APPRENTICESHIP AND ENTREPRENEURSHIP EDUCATION AS CORRELATES OF ECONOMIC SUSTAINABILITY OF UNDERGRADUATES OF RIVERS STATE UNIVERSITY

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Abstract
The study investigated apprenticeship and entrepreneurship education as correlates of economic sustainability of undergraduates of Rivers State University. Descriptive survey design guided the study while three research questions were raised to direct the study. The population for the study comprised 396 undergraduates who are engaged in apprenticeship scheme or entrepreneurial programmes while Census sampling technique was used to reach a sample of 396 respondents. Questionnaire developed by researchers titled "Apprenticeship and Entrepreneurship Education as Correlates of Economic Sustainability Questionnaire (AEECESQ) was used for data collection. The Cronbach Alpha method was used to determine the reliability coefficients of 0.88 for (AEECESQ). The instrument was validated by experts and out of 396 copies of the questionnaire distributed, 350 copies were retrieved for data analysis. The hypotheses formulated were tested using multiple regression at 0.05 level of significance. The result business planning plays the most significant role in sustainability among undergraduates, while skill acquisition and education integration contribute positively but without strong impact. Innovation negatively affects sustainability, possibly due to poor implementation. Effective planning remains crucial, while innovation strategies need improvement for better sustainability outcomes in Rivers State University.. The study recommended that University authorities should prioritize effective business planning as the key to sustainability among undergraduates. Skill acquisition and education integration should be encouraged but with enhanced impact strategies. Innovation strategies should be improved to prevent negative effects on sustainability. Comprehensive planning should be implemented to ensure long-term success, while innovation processes should be refined for better outcomes.

Keyword: Apprenticeship, Entrepreneurship, Undergraduates, Economic Sustainability

Introduction

Apprenticeship is a time-honored method of learning that combines practical experience with theoretical knowledge under the guidance of a skilled mentor or master. Smith (2020) emphasized the importance of apprenticeship in bridging the

gap between classroom learning and real-world application. Apprenticeship provides a unique opportunity for individuals to acquire hands-on experience and cultivate essential skills within their chosen profession. Moreover, Jones and Brown (2020) highlighted the socio-cultural dimensions of apprenticeship, emphasizing its role in fostering a sense of belonging and identity within a community of practice. Through apprenticeship, individuals not only acquire technical expertise but also become part of a rich tradition and lineage of skilled practitioners.

Entrepreneurship is the dynamic process of creating and managing a business venture, is often seen as the embodiment of innovation, risk-taking, and leadership (Shane, 2020). At its core, entrepreneurship involves identifying opportunities in the marketplace, mobilizing resources, and taking calculated risks to bring novel ideas to fruition. Entrepreneurship plays a pivotal role in driving economic growth and societal progress. By introducing new products, services, and business models, entrepreneurs not only satisfy unmet needs but also catalyze innovation, job creation, and wealth generation (Sarasvathy, 2021). Moreover, entrepreneurship fosters competition, which leads to efficiency improvements and consumer benefits. In essence, entrepreneurs are the engines of economic dynamism, constantly pushing the boundaries of what is possible. Successful entrepreneurs often possess a unique blend of characteristics that set them apart. They exhibit traits such as creativity, resilience, passion, and adaptability. Entrepreneurs are adept at recognizing opportunities where others see challenges, and they possess the courage to pursue their visions despite uncertainty and setbacks (Acs et al. 2021). Moreover, effective communication and interpersonal skills enable entrepreneurs to inspire confidence in stakeholders, build strong networks, and attract talented collaborators.

Embarking on an entrepreneurial journey involves several fundamental steps. Firstly, aspiring entrepreneurs must identify a market need or opportunity that aligns with their interests, expertise, and resources. This entails conducting market research, analyzing industry trends, and assessing competitive landscapes. Once a viable opportunity is identified, entrepreneurs develop a comprehensive business plan outlining their vision, objectives, target market, revenue model, and growth strategy. A well-crafted business plan serves as a roadmap for execution and a tool for securing financing from investors or lenders. Execution is where the rubber meets the road in entrepreneurship. Entrepreneurs must mobilize resources, assemble a talented team, and execute their business education plan with precision and agility. This involves product development, marketing and sales efforts, operational management, and continuous iteration based on customer feedback and market dynamics in business education. Along the way, entrepreneurs must navigate challenges, pivot when necessary, and remain resilient in the face of adversity (Kuratko, 2022).

Garcia and Martinez (2020) underscored the role of apprenticeship in addressing skill shortages and enhancing workforce readiness. By providing structured training and mentorship, apprenticeship programmes contribute to the development of a highly skilled and adaptable workforce. Furthermore,

apprenticeship has the potential to promote social equity and inclusion. Chen and Kim (2020) argued that apprenticeship programmes can serve as a mechanism for reducing inequalities by providing access to training and employment opportunities for marginalized groups. Assessment of apprenticeship and entrepreneurship has emerged as a crucial aspect of undergraduate education, particularly in tertiary institutions. This form of assessment aims to foster sustainable development among students by equipping them with practical skills and entrepreneurial mindset essential for their future careers. The integration of apprenticeship and entrepreneurship into academic curricula has gained traction worldwide due to its potential to address unemployment challenges and drive economic growth. This study explores the significance of assessment for apprenticeship and entrepreneurship on undergraduate students' sustainability in tertiary institutions, with a focus on global perspectives, as well as specific insights from Africa, Nigeria, and Rivers State. By examining existing literature and scholarly works, this paper aims to provide a comprehensive understanding of the subject matter and highlight key findings and recommendations for policymakers, educators, and stakeholders in the field of education and sustainable development (Smith & Kemmis, 2022).

In the global context, assessment of apprenticeship and entrepreneurship in tertiary education has been widely recognized as a vital component of sustainable development efforts. Guerrero et al., (2016) emphasized the importance of integrating practical experiences and entrepreneurial training into academic programmes to prepare students for the dynamic demands of the global economy. Furthermore, initiatives like the European Commission's Erasmus+ programme have promoted entrepreneurship education across European universities, showcasing the commitment of international organizations to fostering entrepreneurial mindsets among students. In Africa, where youth unemployment remains a significant challenge, there is growing recognition of the need to promote entrepreneurship and apprenticeship among undergraduates. Amaeshi (2019) highlighted the role of entrepreneurship education in empowering African youth and driving economic growth on the continent.

Similarly, in Nigeria, initiatives such as the Youth Entrepreneurship Support (YES) programme demonstrate the government's commitment to fostering entrepreneurial skills among young people. In Rivers State, specific efforts have been made to integrate apprenticeship and entrepreneurship into tertiary education through partnerships between universities and local industries (Rae, 2021). Okoli et al. (2020) underscored the importance of such collaborations in bridging the gap between academia and industry and promoting sustainable development at the regional level.

Onyemah and Ezenekwe (2023) revealed that skill acquisition refers to the process of acquiring knowledge, competencies, and abilities through education, training, and experience. In the context of sustainability, acquiring relevant skills is essential for empowering undergraduates to address complex environmental, social,

and economic challenges. These skills encompass a broad spectrum, including critical thinking, problem-solving, communication, leadership, and technical expertise. One of the primary benefits of skill acquisition for undergraduates is the development of enhanced problem-solving abilities. Sustainability issues often require innovative and multidisciplinary approaches. By acquiring skills such as critical thinking and analytical reasoning, students can effectively identify, analyze, and devise solutions to sustainability challenges within their academic and extracurricular activities (Adeyemi & Olawale, 2022). Moreover, Okonkwo and Okeke (2023) agreed that skill acquisition fosters the adoption of sustainable practices among undergraduates. Through specialized training and education, students gain insights into sustainable development principles, environmental conservation techniques, and ethical decision-making frameworks. These acquired skills enable students to integrate sustainability into their daily lives, academic pursuits, and future professional endeavors. Skill acquisition also empowers undergraduate students to assume leadership roles in promoting sustainability within tertiary institutions. By developing effective communication, teamwork, and leadership skills, students can collaborate with peers, faculty, and administrators to initiate and implement sustainability projects and initiatives (McCroskey & Richmond, 2020). Additionally, leadership training cultivates the confidence and competence necessary for students to advocate for sustainable policies and practices on campus and beyond (Ibrahim & Abdullahi, 2024).

Smith (2020) research emphasized the pivotal role of skill acquisition in enhancing sustainability among undergraduate students in tertiary institutions. The study reveals that students who actively engage in skill development programmes demonstrated greater awareness and commitment to sustainable practices both within and beyond their academic environment. Yusuf and Mohammed (2023) opined that education integration facilitates a comprehensive understanding of sustainability among undergraduate students. By infusing sustainability concepts into diverse academic disciplines such as engineering, business, social sciences, and humanities, students gain interdisciplinary perspectives on complex sustainability issues. This holistic approach enables students to recognize the interconnectedness of environmental, social, and economic systems, fostering a deeper appreciation for the principles of sustainability. Moreover, education integration promotes interdisciplinary collaboration among undergraduate students. As sustainability challenges require multifaceted solutions, collaboration across different academic fields is essential (Bocken et al. 2020). Through, interdisciplinary coursework, research projects, and extracurricular activities, students have opportunities to collaborate with peers from diverse backgrounds, enriching their learning experiences and enhancing their ability to address complex sustainability problems collaboratively (Adewale & Olaniyan, 2022).

Adebayo and Adeyemi (2023) stated that education integration cultivates sustainable mindsets and values among undergraduate students. By emphasizing

critical thinking, ethical reasoning, and systems thinking, students develop the cognitive frameworks necessary to evaluate the social, environmental, and economic implications of their actions (Zhao, 2022). This transformative learning process empowers students to become agents of change committed to promoting sustainability in their personal, academic, and professional lives (Ogunleye & Ojo, 2023). Johnson (2019) research delves into the nexus between education integration and sustainability among undergraduate students in tertiary institutions. The findings highlight the transformative potential of integrating sustainability principles across diverse academic disciplines. By embedding sustainability concepts into the curriculum and fostering interdisciplinary collaboration, institutions can empower students to recognize the interconnectedness of social, economic, and environmental issues.

Umar and Lawal (2023) noted that through research, design thinking, and entrepreneurship programs, undergraduate students are encouraged to explore innovative approaches to address environmental degradation, resource depletion, social inequality, and other sustainability issues. By harnessing creativity and ingenuity, students can devise disruptive technologies, business models, and social enterprises that promote sustainability within their academic communities and beyond. Moreover, innovation encourages cross-disciplinary collaboration among undergraduate students. Sustainability challenges are inherently complex and require diverse perspectives and expertise to solve effectively. Innovation hubs, maker spaces, and collaborative platforms provide opportunities for students from different disciplines to come together, exchange ideas, and co-create solutions to sustainability problems (Lovell Corporation, 2017). By bridging disciplinary boundaries, students can leverage their collective knowledge and skills to develop holistic and integrated approaches to sustainability (Ademola & Olawale, 2023).
Furthermore, Yusuf and Hassan (2022) revealed that innovation empowers undergraduate students to cultivate entrepreneurial mindsets and behaviors.

Entrepreneurship education equips students with the skills, knowledge, and resources needed to identify opportunities, take calculated risks, and turn ideas into viable ventures. By fostering an entrepreneurial culture within tertiary institutions, students are encouraged to leverage innovation as a driving force for positive social and environmental change. Start-up incubators, accelerators, and competitions provide platforms for students to launch and scale sustainable enterprises that address pressing societal needs. Additionally, innovation facilitates the integration of sustainable technologies into undergraduate education and campus operations. From renewable energy systems and green building technologies to waste reduction and recycling initiatives, universities are increasingly adopting innovative solutions to minimize their environmental footprint and promote sustainability (Jones et al. 2017). By incorporating these technologies into academic curricula and campus infrastructure, undergraduate students are exposed to cutting-edge practices and technologies that inspire them to become champions of sustainability in their future careers (Isah & Mohammed, 2023).

Lee (2021) investigated the profound effect of innovation on promoting sustainability among undergraduates in Ahmadu Bello University, Nigeria The study underscores the pivotal role of creativity and entrepreneurial thinking in driving sustainable solutions to pressing societal and environmental issues. By fostering a culture of innovation within the academic environment through experiential learning opportunities and collaborative projects. Institutions can empower students to develop and implement novel approaches towards sustainability. Furthermore, embracing innovative practices enhances students' adaptability and resilience, preparing them to thrive in a rapidly evolving world. Ahmed and Adamu (2023) found that business planning provides a framework for integrating sustainability into organizational strategies and operations. Undergraduates learn to incorporate environmental, social, and governance (ESG) factors into business decision-making processes, ensuring that sustainability considerations are embedded across all functional areas, including marketing, finance, operations, and supply chain management. By prioritizing sustainability within business plans, students are equipped to navigate complex challenges and capitalize on opportunities that create long-term value for society and the environment. Moreover, business planning fosters the development of sustainable business models among undergraduate students. Through entrepreneurship courses, case studies, and experiential learning opportunities, students are challenged to design innovative business models that deliver financial returns while also generating positive social and environmental impacts. Whether through social enterprises, impact investing, or circular economy initiatives, students learn to leverage business as a force for sustainable development, driving positive change in their communities and beyond (Adegbite & Ogunleye, 2023).

Furthermore, Idris and Lawal (2022) suggested that business leaders, students are encouraged to consider the broader impacts of their decisions on stakeholders, including employees, customers, suppliers, and the community. By developing CSR strategies and initiatives, students learn to cultivate ethical leadership, transparency, and accountability within organizations, fostering trust and goodwill among stakeholders while advancing sustainability goals. Additionally, business planning empowers undergraduate students to pursue sustainable entrepreneurship ventures. By developing business plans for sustainable start-ups, students gain practical experience in identifying market opportunities, assessing risks, and securing resources to launch and grow environmentally and socially responsible businesses. Entrepreneurship incubators, accelerators, and mentorship programs provide support and guidance to aspiring student entrepreneurs, enabling them to turn their sustainability-focused ideas into viable enterprises that drive positive change in the marketplace (Onu & Eze, 2023). Garcia (2022) research explores the influence of business planning on sustainability among undergraduate students in tertiary institutions. The findings underscore the importance of incorporating principles of sustainable development into business education

curricula. By integrating business planning frameworks with sustainability concepts, students are equipped with the necessary knowledge and skills to develop innovative strategies that prioritize environmental stewardship, social equity, and economic viability. This holistic approach not only enhances students' understanding of sustainable business practices but also empowers them to drive positive change within organizational settings and broader society.

Apprenticeships and entrepreneurship provide undergraduates with practical experiences and skills necessary for addressing sustainability challenges. Through apprenticeships, students gain hands-on training in sustainable practices within various industries, fostering a deeper understanding of environmental, social, and economic dimensions of sustainability. Similarly, entrepreneurship empowers students to develop innovative solutions to sustainability issues, driving positive change in their communities and beyond. Moreover, engaging in apprenticeships and entrepreneurship enhances students' employability and career prospects. By acquiring sustainability-focused skills and experiences, undergraduates become attractive candidates for companies seeking to integrate sustainability into their operations (Fuller, A., & Unwin, 2020). Additionally, entrepreneurship allows students to create their ventures centered on sustainable principles, contributing to job creation and economic development (Smith & Johnson, 2023).

Despite the benefits, Patel and Jones (2022) found that financial constraints and risk aversion may deter students from pursuing entrepreneurial ventures focused on sustainability, despite their potential for impact. In response to these challenges, universities and organizations are increasingly integrating sustainability into apprenticeship and entrepreneurship programs. Collaborative partnerships between academia, industry, and government bodies facilitate the creation of tailored initiatives that address specific sustainability issues while providing valuable learning experiences for undergraduates. Moreover, the emergence of social entrepreneurship and impact investing offers new avenues for students to combine their passion for sustainability with business acumen. Incubators, accelerators, and competitions focused on sustainable entrepreneurship provide students with mentorship, funding, and networking opportunities to launch and scale their ventures (Lozano et al. 2017).

The increasing rate of youth unemployment and economic instability among undergraduates in Rivers State University necessitated this research. Many graduates struggle to secure stable employment after completing their studies, largely due to a mismatch between academic knowledge and practical skills required in the job market resulting in financial dependency, underemployment, and an overreliance on government jobs, which are limited. Another factor is the declining relevance of traditional university education in equipping students with hands-on experience. Many students graduate with theoretical knowledge but lack the practical skills needed to start and sustain their own businesses. Additionally, limited access to entrepreneurship education and apprenticeship programmes has left

students without adequate exposure to business opportunities and real-world economic challenges. Another issue is the absence of structured mentorship and business incubation platforms within the university system, which could guide students in transforming their ideas into viable enterprises. To address these concerns, skill acquisition, practical business training, and mentorship programmes are needed among students to create self-sustaining businesses, encouraging partnerships between universities and industries, providing students with opportunities to gain firsthand experience, incorporating entrepreneurship education into disciplines among students, reducing unemployment and enhancing self-reliance. The researchers also offer practical recommendations for universities and policymakers to integrate apprenticeship and entrepreneurship programmes into the academic curriculum, ensuring that undergraduates graduate with the skills and knowledge necessary to thrive in today's competitive economy. The following questions pose for the study are what is the joint contribution of skill acquisition, education integration, innovation, business planning on sustainability of undergraduates in Rivers State University.

The study was design to investigate Apprenticeship and Entrepreneurship Education as Correlates of Economic Sustainability of Undergraduates of Rivers State University. Specifically, the study sought to:

1. Examine the association among skill acquisition, education integration, innovation, business planning and sustainability among undergraduates in Rivers State University.
2. Determine the joint contribution of skill acquisition, education integration, innovation, business planning on sustainability of undergraduates in Rivers State University.
3. Ascertain the relative contribution of skill acquisition, education integration, innovation, business planning to sustainability of undergraduates in Rivers State University.

Hypothesis One: There is no joint contribution of skill acquisition, education integration, innovation, business planning and sustainability among undergraduates in Rivers State University?

Methodology

Descriptive survey design guided the study while three research questions were raised to direct the study. The population for the study comprised 396 undergraduates who are engaged in apprenticeship scheme or entrepreneurial programmes while census sampling technique was used to reach a sample of 396 respondents because the study was limited to undergraduates are engaged in apprenticeship scheme or entrepreneurial programmes. A researcher developed questionnaire titled "Apprenticeship and Entrepreneurship Education as Correlates of Economic Sustainability Questionnaire (AEECESQ)" was used for data collection with two

sections. Section A focused on the bio-data of the respondents while section B consisted of 20 items measuring questionnaire instruments. However, all items in this scale was structured based on the four point modified Likert rating scale of Strongly Agree = (SA), Agree = (A), Disagree = (D) and Strongly Disagree = (SD) which was assigned numerical values of 4, 3, 2 and 1. The constructed instrument was determined by experts in the Department of Educational Foundations, Rivers State University to ascertain the relevance, appropriateness and language level. The experts' corrections and recommendations were incorporated in the final version of the instruments. The instrument constructed was administered to 30 undergraduates once who are not part of the study whereby Cronbach Alpha method was used to determine the reliability coefficients of 0.88 for (AEECESQ). However, out of 396 copies of the questionnaire distributed, 350 copies were retrieved for data analysis. The hypotheses formulated were tested using multiple regression at 0.05 level of significance.

Results

Hypothesis One: There is no association, joint contribution and relative contribution of skill acquisition, education integration, innovation, business planning and sustainability among undergraduates in Rivers State University?

Table 1: Multiple regression analysis on association, joint contribution and relative contribution of skill acquisition, education integration, innovation, business planning and sustainability among undergraduates in Rivers State University

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.652	.186		3.503	.001
	Skill acquisition	.052	.034	.067	1.530	.127
	Education integration	.032	.029	.037	1.080	.281
	Innovation	-.095	.031	-.115	-3.067	.002
	Business planning	.836	.042	.780	19.751	.000

a. Dependent Variable: sustainability

ıtion of skill acquisition, education integration, innovation, and business planning to sustainability among undergraduates at Rivers State University. The model's constant value of 0.652 (p = 0.001) suggests a significant baseline effect. Skill acquisition (B = 0.052, p = 0.127) and education integration (B = 0.032, p = 0.281) show a positive but statistically insignificant influence on sustainability. This implies that while these factors contribute, their impact is not strong enough to be considered significant in this context. Innovation (B = -0.095, p = 0.002) has a negative and statistically significant effect, indicating that increasing innovation efforts, as currently implemented, may hinder sustainability. This could be due to

challenges in application or lack of adequate support structures. Business planning (B = 0.836, p = 0.000) exhibits the strongest and most significant positive contribution, with a high standardized beta value of 0.780. This suggests that structured business planning is a key determinant of sustainability among undergraduates. The model highlights that while skill acquisition and education integration are important, business planning is the most crucial factor, whereas innovation may require better implementation strategies to enhance its positive impact. Finally, the analysis shows that business planning plays the most significant role in sustainability among undergraduates, while skill acquisition and education integration contribute positively but without strong impact. Innovation negatively affects sustainability, possibly due to poor implementation. Effective planning remains crucial, while innovation strategies need improvement for better sustainability outcomes.

Discussion of Findings

Finding obtained from the study revealed that business planning plays the most significant role in sustainability among undergraduates, while skill acquisition and education integration contribute positively but without strong impact. Innovation negatively affects sustainability, possibly due to poor implementation. Effective planning remains crucial, while innovation strategies need improvement for better sustainability outcomes. In corroboration with Smith (2020) research in line with the present study emphasized the pivotal role of skill acquisition in enhancing sustainability among undergraduate students in tertiary institutions. The finding also revealed that students who actively engage in skill development programs demonstrate greater awareness and commitment to sustainable practices both within and beyond their academic environment. Similarly, the study of Johnson (2019) in connection with the present study research revealed that transformative potential of integrating sustainability principles across diverse academic disciplines cultivates a holistic understanding of sustainability, nurturing future leaders equipped to tackle complex global challenges.

In confirmation, the study of Lee (2021) in tandem with the present research revealed that culture of innovation within the academic environment through experiential learning opportunities and collaborative projects, institutions can empower students to develop and implement novel approaches towards sustainability. Furthermore, embracing innovative practices enhances students' adaptability and resilience, preparing them to thrive in a rapidly evolving world. Garcia (2022) research as it supported the present study explored that business planning on fostering sustainability among undergraduates in tertiary institutions.

Conclusion

Based on the findings, researchers concluded that business planning plays the most significant role in sustainability among undergraduates, while skill acquisition and education integration contribute positively but without strong impact. Innovation negatively affects sustainability, possibly due to poor implementation. Effective planning remains crucial, while innovation strategies need improvement for better sustainability outcomes in Rivers State University.

Recommendations

University authorities should prioritize effective business planning as the key to sustainability among undergraduates. Skill acquisition and education integration should be encouraged but with enhanced impact strategies. Innovation strategies should be improved to prevent negative effects on sustainability. Comprehensive planning should be implemented to ensure long-term success, while innovation processes should be refined for better outcomes.

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