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From Classroom to Enterprise: Evaluating the Effectiveness of Vocational Education and Skills Development Programmes in Promoting Youth Entrepreneurship in Nigeria

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Abstract: The study examined the effectiveness of vocational education and skills development programmes in promoting youth entrepreneurship in Nigeria, with emphasis on enterprise creation, business survival, income generation and employment creation. It addressed the problem that many beneficiaries completed training but failed to convert acquired competencies into viable and sustainable enterprises because of weak institutional support, inadequate finance, poor infrastructure, gender inequalities and regional disparities. The study was anchored on Human Capital Theory, developed by Schultz and Becker, which held that investment in education and training increased productive capacity and economic returns. Method: The study adopted a qualitative review design based on recent empirical studies, official statistics and policy documents on vocational education, skills development and youth entrepreneurship in Nigeria. Evidence was synthesised thematically around programme effectiveness, enabling factors and barriers to enterprise development. The findings showed that relevant curricula, practical training, instructor competence, digital skills, mentorship, access to finance and market linkages improved entrepreneurial outcomes. However, programme impact remained uneven because institutional fragmentation, limited post-training support, costly credit, unreliable infrastructure, gendered occupational barriers and regional inequalities constrained beneficiaries. The evidence also showed that training produced stronger results when combined with finance, industry exposure, mentoring and reliable markets. The study concluded that vocational education had promoted youth entrepreneurship, but training alone had not guaranteed sustainable enterprise performance. Human capital generated greater returns where supportive institutions and business environments enabled beneficiaries to apply their skills. Government agencies, training institutions, financial organisations and private-sector actors should coordinate curricula, practical training, finance, mentorship, digital support and market access, while targeting women, rural youths and persons with disabilities across economic sectors.

Keywords: Vocational Education, Skills Development, Youth Entrepreneurship, Enterprise Sustainability, Nigeria.

1. Introduction

The shift from an economy based on certificates to an enterprise-based economy has added impetus to the need for vocational education to transform classroom knowledge to productive capability in Nigeria. As formal employment is not able to keep up with the growing youth population, skills development programmes are now expected to not only build technical skills, but also impart the ability to perceive opportunities, foster creativity and financial acumen, and provide the confidence to build sustainable businesses.

Adeyanju *et al.* [1] found that agricultural training positively influenced the entrepreneurial performance of beneficiaries in Nigeria, indicating that practical training plays a positive role in enhancing productivity and enterprise performance. However, the value of vocational education extends beyond learning a specific skill; it also involves equipping beneficiaries with occupational competencies, market knowledge, digital literacy, mentorship opportunities and access to start-up ecosystems. Emah *et al.* [2] noted that skills acquisition through technical and vocational education provides an important pathway to employment, but emphasised that unequal opportunities and gender-related barriers may restrict the benefits available to graduates. Consequently, the transition from education to employment or entrepreneurship is neither automatic nor guaranteed. It depends on the availability of suitable equipment, competent instructors, workplace exposure and adequate support systems that enable beneficiaries to transform acquired skills into viable economic activities. This situation raises questions regarding the effectiveness of vocational education programmes in Nigeria's pursuit of youth-led economic growth [3].

In this context, the Federal Government of Nigeria has introduced entrepreneurship courses, vocational centres and skills development programmes to transform young people from job seekers into job creators. However, the existence of numerous programmes does not necessarily demonstrate their effectiveness. Programme effectiveness should be reflected in measurable outcomes such as enterprise creation, business survival, increased income, innovation, employment generation and beneficiaries' resilience after training. Oyinola *et al.* [4] argued that entrepreneurship education in Nigerian universities possesses considerable potential, but its implementation is weakened by existing gaps, limited university–industry collaboration and inadequate innovative teaching strategies. This suggests that classroom instruction should be complemented by experiential learning, business incubation, mentorship and continuous engagement with markets. Similarly, Itasanmi *et al.* [5] found that Nigerian technical and vocational education and training students demonstrated positive entrepreneurial attitudes and moderate entrepreneurial intentions, with financial literacy mediating the relationship between entrepreneurial attitude and intention. The finding they make shows that technical skills without business and financial skills can lead to technically skilled graduates who are still not able to start or run businesses. It is therefore essential to evaluate vocational education and skills development programmes to find out if they are indeed bridging the gap between learning and enterprise for youths [6]. Thus, specifically, the study aims to achieve the following:

- 1) To assess the role of vocational education and skills development programmes in enterprise creation, business survival, income generation and employment creation of Nigerian youths.
- 2) To investigate the impact of curriculum relevance, practical training, competence of instructors, digital skills, mentorship, access to finance and market linkages on the entrepreneurial performance of beneficiaries of vocational education and skills development programmes in Nigeria [7].
- 3) To ascertain the institutional, socioeconomic, gender and regional issues affecting Nigerian youths in the utilization of the vocational skills and entrepreneurship trainings for viable and sustainable enterprise.

Classroom

The classroom has a central role in the education system as it is where the curriculum intentions are put into practice, interactions, experiences, competencies and learning. Its definition has however, broadened to include more than just the traditional four walls, desks, teacher and learner. Kokko and Hirsto [8] characterised the classroom as a socially produced learning space in which teachers and students transform physical space into a meaningful learning environment. Their perspective presents the classroom as an active

relational setting rather than merely a physical container. Closs *et al.* [9] observed that the classroom is a multidimensional learning environment comprising physical, pedagogical and psychosocial dimensions that interact to shape students' learning experiences. This definition connects spatial organisation and teaching practices with emotions, relationships and participation. Similarly, Rusticus *et al.* [10] defined the classroom learning environment as the psychological, social, cultural and physical context in which learning occurs and expectations are developed by participants. Their perspective emphasises that classroom life is constructed through the activities and interactions of learners, teachers and other institutional actors. Collectively, these views indicate that the classroom is not merely a room used for instruction; rather, it is an organised educational context in which material conditions, teaching practices, interpersonal relationships and shared meanings influence the development of knowledge and skills.

Modern education also extends the concept of the classroom beyond a physical structure. Goagoses *et al.* defined the classroom as a social climate that can be created in physical, online and technology-enhanced spaces through interaction, belonging, support and participation. This perspective recognises that learning relationships can continue even when teachers and learners are not physically present in the same location. Mbelu and Maguvhe conceptualised the classroom as a socioecological ecosystem shaped by learners, teachers, institutional arrangements, families, communities, resources and inclusive practices. Their interpretation moves beyond the notion of isolated instruction by locating learning within wider social and environmental systems. However, the definitions reviewed focus on general learning, classroom climate, spatial relations, or inclusion, but the aspect of vocational education, where classroom learning should be related to production, enterprise exposure, technological competence, and problem-solving for the market, has received little attention [11], [12], [13]. This restriction results in a conceptual gap, since a vocational classroom is not just a physical room, a social atmosphere, or an online meeting space. Thus, for the purposes of this study the classroom is an organised physical, virtual or blended learning environment where teachers, students, materials, programmes, technologies and work experience in the industry come together to facilitate the transfer of knowledge into skills, entrepreneurial judgment, behaviour and capabilities that are needed to start and maintain a business [14].

Concept of Enterprise

Enterprise is at the heart of entrepreneurship as it is the way in which ideas, skills, resources and risks are structured into productive activity. It goes beyond just shop ownership or business name registration. According to Burns, an enterprise is a business that progresses through recognisable stages of start-up, growth and maturity while responding to opportunities, competition, risk, finance and managerial requirements. This perspective presents an enterprise as a developing organisation rather than a single commercial transaction. Scarborough and Cornwall [15] described an enterprise as a business established and managed through entrepreneurial judgement, market analysis, planning, financing, innovation and operational control to achieve success. Their definition emphasises the disciplined coordination of resources within a competitive environment. Barringer and Ireland [16] defined an enterprise as a new venture that develops from an identified opportunity or business idea into an entrepreneurial firm supported by an ethical foundation, a viable business model, a competent team, financial feasibility and growth potential. This view presents enterprise as both the outcome of entrepreneurial effort and a mechanism for value creation. Collectively, these definitions portray enterprise as an opportunity-seeking, organised and managed economic activity that supplies goods or services, creates value and seeks to survive within a competitive market [17].

Recent scholarship extends the meaning of enterprise beyond the conventional business organisation by presenting it as a context-sensitive mechanism for value creation.

Ratten defined enterprise as the structured expression of entrepreneurship through which individuals recognise, develop and exploit opportunities by creating something new that improves their environment. This definition places greater emphasis on innovation, opportunity recognition and value creation than on business size alone. African enterprises also exist in diverse forms, including formal, informal, part-time, technology-based, survival-oriented and growth-oriented ventures, because entrepreneurial activity is shaped by local culture, available resources, institutions and socioeconomic pressures [18], [19]. This perspective challenges definitions that treat all enterprises as uniform commercial entities. However, the definitions examined focus primarily on business formation, venture development, profitability, growth or general value creation. They pay inadequate attention to vocationally trained youths who will have to transform what they have learnt in the classroom to businesses in challenging markets in Nigeria. This is one scope for a definition that combines skill application, livelihood creation, innovation, resilience and social usefulness. For the purposes of this study, then, an enterprise is considered to be a sustainable economic or social activity by which an individual or group of people leverage acquired skills, knowledge, technology, capital and relationships to create value, meet needs, earn income, create jobs, and remain competitive in the market [20].

Concept of Evaluation

Evaluation is essential to education, public policy and programme management because institutions can't make decisions on whether to continue, improve, expand, redesign or discontinue an intervention without credible evidence. It is not simply a matter of routine measurement but involves systematic enquiry, judgement on quality, usefulness, effectiveness and consequences. Wanzer regarded evaluation as a practical form of inquiry that differs from general research because of its applied purpose, intended audience, recommendations and explicit use of value judgements. This interpretation presents evaluation as knowledge produced for decision-making rather than investigation alone. Puinean *et al.* [21] defined evaluation as a systematic process involving the collection and use of information to understand the effectiveness of practices, programmes and policies. Their definition emphasises organised evidence gathering and the purposeful application of findings. LaVelle *et al.* [22] argued that evaluation is a systematic process of engaging stakeholders to describe programmes, examine evidence, judge quality and support learning and action. This approach incorporates participation by recognising that beneficiaries, implementers, funders and communities possess knowledge that can contribute to the meaningful interpretation of results. Collectively, these definitions present evaluation as a systematic, evidence-based and stakeholder-engaged process for assessing an intervention and determining its merit, performance, relevance and usefulness for accountability, learning, improvement and informed decision-making [23].

Recent studies further demonstrate that evaluation is influenced by the nature of the object being assessed, the values of evaluators and the interpretation of available evidence. Hu *et al.* defined educational performance evaluation as a set of activities undertaken to measure the efficiency, quality and impact of teaching and learning processes. Their perspective emphasises measurable outcomes and the production of information that can support improvements in academic performance. Kelly argued that evaluation is not a value-free technical exercise because organisational demands, policy expectations and evaluators' values shape the evidence that is generated, interpreted and used in decision-making.

This conception emphasizes the moral and political aspects of making value judgments. However, these definitions focus on research purpose, information collection, stakeholder participation, performance measurement or values individually, and do not adequately represent the evaluation of vocational programmes that are expected to result in youth owned enterprises [24]. They fail to combine in one conception the

implementation quality, inclusion, market relevance, enterprise creation, business survival, income and employment generation, and contextual barriers. This gap needs to be defined in line with the current study. Evaluation is thus regarded in this context as a systematic, participatory, value-based and context responsive process of collecting and interpreting evidence to determine the effectiveness of vocational education and skills programmes in enabling the transformation of learning into viable, inclusive, resilient and sustainable youth entrepreneurial outcomes in Nigeria [25].

The Concept of Vocational Education

In modern societies, the importance of vocational education has been growing due to technological change, unemployment and changing expectations of the world of work, which demand learning that can be transferred to competent performance in the workplace. Vocational education extends beyond the teaching of manual skills; it encompasses education, work, identity, productivity and lifelong development. Relly described vocational education as a clearly defined and occupationally oriented educational pathway that leads to skilled employment and produces outcomes that differ from those associated mainly with academic pathways. This definition emphasises the direct relationship between organised learning and preparation for work in a specific occupation. Shi and Bangpan defined vocational education and training as an organised practical activity that equips learners for particular trades or occupations, especially through the development of relevant practical competencies. Their definition presents vocational skills as useful capabilities that prepare individuals for employment. Hermans *et al.* [26] defined vocational education as skills-focused learning that prepares individuals to enter the world of work and pursue different careers, including those increasingly shaped by digital literacy, computational thinking and technological change. This perspective extends vocational preparation beyond tools and routine practices. Collectively, these scholars present vocational education as a systematic form of occupational learning that develops competence, connects learners with workplaces and responds to labour-market needs in both formal and informal settings.

Contemporary scholarship has also questioned definitions that equate vocational education solely with immediate employment. Billett *et al.* [27] regarded vocational education as a legitimate, occupation-aligned post-school pathway that can produce skilled workers while generating benefits for learners, communities and nations. Their conception combines occupational preparation with broader personal and social value. McGrath and Ramsarup proposed that vocational education and skills development should not only equip individuals with the competencies required for labour-market participation but also enable them to contribute to sustainable futures, social wellbeing and environmentally responsible economic activity. Their perspective therefore incorporates developmental, social and ecological functions into the meaning of vocational education. However, the definitions that have been reviewed highlight either an occupational focus, manual skills, adaptability to digital technologies, a social contribution or sustainability. They do not pay enough attention to the role of vocational education as a means by which Nigerian youths can transform classroom learning into innovative and sustainable enterprises in the face of limited formal employment opportunities, poor infrastructure, limited access to finance and evolving markets [28]. This is a conceptual limitation that allows for a context specific definition. For the purpose of this study, vocational education is a structured process of theoretical, practical, digital and entrepreneurial education and learning that equips individuals with occupational skills, relevant technological skills, opportunities, value creation, livelihoods, resilient enterprises and responsible participation in inclusive national development in the evolving socio-economic landscape and peculiar market conditions of Nigeria.

Concept of Skills Development Programmes

Skills development programmes have been a key feature of current education and labour policy as technological change, unemployment and changing market demand necessitate the need for individuals to have skills that are useful and usable, rather than just certificates. It is not just a short training course, but an organised intervention which consciously aims to enhance knowledge, technical skills, attitudes and work-related behaviour. Kumar and Hooda [29] described skills development programmes as structured professional or technical training interventions that provide individuals with the knowledge and competencies required to meet industry needs, improve employability and remain competitive in changing labour markets. Gupta *et al.* [30] regarded these programmes as planned learning interventions that integrate work-based technical training with behavioural and interpersonal development, motivation, future identity, resilience and self-worth, particularly among vulnerable youths. Webb *et al.* [31] further argued that skills development programmes form part of a broader lifelong-learning ecosystem that provides learning, training and guidance to help individuals acquire skills and qualifications for employment and meaningful participation in society within a human-centred sustainable development framework. These definitions demonstrate that skills development programmes are purposeful rather than arbitrary. They organise curricula, instructors, practical activities, assessments and support mechanisms around participants' capacity development so that learning can be applied productively in employment, self-employment, community participation and changing occupational environments.

Recent scholarship extends the concept of skills development beyond preparation for available jobs. Brown and De Neve described skills development programmes as socially situated training processes whose outcomes are shaped by institutions, labour relations, inequality, culture and the lived realities of participants. Their interpretation challenges the assumption that the acquisition of technical skills automatically results in employment or socioeconomic mobility. McGrath and Ramsarup similarly regarded skills development programmes as educational interventions that should not only build occupational capabilities but also promote social justice, ecological responsibility, wellbeing and sustainable futures. This job is related to broader developmental goals and competence formation [32].

However, the definitions studied focus on employability, resilience, lifelong learning, social context or sustainability, individually. They pay too little attention to programmes aimed at Nigerian youths who need to turn out their learning in the practical, digital, managerial and entrepreneurial fields into viable businesses in the face of limited finance, poor infrastructure, inadequate mentorship and volatile markets. This conceptual gap needs to be filled with a definition that incorporates training design, enterprise application, inclusion and ongoing support. Skills development programmes are structured learning interventions that are market responsive and include technical practice, digital competence, entrepreneurial knowledge, behavioural skills, mentorship, assessment, and post-training support for Nigerian youths to create value, secure livelihoods, build resilient businesses, create jobs, and responsibly adjust to evolving socioeconomic conditions.

2. Materials and Methods

Concept of youth Entrepreneurship.

Youth entrepreneurship has become a more significant issue as governments, educators and development agencies look for productive solutions to unemployment, exclusion and economic change among youth. The idea is to connect the energies and aspirations of young people with the generation of ventures, value and jobs. Youth

entrepreneurship, as defined by Van der Westhuizen is the practical application of initiative, innovation, creativity, risk-taking, and skills in self-employment and/or small start-up activities. Sternberg and Breitenbach narrowed youth entrepreneurship to the phenomenon of individuals starting businesses between the ages of 18 and 24, thereby emphasising the timing of entry into venture creation. Ojeda-Beltrán *et al.* described youth entrepreneurship as the process through which young people identify and exploit opportunities by applying creativity, leadership, learning ability, calculated risk-taking, resilience and technological adaptability to business creation. This interpretation shifts attention away from age alone and towards the qualities and capabilities that support entrepreneurial action. Collectively, these definitions present youth entrepreneurship as an age-related but competence-driven process in which young people identify opportunities, mobilise resources, manage uncertainty and take action to establish ventures. They also show that the concept can be understood in terms of personal attributes, entrepreneurial behaviour, age boundaries, venture creation and long-term economic and social development.

Recent scholarship has expanded the concept of youth entrepreneurship beyond conventional business ownership. Alzate *et al.* described youth social entrepreneurship as the ability of young people to apply creativity, dynamism and innovative initiatives to establish enterprises that generate wealth while contributing to social welfare and environmental improvement. Their perspective presents entrepreneurship as an instrument for social change and economic participation. De Klerk *et al.* defined youth entrepreneurs as individuals between the ages of 20 and 35 who apply initiative, innovation, creativity, risk-taking and practical skills in self-employment or small start-up enterprises. This definition combines age, behaviour, competence and engagement. However, the definitions examined vary in terms of age restrictions and make distinct reference to personal characteristics, opportunity discovery, business development, social benefit or technological innovation. They are not enough to account for youth entrepreneurship emanating from vocational education and skills development in Nigeria where trained youths are required to translate their occupational skills into viable businesses, yet they are faced with constraints such as financial, infrastructure, institutional and market. This constraint requires a context-sensitive definition. For the purpose of this study, youth entrepreneurship is the process whereby young Nigerians identify opportunities and leverage their vocational, digital, managerial, financial and creative skills to create, manage, adjust and sustain value-creating enterprises which create income, employment, innovation and social benefit.

Theoretical Underpinning

The study is based on Human Capital Theory, which was primarily developed by Theodore W. Schultz in 1961 and expanded by Gary S. Becker in 1964. Schultz argued that expenditure on education, training, health and mobility should be regarded as investment in people because it expands their productive capabilities. Becker similarly maintained that individuals and institutions invest in knowledge and skills when the expected future benefits exceed the immediate costs. Human Capital Theory is based on several assumptions: education and training create valuable human capital; acquired knowledge, technical competencies and experience increase productivity; individuals generally make rational investment decisions; and improved capabilities should generate higher earnings, better employment opportunities, innovation and stronger economic performance. Contemporary evidence supports these assumptions. Aman-Ullah *et al.* found that human-capital knowledge, skills and capabilities were positively associated with organisational performance. Sternberg and Breitenbach also demonstrated that human capital significantly influences entrepreneurial intentions and decisions to establish new ventures. Furthermore, Dinku *et al.* found that education and managerial capabilities improve the performance of small and medium-sized enterprises, partly by strengthening innovation practices.

Thus, Human Capital Theory is relevant to this study as vocational education and skills development programmes are deliberate investment programmes aimed at converting the classroom learning of Nigerian youths into technical, digital, financial, managerial and entrepreneurial skills. It is used to enable the study to consider if there is any observable return in terms of business creation, survival, income growth, innovation and employment generation from programme exposure, practical training, instructor quality and enterprise support. The theory is also used as a reference for comparing beneficiaries at various levels and types of training. Thus, effectiveness is determined by entrepreneurial outcomes, not simply certificates, attendance, intentions or self-reported competence. However, the contextual challenges of inadequate finance, infrastructure, insecurity, and weak markets are considered as conditions that can strengthen or weaken the impact of acquired skills on sustainable youth enterprises in Nigeria.

3. Results and Discussion

Effectiveness of Vocational Education and Skills Development Programmes in Promoting Youth Entrepreneurship in Nigeria

It is important that vocational education and skills development is measured by the outcomes of beneficiary achievement following training, rather than enrolment, attendance or certificates. This distinction is significant in Nigeria where in the second quarter of 2024, 85.6 per cent of employed persons were self-employed and 93 per cent worked in the informal sector, according to the National Bureau of Statistics. Effectiveness is thus related to whether the training produces living enterprises that earn money and employ people, and whether the institutions that provide skills, finance, mentoring, infrastructure and markets are effective [33].

Enterprise creation is the first measurable outcome: Enterprise Creation. Bello *et al.* [34] examined the impact of the Youth-in-Agribusiness Programme on the gainful employment of 668 youths in south-western Nigeria. Their propensity-score estimates showed that programme participants were between 16.6 and 19.2 percentage points more likely to secure gainful employment than non-participants, while the more conservative endogenous model estimated a 9.33 percentage-point increase among exposed youths. This evidence demonstrates that practical training, productive assets, credit access and youth networks can help beneficiaries transition into income-generating activities. However, Oyinlola *et al.* [35] found that weak university–industry collaboration continued to limit the entrepreneurial outcomes of students across four Nigerian universities. The principal institutional actors include the Federal Ministry of Education, the National Universities Commission, the National Board for Technical Education, the Industrial Training Fund, universities, polytechnics, technical colleges, the National Directorate of Employment and private employers. The Industrial Training Fund reported that, by 2020, the Students Industrial Work Experience Scheme covered 3,742,677 students, 138 universities, 114 polytechnics and monotronics, six colleges of education and 120 approved courses [36], [37]. These institutions should monitor enterprise start-up, registration, capital raised, product launch and first-year survival rather than focusing only on completed placements and certificates.

Business Survival: Business survival is a more demanding measure of programme effectiveness because a newly established enterprise may close before recovering its initial investment. McKenzie evaluated Nigeria's Youth Enterprise with Innovation Programme, which attracted nearly 24,000 applicants and awarded approximately 1,200 grants averaging US\$50,000. Over a five-year follow-up period, grant recipients recorded higher levels of firm entry, survival, sales, profits and employment, including an increase of more than 20 percentage points in the probability of operating firms with at least ten employees. These findings show that acquired skills are more likely to produce durable enterprises

when finance, business planning and monitoring are combined. Nevertheless, Nigeria's financing environment remains challenging.

In a survey of approximately 1,000 micro, small and medium-sized enterprises, the International Finance Corporation estimated unmet credit demand at about ₦13 trillion. Fewer than half of the surveyed enterprises had ever obtained credit, while 19% of non-borrowers identified high interest rates as the principal obstacle to borrowing. Relevant stakeholders include the Bank of Industry, the Development Bank of Nigeria, the Small and Medium Enterprises Development Agency of Nigeria, commercial and microfinance banks, fintech companies, cooperatives, mentors, suppliers and trade associations. These actors should provide affordable capital, bookkeeping assistance, technological support, procurement access and post-training business guidance [38], [39]. Evaluators should measure enterprise operation after one, three and five years, together with profitability, customer retention, reinvestment and reasons for business closure.

Income Generation: Income generation indicates whether entrepreneurial activity improves beneficiaries' livelihoods or merely conceals unemployment. Adeyanju *et al.* [40] studied 1,435 young agripreneurs participating in the ENABLE-TAAT Programme across Kenya, Nigeria and Uganda. They found that programme participation increased agripreneurial income by 7% for the pooled sample and by 54% for the Nigerian sample. This suggests that training produces stronger outcomes when beneficiaries also receive market information, productive resources and value-chain support. However, national labour statistics underline the importance of income quality. In the second quarter of 2024, the underemployment rate was 9.2%, while the rates among youths aged 15–24 and women were 15.1% and 11.2%, respectively [41]. Relevant stakeholders include the Federal Ministry of Agriculture, state agricultural development programmes, extension agencies, African Development Bank-supported programmes, commodity associations, aggregators, retailers, digital platforms and financial institutions. Evaluation should therefore consider net profit rather than sales alone and should measure savings, asset acquisition, loan repayment and income stability. A beneficiary whose turnover increases but who cannot replace equipment remains economically vulnerable. Sustainable income must provide sufficient margins for consumption, reinvestment and protection against inflation, electricity costs and market shocks.

Employment Creation and Institutional Coordination: Employment creation represents a major social benefit because successful beneficiaries can recruit workers and train apprentices. Bello *et al.* [42] found that access to productive assets produced the strongest effect on gainful employment, followed by training, credit access and membership of youth organisations. Adeyanju *et al.* [43] also examined 1,435 agripreneurs and found that youth-owned rural agribusinesses employed an average of four workers, with ENABLE participants recording higher employment levels than non-participants. Counting the paid workers is not the same as counting the unpaid relatives, occasional workers or short-term apprenticeships. Nigeria's institutional architecture should work as a chain: NBTE and education regulators ensure standards; ITF, SMEDAN, employers and master craftspersons provide practical exposure; NDE, SMEDAN, and entrepreneurship centres provide enterprise services; NITDA and telecommunications firms build digital capability; BOI, banks, and fintech providers supply finance; chambers of commerce, anchor firms, retailers and online platforms create market linkages; and governments improve power, roads, security and workspaces. Effectiveness should be measured in terms of net jobs created, wages, job length, working conditions, and apprenticeship completion and job retention. Skilled youths may be left to work for themselves at subsistence level if there is no coordinated actors and post training support for them to build sustainable employers.

The impact of Programme components on Entrepreneurial Outcomes of beneficiaries in Nigeria.

The success of vocational education in Nigeria relies on the extent to which training component is run as a continuum enterprise pathway as opposed to a classroom activity. This is significant in an economy where the National Bureau of Statistics (NBS) reported that 85.6 per cent of employed persons were self-employed and 93 per cent of employed persons were working informally in the second quarter of 2024. Together, these must translate occupational competence into sustainable business outcomes for the Nigerian youths, which would require curriculum relevance, practical exposure, competence of the instructors, digital capability, mentorship, finance and market linkages.

Curriculum Relevance: It is the first step towards curriculum relevance. Based on a study of 1,191 final-year students from 12 public universities across Nigeria's six geopolitical zones, Okolie *et al.* [44] found that entrepreneurship education had a positive relationship with only five of 13 entrepreneurial competencies: opportunity recognition, opportunity assessment, creative problem-solving, self-efficacy and networking. Evidence was not established for the remaining eight competencies, suggesting that many curricula may stimulate entrepreneurial interest without adequately developing resilience, innovation, resource mobilisation or risk-management capabilities. Oyinola *et al.* similarly found, through five focus groups and a survey of 151 students from four Nigerian universities, that stronger university–industry linkages and more innovative teaching methods were required. These findings call for the Federal Ministry of Education, the National Universities Commission, the National Board for Technical Education, universities, polytechnics, technical colleges, employers and trade associations to review curricula in line with current occupational standards, local value chains and digital markets.

Practical Training and Instructor Competence: Practical training and competent instructors make the curriculum operational. The Industrial Training Fund reported that, by 2020, the Students Industrial Work Experience Scheme covered 3,742,677 students, 138 universities, 114 polytechnics and monotechnics, six colleges of education and 120 approved courses. Although the scale is substantial, placement quality remains more important than participation numbers alone. Through SIWES, apprenticeships and live enterprise projects, trainees should gain exposure to equipment, costing, customer complaints, occupational safety, deadlines and quality control. The principal actors include the Industrial Training Fund, the National Board for Technical Education, training institutions, master craftspersons and private firms. This process is further supported by the Nigerian Skills Qualifications Framework, which recognises competencies acquired in training centres and workplaces [45]. Instructors should also undertake regular industry attachments because teachers without practical exposure to production, pricing, procurement and customer acquisition may be unable to prepare learners effectively for entrepreneurship.

Digital Skills: Digital capability has become an essential infrastructure for modern commerce. A survey of 980 Nigerian micro, small and medium-sized enterprises conducted by the International Finance Corporation found that 46% already used WhatsApp to market their products and services, demonstrating how accessible digital platforms can connect informal enterprises with consumers [46]. However, digital training should extend beyond social-media promotion to include electronic payments, online security, bookkeeping, data management and e-commerce. The National Information Technology Development Agency, the Federal Ministry of Communications, Innovation and Digital Economy, training institutions, telecommunications companies, fintech firms and technology hubs should integrate digital tasks into every occupational programme. Upon completing training, for example, a fashion trainee should be able to produce

garments, create digital product images, estimate delivery costs, receive secure payments and respond effectively to online enquiries.

Mentorship: Mentorship provides practical judgement that formal classroom instruction cannot fully reproduce. Adeosun and Shittu found that learning and innovation among youth-owned businesses in Lagos were strengthened by government support, informal networks and external knowledge infrastructure. Mentors can therefore help beneficiaries test prices, avoid unsuitable loans, identify reliable suppliers and interpret customer feedback. Entrepreneurship centres, the Small and Medium Enterprises Development Agency of Nigeria, the National Directorate of Employment, the Tony Elumelu Foundation, chambers of commerce, professional bodies, successful entrepreneurs and traditional apprenticeship networks should provide structured and monitored mentoring relationships. Beneficiaries should be matched with mentors according to sector, business stage and location, while progress should be assessed through improved business decisions, entry into new markets and enterprise survival [46].

Access to Finance: Finance determines whether acquired competencies can be converted into productive assets. The International Finance Corporation estimated that Nigeria had approximately 39.7 million micro, small and medium-sized enterprises, of which about 38.4 million operated informally, while unmet credit demand was approximately ₦13 trillion. In the Nigerian YouWiN! experiment, McKenzie found that grants averaging US\$50,000 increased firm entry, survival, sales, profits and employment. Grant recipients were also more than 20 percentage points more likely to operate firms employing at least ten workers. This evidence suggests that training could stay dormant while capital is a constraint. The Bank of Industry, Development Bank of Nigeria, SMEDAN, commercial banks, microfinance banks, fintech lenders, cooperatives, investors and state employment funds should all provide low-cost financing and financial education, clear selection criteria, milestone tracking and business support.

Market Linkages and Institutional Coordination: Market linkage is the final step in the process of converting production into revenue. Beneficiaries require repeat customers, reliable suppliers, procurement opportunities, aggregators, trade shows, and e-stores. Public agencies should not consider graduation certificates as success when trained producers are not having buyers. SMEDAN, state ministries, local governments, export agencies, commodity associations, retailers, manufacturers, online marketplaces, and anchor firms should link up trainees to the real demand. Monitoring should include start-up rates, registration, sales, profit, customer retention, innovation, business survival and jobs created, all of which should be monitored for beneficiaries by gender, region and trade [47]. This requires institutional coordination: NBTE and the education regulators ensure standards; ITF and employers ensure workplace learning; NITDA enhances digital capability; SMEDAN and NDE ensure enterprise services; financial institutions ensure capital; mentors ensure guidance, and private buyers ensure markets. It is only this joined-up architecture that can take Nigerian youths from classroom competence to viable enterprise at meaningful scale and for long-term.

Factors Affecting the Transformation of Vocational Skills to Sustainable Enterprises in Nigeria

Vocational competence is not enough to make a viable enterprise, it needs more. Nigerian youths are faced with the challenges of weak institutional coordination, inadequate household capital, gendered opportunity structures and unequal regional business environments. The significance of these barriers is underscored by the National Bureau of Statistics, which reported that 85.6% of employed Nigerians were self-employed, 93% worked in the informal sector and 12.5% of youths were not in education, employment or training in the second quarter of 2024. Training quality must therefore be assessed within this difficult entrepreneurial environment.

Institutional Challenges and Responsible Agencies: Institutional weaknesses often disrupt the transition from certification to enterprise formation. Based on evidence from 19,278 serving and former corps members across Nigeria's 36 states and the Federal Capital Territory, Owan *et al.* found that the National Youth Service Corps Skills Acquisition and Entrepreneurship Development Programme was affected by weak practical training, unclear deployment strategies and inadequate follow-up. Oyinlola *et al.* similarly found, from a study involving 151 students and five focus groups across four Nigerian universities, that inadequate institutional support and weak university–industry linkages constrained entrepreneurial outcomes. The principal public actors include the Federal Ministry of Education, which provides policy direction; the National Board for Technical Education, which regulates non-university technical and vocational education and training; the Industrial Training Fund, which develops occupational standards, manages SIWES and certifies skills; and the National Directorate of Employment, which administers vocational, small-enterprise and rural-employment programmes. The National Youth Service Corps aims to sensitise 200,000 graduates annually and train or mentor 100,000 graduates through the SAED programme. However, overlapping mandates, short funding cycles and weak graduate-tracking systems may leave a trained welder without workspace, certification assistance, procurement contacts or post-training coaching.

Socioeconomic and Financial Challenges: Socioeconomic barriers determine whether acquired competence can be used to purchase tools, secure business premises and withstand weak demand. The International Finance Corporation estimated that Nigeria had approximately 39.7 million micro, small and medium-sized enterprises, including about 39 million microenterprises. Its survey of 980 enterprises also indicated unmet credit demand of approximately ₦13 trillion. The same evidence showed that 38.4 million enterprises operated informally, limiting registration, collateral availability and financial records required for formal borrowing. The National Bureau of Statistics also reported a time-related underemployment rate of 9.2%, indicating that employment frequently fails to provide sufficient working hours or income. Relevant actors include the Small and Medium Enterprises Development Agency of Nigeria, which provides business development and cluster support; the Bank of Industry, which provides finance and advisory services; commercial and microfinance banks; fintech companies; cooperatives; and state enterprise agencies. However, finance must be timely and sufficient. A trained caterer may understand job costing but remain unable to operate commercially because of the cost of ovens, refrigeration, transport and working capital. Inflation, electricity costs and exchange-rate pressures may further reduce profit margins and divert grants towards immediate household needs.

Gender-Related Challenges: Gender-related barriers arise when unequal classroom exposure produces unequal enterprise opportunities. Emah *et al.* found that, among 172 technical and vocational education and training graduates in Akwa Ibom State, comprising 86 women and 86 men, gender continued to influence perceptions of skills and employment opportunities across seven vocational areas. Women performed better in hotel management and catering, while men performed better in electronics repair, electrical installation, blockwork, welding and fabrication. National labour statistics reinforce this concern, as female underemployment stood at 11.2%, compared with 7.1% for men, while the proportion of women outside education, employment or training was also higher. Families, training providers, lenders, trade associations and customers therefore play important roles in either sustaining or dismantling occupational stereotypes. Women may face unpaid care responsibilities, restricted mobility, limited collateral and distrust from customers or male-dominated workplaces. Gender-responsive finance, childcare-compatible schedules, female mentors, safe facilities and deliberate recruitment into higher-value technical occupations are therefore required to reduce market segregation.

Regional and Infrastructure Challenges: Regional inequality affects the economic value of the same skills. In the second quarter of 2024, the urban unemployment rate was 5.2%, compared with 2.8% in rural areas, although higher rural labour-force participation partly reflected the absorption of workers into necessity-driven, informal and agricultural activities. Osabohien *et al.* found that access to markets and productive resources significantly influenced youth participation in agriculture, household income and poverty reduction in Nigeria [48].

A digital designer in Lagos has access to broadband, technology hubs and corporate clients, while a similarly-trained youth in a remote community struggles with unreliable power, high data costs and limited customers. State governments, local councils, traditional apprenticeship networks, chambers of commerce, private companies, development partners and community groups need to support federal agencies by adapting programmes to local value chains [49].

Geographical disadvantage can be minimised through mobile workshops, shared equipment centres, rural broadband, local-language instruction, security enhancements and buyer–supplier agreements. The sustainable conversion therefore needs coordinated action: training institutions develop competence, financing providers loosen their purse strings, industry recognizes skills, mentors advise, governments invest in infrastructure and markets reward dependable production. With the lack of integrated support, many beneficiaries are technically able but commercially stranded, subsisting or giving up their trades altogether, despite the significant public and private investment in them.

4. Conclusion

The study found that vocational education and skills development programmes had helped Nigeria's youth entrepreneurship, however, their impact relied on the quality of their implementation and supporting conditions. The results indicated that enterprise creation, business survival, income generation and employment creation had been improved by relevant curricula, practical training, competent instructors, digital skills, mentorship, access to finance and market linkages. But many beneficiaries were unable to translate the skills they gained into sustainable businesses due to institutional weaknesses, lack of funding, infrastructure, post-training support and gender disparities and regional variations.

The evidence also showed that training on its own had not ensured entrepreneurial success, but there had been a positive impact when training was coupled with finance, mentoring, industry exposure, digital access and reliable markets. These findings had been in support of Human Capital Theory which stated that investing in education and training of people would enhance their productive potential and monetary returns.

However, the research had also indicated that the human capital alone was not enough to achieve good results without the supporting business environment, which allowed beneficiaries to put their knowledge and competencies into practice. Thus, coordinated action of training institutions, government agencies, financial organisations, private firms, mentors and market actors in various sectors and regions were required to achieve sustainable youth entrepreneurship in Nigeria.

Based on the major findings, the followings recommendations were stated:

- 1) Vocational and skills development programmes should be rethought by government agencies, training institutions and private employers to be based on measurable entrepreneurial outcomes. The curriculum should integrate technical skills and financial education, digital marketing, opportunity identification, customer management, and business planning. Practical training, industry placement and post training monitoring should be enhanced to enable beneficiaries to start up and maintain their businesses, improve their income and create decent jobs.

- 2) Training providers need to create a "one-stop" support mechanism that connects beneficiaries with qualified trainers, mentors, funding sources, technical hubs and stable markets. Interventions, shared facilities and tracking of graduates should be coordinated by agencies like ITF, NBTE, NDE, SMEDAN and the Bank of Industry. The support should not stop once certified, but should be maintained until enterprises have stable customers, positive cash flow and reinvestment and employment growth have been sustainably achieved.
- 3) Institutional, socioeconomic, gender and regional barriers which negatively affected entrepreneurial outcomes should be tackled by both federal and state governments. Access to low-cost financing, stable power supply, broadband, safe work places and transport facilities should be increased. Targeted funding, flexible training, mentoring and market access for women, rural youths and persons with disabilities. Results of the programme should be broken down by gender, location, and by trade and enterprise survival rates.

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