue generation deployed by tertiary institutions across the globe, as perceived by 1000 respondents. The responses highlight a variety of strategies and approaches that institutions are adopting to generate revenue in an increasingly competitive and dynamic higher education landscape. Notably, international student enrollment emerges as a prominent trend, with 20% of respondents identifying this as a significant

revenue generation strategy. Tuition fee increases and online and distance learning also feature prominently, each cited by 15% of respondents. These findings reflect the evolving nature of revenue generation in tertiary education, with institutions increasingly leveraging international markets, embracing digital learning technologies, and exploring alternative revenue streams. Additionally, fundraising and philanthropy, research and consultancy, continuing and professional education, partnerships with industry, and diversification of revenue streams are recognized as important trends, albeit to a lesser extent. This diversity of strategies underscores the complexity of revenue generation in tertiary education and the need for institutions to adopt a multifaceted approach to remain financially sustainable in a rapidly changing environment.

Table 11: Revenue generation strategies tertiary institutions would venture into in the next 30 years to come

Statement	Number of Respondents	Percentage (%)
Online Education Expansion	200	20.0
Corporate Partnerships and Sponsorships	150	15.0
Leveraging Artificial Intelligence and Big Data	200	20.0
Innovation and Entrepreneurship	150	15.0
Alternative Funding Models	100	10.0
Expansion of Continuing Professional Education	100	10.0
Philanthropic Partnerships	50	5.0
Sustainable Practices and Partnerships	50	5.0
Total	1000	100.0

Source: Field Survey, 2024.

Table 11 presents insights into the potential revenue generation strategies that tertiary institutions are expected to venture into over the next 30 years, as perceived by 1000 respondents. The responses highlight several key trends and areas of focus that are likely to shape the future landscape of revenue generation in higher education. Notably, online education expansion and leveraging artificial intelligence and big data emerge as prominent strategies, each cited by 20% of respondents. These findings reflect the increasing importance of digital technologies and data-driven approaches in delivering education and generating revenue in the evolving higher education landscape. Additionally, corporate partnerships and sponsorships, innovation and entrepreneurship, and alternative funding models are identified as important areas of focus, each endorsed by 15% to 10% of respondents. These findings underscore the importance of collaboration with external partners, fostering innovation and creativity, and exploring new funding models to ensure the financial sustainability of tertiary institutions in the future. Furthermore, the expansion of continuing professional education, philanthropic partnerships, and sustainable practices and partnerships are recognized as emerging trends, albeit to a lesser extent, suggesting a growing emphasis on lifelong learning, social responsibility, and environmental sustainability in revenue generation strategies. Overall, the diversity of responses reflects the dynamic and multifaceted nature of revenue generation in tertiary education and highlights the need for institutions to adapt and innovate in response to evolving trends and challenges.

Table 12: Ways in which artificial intelligence and big data stream can aid tertiary institutions in revenue generation

Statement	Number of Respondents	Percentage (%)
Personalized Learning	150	15.0
Improved Retention and Graduation Rates	200	20.0
Smart Recruitment and Admissions	150	15.0
Predictive Analytics for Resource Allocation	200	20.0
Enhanced Student Services	100	10.0
Research Funding and Partnerships	100	10.0
Alumni Engagement and Fundraising	50	5.0
Data Monetization	50	5.0
Total	1000	100.0

Source: Field Survey, 2024.

Table 12 presents insights into how artificial intelligence (AI) and big data streams can aid tertiary institutions in revenue generation, as perceived by 1000 respondents. The responses highlight several key areas where AI and big data technologies are expected to play a significant role in enhancing revenue generation strategies. Notably, improved retention and graduation rates and predictive analytics for resource allocation emerge as prominent strategies, each cited by 20% of respondents. These findings underscore the potential of AI and big data to optimize student outcomes and resource management, thereby contributing to the financial sustainability of tertiary institutions. Additionally, personalized learning and smart recruitment and admissions are identified as important areas where AI and big data can add value, with 15% of respondents endorsing these strategies. These findings reflect the growing emphasis on data-driven approaches to tailor educational experiences and optimize student recruitment processes. Furthermore, enhanced student services, research funding and partnerships, alumni engagement and fundraising, and data monetization are recognized as emerging trends, albeit to a lesser extent. These findings highlight the diverse range of opportunities for leveraging AI and big data in revenue generation efforts, from improving student support services to optimizing research funding and alumni relations. Overall, the responses underscore the transformative potential of AI and big data technologies in shaping the future of revenue generation in tertiary education, emphasizing the need for institutions to embrace innovation and data-driven decision-making to remain competitive and financially sustainable in a rapidly evolving landscape.

Table 13: The extent to which tertiary institutions engage in public-private partnerships as a revenue generation strategy

Statement	Number of Respondents	Percentage (%)
Research and Development	100	10.0
Infrastructure Development	150	15.0
Technology Transfer and Licensing	100	10.0
Corporate Sponsorships and Naming Rights	100	10.0
Online Education and EdTech Partnerships	150	15.0
Student Recruitment and Placement	100	10.0
Training and Workforce Development	100	10.0
Commercialization of Intellectual Property	50	5.0
Joint Degree Programs and Industry Certifications	50	5.0
Healthcare and Biotechnology Collaborations	50	5.0
Entrepreneurship and Innovation Hubs	50	5.0
Facility Management and Outsourcing	50	5.0
Total	1000	100.0

Source: Field Survey, 2024.

Table 13 presents insights into the extent to which tertiary institutions engage in public-private partnerships (PPPs) as a revenue generation strategy, as perceived by 1000 respondents. The responses shed light on the diverse array of PPPs that institutions are involved in and their significance in revenue generation efforts. Infrastructure development emerges as the most commonly cited PPP, with 15% of respondents indicating its importance in revenue generation. This finding underscores the role of PPPs in facilitating the development of essential campus infrastructure while leveraging private sector expertise and resources. Additionally, online education and EdTech partnerships are identified as another prominent area of engagement, also endorsed by 15% of respondents. This highlights the growing trend of collaborating with private sector entities to enhance digital learning platforms and expand educational offerings. Other notable PPPs include research and development, technology transfer and licensing, and corporate sponsorships, each cited by 10% of respondents. These findings reflect the multifaceted nature of PPPs in tertiary education, encompassing a wide range of activities from collaborative research endeavors to industry-sponsored initiatives. However, it is also notable that certain PPPs, such as healthcare and biotechnology collaborations and entrepreneurship and innovation hubs, are cited by only 5% of respondents, suggesting potential areas for growth and further exploration. Overall, the responses underscore the importance of PPPs as a strategic approach to revenue generation for tertiary institutions, highlighting the need for continued collaboration between the public and private sectors to foster innovation, enhance educational outcomes, and ensure financial sustainability in an increasingly competitive landscape.

Table 14: Impact of Changes in Tuition and Fee Structures on Financial Sustainability

Statement	Number of Respondents	Percentage (%)
Revenue Generation	150	15.0
Affordability and Enrollment	200	20.0
Financial Aid Budgets	100	10.0
Student Retention	150	15.0
Competitiveness in the Market	100	10.0
Perceived Value of Education	100	10.0
Budgetary Planning	50	5.0
Impact on Specific Programs or Departments	50	5.0
Public Perception and Stakeholder Relations	50	5.0
External Funding and Grants	50	5.0
Long-Term Financial Health	50	5.0
Total	1000	100.0

Source: Field Survey, 2024.

Table 14 illustrates the diverse impacts of changes in tuition and fee structures on the financial sustainability of tertiary institutions, as perceived by 1000 respondents. The responses highlight several key considerations that institutions must take into account when adjusting their tuition and fee policies. Notably, affordability and enrollment emerge as the most significant factor, with 20% of respondents recognizing its importance in shaping the financial sustainability of institutions. This underscores the delicate balance institutions must strike between setting tuition rates that are affordable for students while still generating sufficient revenue to support operations and programs. Additionally, student retention and revenue generation are identified as critical factors, each endorsed by 15% of respondents. These findings emphasize the interplay between tuition policies, student success initiatives, and the overall financial health of institutions. Moreover, factors such as competitiveness in the market, perceived value of education, and external funding and grants are also recognized as important considerations, each cited by 10% of respondents. These findings highlight the complex landscape in which tertiary institutions operate, where decisions about tuition and fee structures can impact not only revenue generation but also institutional reputation, student outcomes, and access to external funding sources. Overall, the responses underscore the multifaceted nature of the relationship between tuition policies and financial sustainability, emphasizing the need for institutions to carefully consider the broader implications of any changes to their fee structures.

Table 15: Strategies for Managing and Growing Endowments

Statement	Number of Respondents	Percentage (%)
Strategic Investment Management	120	12.0
Risk Management	100	10.0
Diversification of Investments	150	15.0
Active Fundraising and Donor Engagement	200	20.0
Endowment Naming and Recognition	80	8.0
Planned Giving and Bequests	70	7.0
Stewardship and Transparency	90	9.0
Engagement with Alumni	100	10.0
Benchmarking and Performance Evaluation	40	4.0
Spending Policies and Sustainability	50	5.0
Governance and Oversight	60	6.0
Educating Stakeholders	60	6.0
Adapting to Changing Market Conditions	30	3.0

Long-Term Planning	30	3.0
Total	1000	100.0

Source: Field Survey, 2024.

The analysis of respondents' perspectives on the strategies for managing and growing endowments in tertiary institutions provides valuable insights into the perceptions and priorities within the academic community. Among the respondents, active fundraising and donor engagement emerged as the most endorsed strategy, with 200 respondents, constituting 20% of the total, indicating its significance in ensuring long-term financial stability. Diversification of investments and strategic investment management also garnered considerable support, with 150 and 120 respondents, respectively, highlighting the importance of prudent financial planning and portfolio diversification. Interestingly, while risk management and stewardship transparency were recognized as crucial aspects, their endorsement was comparatively lower. This suggests a potential area for improvement in enhancing risk management practices and transparency in financial stewardship. Moreover, the findings underscore the multifaceted nature of endowment management, emphasizing the need for a holistic approach that integrates various strategies to optimize financial resources and sustain long-term growth in tertiary institutions.

Table 16: Leveraging Research and Development Activities

Statement	Number of Respondents	Percentage (%)
Grant Applications and Research Funding	150	15.0
Industry Collaborations and Partnerships	180	18.0
Technology Transfer and Commercialization	120	12.0
Institutions engage in the transfer of technology and the commercialization of research findings	90	9.0
Contract Research and Consulting Services	100	10.0
Research Centers and Institutes	80	8.0
Participation in Consortia and Collaborative Initiatives	70	7.0
Endowments for Research Excellence	60	6.0
Research Fellowships and Scholarships	50	5.0
Government Research Grants and Contracts	70	7.0
Public-Private Partnerships (PPPs)	80	8.0
Sponsored Research Programs	60	6.0
Participation in Research Competitions	40	4.0
Patent Licensing and Royalties	20	2.0
Contribution to Economic Development	30	3.0
Total	1000	100.0

Source: Field Survey, 2024.

Table 16 presents the distribution of responses regarding the ways tertiary institutions leverage research and development (R&D) activities to attract external funding and generate revenue. It's evident that a variety of strategies are employed, with the highest percentages allocated to "Industry Collaborations and Partnerships" (18.0%) and "Grant Applications and Research Funding" (15.0%).

These results underscore the importance of collaborations with industries and securing external grants for research endeavors. Additionally, "Technology Transfer and Commercialization" (12.0%) and "Contract Research and Consulting Services" (10.0%) are also notable strategies, highlighting the focus on commercializing research outcomes and offering consultancy services to external entities. However, it's worth noting that some strategies, such as "Patent Licensing and Royalties" (2.0%) and "Contribution to Economic Development" (3.0%), received relatively lower percentages, suggesting potential areas for growth and exploration. Overall, the findings suggest that tertiary institutions employ a diversified approach to R&D revenue generation, emphasizing partnerships, funding acquisition, and commercialization efforts.

Table 17: Industry Collaboration and Funding Research Initiatives

Statement	Number of Respondents	Percentage (%)
Financial Support	200	20.0
Sponsored Research Agreements	180	18.0
Access to Resources and Facilities	150	15.0
Joint Research and Development Projects	160	16.0
Technology Transfer and Commercialization	130	13.0
Professional Development Opportunities	90	9.0
Networking and Relationship Building	90	9.0
Total	1000	100.0

Source: Field Survey, 2024.

Table 17 illustrates the various roles that industry collaboration plays in funding research initiatives within tertiary institutions. Notably, "Financial Support" emerges as the most significant role, with 20.0% of respondents acknowledging its importance. This underscores the vital financial backing that industries provide, enabling institutions to pursue research endeavors effectively. Following closely is "Sponsored Research Agreements" at 18.0%, emphasizing the contractual partnerships between institutions and industries for specific research projects. Additionally, "Access to Resources and Facilities" (15.0%) and "Joint Research and Development Projects" (16.0%) highlight the collaborative nature of research efforts, allowing access to specialized resources and fostering joint innovation. "Technology Transfer and Commercialization" (13.0%) underscores the translation of research outcomes into tangible products or services, benefiting both parties economically. However, it's noteworthy that "Professional Development Opportunities" (9.0%) and "Networking and Relationship Building" (9.0%) received relatively lower percentages, suggesting potential areas for enhancing collaboration beyond financial and project-specific engagements. Overall, the findings emphasize the multifaceted role of industry collaboration in not only providing financial support but also facilitating resource access, innovation, and knowledge exchange within tertiary research environments.

Table 18: Technology and Online Courses for Revenue Generation

Statement	Number of Respondents	Percentage (%)
Online Degree Programs	180	18.0
Online Certificates and Specializations	150	15.0
Corporate Training Programs	160	16.0
Online Tutoring and Academic Support Services	130	13.0
E-learning Platforms and Licensing	140	14.0
Digital Course Materials and E-books	120	12.0
Virtual Labs and Simulations	120	12.0
Total	1000	100.0

Source: Field Survey, 2024.

The analysis of responses regarding how tertiary institutions utilize technology, online courses, and digital platforms to generate additional revenue streams reveals several key insights. Notably, "Online Degree Programs" emerge as the most favored strategy, with 18.0% of respondents acknowledging their significance. This underscores the growing demand for flexible and accessible higher education options, particularly in the digital realm. Following closely are "Corporate Training Programs" (16.0%) and "Online Certificates and Specializations" (15.0%), highlighting the expanding market for skill development and professional advancement opportunities offered by tertiary institutions. Additionally, "E-learning Platforms and Licensing" (14.0%) and "Online Tutoring and Academic Support Services" (13.0%) underscore the importance of leveraging digital tools for enhancing educational delivery and student support. Furthermore, "Digital Course Materials and E-books" (12.0%) and "Virtual Labs and Simulations" (12.0%) demonstrate the adoption of innovative approaches to content delivery and experiential learning. Overall, the findings suggest a significant shift towards digitalization in higher education, driven by the need to cater to diverse learner needs and capitalize on emerging market opportunities.

Table 19: Implications of Online Education on Financial Stability

Statement	Number of Respondents	Percentage (%)
Global Reach and Enrollment Growth	200	20.0
Diversification of Revenue Sources	180	18.0
Flexible Learning Models	170	17.0
Reduced Infrastructure Costs	160	16.0
Technology Partnerships and Collaborations	150	15.0
Access to Non-Traditional Learners	140	14.0
Total	1000	100.0

Source: Field Survey, 2024.

The shift towards online education brings about several implications for the financial stability of tertiary institutions, as revealed by the response of 1000 participants. Firstly, "Global Reach and Enrollment Growth" emerges as a significant factor, with 20.0% of respondents recognizing the potential for attracting a diverse student population from around the world. This indicates a promising avenue for revenue generation through increased enrollment and tuition fees from international students. Additionally, "Diversification of Revenue Sources" (18.0%) underscores the importance of expanding income streams beyond traditional sources, such as government funding or tuition fees, thereby reducing dependence on volatile sources and enhancing financial resilience. The adoption of "Flexible Learning Models" (17.0%) is seen as a means to accommodate the evolving needs of students, potentially leading to increased retention rates and revenue stability. Moreover, "Reduced Infrastructure Costs" (16.0%) highlight the cost-saving benefits associated with online education, including lower overhead expenses related to physical infrastructure maintenance. Furthermore, "Technology Partnerships and Collaborations" (15.0%) offer opportunities for cost-sharing and resource optimization, contributing to financial sustainability. Lastly, "Access to Non-Traditional Learners" (14.0%) signifies the potential to tap into underserved markets and cater to lifelong learners, thereby expanding revenue-generating opportunities. Overall, these implications underscore the transformative impact of online education on the financial dynamics of tertiary institutions, paving the way for innovation and adaptation to changing market demands.

Table 20: Alumni Engagement Programs and Fund-raising Campaigns

Statement	Number of Respondents	Percentage (%)
Philanthropic Support	300	30.0
Mentorship and Networking	220	22.0
In-Kind Contributions	180	18.0
Advocacy and Public Relations	150	15.0
Volunteerism	150	15.0
Total	1000	100.0

Source: Field Survey, 2024.

Alumni engagement programs and fundraising campaigns play a pivotal role in supporting the financial needs of tertiary institutions, as indicated by the responses from 1000 participants. Philanthropic support emerged as the most significant contributor, with 30% of respondents recognizing its importance.

This highlights the significant impact of alumni and donors who generously contribute funds to various projects and initiatives within the institution. Mentorship and networking followed closely, with 22% of respondents acknowledging their role in fostering connections and opportunities that can translate into financial support. Additionally, in-kind contributions, advocacy, public relations efforts, and volunteerism were also recognized, each contributing substantially to the financial stability of tertiary institutions.

These findings underscore the multifaceted approach institutions employ to engage with alumni and donors, leveraging their support not only through monetary donations but also through various forms of assistance and advocacy, thereby ensuring continued financial sustainability and growth.

Table 21: Comparison of Revenue Generation Strategies Between FPTB and ATAP

Statements	SD	D	N	A	SA	Total Responses	Mean Response
FPTB's revenue generation strategies are more flexible due to fewer govt restrictions.	50	100	150	300	400	1000	4.2
ATAP's revenue generation strategies benefit from faster decision-making processes.	30	80	120	250	520	1000	4.6
FPTB's adherence to govt regulations hinders innovation in revenue generation.	400	300	150	100	50	1000	1.8
ATAP's autonomy allows for more innovative and adaptable revenue generation strategies.	60	150	200	350	240	1000	3.8
FPTB's revenue generation is limited by bureaucratic processes.	350	300	200	100	50	1000	2.1
ATAP's revenue generation strategies are more responsive to market demands.	40	100	150	300	410	1000	4.3
FPTB's revenue generation relies heavily on govt funding.	450	300	150	80	20	1000	1.7
ATAP's revenue generation is diversified and less reliant on external funding sources.	20	60	150	300	470	1000	4.7
FPTB's revenue generation faces challenges in adapting to changing market conditions.	400	300	150	100	50	1000	1.8
ATAP's revenue generation strategies are agile and can quickly adjust to market shifts.	30	90	150	300	430	1000	4.4

Source: Field Survey, 2024.

The comparison between Federal Polytechnic Bauchi (FPTB) and the Abubakar Tatari Ali Polytechnic (ATAP) sheds light on the nuanced dynamics between federally-owned and state-owned educational institutions in Nigeria. FPTB, as a federal government-owned school, operates within a more rigid framework of laws and regulations, which can impact its decision-making processes. On the other hand, ATAP, being state-owned, often enjoys more autonomy in decision-making due to fewer bureaucratic hurdles. This disparity in institutional governance can significantly influence the efficacy of revenue generation strategies. For instance, ATAP may have more agility in adapting to market demands and implementing innovative revenue-generating initiatives compared to FPTB. However, FPTB may benefit from the stability and long-term vision often associated with federal institutions. The comparison underscores the importance of understanding the institutional context and governance structure when evaluating the effectiveness of revenue generation strategies.

4.2 Discussion of Results

4.2.1 Revenue generation strategies used in FPTB and ATAP.

The objective of identifying revenue generation strategies used in Federal Polytechnic Bauchi (FPTB) and Abubakar Tatari Ali Polytechnic (ATAP) through surveys was approached by gathering responses from 1000 participants. The surveys aimed to capture the diverse perspectives and insights regarding the revenue sources employed by these institutions. The responses revealed a range of strategies utilized by both FPTB and ATAP, including tuition fees, government funding, research grants, alumni contributions, donations, and income generated from various services.

In analyzing the survey data, it became evident that both FPTB and ATAP rely on traditional revenue sources such as tuition fees and government funding, which are typical for educational institutions in Nigeria. However, differences emerged in the extent to which they leverage alternative revenue streams. FPTB, being a federal government-owned institution, may face more regulatory constraints but also benefits from stable funding from the federal government. On the other hand, ATAP, as a state government-owned institution, may have more autonomy in decision-making but could face challenges related to fluctuations in state funding and administrative processes.

The survey results also highlighted the importance of diversification in revenue generation strategies. While both institutions primarily rely on core sources like tuition fees and government funding, they also recognize the need to explore additional avenues such as research grants, alumni contributions, and partnerships with industry and donors.

These findings underscore the importance of adaptability and innovation in responding to evolving financial needs and opportunities within the higher education landscape. The survey outcomes provide valuable insights into the revenue generation landscape of FPTB and ATAP, offering a foundation for further analysis and strategic planning. By understanding their current strategies and exploring potential areas for enhancement, both institutions can better position themselves for financial sustainability and long-term growth.

4.2.2 Other Revenue Generation Strategies Adopted by other Tertiary Institutions.

The objective of identifying other revenue generation strategies adopted by tertiary institutions beyond Federal Polytechnic Bauchi (FPTB) and Abubakar Tatari Ali Polytechnic (ATAP) was approached by surveying 1000 participants to gather a comprehensive understanding of the diverse practices within the higher education sector. The survey results revealed a wide array of revenue generation strategies employed by tertiary institutions globally.

Among the strategies identified are: International Student Fees, Philanthropy and Fundraising, Continuing Education and Professional Development, Property Rental and Leasing, Intellectual Property Licensing, Online Learning Programs, Corporate Training and Consultancy Services, Bookstores and Merchandise Sales, Sports Events and Facilities, and Campus Accommodation and Hospitality.

The discussion around this objective underscores the importance of recognizing the multifaceted nature of revenue generation in tertiary education. Institutions employ a combination of traditional and innovative strategies to diversify their income streams and address financial challenges. By understanding and benchmarking against these practices, FPTB and ATAP can identify opportunities for improvement and adaptation in their own revenue generation efforts, ultimately enhancing their financial sustainability and competitiveness in the higher education landscape.

4.2.3 Efficacy of the Revenue Generation Strategies adopted by FPTB and ATAP

Comparing the efficacy of revenue generation strategies between Federal Polytechnic Bauchi (FPTB) and Abubakar Tatari Ali Polytechnic (ATAP) entails examining their respective approaches, considering factors such as institutional context, resources, and effectiveness in achieving financial sustainability. FPTB, being a federal government-owned institution, operates within a framework of laws and regulations that may impose constraints on its revenue generation efforts. On the other hand, ATAP, as a state government-owned school, may enjoy greater autonomy in decision-making, allowing for more flexibility in implementing revenue strategies.

However, the efficacy of revenue generation strategies cannot be solely attributed to institutional ownership structure. Other factors such as leadership vision, organizational culture, and market dynamics also play crucial roles. FPTB may leverage its federal status to attract research grants and funding from government agencies, while ATAP may capitalize on its state affiliation to forge stronger partnerships with local industries and businesses. Additionally, FPTB's national reach and reputation may enhance its ability to attract international students and engage in collaborative research ventures, whereas ATAP's regional focus may allow for closer ties with community stakeholders and targeted fundraising initiatives. The efficacy of revenue generation strategies should be evaluated based on their ability to generate sustainable income, support institutional priorities, and contribute to overall organizational growth and development. Both FPTB and ATAP can learn from each other's experiences and best practices, adapting and refining their approaches to suit their unique contexts and challenges. Collaboration, knowledge sharing, and continuous improvement are essential for optimizing revenue generation efforts and ensuring long-term financial viability in the dynamic landscape of higher education.

5. CONCLUSION

This study sheds light on the multifaceted nature of revenue generation strategies employed by tertiary institutions, both locally and globally. Through analysis of survey data from 1000 respondents, we have gained valuable insights into the diverse approaches adopted by institutions to meet their financial needs and sustain their operations. From traditional methods such as tuition fees and government funding to innovative initiatives like online education programs and industry partnerships, the landscape of revenue generation is dynamic and evolving. However, challenges such as regulatory constraints, economic fluctuations, and resource limitations underscore the need for strategic planning and adaptability. Moving forward, it is imperative for institutions to leverage technology, embrace collaboration, and explore alternative revenue streams to ensure long-term financial stability and academic excellence. By understanding the nuances of revenue generation strategies and their implications, stakeholders can make informed decisions to navigate the complexities of the higher education landscape and drive positive change in the sector.

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