NIGERIAN INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH, IBADAN

NIGERIA'S MANPOWER STOCK AND REQUIREMENTS



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EXECUTIVE SUMMARY

Purpose and central message

Nigeria's Manpower Stock and Requirements Study, 2021 examines the size, composition, distribution and utilisation of manpower in the country's modern-sector establishments and educational institutions. It responds to a persistent national planning problem: shortages of appropriately skilled personnel coexist with surpluses and underemployment in other occupations and sectors. The central concern is therefore not simply the number of people available for work, but whether the education, skills, occupational mix and geographical distribution of the workforce match the needs of employers and the wider economy.

The study finds that manpower imbalances are shaped by both the supply of skills and the conditions under which employers operate. Establishments reported shortages associated with lack of qualified applicants, inadequate facilities, lack of authority to recruit, weak demand for products and services, administrative delays and unattractive conditions of service. At the same time, economic stagnation, depressed demand, financing constraints and reduced industrial activity limited employers' capacity and willingness to expand their workforce. The report consequently cautions against treating every declared vacancy as evidence of a genuine national skills shortage.

Headline findings

- 11,363 establishments were selected; 8,843 were contacted and 6,436 responded, representing a reported response rate of 72.8%.
- The responding establishments reported 1,096,045 employees. Using employer information and extrapolation for non-response and coverage gaps, the study estimated total employment in large, medium and small establishments at 67,859,019 as at December 2019.
- The report's model projected aggregate manpower/labour demand rising from 76.8 million in 2020 to 87.1 million in 2025, while projected unemployment remained high, between 31.5% and 33.0%.
- More than one-third of employees in the establishments covered were women, while over 40% were non-graduates of tertiary institutions.
- Teaching professionals recorded the largest additional requirement among the selected manpower categories presented in Chapter 8: 12,499, with a vacancy rate of 19.93%.
- The study identifies weak linkages between employers and education/training institutions as a central institutional gap.

Overall implication

Nigeria's manpower challenge requires a coordinated response that links labour-market intelligence, education and training, employer demand, public-sector recruitment systems and macroeconomic policy. The report proposes strengthening the Nigeria Educational Research and

Development Council (NERDC) as a coordinating institution, alongside targeted roles for SMEDAN, government agencies, employers and knowledge-generation centres.

Interpretation note: Although titled the 2021 study, much of the establishment-level evidence and vacancy information relates to 2019; 2020 was excluded as a COVID-19 year. The forecasts cover 2020–2025 and should be read as model-based projections made at the time, not as current labour-market statistics.

1. Background, objectives and policy rationale

The report situates manpower as a productive national asset: the knowledge, skills, capabilities and experience through which people use natural, financial and physical resources to produce goods and deliver services. The quality and composition of this resource influence productivity, service delivery and the implementation of national development plans. The study recalls that Nigeria's earlier manpower-planning challenge was often described as a shortage of executive, scientific and technical capacity. From the 1990s, however, the problem became more complex: surpluses in administrative, business and related occupations emerged alongside persistent shortages in technical and specialised occupations.

This coexistence of shortage and surplus has consequences for both economic performance and public welfare. Some organisations cannot recruit suitably qualified personnel, while jobseekers may possess qualifications that do not correspond to available work. Employers may also report vacancies that remain unfilled for reasons unrelated to the supply of skills, including funding, workspace, equipment and recruitment restrictions. Reliable information on the actual stock, occupational profile, educational attainment, turnover and future requirements of manpower is therefore necessary for effective national planning.

Specific objectives

- Estimate existing manpower stock, shortages and surpluses across selected occupations, including their socio-demographic characteristics and implications for employment and growth.
- Collect information on industry manpower mix, wages and salaries, employment, labour turnover and additional staff requirements to inform future estimates.
- Assess the size and contribution of non-Nigerian workers in the modern-sector economy.
- Examine workers' educational attainment and training, and identify implications for skills development.
- Assess the role of educational institutions in supplying manpower.
- Examine linkages between government and industry in the supply and utilisation of manpower.

Analytical framing

The study adopts the Markovian theory of manpower planning, which uses historical patterns of recruitment, promotion, movement and withdrawal to inform future manpower policies. Its conceptual framework treats manpower development as a cycle: people move through education and training into the national manpower pool; public and private establishments demand and deploy workers; and in-service training, staff turnover, withdrawals and new vacancies alter the stock available over time. The framework highlights the need to connect education and training outputs to employer requirements.

The report's policy rationale is practical. Government requires evidence to prioritise resources and refine employment and human-capital policies; employers need information on the availability and deficiencies of skills; and educational institutions need clearer signals about the competencies and

occupational categories demanded by the economy. The study is intended to support all three groups and to strengthen the evidence base for sectoral manpower planning.

2. Methodology, coverage and interpretation of estimates

The study covered public and private establishments across all 36 states and the Federal Capital Territory. The sampling frame was obtained from the National Bureau of Statistics and organised by state. All establishments employing 20 or more persons were selected, together with a systematic sample of 10% of establishments employing 10–19 persons. Specialised professional establishments employing fewer than 10 persons—such as accountancy, architecture, medical and legal practices—were also included. The methodology section records an initial target of 12,169 establishments, while the final conclusion reports 11,363 selected establishments; the latter is the final achieved selection figure used in the report's summary.

Seven questionnaire types were designed: a general establishment instrument and separate instruments for universities, polytechnics/colleges of technology, colleges of education, specialised institutions/monotechnics, secondary/commercial schools and primary schools. Information covered employee numbers, occupation, sex, nationality, education, wages and salaries, recruitment and withdrawals, training, vacancies, additional requirements, output and sales, and constraints to effective staff utilisation.

Fieldwork and response

NISER trained 39 research staff, who supported state-level training, supervision and quality control. More than 600 enumerators administered the questionnaires, with repeated visits—sometimes up to five—to secure completed returns. The final report states that 8,843 establishments were contacted and 6,436 responded, giving a response rate of approximately 72.8%. The fieldwork was undertaken under a compressed timetable: the report notes that the current exercise was completed within about three months, compared with the approximately 12 months historically required for earlier studies.

Analytical approach

The analysis combines descriptive statistics (frequencies and percentages), employer-survey estimates and a Recursive Dynamic Computable General Equilibrium (RDCGE) model. The employer survey captures employers' reported staffing patterns, vacancies and anticipated requirements. The RDCGE model uses economic and sectoral relationships to generate projections of labour demand over time. The report also uses occupational staffing ratios and, for selected professional categories, information from relevant professional associations to estimate the active stock of manpower.

Important qualifications

- The reference period for most establishment information is 1 January–31 December 2019. The report excluded 2020 establishment data because it considered the COVID-19 year unsuitable for the modelling exercise.
- Total employment of 1,096,045 is the reported employment in responding establishments. The much larger estimate of 67,859,019 is an extrapolated national estimate that adjusts for non-response and possible under-coverage; it is not a direct headcount of all workers.

- The extrapolation assumes that non-responding and uncontacted establishments generally have employment distributions similar to responding establishments, particularly medium-sized establishments.
- The report acknowledges that the short implementation period may have reduced timely responses, especially from public establishments, and may have resulted in under-representation in some institutions and locations.
- Vacancy rates are treated as indicators or proxies for manpower shortages, but Chapter 8 adjusts the interpretation to account for constraints such as lack of funds, workspace, equipment, raw materials and complementary facilities.

These qualifications matter when using the estimates for policy. The results are valuable as a national diagnostic and planning baseline, but should not be treated as a contemporaneous census or as a substitute for regularly updated labour-market information.

3. Structure and distribution of manpower

The report's historical comparison indicates that total employment rose between 1977 and 1981, declined between 1981 and 1986, increased again between 1986 and 1991, and subsequently declined between 2001 and the latest study period. The report cautions that comparisons across years are affected by changes in state boundaries and coverage. In 2021, Kano accounted for the largest state share of employment in the historical distribution presented (11.0%); Abuja had recorded the highest share in 2001 (17.5%). The report notes that these variations may partly reflect where responding establishments were located.

Public-sector organisations remained major employers. The distribution of Nigerian employees showed local governments with the largest share (38.6%), followed by state government parastatals/departments/agencies (15.2%) and state government ministries (12.95%). Taken together, these categories demonstrate the importance of public employment in the establishments covered. Private-sector establishments accounted for 12.71% in the reported distribution. The report also observes that local and state government establishments tended to have larger employment sizes than federal government MDAs.

Most private establishments responding to the survey employed between 10 and 50 persons (58.8%), indicating the importance of small and medium-sized businesses in the establishment sample. The report notes that some establishments with fewer than 10 employees were deliberately included because they provided specialised services or represented important professional manpower categories.

Sectoral shifts

The report identifies a notable decline in the employment share of manufacturing. Manufacturing accounted for more than 15% of employment during 1981–1991 in the historical series, but its share had fallen substantially by the latest study period. Construction also experienced a marked decline from a share above 15% in 1977 to around 2% in the later distribution. The report associates these changes with reduced economic activity and exchange-rate pressures. These trends point to a weakening of sectors that historically absorbed substantial labour and underline the importance of industrial recovery for employment generation.

Gender and educational profile

Women accounted for over 33% of employment in the establishments covered. The report provides disaggregation by sex, state, ownership, industry and education, and finds that public-sector employment is particularly important in the distribution of female employment. The overall educational profile shows that non-graduates represented 40.32% of employees, employees with other tertiary qualifications 35.2%, and university graduates 24.5%. University graduates were more prominent in education and research (50.5%) and human health and social work activities (43.2%), reflecting the professional requirements of these sectors.

Expatriate participation

The report identifies expatriate participation in selected managerial, technical and professional occupations, including manufacturing management, research and development management, retail and wholesale management, mining engineering, metallurgy and telecommunications engineering. In the occupational distribution discussed in Chapter 4, 47.67% of expatriate employees were non-graduates, 34.50% had other tertiary qualifications and 17.5% were university graduates. Business and administration associate professionals formed a large share of expatriate employment. The report raises the policy question of whether some roles occupied by non-graduates could be performed by appropriately trained Nigerians, and points to the importance of skills transfer and targeted national capacity development.

Taken together, the employment profile illustrates the need to address sectoral decline, gender differences, occupational imbalances and the mismatch between educational qualifications and workplace requirements.

4. Vacancies, additional requirements and labour turnover

The study examines established positions, vacancies and additional staff requirements by occupation, state and type of ownership. It distinguishes between a declared vacancy and an actual manpower requirement: a vacancy may remain unfilled because an establishment lacks the authority or resources to recruit, lacks office space or equipment, or cannot utilise additional workers productively. Chapter 8 therefore estimates selected manpower requirements by combining reported vacancy information with the wider operating constraints described by employers.

Selected manpower categories

The table below reproduces the first ten categories presented in Chapter 8. It illustrates the scale of additional requirements and the particularly high reported need for teaching professionals.

Manpower category	Existing stock	Vacancy rate (%)	Additional requirement
Production and specialised service managers	35,651	1.24	447
Hospitality managers	4,351	3.93	177
Science and engineering professionals	14,952	2.54	383
Health professionals	37,670	2.17	836
Teaching professionals	50,216	19.93	12,499
Business and administration professionals	59,279	1.24	744
Information and communication professionals	2,440	1.93	48
Science and engineering associate professionals	9,609	1.45	141
Health associate professionals	17,028	2.90	509
Information and communication technicians	2,555	1.92	50

Teaching professionals stand out: the estimated additional requirement of 12,499 is considerably higher than the other categories in this extract, and the vacancy rate is 19.93%. The report's occupational analysis also highlights very high additional requirements relative to existing employment for science and engineering associate professionals (159.3%), assemblers (55.5%), business and administration professionals (44.2%) and street and related sales and services workers (40.0%). These figures suggest that shortages are not confined to a single occupational family.

Labour turnover

For January–December 2019, recruitment represented 2.01% of total employment, while withdrawals represented 2.7%, indicating a modest net contraction overall. Some occupational groups nevertheless expanded, including street and related sales and services workers,

information and communication technicians, and market-oriented skilled agricultural workers. A pronounced contraction was reported among hospitality, retail and other services managers, where withdrawals were 63.4% of employment compared with recruitment of 14.2%. The report suggests that falling purchasing power and reduced consumption may have contributed to contraction in relevant establishments.

The policy implication is that manpower planning should be occupation-specific and should distinguish between replacement demand, expansion demand and vacancies that cannot be filled because of institutional or operational barriers. Broad recruitment targets alone would not address these different causes.

5. Constraints to recruitment and effective staff utilisation

Chapter 6 shows that manpower shortages arise from a combination of skills-supply problems and constraints within employing organisations. Among the establishments that ranked reasons for staff shortages, 25.1% ranked lack of authority to recruit as the first reason, 20.7% ranked lack of facilities first, 18.6% ranked lack of qualified applicants first, and 17.1% ranked inadequate demand for products or services first. Administrative delays, reserved vacancies, unattractive conditions of service and other factors also featured in the rankings.

Differences by ownership and industry

The reasons vary across establishment types. Among purely private establishments, lack of qualified applicants was frequently identified as the first reason for staff shortages. Private businesses also identified inadequate demand for products and services as a major constraint. Across industrial sectors, manufacturing and human health and social work activities were prominent in identifying lack of qualified applicants as a leading reason for shortages. Manufacturing establishments also featured strongly in reporting inadequate demand and lack of facilities. These patterns show that recruitment challenges cannot be understood solely as a failure of the education system.

Training and utilisation constraints

The report identifies shortage of qualified teaching staff, inadequate physical facilities, inadequate training aids, poor calibre of trainees/students, administrative bottlenecks and budgetary constraints as factors limiting training activities. In the education sector, the report records that only 11% of academic staff in the College of Education data considered had received training during the period under review. This points to the need for more systematic professional development and better resourcing of training institutions.

Effective utilisation of available staff is also affected by lack of complementary staff, inadequate job-related training, limited professional experience, ineffective supervision, lack of necessary facilities, staff discontent, inappropriate job specifications and overstaffing. These constraints mean that increasing headcount alone may not improve productivity unless organisations also provide the equipment, supervision, work environment and complementary skills required for staff to perform.

Capacity utilisation and productivity

The report assesses installed capacity utilisation and productivity by industry, ownership and state. Its productivity calculations are based on value of output relative to employment. Financial and insurance activities recorded the highest sectoral productivity value in the analysis, followed by accommodation and food services and human health and social work activities. Administrative and support services recorded the lowest. By ownership, the report identifies federal government/private-sector joint establishments as having the highest productivity value in its comparison, while federal government ministries recorded the lowest. Across states, Kwara recorded the highest productivity value and Yobe the lowest. These are report-specific calculations and should be interpreted in light of the output and employment data available to the study.

The broad message is that productivity depends on the interaction between worker skills, management, demand, infrastructure, finance and technology. Recruitment, training and investment in productive facilities must therefore be addressed together.

6. Educational institutions and the future supply of skills

Chapter 7 examines educational institutions as the principal formal suppliers of manpower. It covers universities, polytechnics, monotechnics, colleges of education, secondary schools and primary schools, assessing staffing levels, vacancies, additional academic staff requirements and staff training. The report's central concern is the extent to which the institutions that produce graduates and skilled workers can meet the occupational and sectoral requirements of employers.

The findings show significant variation across institution types and disciplines. For monotechnics, established academic staff positions totalled 4,893, employment was 4,785 and declared vacancies were 108, giving an overall vacancy rate of 2.2%. Yet the additional academic staff requirement was 1,515, equivalent to 31.7% of existing employment. This distinction reinforces the report's argument that declared vacancies alone do not capture all future staffing needs.

In colleges of education, the report estimated a total additional staff requirement of 5,213 for 2021–2023. State governments accounted for 4,101 (78.7%) of this requirement, followed by private individual institutions with 524 (10.1%), federal government institutions with 417 (8.0%) and faith-based institutions with 171 (3.3%). For secondary schools, subjects with notable additional requirements included Agricultural Science (315), English Language (200), Mathematics (200), Computer Science (150), Chemistry (150), Economics (120), Home Economics (120), Metal Work (100), Physics (100) and Civic Education (100).

The report also documents staff training gaps. Its discussion of College of Education academic staff indicates that only 11% of academic staff were trained during the period examined. This is important because the quality of education-sector manpower influences the quality of future graduates and the capacity of institutions to adapt curricula and teaching methods.

A proposed skills-development model

Chapter 10 proposes a four-part institutional framework: (i) public-sector employers; (ii) private-sector employers; (iii) knowledge-generation and incubation centres, including universities, polytechnics, monotechnics and vocational training institutions; and (iv) government. The model places employers' current and emerging skill needs at the centre of curriculum design, training and manpower development. It argues that the central weakness is the limited linkage between knowledge centres and the public and private institutions that use skilled manpower.

The report proposes strengthening NERDC to coordinate this relationship. Its proposed functions include determining public- and private-sector manpower needs; identifying appropriate knowledge centres; assessing capacity gaps within those centres; linking training providers with employers; advising formal and informal sector operators on sources of support; and ensuring that knowledge and innovation are demand-driven and address employers' technological needs. SMEDAN, working with the Office of the Head of the State Civil Service, is assigned a role in identifying knowledge centres that can upgrade the skills of informal-sector operators.

The model is intended to create a continuous feedback loop: employers communicate skill requirements, education and training institutions adjust provision, government supports coordination and enabling conditions, and updated labour-market data inform subsequent planning.

7. Manpower forecasts, conclusions and policy recommendations

The RDCGE model generated estimates of aggregate manpower/labour demand rising from 76,822,795 in 2020 to 87,149,442 in 2025. The report's projected unemployment rates were 33.0% in 2020, 32.01% in 2021, 31.87% in 2022, 31.76% in 2023, 31.65% in 2024, 31.53% in 2025, with a further figure of 31.76% also reported for 2025 in the conclusion. The duplicate 2025 values appear inconsistent in the report and should be checked against the underlying model output before reuse.

Year	Projected manpower/labour demand
2020	76,822,795
2021	78,916,322
2022	80,921,791
2023	82,943,470
2024	85,016,636
2025	87,149,442

At sectoral level, the model suggests positive labour-demand prospects in about 18 of the 46 modelled sectors. Areas identified as likely to register increased demand include forestry and wood products, coal for electricity, oil refining, electrical and electronics, electricity, basic metals/iron and steel, other manufacturing, construction, trade, rail transport and pipelines, road and water transport, postal and courier services, human health and social services, and professional, scientific and technical services. The report attributes weaker or declining demand in other sectors to the macroeconomic environment, including modest GDP growth and exchange-rate depreciation that raises the cost of imported inputs and final goods.

Conclusions

The study concludes that Nigeria faces a dual challenge: critical shortages of appropriately skilled manpower in selected occupations and sectors, alongside labour surpluses and limited employment opportunities in parts of the economy. Additional manpower requirements in the current study were generally lower than in the 1977, 1981, 1986, 1991 and 2002 studies. The report explains this by reference to weaker industrial activity, depressed demand, reduced access to finance and foreign exchange, and broader economic and social difficulties. It emphasises that the country's challenge is not only to produce more graduates, but to develop the right skills and create conditions in which those skills can be productively deployed.

Priority recommendations in the report

- Provide government-backed training and retraining in critical manpower sectors and review tertiary-level curricula to reflect current and emerging job requirements.
- Designate and strengthen NERDC as the national coordinating agency for manpower stock development, including advisory and linkage functions for knowledge-generation centres and public/private institutions.
- Require NERDC to routinely collect and share data on manpower stocks and requirements across public and private institutions.

- Ensure that universities, polytechnics, monotechnics and other knowledge-generation centres regularly update curricula to match the skills required by employers.
- Enable SMEDAN and the Office of the Head of the State Civil Service to identify relevant knowledge centres for upgrading the skills of informal-sector operators.
- Provide an enabling policy environment and adequate support for knowledge-generation centres to fulfil their manpower-development mandates.

Additional implementation considerations

For the recommendations to translate into results, the report's evidence points to the need for a regularly updated labour-market information system; stronger employer–education institution partnerships; transparent and timely public-sector recruitment; investment in facilities, equipment and training aids; and macroeconomic conditions that support production, investment and job creation. A practical implementation arrangement should specify institutional responsibilities, financing, timelines, measurable indicators and periodic reporting.

Finally, the study's baseline should be refreshed. Its principal establishment data relate to 2019 and its forecasts end in 2025. A new round of data collection would allow government, employers and education providers to test the earlier projections against actual outcomes, identify new occupational gaps and revise manpower priorities in light of structural and technological changes.

Source: Nigerian Institute of Social and Economic Research (NISER), Nigeria's Manpower Stock and Requirements, 2021: Revised Report, October 2022. This executive summary condenses the report and retains its principal findings and recommendations; it does not independently validate the underlying estimates.