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PLANNING FOR MASSIFICATION IN NIGERIAN UNIVERSITIES: DEMAND, ENROLMENT, STAFFING AND INSTITUTIONAL CAPACITY, 2015–2040

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Abstract
Nigeria's expanding demand for university education has intensified a planning problem that is frequently discussed but rarely modelled as an integrated relationship among demand, enrolment, staffing and institutional capacity. This study combines Joint Admissions and Matriculation Board demand indicators, National Universities Commission statistical digests and United Nations demographic evidence with time-series and scenario analysis. JAMB UTME registrations rose from 1.476 million in 2015 to 2.031 million in 2025, notwithstanding a sharp 2021 disruption. NUC data show university enrolment increasing from 1.962 million in 2017 to 2.159 million in 2019, while reported academic staff increased from 61,999 to 73,443. Rolling-origin tests favoured Holt's trend benchmark over linear, damped-trend and ARIMA alternatives for the short JAMB series. Because continuous NUC enrolment and staffing data after 2019 are not publicly available, 2026–2040 university projections are presented as transparent scenarios rather than official forecasts. By 2040, alternative growth paths imply 3.27–5.90 million students and approximately 111,000–201,000 academic staff merely to preserve the 2019 system-wide staffing intensity. The study proposes a Sustainable Massification Capacity Framework and argues for integrated, data-governed capacity planning rather than institution-count expansion alone. It is recommended that Nigeria should institutionalise a rolling National University Capacity Plan with a minimum fifteen-year horizon and annual updates; that the National Universities Commission should maintain a national programme-level capacity registry; that resource allocation should be explicitly connected to marginal student capacity; that a national academic workforce pipeline be developed; and that the public–private capacity relationship be better integrated through targeted student finance, transparent transfer pathways and regulated public–private capacity partnerships.
Keywords: Educational planning, Massification, Enrollment forecasting, Resource allocation, Institutional capacity, Higher education and University systems

Introduction
Higher education expansion is among the most consequential institutional transformations of the contemporary era. Systems that were historically designed for a small social elite have been pressed to accommodate much broader populations, producing what Trow's influential formulation described as movement from elite through mass toward universal participation. Subsequent scholarship has demonstrated that this movement is neither linear nor uniform. Participation grows through interactions among demographic change, household aspirations, state policy, labour-market expectations, institutional differentiation and the political meaning attached to university opportunity. Recent analysis of Anglophone Africa shows that population growth can absorb substantial enrolment expansion without producing the participation ratios associated with mature mass systems elsewhere, in which expansion remains politically and socially necessary, yet unmanaged expansion can weaken the very quality and developmental relevance that higher education is expected to deliver (Andoh, 2026). Nigeria is one of Africa's largest youth populations, with a longstanding social premium on university education, substantial unmet demand for admission, a federal political system that encourages geographical claims for institutional presence, and recurrent constraints on public finance. The Nigerian university system has therefore expanded through several channels: growth in enrolment at established institutions; creation of federal and state universities; rapid proliferation of private universities; new programmes and professional fields; and more recently, open, distance

and transnational arrangements (Anyanwu, 2011; Amini-Philips & Akpoyoware, 2016). The National Universities Commission (NUC) records show 170 universities in 2019, whereas the Commission's 2026 public listing indicates 328 federal, state and private universities combined. The near doubling of institutional count over a relatively short period represents a major structural change. Yet the absence of a continuous, publicly accessible national series of enrolment, academic staffing and physical-capacity indicators after the 2019 statistical digest makes it difficult to determine whether effective system capacity expanded proportionately. When institution counts are current but enrolment and resource stock data are discontinuous, planners cannot easily distinguish nominal expansion from capacity-supported expansion.

The Joint Admissions and Matriculation Board (JAMB) Unified Tertiary Matriculation Examination registrations increased from approximately 1.476 million in 2015 to 2.031 million in 2025. JAMB's broader admission statistics also show that the number admitted to tertiary institutions has historically been well below the number seeking access, which is not peculiar to universities but also affects polytechnics, colleges and other tertiary pathways. Nevertheless, it is a powerful national indicator of the social pressure on post-secondary capacity and can be used transparently as a demand proxy when its scope is clearly stated. This study addresses that gap through a longitudinal and scenario-based analysis of Nigerian university massification. It has six objectives: to examine trends in tertiary demand, university enrolment and institutional expansion; to assess the relationship between enrolment and selected staffing capacity indicators; to compare competing forecasting methods for the available demand series; to construct alternative university-enrolment paths through 2040; to estimate the staffing requirements implied by those paths; and to develop a conceptual framework linking demographic pressure, effective demand, resource environment, institutional capacity and sustainable massification.

The study combines the high-participation/massification tradition with Resource Dependence Theory (Pfeffer & Salancik, 1978). The first explains the social and demographic pressure that expands demand; the second explains the material constraints through which institutions respond. Their integration avoids two symmetrical errors: treating demand as if it can be satisfied simply by political authorization, and treating capacity as if it can be analysed without considering the social forces continuously increasing demand. The Sustainable Massification Capacity Framework (SMCF) proposed contains five domains. The first is demographic and educational pipeline pressure: the size of youth cohorts, secondary completion and qualification determine the pool from which tertiary demand emerges. The second is effective demand, observed imperfectly through application and examination-registration behaviour. The third is admission and enrolled student stock. The fourth is the resource environment, including government finance, TETFund intervention, tuition, staff labour markets, capital facilities and regulation. The fifth is institutional capacity, understood as the human, physical, digital and organizational capability required to educate the enrolled population. The concept of massification is often used as a synonym for increased enrolment, but its theoretical meaning is richer. In education, it implies expansion of education from a relatively small elite to a much larger proportion of the population. A high-demand system may face a persistent gap between potential participation and financed capacity.

Governments can respond by expanding public institutions, enabling private provision, increasing tuition, diversifying institutional types, promoting distance education or rationing access through selective admission. Each response has resource implications and distributive consequences. Massification therefore sits at the intersection of access, finance, capacity and quality. The African context demonstrates why participation ratios and institutional pressure must be considered together. Mohamedbhai (2014) argues that many African institutions enrolled students beyond capacity, generating overcrowding, strained facilities and pressure on academic staff. At the same time, Sub-Saharan Africa continued to record low tertiary participation relative to other world regions. Lebeau and Oanda (2020) similarly show that expansion in the region has been accompanied by persistent inequalities, while comparative work on access highlights substantial socioeconomic and regional differentiation. Andoh (2026) stresses that low gross enrolment ratios do not negate massification; rapid population growth can keep ratios low even as absolute student numbers and institutional pressure rise sharply.

Nigeria's university expansion is rooted in post-independence nation-building, regional inclusion and the democratization of access. The Politics of Access literature shows that university location and admission have long carried meanings beyond technical manpower production: they are bound to federal balance, social mobility and political legitimacy (Anyanwu, 2011). This legacy helps explain why the creation of institutions has remained an attractive policy response to unmet demand. Yet access and capacity are not equivalent. Amini-Philips and Akpoyowaire (2016) define carrying-capacity policy as an attempt to align admissions with the human and physical resources available to universities. Their analysis highlights a persistent imbalance between demand and supply and the difficulty of widening access while maintaining quality. More recent Nigerian commentary continues to identify this tension, and recent NUC accreditation reports make it visible at programme level. In 2024 accreditation reports, NUC panels cited staff-student ratios outside approved discipline-specific guidelines in programmes across agriculture, basic medical sciences, education, social sciences and computing (National Universities Commission, 2024). These reports are useful because they demonstrate that capacity standards are disciplinary rather than reducible to a single national ratio.

JAMB admission data provide another perspective. For the broader tertiary system, recorded admissions increased from 479,539 in 2010 to 619,397 in 2019, fell during the pandemic period, and recovered to 693,398 in 2022 before standing at 639,263 in 2023 in the policy report used here (Joint Admissions and Matriculation Board, 2024). These figures cover tertiary admissions under JAMB's remit rather than universities alone and are subject to later regularization. Their value therefore lies in describing the scale and volatility of access pressure, not in serving as a clean university-enrolment stock measure. This distinction is often blurred in public discourse, where application, admission and enrolment are treated interchangeably. The NUC statistical digests provide the stronger measure of university student stock for 2017–2019. Total university enrolment rose from 1,962,364 in 2017 to 2,041,291 in 2018 and 2,159,461 in 2019. Academic staffing increased from 61,999 in 2017 to 73,443 in 2019 according to the published digests (National Universities Commission, 2018, 2019, 2020). These totals imply an observed system-wide student-to-academic-staff ratio improving from approximately 31.7 students per academic staff member to 29.4. The calculation should not be mistaken for a regulatory benchmark because NUC standards vary by discipline. It is instead a system-level intensity measure that can be used to translate future student stock into indicative staff requirements.

Nigeria's public universities draw on government budgets and Tertiary Education Trust Fund (TETFund) interventions, while state institutions depend on heterogeneous state fiscal capacities and private institutions rely heavily on tuition and owner investment. TETFund's statutory role is explicitly interventionist: it finances infrastructure, academic staff development, libraries, ICT, research and other quality-enhancing activities in eligible public tertiary institutions. In 2025, the Fund announced annual direct allocations of about N2.56 billion for each beneficiary university alongside zonal and special interventions (Tertiary Education Trust Fund, 2025). Such allocations are important, but uniform annual direct intervention amounts do not eliminate variation in institutional size, inherited infrastructure deficits or disciplinary cost structures. Capacity should therefore be understood as multidimensional. Human capacity includes the number, qualification, rank mix and disciplinary distribution of academic staff. Physical capacity includes teaching rooms, laboratories, workshops, libraries, offices, utilities and student-service facilities. Financial capacity determines whether these resources can be maintained and renewed. Organizational capacity includes planning systems, data quality, governance and the ability to convert resources into educational provision. Digital capacity has also become increasingly important as universities expand hybrid teaching, administrative automation and access to electronic resources.

For universities, time-series models are attractive because historical admissions and enrolments often exhibit trend and persistence. Onyeka-Ubaka et al. (2017) applied ARIMA methods to undergraduate admissions at the University of Lagos using a long historical series from 1962 to 2016. Their work demonstrates the practical argument for forecasting: student numbers must be anticipated if infrastructure is to be aligned with population. Nevertheless, national Nigerian data impose important methodological constraints. ARIMA models are data-

hungry relative to the eleven annual JAMB UTME observations available here for 2015–2025, and the series includes an exceptional pandemic-period shock. More importantly, the publicly accessible NUC national university-enrolment series is continuous for only 2017–2019 in the statistical digests linked on the Commission's current website. Fitting a sophisticated time-series model to three observations would create an illusion of precision. The proper response is methodological pluralism: compare simple forecasting models where the data support them; model the pandemic shock explicitly as a sensitivity test; and use transparent scenarios rather than statistical forecasts where the underlying series is too short. The specific gap is therefore integrative and prospective. Existing Nigerian studies tend to examine access, carrying capacity, funding, infrastructure or forecasting separately; many are descriptive or institution-specific. There is limited national work that (a) consolidates official demand and university stock indicators, (b) tests competing forecasts on the available demand series, (c) explicitly documents gaps in the national statistical record, (d) translates alternative future enrolment paths into academic-staff requirements, and (e) embeds these elements in a conceptual framework of sustainable massification. This study is designed to fill that gap while keeping claims proportional to the evidence actually available.

Research Questions

The following research questions were raised for the study:

1. What is the trend of demand, admission and enrolment in universities between 2015 and 2025?
2. What is the pattern of university enrolment, staffing and institutional expansion?
3. What university enrolment levels emerge under the alternative growth scenarios through 2040?
4. What staffing levels would those scenarios require under alternative staffing-intensity benchmarks?

Methodology

The study uses a quantitative longitudinal design combining administrative-data synthesis, time-series benchmarking and scenario-based capacity modelling. The unit of analysis varies by data source. JAMB indicators are national annual flows; NUC enrolment and staff values are national university-system stocks; institution counts describe structural supply; UN population projections provide demographic context. The design is deliberately multi-source because no single public dataset provides all variables required for national educational-planning analysis. The observational window is 2010–2025 where official data are available, with forecast and scenario horizons extending from 2026 to 2040. The phrase "2010–2025 historical series" therefore refers to the assembled evidence window, not to a claim that every variable is observed annually across all sixteen years. Data coverage is explicitly documented variable by variable. This is important because silently interpolating missing national values would undermine reproducibility. Four principal source families were used. First, the National Universities Commission statistical digests provide national university enrolment, academic staffing and institution counts. The current NUC website publicly links the 2017, 2018 and 2019 digests. The 2019 digest reports 2,159,461 students across all levels, including 1,854,261 full-time undergraduates, 85,483 part-time undergraduates, 197,105 full-time postgraduates and 22,612 part-time postgraduates. It also reports 73,443 academic staff and 170 universities. The 2017 digest reports 1,962,364 students and 61,999 academic staff. The 2018 digest reports a national enrolment total of 2,041,291 (National Universities Commission, 2018, 2019, 2020). Second, JAMB UTME registration and admission statistics provide the tertiary-demand proxy and complementary admission flows (Joint Admissions and Matriculation Board, 2024, 2025). Third, United Nations demographic evidence provides the population context (United Nations, Department of Economic and Social Affairs, Population Division, 2024). Fourth, NUC accreditation technical reports provide programme-level evidence on staffing standards (National Universities Commission, 2024).

For the demand series, rolling-origin tests were used to compare Holt's trend benchmark against linear, damped-trend and ARIMA alternatives. Because the publicly available NUC national university-enrolment series is continuous for only three years (2017–2019), no single statistical forecast of university enrolment is presented; instead, transparent scenarios are constructed and anchored to the NUC 2019 value of 2,159,461 students. Staffing

requirements are derived by applying alternative staffing-intensity benchmarks to each enrolment scenario, and are reported as gross system-level requirements rather than as present or future "gaps."

Results

Research Question 1: What is the trend of demand, admission and enrolment in universities between 2015 and 2025?

The first empirical pattern is sustained high demand accompanied by volatility. UTME registrations increased from 1,475,600 in 2015 to 1,592,462 in 2016 and 1,722,269 in 2017. Registrations moderated to 1,653,127 in 2018, rose to 1,886,509 in 2019 and 1,949,983 in 2020, then fell sharply to 1,351,284 in 2021. The series recovered to 1,761,262 in 2022, eased to 1,595,779 in 2023, and then rose to 1,992,660 in 2024 and approximately 2,030,862 in the final 2025 UTME count used here. The endpoint comparison implies an increase of roughly 37.6 percent in annual UTME registrations between 2015 and 2025. Because the intervening series is nonmonotonic, this increase should not be interpreted as a smooth annual trend. It nevertheless demonstrates that demand at the end of the period was materially higher than a decade earlier.

JAMB's broader tertiary admission series provides complementary context. Admissions recorded in the policy report were 479,539 in 2010, 468,448 in 2011, 497,427 in 2012, 513,207 in 2013 and 467,074 in 2014. They increased to 522,856 in 2015, 598,837 in 2016 and 619,397 by 2019. Pandemic-period admissions declined to 551,553 in 2020 and 429,351 in 2021, before rising to 693,398 in 2022 and 639,263 in 2023. These are not university-only values, but they underline the difference between the scale of tertiary aspiration and realized annual admissions. The combination of high registrations and lower admission flows is consistent with a capacity-constrained access system, although it cannot establish that all unsuccessful candidates were academically qualified for university admission or preferred a university pathway. Demand pressure therefore needs to be interpreted alongside admission standards, programme preferences, affordability and alternative tertiary routes.

Table 1: JAMB UTME registrations used as the tertiary-demand proxy, 2015–2025

Year	UTME registrations
2015	1,475,600
2016	1,592,462
2017	1,722,269
2018	1,653,127
2019	1,886,509
2020	1,949,983
2021	1,351,284
2022	1,761,262
2023	1,595,779
2024	1,992,660
2025	2,030,862

Research Question 2: What is the pattern of university enrolment, staffing and institutional expansion?

The NUC digests show an increase in national university student stock over the 2017–2019 interval. Total enrolment was 1,962,364 in 2017, 2,041,291 in 2018 and 2,159,461 in 2019. The two-year increase from 2017 to 2019 was 197,097 students, or approximately 10.0 percent, corresponding to a compound annual growth rate of 4.902 percent. Reported academic staff increased from 61,999 in 2017 to 73,443 in 2019, an 18.5 percent increase over the two-year interval. On the official printed totals, the simple system-wide students-per-academic-staff

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indicator improved from approximately 31.7 to 29.4. This is encouraging in the narrow sense that reported staff growth exceeded enrolment growth over the verified interval. It cannot be generalized to all disciplines or institutions because national averages can conceal severe programme-specific shortages, and NUC accreditation evidence demonstrates differentiated staffing standards (National Universities Commission, 2024). Institution count expanded from 141 in 2015 to 153 in 2016, 161 in 2017, 165 in 2018 and 170 in 2019. The current NUC listing for 2026 shows 328 universities: 77 federal, 69 state and 182 private. This represents a 92.9 percent increase in institution count relative to 2019. However, the absence of a comparable public national student/staff digest after 2019 means that the effective capacity associated with this proliferation cannot be inferred from count alone.

Table 2: Selected NUC system indicators

Year	University enrolment	Academic staff	Observed students/staff	Universities
2017	1,962,364	61,999	31.7	161
2018	2,041,291	Not used		165
2019	2,159,461	73,443	29.4	170
2026	Not publicly available in comparable digest	Not publicly available in comparable digest		328

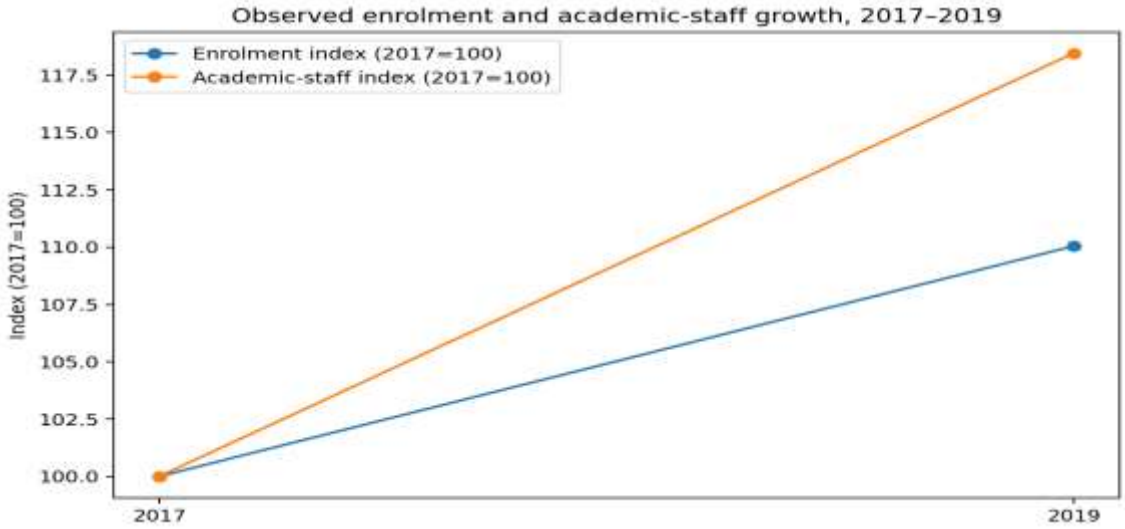


Figure 1. Indexed growth in reported university enrolment and academic staffing, 2017–2019 (2017 = 100).

Research Question 3: What university enrolment levels emerge under the alternative growth scenarios through 2040?

Because a continuous post-2019 national university-enrolment stock series is not publicly accessible in the NUC digest archive, the study does not present a single statistical forecast of university enrolment. Instead, three transparent scenarios are constructed and anchored to the NUC 2019 value of 2,159,461 students. Under the capacity-constrained 2.0 percent annual-growth scenario, university enrolment reaches approximately 2.48 million in 2026, 2.69 million in 2030, 2.96 million in 2035 and 3.27 million in 2040. Under the planned-expansion 3.5 percent scenario, the corresponding values are about 2.75 million, 3.15 million, 3.74 million and 4.45 million. Under the historic-growth scenario of 4.902 percent the 2017–2019 observed CAGR enrolment reaches about 3.02 million in 2026, 3.66 million in 2030, 4.64 million in 2035 and 5.90 million in 2040. The range is deliberately wide. By 2040, the difference between the lowest and highest scenario is approximately 2.63 million students. Such divergence is the mathematical consequence of compounding and illustrates why early planning decisions matter. Small differences in annual expansion accumulate into very large differences in staff,

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facilities and recurrent expenditure requirements over two decades. These paths should not be read as probability-weighted forecasts. The historic-growth scenario asks what would happen if the short 2017–2019 pace persisted. The planned-expansion scenario represents a moderate policy path, while the 2.0 percent scenario illustrates slower capacity-constrained growth. Actual outcomes will depend on demographics, admission policy, affordability, public and private expansion, alternative tertiary pathways, online provision and labour-market conditions.

Table 3: Scenario-based university enrolment trajectories

Year	2.0% capacity-constrained	3.5% planned expansion	4.902% historic-growth
2026	2,480,542	2,747,437	3,018,740
2030	2,685,018	3,152,748	3,655,588
2035	2,964,477	3,744,475	4,643,781
2040	3,273,022	4,447,262	5,899,106

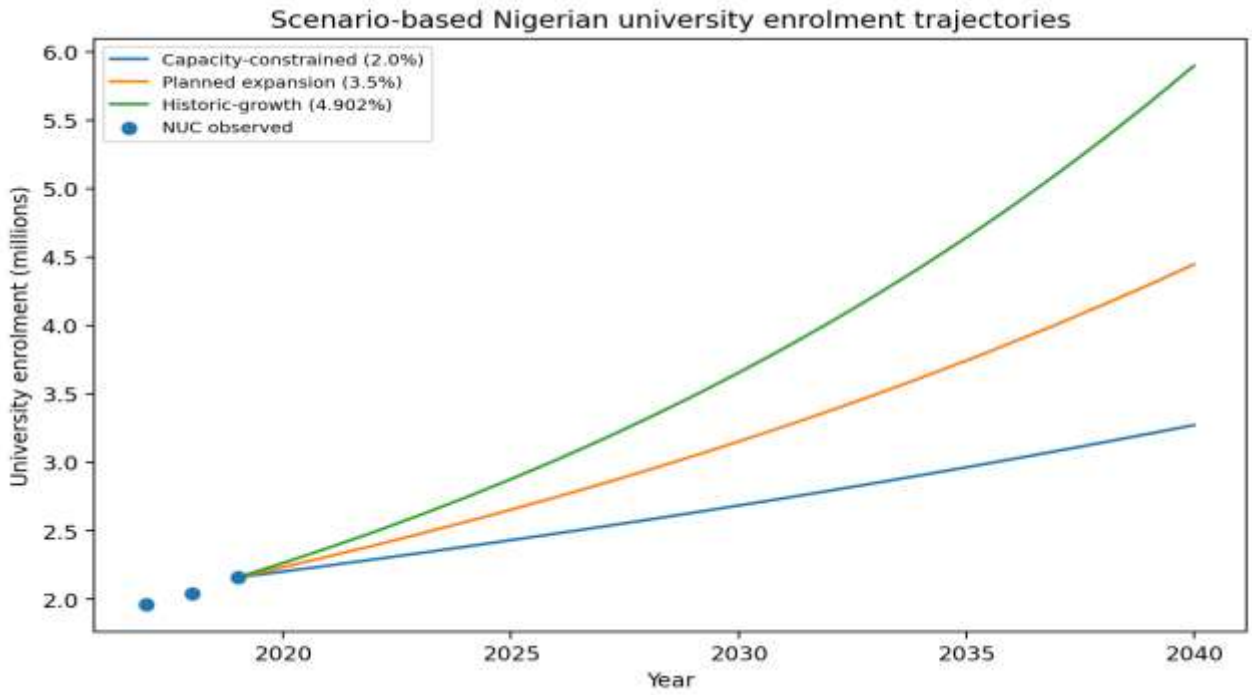


Figure 2. Scenario-based Nigerian university enrolment trajectories, anchored to NUC 2019.

Research Question 4: What staffing levels would those scenarios require under alternative staffing-intensity benchmarks?

The staffing implications are substantial even under conservative growth. If the system merely preserves the observed 2019 average of approximately 29.4 students per academic staff member, the 2040 capacity-constrained scenario would require roughly 111,315 academic staff; planned expansion would require about 151,251; and continuation of the 2017–2019 enrolment growth rate would require about 200,628. A 25:1 planning benchmark increases those requirements to approximately 130,921, 177,890 and 235,964 respectively. At a 20:1 benchmark, the requirements rise further to approximately 163,651, 222,363 and 294,955. These are system-level staffing requirements, not current shortages. Because the latest comparable national academic-staff stock used in this study is 2019, it would be incorrect to subtract 73,443 from the 2040 requirements and call the difference a present or future "gap" without observing staff recruitment between 2020 and 2040. The proper interpretation is gross staffing requirement under each scenario. The calculations also understate the complexity of actual resource planning. A system can meet a national average staffing ratio while still having acute shortages in engineering,

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medicine, computing or emerging fields. NUC accreditation reports show discipline-specific norms (National Universities Commission, 2024), which means the next generation of national capacity models should forecast enrolment by discipline and apply corresponding staff, laboratory and space standards. Nevertheless, the aggregate exercise establishes the scale of the planning problem: multi-million-student expansion implies tens or hundreds of thousands of academic positions depending on growth and quality targets.

Table 4: Indicative academic staffing requirements in 2040

2040 scenario	Students	Staff at 29.4:1	Staff at 25:1	Staff at 20:1
2.0% capacity-constrained	3,273,022	111,315	130,921	163,651
3.5% planned expansion	4,447,262	151,251	177,890	222,363
4.902% historic-growth	5,899,106	200,628	235,964	294,955

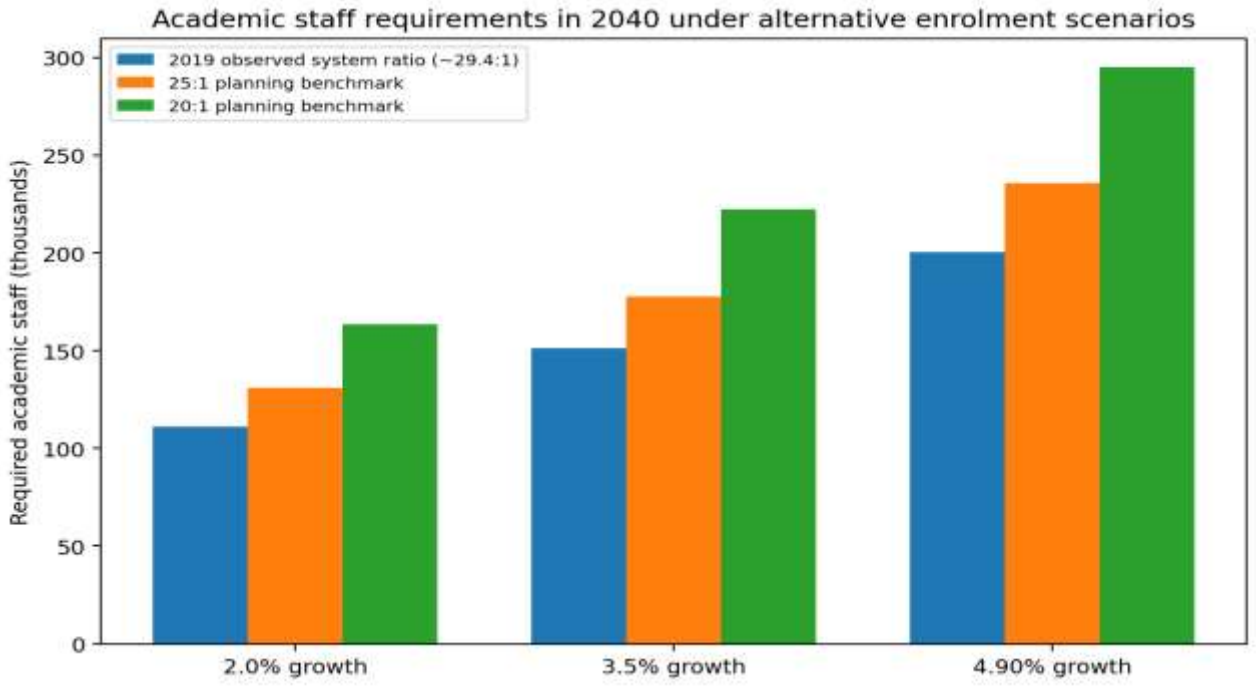


Figure 3. Academic staff requirements in 2040 under alternative enrolment and staffing-intensity assumptions.

Discussion of the Findings

The results show that UTME registrations rose by roughly 37.6 percent between 2015 and 2025, from 1,475,600 to 2,030,862, but did so nonmonotonically, with a sharp fall to 1,351,284 in 2021 and a recovery thereafter. This finding supports a central insight of the African massification literature: institutional pressure and low societal participation can coexist. Nigeria's annual UTME demand remains around two million candidates, while university student stock already exceeded two million in 2019. These are large absolute numbers, but they exist within a country whose youth population is growing and whose overall population exceeded 230 million by 2024 (United Nations, Department of Economic and Social Affairs, Population Division, 2024). The planning problem is therefore not whether massification is occurring; it is how to accommodate continued pressure without allowing resource intensity to deteriorate. The volatility of the series also matters for planning: because demand is nonmonotonic and shock-sensitive, a single trend line cannot be treated as a reliable planning anchor. This matters conceptually because policy discourse sometimes treats expansion as evidence that the access problem has been solved. The rapid rise in the number of universities could suggest abundant institutional supply, yet the demand series and historical admission flows indicate persistent pressure. Conversely, congestion in established public universities can create an impression of system-wide shortage even when some private or newer

institutions have unused capacity. A national plan must therefore shift from aggregate institution counts toward programme-specific, geographic and affordability-sensitive capacity measures.

The results show that university enrolment rose from 1,962,364 in 2017 to 2,159,461 in 2019, a two-year increase of 197,097 students, or approximately 10.0 percent, corresponding to a CAGR of 4.902 percent. Reported academic staff rose from 61,999 to 73,443 over the same interval, an 18.5 percent increase, and the observed system-wide students-per-staff ratio improved from approximately 31.7 to 29.4. Institution count, however, expanded far more dramatically: from 170 in 2019 to 328 on the 2026 NUC listing, a 92.9 percent increase. This divergence between the staffing/enrolment improvement observed in 2017–2019 and the much larger expansion in institution count after 2019 is the key analytical outcome of this research question. The finding that reported staff growth exceeded enrolment growth between 2017 and 2019 should temper claims that every dimension of capacity necessarily deteriorated as student numbers increased. Yet the aggregate ratio does not resolve programme-level shortages, and the 2024 NUC accreditation reports show that noncompliance with discipline-specific staffing ratios remains a live issue (National Universities Commission, 2024). The increase from 170 universities in 2019 to 328 in 2026 demonstrates that Nigeria has responded vigorously on the extensive margin creating more institutions. The unanswered question is how much effective capacity this expansion has generated. New universities may increase seats over time, but licensing alone does not provide lecturers, laboratories, libraries, power, broadband, housing or recurrent budgets. Nor does it ensure that new seats appear in the disciplines and locations where demand and national manpower needs are highest. This is precisely where Resource Dependence Theory adds explanatory value. Institutions are constrained by the resources available from governments, tuition-paying households, intervention funds and labour markets (Pfeffer & Salancik, 1978). Private institutions may possess physical space but face affordability-limited demand; state universities may expand admissions despite volatile subnational funding; federal universities may have large demand but depend heavily on public appropriations and TETFund infrastructure. Effective capacity is therefore jointly produced by authorization, finance and organizational resources. The current federal emphasis on consolidating quality rather than simply proliferating institutions is consistent with this interpretation. NUC's Blueprint 2.0 and recent quality-assurance initiatives point toward governance, relevance, student support and international competitiveness (National Universities Commission, 2026).

The present analysis suggests that such reforms should be tied to a national capacity ledger that measures the actual instructional resources attached to institutional expansion. The results show that the three scenarios diverge substantially: 3,273,022 students under the 2.0 percent capacity-constrained path, 4,447,262 under the 3.5 percent planned-expansion path, and 5,899,106 under the 4.902 percent historic-growth path by 2040. The difference between the lowest and highest scenario is approximately 2.63 million students. This wide divergence is itself the substantive finding. Because compounding magnifies small differences in annual growth into very large differences in staff, facilities and recurrent expenditure requirements over two decades, early planning decisions matter disproportionately. The scenario range also confirms that the future is not pre-determined by demography alone: admission policy, affordability, public and private expansion, alternative tertiary pathways, online provision and labour-market conditions will all shape which path materialises. This is why the study presents scenarios rather than a single statistical forecast, and why it treats the absence of a continuous post-2019 national enrolment series as a planning risk in its own right. The results show that preserving the 2019 observed ratio of approximately 29.4 students per academic staff member would require 111,315 academic staff by 2040 under the capacity-constrained scenario, 151,251 under planned expansion, and 200,628 under historic growth. Applying a 25:1 benchmark raises those requirements to 130,921, 177,890 and 235,964 respectively; applying a 20:1 benchmark raises them further to 163,651, 222,363 and 294,955. These long-range requirements are consequential. Preserving the 2019 national average under the moderate 3.5 percent student-growth path requires roughly 151,000 academic staff by 2040; improving to 25 students per staff member requires nearly 178,000. Under the high-growth scenario, the corresponding figures exceed 200,000 and 235,000. Academic staff development is therefore not a secondary human-resources concern. It is a core infrastructure problem because

doctoral training, recruitment and academic career formation take years. This has implications for TETFund and university workforce planning. Capital projects can often be completed faster than a high-quality academic workforce can be developed. Expansion policy should therefore include multi-year doctoral production, return and retention strategies; discipline-specific labour-market analysis; staff development; and incentives that reduce excessive concentration of senior academic capacity in a small number of established universities. The requirement figures are gross system-level requirements, not present shortages, and they understate disciplinary complexity: a system can meet a national average staffing ratio while still having acute shortages in engineering, medicine, computing or emerging fields, which is why the next generation of national capacity models should forecast enrolment by discipline and apply corresponding staff, laboratory and space standards.

Conclusion

Nigeria's university system is entering a stage in which the traditional policy response to unmet demand adding institutions and expanding admissions must be complemented by a more rigorous capacity-planning architecture. The evidence assembled in this study shows substantial and persistent tertiary demand, growth in verified university enrollment between 2017 and 2019, rapid expansion in institutional count, and large long-range staffing implications under plausible student-growth scenarios. The study's central argument is not that Nigeria has too many or too few universities. The available evidence is insufficient for such a simple conclusion. The more defensible claim is that institution count alone is a poor measure of capacity. Sustainable massification requires alignment among demand, admissions, enrolled student stock, academic workforce, facilities, finance, quality standards and data systems.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Nigeria should institutionalize a rolling National University Capacity Plan with a minimum fifteen-year horizon and annual updates. The plan should link demographic projections, secondary-school completion, JAMB demand, programme preferences, admissions, student stock, graduate output and labour-market requirements.
2. NUC should maintain a national programme-level capacity registry. Every accredited programme should have a machine-readable record of approved carrying capacity, actual enrollment, academic staff by rank, applicable staff-student norm, key facility requirements, accreditation status and utilization.
3. Resource allocation should be more explicitly connected to marginal student capacity. Public funding and TETFund intervention should not be distributed solely through uniform institutional allocations.
4. Nigeria should estimate doctoral and academic-staff requirements by discipline, coordinate doctoral scholarships with forecast shortages, improve early-career academic retention and create mobility mechanisms through which experienced academics can support newer institutions without permanently weakening established ones.

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