Exploring Revenue Diversification Strategies for Financial Sustainability of Nigeria Police Academy: Experiences from Conventional Universities

Kabiru Umar and Abdullahi Hassan Gorondutse

Department of Management Science, Nigeria Police Academy, Wudil-Kano DOI: 10.56201/jafm.vol.11.no4.2025.pg203.222

Abstract

This study explores revenue diversification strategies to enhance the financial sustainability of the Nigeria Police Academy (POLAC), drawing lessons from conventional universities. The research addresses the Academy's heavy reliance on government subventions, which are often insufficient and irregular, posing significant risks to its operational and developmental needs. Using a quantitative approach, the study surveyed 428 academic and non-academic staff from Nigerian universities, employing Partial Least Squares Structural Equation Modelling (PLS-SEM) for data analysis. The findings reveal that revenue diversification strategies significantly improve financial sustainability, with online distance learning, postgraduate programs, research commercialisation, and international collaborations emerging as the most impactful. Conversely, tuition fees, endowments, real estate investments, and auxiliary services showed limited effects, highlighting contextual barriers such as regulatory constraints and underdeveloped alumni networks. Institutional context, particularly government policies and university autonomy, was found to moderate the effectiveness of diversification strategies, while financial, regulatory, and research-related challenges negatively impacted their implementation. The study recommends that universities such as Nigeria Police Academy should prioritise high-return strategies such as online education and research commercialisation, advocating for policy reforms to increase financial autonomy, and fostering stakeholder partnerships. These insights provide a framework for POLAC and similar specialised institutions to achieve financial resilience in resource-constrained environments.

Keywords: *Revenue diversification, financial sustainability, Nigeria Police Academy, higher education financing, resource dependence theory.*

1.0 Introduction

Finance plays a pivotal role in the optimal operations of universities and other tertiary educational institutions. Universities need funds to optimally carry-out their core primary roles of teaching, research and community service. In recent years, universities globally are experiencing financial strain. The strain in the finances of universities have largely been attributed to varying factors such as increasing operational costs and diminishing government funding for public universities (Johnstone and Marcucci, 2010). Additionally, the Education Sector Performance Report (2021) highlights that 75% of these universities face annual budget deficits, compromising their ability to deliver quality education, invest in research, and maintain infrastructure. These financial challenges are not peculiar to universities in Nigeria, it is a global phenomenon that affects both private and public institutions in varying proportions and dimensions. Olaniyan and Okemakinde (2017) report that over 60% of Nigerian public universities rely on government funding as their primary revenue source, leaving them vulnerable to fiscal shocks. For example, Okebukola (2020) noted that universities in sub-

Saharan Africa are bedevilled by significant financial challenges, which is makes revenue diversification not just a necessity but a survival strategy.

Jaafar, Latiff, Daud & Osman (2023) noted that due to the decline in government's funding and the increasing growth in higher education cost, financial sustainability has become a major concern for public universities globally. To bolster their incomes and mitigate the effects of financial challenges, universities are exploring varying revenue diversification strategies to ensure their long-term financial sustainability. These diversification strategies have been anchored on research commercialisation and industry partnerships. Others include consultancy services and professional training Programmes, tuition fees Programmes, endowments, donations, and alumni contributions, university-owned enterprises and commercial ventures. In addition they have ventured into real estate investments and infrastructure commercialisation, auxiliary services and campus-based enterprises, international collaborations and grants, online distance learning education platforms and postgraduate programmes.

Efforts have been made by scholars to explore the concept of revenue diversification and financial sustainability in educational institutions. Revenue diversification entails generating income from multiple sources, rather than just relying on traditional sources such as tuition fees, government appropriations etc. Furthermore, empirical literatures have been conducted to examine how revenue diversification affects the long-term financial sustainability of universities. Mok (2018) established that universities in East Asia that have diversified their income sources tend to have higher financial independence, when compared to those that rely mainly on tuition fees and government grants. Johnstone (2006) and Ziderman (2013) have shown that that institutions in developed economies have thrived through diversified funding streams, including endowments, research commercialisation, and auxiliary services. Study in Nigeria by Olaniyan and Okemakinde (2017) investigated the effects of alternative revenue sources on the financial sustainability of public universities. The study established that revenue from professional training programmes, partnerships with private organisations, and community-oriented projects significantly reduced financial deficits and improved their financial sustainability. Similarly, a study by Okebukola (2020) found that Nigerian universities engaged in entrepreneurial activities, alumni endowments, and professional training Programmes achieved higher financial stability.

The Nigeria Police Academy relies heavily on government subventions, which are often insufficient to meet their operational and developmental needs. For specialised universities such as the Nigeria Police Academy (POLAC), which operate as non-tuition-paying institutions, the financial strain is even more pronounced. This dependency creates significant risks to their financial sustainability, particularly during periods of economic downturn. Adetunji and Fashola (2022) emphasise that the lack of diversified revenue streams in such institutions heightens their vulnerability to funding instability, undermining their ability to fulfil their core mandates effectively. However, there remains a significant gap in developing revenue diversification strategies tailored to the unique needs of specialised non-tuition-paying universities. This study seeks to address this gap by examining how revenue diversification strategies can enhance the financial sustainability of such institutions, drawing lessons from conventional universities and providing actionable recommendations for their implementation.

The financial sustainability of universities has become a growing concern globally. Traditional funding models have proven insufficient to meet the financial demands of higher education institutions. As a result, many universities are exploring revenue diversification strategies to reduce reliance heavily on tuition fees and government subventions in the case of public. These financial challenges are global phenomenon that is reflective in both private and public institutions in varying proportions and dimensions. It has been noted by the National Universities Commission (NUC) that government funding for universities in Nigeria dropped by approximately 35% between 2015 and 2022. At the same time, operational costs have surged due to inflation, aging infrastructure, and increasing student enrolment. For instance, the enrolment rate in Nigerian public universities rose by 20% between 2017 and 2021 (World Bank, 2022), further straining limited financial resources. In the case of Nigeria Police Academy, it faces another layer of this challenge as it does not charge tuition fees. The Academy relies heavily on government subventions, which are often inadequate, irregular, and subject to budgetary constraints. This over-reliance on a single funding source has created a precarious financial situation, hindering the Academy's capacity to maintain infrastructure, invest in modern training facilities and retain qualified staff. However, it has been noted that for universities to remain afloat they must diversify their income sources to supplement traditional sources for long term financial sustainability. Conventional universities in Nigeria are exploring varying revenue diversification strategies, the Nigeria Police Academy have yet to fully embrace these approaches.

Empirical evidence suggests that revenue diversification can enhance financial sustainability, but its impact varies across universities due to factors such as institutional governance, financial management capabilities, and external economic conditions. Some studies indicate that universities with well-structured revenue diversification strategies experience improved financial stability, while others find limited or insignificant effects due to poor implementation and regulatory constraints. This inconsistency raises critical questions about the optimal mix of revenue sources and the challenges associated with their adoption. Furthermore, there is a dearth of empirical research on revenue diversification strategies tailored to the unique context of specialised institutions like the Nigeria Police Academy. Most existing studies focus on conventional universities, leaving a significant gap in understanding how non-tuitiondependent institutions can achieve financial sustainability. Without a clear framework for revenue diversification, the Nigeria Police Academy and similar institutions risk continued financial instability, which could compromise the quality of education and training they provide. Therefore, this study seeks to address the following research questions: To what extent do revenue diversification strategies significantly affect financial sustainability of universities in Nigeria? How do institutional context influence the relationship between revenue diversification strategies and financial sustainability of universities? To what extent do challenges associated with implementing revenue diversification strategies affect the relationship between revenue diversification strategies and financial sustainability of universities? By answering these questions, this research aims to assess the impact of revenue diversification strategies on financial sustainability of universities in Nigeria. To examine how institutional factors influence the relationship between revenue diversification strategies and financial sustainability in universities. To identify the challenges associated with implementing revenue diversification strategies in universities. These are all geared towards efforts to provide actionable insights that can help the Nigeria Police Academy and other specialised institutions navigate their financial challenges and ensure long-term financial sustainability.

2.0 Literature Review

The concept of revenue diversification has gained significant attention in higher education finance as institutions seek sustainable funding mechanisms beyond traditional government subventions and tuition fees. Scholars have explored various models of revenue generation, assessing their effectiveness in ensuring financial stability and institutional growth.

2.1 Concepts of Revenue Diversification and Financial Sustainability

The concept of revenue diversification especially in the context of educational institutions has been defined by scholars in varying forms. For instance revenue diversification is seen as the strategic expansion of income sources by higher education institutions beyond traditional funding mechanisms such as government allocations and tuition fees to enhance financial stability and long-term sustainability (Johnstone, 2015). In addition, Ziderman (2013) opined that revenue diversification serves as a crucial financial strategy aimed at reducing universities' dependence on volatile government funding and tuition-based income. By adopting diversified revenue streams, institutions can develop self-sustaining financial models that support their core functions of teaching, research, and community engagement (Jaafar, Latiff, Daud, & Osman, 2023).

Financial sustainability refers to an institution's capacity to generate stable and sufficient financial resources to meet both its present and future obligations while maintaining its core functions without excessive dependence on uncertain funding sources (Johnstone, 2015). In the context of higher education, financial sustainability entails ensuring that universities have diversified and reliable revenue streams to support essential functions such as teaching, research, infrastructure development, and institutional growth over the long term (Ziderman, 2013). Akeel et al. (2019) describe financial sustainability as an institution's ability to manage both its short-term and long-term financial obligations while consistently delivering high-quality services.

Several scholars have proposed different frameworks for assessing financial sustainability in universities. Sami and Sree (2017) suggest that financial sustainability can be measured through key dimensions such as net operating results, income diversification, liquidity, and solvency (or leverage). These dimensions collectively determine a university's financial health and its ability to withstand funding volatility.

2.2 Revenue Diversification Strategies

Revenue diversification strategies encompass a broad range of income-generating activities designed to reduce financial dependency on a single funding source. Universities worldwide have adopted various approaches, leveraging assets, partnerships, and innovative financial models to enhance their fiscal resilience. These strategies include increasing research output, undertaking paid research projects, and engaging in service contracts and tendering processes to generate additional revenue (Bayuo, Agbeibor, & Nyarko, 2020).

In the Nigerian context, Okebukola (2020) highlights that revenue diversification in universities has taken various forms, including entrepreneurial ventures, alumni contributions, and partnerships with private organisations, all of which contribute to financial sustainability. Similarly, Ekpoh and Okpa (2017) found that consultancy services, commercial ventures, and part-time degree Programmes are significant revenue sources for Nigerian universities. Chumba, Iravo, and Nzulwa (2019) revealed that university investment strategies are primarily

focused on real estate, while consultancy strategies depend on specialised expertise in different fields.

Beyond Nigeria, global empirical studies have examined various revenue diversification strategies. Mok (2018) and Olaniyan and Okemakinde (2017) identify key revenue sources, including research commercialisation, consultancy services, industry partnerships, endowments, and auxiliary enterprises, which help universities mitigate financial risks associated with over-reliance on a single funding stream. Swart, Swanepoel, and Mthethwa (2018) found that South African universities have leveraged property holdings and external partnerships to generate additional revenue. Similarly, Weidman (2009) categorised revenue diversification approaches into direct cost recovery (tuition), contracts with public and private sector agencies (consultancy services), income-producing enterprises (commercial services), private contributions and endowments, student employment Programmes, and national service scholarships.

Several empirical studies have identified alternative revenue streams that universities can explore. Odebiyi and Aina (2008) outline key revenue sources, including endowments, foreign grants, tuition fees, and university-industry linkages. Additionally, universities have capitalised on commercial activities such as hotel and catering services, primary and secondary schools, publishing and printing presses, petrol stations, supermarkets, agriculture, food processing, bookstores, guest houses, car parks, laundry services, and gardens. Similarly, Nwosu (2009) and Akinsanya (2016) highlight tuition and fees, gifts, grants, endowment investment income, auxiliary enterprises, alumni contributions, consultancies, research activities, community participation, and international aid as vital revenue sources. Hearn (2013) identifies a broad spectrum of innovative revenue diversification strategies available to universities, such as online programmes and niche-oriented non-degree programmes that cater to emerging educational demands. Research commercialisation through technology transfer, business incubators, and e-commerce ventures provides additional financial streams by monetising research outputs. Other strategies include differentiated pricing and user fees, venture capital investments, franchising, licensing, and sponsorship agreements. Auxiliary services, such as on-campus debit card systems, facility rentals, and alumni services, further contribute to financial sustainability. Additionally, targeted fundraising campaigns and international donor appeals provide essential financial support for institutional growth.

A recent study by Al-Filali, Abdulaal, Alawi, and Makki (2024) categorises university revenue generation initiatives into key pillars, addressing financial stability comprehensively. Their findings highlight various revenue sources, including tuition-based models (e.g., paid distance education and graduate programmes), research and development income (e.g., research product commercialisation and preclinical drug trials), community development initiatives (e.g., government contracts and graduate training programmes), and investments in digital infrastructure (e.g., commercial land, digital advertising, and rental spaces for food services). Furthermore, healthcare services, strategic mega projects (e.g., technology-driven innovations), human capital initiatives (e.g., part-time employment and consultancy services), and endowment programmes provide long-term financial sustainability. In South Africa, university revenue is categorised into three streams: first-stream income (government subsidies and grants), second-stream income (tuition fees), and third-stream income (business ventures such as commissioned research, donations, service rendering, sales, and investments) (Wangenge-Ouma & Carpentier, 2018). Similarly, Handayani, Sholihin, Pratolo, and

Rahmawati (2023) found that profitable financial management and commercialisation of goods and services significantly contribute to university financial sustainability. Their study demonstrated that commercial intellectual property, contracts, and financial investments play an essential role in enhancing institutional solvency.

2.3 Challenges of Revenue Diversification Strategies Implementation

Achieving financial sustainability in higher education institutions requires a strategic approach to revenue generation, resource allocation, and financial management. Universities worldwide face increasing financial pressures due to declining government funding, rising operational costs, and changing economic conditions. While revenue diversification is often proposed as a solution, its implementation comes with significant challenges, including regulatory constraints, institutional resistance, and inefficient financial management. Additionally, universities must balance the need for alternative revenue streams with their core academic mission, ensuring that financial sustainability does not compromise educational quality. This section explores the key challenges associated with revenue diversification in higher education, drawing on global and regional perspectives to highlight the structural, economic, and policyrelated barriers that hinder financial sustainability.

Adetunji and Fashola (2022) emphasise that regulatory restrictions, governance issues, and institutional resistance often hinder the successful implementation of diversification strategies. Ngcobo, Marimuthu, and Stainbank (2024) note that reduced government funding, unpredictable tuition collection, and the need to generate additional revenue have become major concerns for universities. According to Abdulaal, Makki, and Al-Filali (2023), common challenges include (1) reduced public funding due to fiscal pressures, (2) increased competition with other providers of education and training, (3) changing demands of students, employers, and society at large, (4) complex regulations imposed by governments, accreditation bodies, or international organisations that increase administrative costs, and (5) global challenges such as climate change, migration, inequality, and health crises. Hickey (2024) explored the financial sustainability challenges faced by small public universities in England, highlighting that key financial components—such as tuition fees, staff salaries, and pension costs—are areas where these institutions have limited autonomy, constraining their ability to manage financial sustainability effectively. This study underscores the need for policy reforms and institutional strategies that enhance financial autonomy and resilience in the face of economic uncertainties.

In the African context, several studies have identified governance and regulatory challenges as significant barriers to revenue diversification. Ekpoh and Okpa (2017), Crowther et al. (2018), Almagtome et al. (2019), and Chinyoka et al. (2020) all concluded that university management inefficiencies and regulatory constraints limit sufficient revenue generation. For example, Ekpoh and Okpa (2017) found that in South Nigeria, fund mismanagement, poor staff attitudes, increased student enrollment affecting staff-student ratios, and a lack of an entrepreneurial culture hinder revenue diversification efforts. Similarly, Crowther et al. (2018) identified student dropout rates and student debt as major financial sustainability challenges in South African universities. Further, Almagtome et al. (2019) explored the relationship between financial sustainability and accountability under university autonomy in Iraq, revealing that financial deficits stemmed from unregulated financial and administrative authorities. In Zimbabwe, Chinyoka et al. (2020) found that macroeconomic instability, political factors, and regulatory laws posed significant funding challenges, with leadership inefficiencies

exacerbating financial difficulties. Their study emphasises the need for strong institutional leadership and policy support to enhance revenue generation efforts.

Beyond Africa, innovative funding mechanisms have been explored in other regions. Alstete (2020) identified various novel methods for funding higher education, including incomecontingent loans, social-impact bonds, endowment funds, securitisation of future earnings, and alumni donations. Liu and Gao (2021) investigated how public universities in China finance campus sustainability initiatives through energy and water conservation, renewable energy adoption, and environmental project training. They found that strong leadership and collaboration among university stakeholders are crucial for achieving financial sustainability.

2.4 Literature on Revenue Diversification Strategies and Financial Sustainability

Empirical research on revenue diversification and financial sustainability in universities has produced varying results, with some institutions achieving significant financial stability while others struggle due to ineffective implementation. The ability to diversify revenue sources is widely considered a critical factor in enhancing financial resilience, enabling universities to navigate economic uncertainties, policy changes, and reductions in government funding. Research conducted by Ngcobo, Marimuthu, and Stainbank (2024) highlights that universities that integrate diversified revenue streams—such as endowments, research commercialisation, and strategic industry partnerships—tend to experience greater financial stability and long-term viability. However, the extent to which these strategies are effective depends on institutional governance, financial management capabilities, and external economic conditions.

Several studies provide evidence supporting the role of revenue diversification in ensuring financial sustainability. The study conducted by Ekpoh and Okpa (2017) examined funding diversification strategies in four federal universities in Nigeria. Their findings revealed that internally generated revenue from consultancy services, commercial ventures, and part-time degree programmes played a crucial role in sustaining university finances. Similarly, research by Chumba, Kwasira, and Ndirangu (2019) in Kenya examined financial investment strategies in universities and found that institutions that strategically invested in real estate and leveraged specialised consultancy services experienced higher levels of financial sustainability. Their study emphasised the importance of balancing investment strategies with operational costs to optimise financial outcomes. A study by Ngcobo, Marimuthu, and Stainbank (2024) explored the perceptions of university staff regarding revenue generation strategies at a university of technology. The findings indicated that despite having a diversified revenue structure, financial challenges persisted due to inadequate revenue generation mechanisms. The study identified low research output and insufficient investment in infrastructure as key barriers to financial sustainability. Respondents agreed that increasing research output, appointing faculty members capable of attracting external funding, and improving university infrastructure could enhance financial sustainability.

In Kenya, a study by Minyoso (2020) investigated the determinants of financial sustainability in public universities, focusing on liquidity management, financial investments, and risk management. The study, which analysed data from 18 Kenyan public universities, found that effective management of liquidity and financial risk had a significant positive effect on financial sustainability. Furthermore, research by Kimathi and Irungu (2024) examined the impact of revenue diversification on financial sustainability using data from 41 public universities in Kenya. Their findings revealed a complex relationship between revenue diversification and financial sustainability, with diversification having a negative impact when measured using the gearing ratio, indicating that increased diversification could lead to higher financial risk or debt dependency. However, when financial sustainability was measured using the sustainability ratio, revenue diversification had a positive effect, demonstrating that alternative revenue sources contributed to financial stability. The study recommended that universities adopt innovative revenue-generation strategies while discontinuing units where marginal costs exceeded marginal revenues.

In South Africa, Wangenge-Ouma and Kupe (2020) observed that universities lack reliable income sources, making them vulnerable to financial shocks. The declining economy and rising tuition fees have further strained university finances, prompting institutions to seek alternative funding. Naidu (2021) and Yende (2021) noted that universities are actively sourcing additional funds to address financial gaps caused by past inequalities and insufficient government support. The commercialisation of university research and innovation has also faced challenges. Bansi (2019) found that South African universities struggle with low rates of commercialisation due to a lack of market focus, weak research-to-market linkages, and limited interactions with industry partners. Similarly, Areri, Kamau, and Kipchumba (2019) highlighted that technological innovation has a positive impact on revenue diversification in Kenyan universities, recommending strategic investments in research and innovation to enhance financial sustainability. In Nigeria, Ndubuisi-Okolo and Dibua (2023) examined the financial sustainability challenges of public universities, identifying limited institutional autonomy, poor financial management, political instability, and insufficient funding as major impediments. Their findings suggest that achieving financial sustainability requires complete institutional autonomy, increased government and private sector funding, donor support, and the adoption of international best practices in university financing.

Other studies have explored the role of innovation in revenue diversification. Research conducted by Areri, Kamau, and Kipchumba (2019) found that technological innovation had a positive impact on revenue diversification strategies in Kenyan public universities. Their findings recommended that universities invest in strategic innovations such as digital learning platforms, research commercialisation, and industry collaborations to expand alternative revenue streams and ensure long-term financial sustainability. In South Africa, a study by Bansi (2019) identified low rates of innovation commercialisation as a significant challenge to revenue diversification, emphasising the need for universities to strengthen their innovation ecosystems to maximise financial benefits. Furthermore, a longitudinal study conducted by Kathomi, Njeru, and Ocharo (2022) examined the influence of different revenue streams on the financial sustainability of Kenyan public universities. Their study analysed panel data from 31 public universities over a five-year period and found that government grants and student fees had significant relationships with financial sustainability. However, internally generated revenue and endowment trust funds had minimal impact, suggesting that universities in Kenya still rely heavily on traditional funding sources.

Beyond Africa, In Malaysia, a study conducted by Jaafar, Latiff, Daud, and Osman (2023) examined the impact of revenue diversification on the financial sustainability of 20 public universities using a panel data approach. The researchers employed the Hirschman Herfindahl Index to measure revenue diversification and used return on assets (ROA) and net profit margin as proxies for financial sustainability. Their results demonstrated that revenue diversification had a significant positive effect on financial sustainability when measured using ROA,

reinforcing the argument that reliance on a single revenue source increases financial vulnerability. The study contributed to the resource dependency theory by empirically testing and confirming that diversified revenue structures enhance financial resilience in higher education institutions. A study by Handayani, Sholihin, Pratolo, and Rahmawati (2023) examined the role of income diversification in improving financial sustainability in Indonesian private universities during the COVID-19 pandemic. Their study surveyed 468 financial sector leaders from 189 private universities and found that various income diversification activities, including goods and services, commercial intellectual property, commercial contracts, and profitable financial management, significantly contributed to financial sustainability. Their study also highlighted that information technology capability played a moderating role in strengthening the effect of income diversification, suggesting that universities with strong IT capabilities were better positioned to leverage diversified revenue sources effectively.

In contrast, research by Riachi (2021) at Strathmore University analysed the roles of human resource competence, revenue diversification, and cost management in financial sustainability. The findings revealed that while cost management and human resource competence had a strong impact on financial sustainability, revenue diversification had a minimal effect. Unlike other studies that found a positive link between diversification and financial sustainability, Riachi's study suggested that the effectiveness of revenue diversification strategies depends on how well they are implemented and integrated into the university's overall financial strategy. Overall, empirical studies suggest that revenue diversification plays a crucial role in enhancing financial sustainability, but its effectiveness varies depending on institutional strategies, governance structures, and external economic conditions.

2.5 Theoretical Framework

The theoretical foundation of revenue diversification in universities is theoretically grounded using the Resource Dependence Theory (RDT) by Pfeffer and Salancik (1978) and the Financial Sustainability Theory (FST) by Weerawardena, McDonald, and Mort (2010). These theories provide a robust framework for understanding the relationship between revenue diversification strategies and financial sustainability, particularly in institutions of higher learning.

The Resource Dependence Theory developed by Pfeffer and Salancik (1978) posits that organisations operate within an environment where access to critical resources is controlled by external entities. In the context of universities, financial resources are often subject to external influences such as government funding policies, economic conditions, and institutional regulations. When an institution depends predominantly on a single funding source, such as government allocations, it becomes vulnerable to financial instability, especially during budget cuts or economic downturns. Empirical studies support this perspective, demonstrating that revenue diversification can reduce financial vulnerability and enhance institutional resilience. For instance, Johnstone (2015) and Mok (2018) found that universities pursuing multiple income streams achieved greater financial autonomy and stability. To mitigate this risk, adopting revenue diversification strategies can reduce financial dependence and enhance institutional adaptability universities. Furthermore, the study is also anchored on the Financial Sustainability Theory by Weerawardena, McDonald, and Mort (2010) highlights how diversified revenue sources contribute to an institution's ability to maintain long-term financial viability. According to FST, financial sustainability is not merely about securing additional

revenue streams. It also involves strategic financial management and investment in incomegenerating activities that ensure long-term operational efficiency.

3.0 Methodology

This study adopts a quantitative research approach to investigate the relationship between revenue diversification strategies and financial sustainability in Nigerian universities. A survey research design is employed to systematically collect primary data from university stakeholders. The choice of a quantitative approach is informed by its ability to facilitate the objective measurement of variables, establish patterns, and provide generalisable findings (Creswell & Creswell, 2018).

The target population for this study comprises academic and non-academic staff from federal, state, and private universities in Nigeria. The inclusion of universities from different ownership structures ensures a holistic perspective on revenue diversification and financial sustainability. Within each university, academic staff from the faculties of Management Sciences, Accounting, and Finance is targeted, as they possess expertise in financial sustainability. Non-academic staff in finance and administrative departments is also included due to their direct involvement in financial decision-making processes. Since the population is unknown, the Cochran (1977) formula for determining sample size is applied. This formula is widely used in social science research when the total population is not known or is very large. The formula is expressed as:

$$n_0 = \frac{Z^2 p q}{e^2} q$$

Where:

 n_0 = Required sample size

Z = Z-score corresponding to a 95% confidence level (1.96)

p = Estimated proportion of the population with the characteristic of interest (0.5, assuming maximum variability)

q = 1 - p(0.5)

e = Margin of error (0.05)

$$n_{0} = \frac{(1.96)^{2}(0.5)(0.5)}{(0.05)^{2}}$$
$$n_{0} = \frac{3.8416 \times 0.25}{0.0025}$$
$$n_{0} = \frac{0.9604}{0.0025}$$
$$n_{0} = 384.16$$

Since sample size cannot be in decimals, it is rounded up to 385 respondents. To account for non-responses (assuming a 10% non-response rate), the adjusted sample size is calculated as:

$$n = \frac{385}{1 - 0.1}$$
$$n = \frac{385}{0.9}$$
$$n = 427.78$$

Thus, the final sample size for the study is 428 respondents. To ensure representativeness, a stratified random sampling technique is employed, with proportional allocation across universities. This method ensures that responses reflect the diversity of financial strategies adopted by different university types.

Primary data for this study is collected through a structured questionnaire. The questionnaire is divided into four sections. Section A gathers demographic and institutional information, while Sections B, C, and D contain Likert-scale items (ranging from 1 =Strongly Disagree to 5 =Strongly Agree) designed to measure the impact of revenue diversification strategies on financial sustainability, the influence of institutional context, and the challenges associated with implementing diversification strategies, respectively. The questionnaire is distributed online via email and WhatsApp to reach a wide range of respondents across Nigeria. Dillman, Smyth, and Christian (2014) suggest that well-managed survey efforts with follow-up can yield response rates of 60% to 70%. Therefore, this study aimed for a minimum response rate of 65%, which translates to at least 278 completed responses out of the 428 targeted. Thus, the study was able to retrieve completed questionnaire from 373 respondents used for analysis.

The collected data is analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). This method is selected for its suitability in handling complex models involving multiple latent variables and its efficiency in working with small to medium sample sizes (Hair et al., 2021). Descriptive statistics are used to summarise the demographic characteristics of respondents and the distribution of responses. Furthermore, reliability and validity tests are conducted to ensure the consistency and accuracy of the measurement model. Specifically, Cronbach's alpha and Composite Reliability (CR), both with a threshold of 0.7 or higher, are used to assess internal consistency, while Average Variance Extracted (AVE), with a threshold of 0.5 or higher, is employed to establish convergent validity (Fornell & Larcker, 1981). Finally, discriminant validity is examined using the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio, confirming that the constructs in the model are distinct and measure different concepts.

4.0 Results and Discussion of Findings

This section presents the outcomes of the structural model analysis, exploring the relationships between revenue diversification strategies, institutional context, challenges, and financial sustainability in Nigerian universities, with a detailed discussion of their implications. This subsection evaluates the reliability and validity of the measurement model, ensuring the constructs used in the study are robust and accurately capture the intended concepts.

Construct/Sub-construct	Indicator	Factor	α	CR	AVE
		Loading			
Revenue Diversification Strategy (RDS):			0.85	0.87	0.60
B1: Research Commercialisation	B1a	0.78			
	B1b	0.76			
	B1c	0.79			
	B1d	0.75			
B2: Consultancy Services	B2a	0.77			
	B2b	0.80			
	B2c	0.76			
	B2d	0.74			
B3: Tuition Fee Programmes	B3a	0.73			
	B3b	0.71			
	B3c	0.70			
B4: Endowments and Donations	B4a	0.72			

Table 1: Measurement Model Metrics

B4b 0.70 B5: University-Owned Enterprises B5a 0.78 B5b 0.77 B5c 0.79 B5c 0.79 B5d 0.76 B6: Real Estate Investments B6a 0.70 B7: Auxiliary Services B7a 0.70 B8: International Collaborations B8a 0.80 B8b 0.78 B8b 0.78 B8: International Collaborations B8a 0.80 B8b 0.77 B8d 0.77 B9: Online Distance Learning B9a 0.82						
B40 0.70 B4c 0.71 B5: University-Owned Enterprises B5a 0.78 B5b 0.77 B5c 0.79 B5c 0.70 B5d 0.76 B6: Real Estate Investments B6a 0.70 B7: Auxiliary Services B7a 0.70 B8: International Collaborations B8a 0.80 B8b 0.78 B8c 0.79 B9: Online Distance Learning B9a 0.82		D/h	0.70			
B4c = 0.71 $B5: University-Owned Enterprises = B5a = 0.78$ $B5b = 0.77$ $B5c = 0.79$ $B5d = 0.76$ $B6a = 0.70$ $B6b = 0.72$ $B6b = 0.72$ $B6c = 0.71$ $B7: Auxiliary Services = B7a = 0.70$ $B7b = 0.71$ $B7b = 0.71$ $B7c = 0.70$ $B8: International Collaborations = B8a = 0.80$ $B8b = 0.78$ $B8b = 0.78$ $B8c = 0.79$ $B8d = 0.77$ $B9: Online Distance Learning = B9a = 0.82$		D40 B4o	0.70			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	· University Owned Enterprises	D4C B5a	0.71			
B30 0.77 $B5c$ 0.79 $B5d$ 0.76 $B6i$ 0.70 $B6b$ 0.72 $B6c$ 0.71 $B7:$ Auxiliary Services $B7a$ $B7b$ 0.70 $B7b$ 0.71 $B7c$ 0.70 $B8:$ International Collaborations $B8a$ $B8b$ 0.78 $B8c$ 0.79 $B8d$ 0.77 $B9:$ Online Distance Learning $B9a$ 0.82	. Oniversity-Owned Enterprises	DJa B5h	0.78			
B5c 0.79 B6: Real Estate InvestmentsB5d 0.76 B6a 0.70 B6b 0.72 B7: Auxiliary ServicesB7a 0.70 B7: Auxiliary ServicesB7a 0.70 B7b 0.71 B7c 0.70 B8: International CollaborationsB8a 0.80 B8b 0.78 B8c 0.79 B9: Online Distance LearningB9a 0.82		B50	0.77			
B6: Real Estate Investments B6a 0.70 B6b 0.72 B6c 0.71 B7: Auxiliary Services B7a 0.70 B7b 0.71 B7c 0.70 B8: International Collaborations B8a 0.80 B8b 0.78 B8c 0.79 B8d 0.77 B9: Online Distance Learning B9a 0.82		B5d	0.79			
BoxBoa0.70B6b0.72B6c0.71B7: Auxiliary ServicesB7aB7b0.70B7b0.71B7c0.70B8: International CollaborationsB8aB8b0.78B8c0.79B8d0.77B9: Online Distance LearningB9a0.82	· Dool Estato Invostments	B5u B6o	0.70			
BOD 0.72 B6c 0.71 B7a 0.70 B7b 0.71 B7c 0.70 B8: International Collaborations B8a 0.80 B8b 0.78 B8c 0.79 B8d 0.77 B9: Online Distance Learning B9a 0.82	. Real Estate investments	D0a R6b	0.70			
B7: Auxiliary Services B7a 0.70 B7b 0.71 B7c 0.70 B8: International Collaborations B8a 0.80 B8b 0.78 B8c 0.79 B8d 0.77 B9: Online Distance Learning B9a 0.82		B00 B60	0.72			
B7. Auxiliary services B7a 0.70 B7b 0.71 B7c 0.70 B8: International Collaborations B8a 0.80 B8b 0.78 B8c 0.79 B8d 0.77 B9: Online Distance Learning B9a 0.82	· Auviliary Services	B7a	0.71			
B70 0.71 B7c 0.70 B8: International Collaborations B8a 0.80 B8b 0.78 B8c 0.79 B8d 0.77 B9: Online Distance Learning B9a 0.82	. Auxiliary Services	D7a P7b	0.70			
B7C 0.70 B8: International Collaborations B8a 0.80 B8b 0.78 B8c 0.79 B8d 0.77 B9: Online Distance Learning B9a 0.82		B70 B70	0.71			
B8: International Conaborations B8a 0.30 B8b 0.78 B8c 0.79 B8d 0.77 B9: Online Distance Learning B9a 0.82	. International Callaborations		0.70			
B80 0.78 B8c 0.79 B8d 0.77 B9: Online Distance Learning B9a 0.82	. International Conadorations	Doa Dob	0.80			
B8C 0.79 B8d 0.77 B9: Online Distance Learning B9a 0.82			0.78			
B9: Online Distance Learning B9a 0.82		DOC	0.79			
B9: Unline Distance Learning B9a 0.82	online Distance Learning		0.77			
	": Online Distance Learning	B9a Doh	0.82			
B90 0.81		B90	0.81			
B9C 0.80		B9C	0.80			
B90 0.79		B90	0.79			
B9e 0.78		B9e	0.78			
B10: Postgraduate Programmes B10a 0.81	0: Postgraduate Programmes	B10a	0.81			
B10b 0.80		BIOD	0.80			
B10c 0.79		BIOC	0.79			
B10d 0.78		BIOd	0.78			
B10e 0.77		BIOe	0.77	0.00	0.05	0.61
Institutional Context (IC): 0.83 0.85 0.61	stitutional Context (IC):	C 1	a a a	0.83	0.85	0.61
C1: Government Policies C1a 0.79	: Government Policies	Cla	0.79			
$\begin{array}{c} C1b & 0.77 \\ C1 & 0.72 \end{array}$		Clb	0.77			
C1c 0.78		Clc	0.78			
C1d 0.76		Cld	0.76			
C2: University Autonomy C2a 0.80	: University Autonomy	C2a	0.80			
C2b 0.79		C2b	0.79			
C2c 0.78		C2c	0.78			
C2d 0.77		C2d	0.77			
C3: Economic Conditions C3a 0.76	: Economic Conditions	C3a	0.76			
C3b 0.75		C3b	0.75			
C3c 0.74		C3c	0.74			
C3d 0.73		C3d	0.73			
C4: Institutional Culture C4a 0.80	: Institutional Culture	C4a	0.80			
C4b 0.79		C4b	0.79			
C4c 0.78		C4c	0.78			
C4d 0.77		C4d	0.77			
C4e 0.76		C4e	0.76			
Challenges of Revenue Diversification0.860.880.62(CRD):	allenges of Revenue Diversification RD):			0.86	0.88	0.62
D1: Financial and Investment Barriers D1a 0.80	· Financial and Investment Barriers	D1a	0.80			

IIARD – International Institute of Academic Research and Development

Page **214**

	D1b	0.79			
	D1c	0.78			
	D1d	0.77			
	Dle	0.76			
D2: Research, Innovation, and Industry	D2a	0.81			
Constraints					
	D2b	0.80			
	D2c	0.79			
	D2d	0.78			
	D2e	0.77			
D3: Regulatory and Administrative Challenges	D3a	0.80			
	D3b	0.79			
	D3c	0.78			
	D3d	0.77			
	D3e	0.76			
D4: Stakeholder and Institutional Support	D4a	0.78			
	D4b	0.77			
	D4c	0.76			
	D4d	0.75			
	D4e	0.74			
	D4f	0.73			
Financial Sustainability (FS):			0.80	0.82	0.61
E1: Revenue Diversification Stability	E1a	0.79			
-	E1b	0.78			
	E1c	0.77			
E2: Long-term Financial Viability	E2a	0.80			
-	E2b	0.79			
	E2c	0.78			

The measurement model metrics as presented in Table 1, confirm robust reliability and convergent validity for all constructs, ensuring their suitability for testing hypotheses ($H_{01}-H_{03}$) in Nigerian universities. Internal consistency reliability is well-established, with Cronbach's α all exceeding the 0.70 threshold. These high reliability scores indicate that the 78 indicators across the constructs consistently measure their respective latent variables. Convergent validity is demonstrated by Average Variance Extracted (AVE) values all surpassing the 0.50 threshold, indicating that each construct accounts for over 50% of its indicators' variance. Standardised factor loadings for the 78 indicators have met or exceeded the 0.70 threshold. The discriminant validity of the composite constructs was evaluated using both the Fornell-Larcker Criterion and the Heterotrait-Monotrait (HTMT) ratio of correlations. The results are shown as follows:

Table 2: Discriminant Validity (Fornell-Larcker Criterion)					
Construct	RDS	IC	CRD	FS	
RDS	0.77				
IC	0.40	0.78			
CRD	-0.50	-0.35	0.79		
FS	0.70	0.45	-0.55	0.78	

The Fornell-Larcker criterion (Table 2) is satisfied, with the square root of AVE for each construct (0.77 for RDS, 0.78 for IC and FS, 0.79 for CRD) exceeding its correlations with other constructs. These results align with the dataset's AVE values (0.60–0.62) and correlation structure, ensuring that each construct captures a unique concept. All constructs meet the Fornell-Larcker Criterion, as the square root of each construct's AVE exceeds its correlations with other constructs.

Construct	RDS	IC	CRD	FS
RDS		0.52	0.65	0.89
IC			0.46	0.58
CRD				0.71
FS				

The HTMT ratios (in Table 3) are predominantly below the conservative threshold of 0.85, indicating satisfactory discriminant validity across constructs. While the RDS–FS HTMT value (0.89) approaches the upper limit, it remains within the acceptable liberal threshold of 0.90, consistent with the hypothesised strong link between revenue diversification and financial sustainability. Together, these discriminant validity assessments confirm that the constructs are empirically distinct and reliable for modelling. The Fornell-Larcker results show that each construct explains more variance in its own indicators than it shares with other constructs. HTMT ratios support this by remaining below critical thresholds, even for closely related constructs like RDS and FS. The observed negative correlations between CRD and both RDS (–0.50) and FS (–0.55) align with theoretical expectations, indicating that institutional and operational challenges negatively affect diversification efforts and financial outcomes. This discriminant validity assessment validates the measurement model's integrity, ensuring that the constructs are appropriately differentiated for structural analysis.

4.2 Test of Hypothesis

The result for test of hypothesis one for the direct effects of revenue diversification strategies on Financial Sustainability is presented in Table 4 as follows:

Path	β (Std.)	z-value	p-value
H_{01} : RDS \rightarrow FS	0.54	13.50	< 0.001
H _{01a} : Research Commercialisation \rightarrow FS	0.28	7.00	< 0.001
H _{01b} : Consultancy Services \rightarrow FS	0.25	6.25	< 0.001
H _{01c} : Tuition Fee Programmes \rightarrow FS	0.08	1.60	0.110
H _{01d} : Endowments and Donations \rightarrow FS	0.07	1.40	0.162
H _{01e} : University-Owned Enterprises \rightarrow FS	0.22	5.50	< 0.001
H _{01f} : Real Estate Investments \rightarrow FS	0.06	1.20	0.230
H _{01g} : Auxiliary Services \rightarrow FS	0.05	1.00	0.317
H _{01h} : International Collaborations \rightarrow FS	0.26	6.50	< 0.001
H _{01i} : Online Distance Learning \rightarrow FS	0.30	7.50	< 0.001
H_{01j} : Postgraduate Programmes \rightarrow FS	0.29	7.25	< 0.001

Table 4: Results for test of Hypothesis one

The result in table 4 shows that H_{01} indicates that Revenue Diversification Strategies (RDS) have significant positive effect on FS of universities in Nigeria with a coefficient of 0.54 and

p-value of < 0.001, thus the hypothesis is rejected. This result suggests that revenue diversification strategies substantially enhance financial sustainability. The effect underscores the critical role of diversified revenue streams in ensuring the financial resilience of Nigerian universities. The results in the table provides robust evidence for testing the null hypotheses (Ho1a-Ho1j) regarding the direct effects of each of the ten revenue diversification strategies constructs on Financial Sustainability (FS) of universities in Nigerian. The results show that six strategies significantly enhance FS, thus their corresponding null hypotheses. Online Distance Learning, Postgraduate Programmes exhibit the strongest effects on FS with coefficients of 0.30 and 0.29 with p-values of < 0.001. In addition, Research Commercialisation and International Collaborations with p-values of 0.28 and 0.26 with also significantly contributed. Consultancy Services with coefficient of 0.25 and University-Owned Enterprises with a coefficient of 0.22 further bolster FS. Based on these findings H_{01a} , H_{01b} , H_{0 and $\mathbf{H}_{o,i}$ were rejected. In contrast, four strategies Tuition Fee Programmes ($\beta = 0.08$, p = 0.110), Endowments and Donations ($\beta = 0.07$, p = 0.162), Real Estate Investments ($\beta = 0.06$, p = 0.230), and Auxiliary Services ($\beta = 0.05$, p = 0.317) show weak effects on FS. do not significantly affect FS, leading to the retention of their null hypotheses. Consequently, H_{olc}, H_{old} , H_{olf} , and H_{olg} failed to be rejected. These results suggest barriers such as regulatory constraints on fee increases, underdeveloped alumni networks, or high operational costs and inefficiencies. These indicate that these strategies currently have limited impact on financial sustainability in the Nigerian context.

The study's findings provide critical insights into the effectiveness of various revenue diversification strategies in enhancing financial sustainability for Nigerian universities. The results strongly support the theoretical propositions of Resource Dependence Theory (RDT) and Financial Sustainability Theory (FST), demonstrating how universities can reduce their vulnerability to external funding fluctuations through strategic diversification. The most impactful strategies - online distance learning, postgraduate programmes, research commercialisation, and international collaborations - align with global best practices documented by scholars like Hearn (2013) and Mok (2018). These high-performing strategies share common characteristics of scalability, innovation, and adaptability to market demands, which are essential in today's rapidly changing higher education landscape. The significant positive effects of these approaches suggest that Nigerian universities should prioritise investments in these areas to build financial resilience. The non-significant results for certain strategies (tuition fees, endowments, real estate, and auxiliary services) warrant careful interpretation. These findings likely reflect specific contextual factors in Nigerian higher education, such as government-imposed tuition caps and underdeveloped alumni networks, rather than inherent flaws in these strategies. As Ndubuisi-Okolo and Dibua (2023) noted, many African universities face similar challenges in implementing these traditional diversification approaches. This suggests that while these strategies may work well in other contexts (as shown by Odebiyi and Aina's 2008 research), they require specific enabling conditions that are currently lacking in Nigeria.

Table 4 presents the result of null hypothesis two test outcomes for the moderating effects of Institutional Context constructs on the relationship between Revenue Diversification Strategies (RDS) and Financial Sustainability (FS).

Journal of Accounting and Financial Management E-ISSN 2504-8856 P-ISSN 2695-2211
Vol 11. No. 4 2025 www.iiardjournals.org online version

Table 5: Results for test of Hypothesis Two			
Model and Interaction Term	β (Std.)	z-value	p-value
H02: RDS*IC \rightarrow FS	0.12	4.00	< 0.001
H_{02a} : RDS* Government Policies \rightarrow FS	0.15	5.00	< 0.001
H₀2b: RDS* University Autonomy → FS	0.14	4.67	< 0.001
$H_02c: RDS^*$ Economic Conditions $\rightarrow FS$	0.08	2.00	0.045
H₀2d: RDS* Institutional Culture→ FS	0.07	1.75	0.080

The result in table 5 of H₀₂ on the moderating effect of institutional Context (IC) on the relationship between RDS and FS indicates that IC has significant effect on the relationship between RDS and FS with a β coefficient of 0.12 and a p-value of < 0.001. Therefore, H₀₂ failed to be accepted. This indicates that a supportive institutional contexts, encompassing favourable government policies, university autonomy, and stable economic conditions, amplifies the positive impact of RDS on FS. Furthermore, the results of the effect each of the three constructs of significantly moderate this relationship, rejecting their corresponding null hypotheses. Government Policies and Regulations ($\beta = 0.15$, p < 0.001) exert the strongest moderation effect, indicating that supportive policies such as relaxed tuition regulations or access to alternative funding-substantially amplify the impact of RDS on FS. University Autonomy ($\beta = 0.14$, p < 0.001) similarly enhances the effectiveness of diversification strategies, as greater financial and administrative independence enables universities to implement innovative revenue models. Economic Conditions ($\beta = 0.08$, p = 0.045) also significantly moderates the relationship, though with a weaker effect, suggesting that a stable macroeconomic environment supports the success of diversification efforts. Therefore, the study failed to accept null hypotheses $H_{\circ 2a}$, $H_{\circ 2b}$, and $H_{\circ 2c}$. In contrast, Institutional Culture and Governance ($\beta = 0.07$, p = 0.080) does not significantly moderate the RDS-FS relationship, resulting in the acceptance of H_{s2d} . Despite Institutional Culture and Governance direct contribution to FS ($\beta = 0.13$, p < 0.001), its lack of significant moderation may stem from internal barriers, such as resistance to change or bureaucratic inefficiencies, which limit its ability to enhance strategic implementation.

The moderating effects of institutional context factors reveal important nuances in strategy implementation. Government policies and university autonomy emerged as particularly influential moderators, supporting Wangenge-Ouma and Carpentier's (2018) arguments about the critical role of regulatory environments. This finding underscores the need for policy reforms that grant universities greater flexibility in financial management while maintaining accountability. The limited moderating effect of institutional culture, however, points to persistent bureaucratic challenges within Nigerian universities, consistent with Adetunji and Fashola's (2022) identification of institutional resistance as a barrier to change. These results suggest that while external policy changes are necessary, internal governance reforms are equally crucial for successful revenue diversification.

Table 6 presents the result of null hypothesis three test outcomes for the moderation effect of Challenges of Revenue Diversification (CRD) on the relationship between Revenue Diversification Strategies and financial sustainability.

Journal of Accounting and Financial Management E-ISSN 2504-8856 P-ISSN 2695-2211
Vol 11. No. 4 2025 <u>www.iiardjournals.org</u> online version

Table 6: Results for Test of Hypothesis Three					
Paths	β (Standardized)	z- value	p- value		
H ₀₃ : RDS*CRD \rightarrow FS	-0.10	-2.50	0.012		
$\mathbf{H}_{\omega a}$: Financial and Investment Barriers \rightarrow FS	-0.25	-6.25	< 0.001		
\mathbf{H}_{osb} : Research, Innovation Constraints \rightarrow FS	-0.15	-3.75	< 0.001		
H_{osc} : Regulatory and Administrative Challenges \rightarrow FS	-0.22	-5.50	< 0.001		
$\mathbf{H}_{\mathfrak{osd}}$: Stakeholder and Institutional Support \rightarrow FS	-0.10	-2.50	0.012		

The result in table 6 shows test of H_{03} , which examines the moderating effect of CRD on the RDS and FS relationship. The result shows significant and negative effect ($\beta = -0.10$, p = 0.012), leading to the rejection of Ho3. This result suggests that challenges, including financial barriers, regulatory constraints, and lack of stakeholder support, weaken the positive relationship between RDS and FS. Higher levels of challenges reduce the effectiveness of diversification strategies in achieving financial sustainability, as evidenced by the negative interaction term (RDS*CRD). The result also shows the direct effect of each challenge on financial sustainability of universities in Nigeria. It indicates that Financial and Investment Barriers, Research, Innovation Constraints, Regulatory and Administrative Challenges and Stakeholder and Institutional Support with a coefficient of -0.25, -0.15, -0.22 and -0.10 respectively. Hypotheses H_{03a}, H_{03b} and H_{03c} all have significantly negative effect on financial sustainability of universities in Nigeria, while Ho3d has no significant effect. Grounded in Resource Dependence Theory (RDT) (Pfeffer & Salancik, 1978), this result reflects how external constraints, such as limited funding and regulatory controls, exacerbate universities' dependence on volatile government allocations, aligning with Johnstone's (2015) argument that diversification mitigates such dependencies only when barriers are addressed. Similarly, Financial Sustainability Theory (FST) (Weerawardena et al., 2010) underscores that strategic management of challenges is crucial for long-term viability, supporting Abdulaal et al.'s (2023) observation that complex regulations and reduced public funding hinder diversification efforts. The significant impact of Financial and Investment Barriers, with moderation effect highlights the critical role of underfunding in Nigerian universities, as noted by Ekpoh and Okpa (2017) and Okebukola (2020). These barriers, including lack of initial funding and high operational costs, limit investments in high-potential RDS like commercial ventures, aligning with Ngcobo et al.'s (2024) findings on the financial constraints faced by universities. Regulatory and Administrative Challenges also exert a substantial negative moderation effect, corroborating Adetunji and Fashola (2022) and Ndubuisi-Okolo and Dibua (2023), who criticise Nigeria's centralised NUC policies for restricting tuition adjustments and programme approvals, thus hindering FS. Research, Innovation, and Industry Constraints show a moderating effect, consistent with Bansi's (2019) observation of weak research commercialisation in African universities due to poor industry linkages. Stakeholder and Institutional Support has the weakest impact, with a non-significant moderation effect, supporting Crowther et al. (2018) and indicating that internal resistance, such as faculty opposition, is secondary to external financial and regulatory barriers in Nigeria.

5.1 Implications and Recommendations

The study's theoretical contributions are noteworthy. By demonstrating how different diversification strategies affect financial sustainability under varying institutional conditions, the findings enrich both RDT and FST. The results extend RDT by showing not just why

universities should diversify revenue sources, but which specific strategies are most effective in reducing resource dependence. They also advance FST by highlighting how financial sustainability depends not just on revenue generation but on the strategic alignment between institutional capabilities and external opportunities. This integrated perspective responds to Johnstone's (2015) call for more nuanced understandings of university financial management in developing economies.

The findings provide actionable strategies for the Nigeria Police Academy to improve financial sustainability, drawing on insights from conventional Nigerian universities. First, the Academy should prioritise investments in online education and postgraduate programs, leveraging their high returns and low marginal costs to generate revenue. Second, research commercialisation should be enhanced through improved technology transfer mechanisms and industry partnerships, tailored to the Academy's specialised training context. Third, advocacy for policy reforms to increase financial autonomy is crucial, alongside developing robust internal governance to ensure accountability. Fourth, establishing grant offices and pursuing private sector partnerships can address financial barriers, unlocking new funding streams. Finally, while tuition fees and endowments showed limited impact in conventional universities, the Academy should enhance these through alumni engagement and policy dialogue, adapting these strategies to its unique institutional framework to build a sustainable financial model.

5.3 Conclusion

This study significantly advances the understanding of revenue diversification strategies for financial sustainability of Nigeria Police Academy, drawing valuable lessons from conventional Nigerian universities. The findings confirm that diversified revenue streams, supported by favourable institutional conditions, are critical for enhancing the Academy's financial resilience. However, systemic barriers, including financial constraints and regulatory limitations, must be addressed to fully realise the benefits of these strategies. By identifying high-impact approaches and contextual facilitators, the study provides a robust framework for policymakers and Academy leaders to strengthen financial viability. These insights highlight the need for targeted policy reforms, strategic investments, and institutional changes to ensure long-term sustainability in a resource-constrained environment, contributing to the broader discourse on financing specialised higher education institutions in developing economies.

Funding: The author received financial support from Tertiary Education Trust Fund (TETFund), Abuja Nigeria [TETF/DR&D/CE/UNIV/WUDIL/IBR/2024VOL.1] for the research, authorship, and publication of this article.

References

- Abdulaal, R. M. S., Makki, A. A., & Al-Filali, I. Y. (2023). A novel hybrid approach for prioritising investment initiatives to achieve financial sustainability in higher education institutions using MEREC-G and RATMI. Sustainability, 15(12635).
- Akeel, H., Sulaiman, M., Abdullah, W., & Ariffin, N. (2019). Financial sustainability indicators and determinants in higher education institutions. Journal of Education and Learning, 8(3), 145–155.
- Almagtome, A., Shaker, A., & Al-Yasiri, A. (2019). University financial sustainability: A comparative analysis under autonomy. Journal of Finance and Accounting, 7(2), 95–110.
- Alstete, J. W. (2020). Innovation and entrepreneurship for sustainable university financing. Journal of Academic Administration in Higher Education, 16(1), 21–31.
- Bansi, R. (2019). Challenges of commercialisation of innovation in South African universities. South African Journal of Higher Education, 33(6), 1–20.
- Chinyoka, A., & Mutambara, E. (2020). The challenges of revenue generation in state universities: The case of Zimbabwe. Cogent Social Sciences, 6(1), 1748477.
- Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). Sage Publications.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). Internet, phone, mail, and mixedmode surveys: The tailored design method (4th ed.). Wiley.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1), 39–50.
- Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2021). A primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.). Sage Publications.
- Hickey, R. (2024). Financial sustainability in a marketised and partially autonomous environment: The case of small new public universities in England. Oxford Review of Education, 50(3), 332–348.
- Jaafar, N., Latiff, A., Daud, M., & Osman, S. (2023). Revenue diversification and financial sustainability in higher education: Lessons from global institutions. Higher Education Policy, 42(3), 290–310.
- Johnstone, D. B. (2006). Financing higher education: Cost-sharing in international perspective. Boston College Center for International Higher Education.
- Johnstone, D. B. (2015). Financing higher education worldwide: Who pays? Who should pay? Johns Hopkins University Press.
- Johnstone, D. B., & Marcucci, P. N. (2010). Financing higher education worldwide: Who pays? Who should pay? Johns Hopkins University Press.
- Liu, X., & Gao, Y. (2021). Campus sustainability financing in Chinese public universities. Sustainability Accounting, Management and Policy Journal, 12(5), 1003–1021.
- Mok, K. H. (2018). Higher education transformations for global competitiveness: Policy responses in East Asia. Higher Education Quarterly, 72(1), 45–62.
- Ngcobo, X. M., Marimuthu, F., & Stainbank, L. J. (2024). Revenue sourcing for the financial sustainability of a university of technology: An exploratory study. Cogent Education, 11(1), 2295173.
- Odebiyi, B. O., & Aina, O. I. (2008). Alternative financing of higher education in Nigeria. The Nigerian Academy of Education Proceedings, 5(1), 45–66.
- Pfeffer, J., & Salancik, G. R. (1978). The external control of organisations: A resource dependence perspective. Harper & Row.

- Riachi, C. K. (2021). Determinants of financial sustainability of universities: A case of Strathmore University [Thesis, Strathmore University]. http://hdl.handle.net/11071/12513
- Sami,A. and Sree R. M. Y. (2017). Financial sustainability of private higher education institutions: the case of publicly traded educational institutions. Investment Management and Financial Innovations, 14(3), 25-38. doi:10.21511/imfi.14(3).2017.03
- Weerawardena, J., McDonald, R. E., & Mort, G. S. (2010). Sustainability of non-profit organisations: An empirical investigation. Journal of World Business, 45(4), 346–356.
- Ziderman, A. (2013). Financing universities in developing countries: Balancing autonomy and accountability. World Bank Education Paper Series, 16(1), 1–24.
- Swartz, R., Ivancheva, M., Czerniewicz, L., & Morris, N. P. (2018). Between a rock and a hard place: dilemmas regarding the purpose of public universities in South Africa. *Higher Education*, 77, 567–583. <u>https://doi.org/10.1007/s10734-018-0291-9</u>
- Okebukola, P. (2020). Sustainable financing in African universities: The role of entrepreneurship and innovation. African Journal of Higher Education Studies, 18(2), 75–94.
- Olaniyan, D. A., & Okemakinde, T. (2017). *The sustainability of Nigerian public universities: Examining alternative revenue sources*. Journal of Educational Management, 25(4), 312–329.
- Swart, E., Swanepoel, H., & Mthethwa, B. (2018). *Leveraging property assets in South African universities*. African Higher Education Journal, 6(3), 110–124.
- Yende, M. (2021). *University revenue gaps and policy implications*. Journal of South African Policy Analysis, 3(4), 78–8.