PUBLIC AND PRIVATE SECTOR PARTNERSHIP IN TECHNOPRENEURSHIP: ACHIEVING SUSTAINABLE DEVELOPMENT GOAL No. 1 AMONG YOUTHS IN OGBA/EGBEMA/NDONI LOCAL GOVERNMENT AREA

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Abstract

The study examined public and public sector partnership in technopreneurship for the achievement of sustainable development goal "1" among youths in Ogba/Ndoni/Egbema Local Government Area. The study employs descriptive research survey design. The population of this study was 108 respondents in ONELGA, comprising 90 tech businessmen/women and 18 experts mainly lecturers with experience in entrepreneurship. Purposive sampling techniques was used to sample 61 respondents for the study, comprising 43 technopreneurs with registered businesses and employing at least three (3) persons and 18 experts who are lecturers teaching entrepreneurship. The instrument for data collection was a self-structured questionnaire design after Likert-4-point rating scale. The instrument was validated and tested for reliability using Cronbach Alpha which yield a reliability coefficient of 0.89. The data collected were analysed using mean and standard deviation. The study found that public and private sector partnership enhance computer maintenance and mobile device for the achievement of sustainable development goal "1" among youths in Ogba/Ndoni/Egbema Local Government Area. Based on the findings of the study, it was recommended among others that Government and investors should provide a favourable environment where business can thrive well thereby boosting profitability of computer technician to achieve sustainable development goal 1 (poverty reduction and zero hunger) among ONELGA youths. Government and investors should provide a favourable environment where business can thrive well thereby boosting profitability of mobile device technician to achieve sustainable development goal 1 (poverty reduction and zero hunger) among ONELGA youths.

Keywords: Public and Private Sector, Partnership, *Technoprenuership*, SDG 1, Youth.

Introduction

The timeline for the Millennium Development Goals (MDGs) which commenced in year 2000 ended in 2015. Given the deficiency of many countries in achieving the set- goals, the United Nations at its 2015 General Assembly, aligned with the international community through the respective Heads of States of the 193 Member Nations, launched the Sustainable Development Goals (SDGs) as a new developmental strategy with a new terminal date for 2030. This strategy which is otherwise known as Agenda 2030 unlike the MDGs has 17 Goals, with 169 Targets and 230 Indicators. According to Ugwuegbe, Urama and Iloh (2018), these are the agenda designed as a universal call for action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. At the heart of the 2030 agenda of SDG is poverty eradication with a renewed commitment to leave no-one behind. The Global Goals of SDGs like that of MDGs are all laudable and adequately designed to improve the quality of people's lives globally'. Out of the 129 countries that signed the Millennium accord, only achieved the MDG targets with some countries missing the target by a small margin. Various African countries including Nigeria and other developing nations were reported to have failed to achieve the MDGs targets.

The 2015 MDGs report indicates that Nigeria failed to achieve the target of MDGs on eradication of extreme poverty and hunger by 24.1%. On achieving universal primary education, Nigeria recorded a marginal increase of 2.7% in literacy rate for over 14 years of the MDG program, gender equality and women empowerment were deplorable with only 7.7% of the women in wage employment in the

nonagricultural sector. Nigeria fell short of the 2015 target of 64 deaths per 1000 live births by 28% (United Nations, 2015). Available data on the internet show that, China (whose poverty population declined from 452million to 278million), India and East Asia who are among the 72 nations that achieved the MDGs, prioritized private sector development and engagement before, and during the implementation phase of the program to emerge as some of the leading economies in the world. Brazil and South Africa also partially achieved most of the goals while Nigeria and other developing countries did not make significant efforts in achieving MDGs 2015(Cheen, Shadua & Ravallion, 2012). This role played by private sector is further supported by Ban Ki Moon (Former Secretary General of the United Nations) where he sated thus:

Countries can effectively achieve most of the SDGs (no poverty, zero hunger and decent work and economic growth) if they emphasize the development of the nature, role and productivity of the private sector. It is on record that in developing counties and other emerging economies, over 90% of the entire firms in agricultural and nonagricultural sectors are small and microenterprises, contributing significantly to their GDP. For instance, in Morocco, 93% of industries are SMEs and accounts for 38% of production, 33% of the investment, 30% of export and 46% of employment. Similarly, in Bangladesh, enterprises with below 100 employees account for 99% of their firms, and 58% of employment. In Ecuador, 99% of all private companies have less than 50 employees, accounting for 55% of employment (Igwe, Adebayo, Olakanmi Ogbonna & Aina, 2013).

The connection and complimentary relationship among technological development, innovations and entrepreneurship has become the bane for socio-economic development and educational research. The adoption of technology and adaption of technological innovations has created new opportunities in entrepreneurship, creating new occupations as well as new businesses. Technological savvy individuals are creating new businesses termed “Tech-business”. While new tech-businesses are springing up, it is riding on the shoulders of tech-savvy individuals called “technopreneurs”.

Technopreneurship is an emerging concept that is placed at the core of many fundamental subjects and concepts. It is a relatively new term and is receiving increasing significant recognition and attention from scholars of various areas of business, science, and technology disciplines, as well as from players in the business world. It stresses integration of technology with entrepreneurship. According to Wood (2011), technopreneurship is a logical or gradual process which progress in four phases - innovation disclosure and intellectual property protection, awareness and securing industry collaboration, commercialization mechanism selection, and commercialization.

Technopreneurship is combination of the word technology and entrepreneurship (Putri, Anggadwita & Wicaksono, 2019). Technopreneurship is increasingly high in companies where there is a growth in creativity and innovation. Entrepreneurship and technopreneurship complement and guarantee the long-term viability of e-commerce and e-business (Olusegun et al. 2019). Technopreneurs use technology in innovative ways to offer services or products to customer. Technopreneurs are entrepreneurs who use technology to create new business processes and formations, as well as to implement technical advancements and transform technology into goods or services (Fowosire et al. 2017).

Technopreneurship is the innovative application of technical science and knowledge individually or by a group of persons, who create and manage a business and take it financial risk in order to achieve their goals and perspectives (Fowosire, et al. 2017). The engineers possess high technical skills in this regard, but they often enjoy few skills in business and in terms of entrepreneurial thinking (Antoncic & Prodan, 2008). Technopreneurship is one of the foundation areas of Information and Communication Technology (ICT) age in entrepreneurship that plays important role in creation of competitive

advantage in various enterprises and organizations, reconstruction and economic growth being basic reasons for this, businesses will be able to expand themselves to compete in this ever-expanding world, at the same time create and add value to them (businesses) in order to achieve sustainability.

However, as Fowosire, Idris and Opoola (2017) asserted, it is noteworthy that, entrepreneurship forms the sub structure upon which science and technology are built. They stated that technopreneurship is, by a large part, still entrepreneurship. The difference is that technopreneurship is either involved in delivering an innovative hi-tech product (e.g software) or makes use of hi-tech in an innovative way to deliver its product to the consumer (e.g. online shops), or both (e.g. konga and Jumia). Technopreneurship is not a product but a process of synthesis in engineering the future of a person, an organization, a nation, and the world.

Technopreneurship probes the relationship between entrepreneurship and technological innovation and examines how entrepreneurs explore and exploit organizational resources and technological systems by crafting strategies to pursue opportunities in a process of technology development (Shane & Venkataraman, 2020). Similarly, Jones-Evans (2015) referred to technopreneurs as technical entrepreneurs and defined them as the founder and current owner-manager of a technology-based business, i.e. primarily responsible for its planning and establishment and currently having some management control of the organization. The potential of technology to support the Nigerian economy is large. In fact, a good chunk of the venture capital and foreign direct investment into Nigeria in the past years has been towards the tech industry. The most start-ups in Nigeria are tech companies and they are attracting the most capital as well. This not only shows the value of tech-business to the Nigerian economy, but its future potentials as well as the rising number of technopreneurs in the country.

According to Ola, et al (2020), emerging economies have come to realize the prospects of technopreneurship (a blend of innovation, technology and entrepreneurship) in stimulating economic prosperity in today's globalised and knowledge-driven world. More emphasis and attention from researchers/academia, policy makers, think tanks and the government, is given to technological innovation as a key driver of sustainable business performance, sustained long-run competitive advantage and national competitiveness. Young graduates in Nigeria often moved straight into the informal economy where they start or continue their "hustle". However, Tech is changing the dynamics, with a lot of young folks seeking to learn new tech skills. They are also budding partnerships among tech savvy graduates to ensure that their products and services actually make it to the market and thrive. However, public, and private support can go a long way to promoting the sustainability of technopreneurs and techbusinesses.

It is important to note that discoveries in the form of technological innovations and/or results of research, development, and innovation (R&D&I) remain in crude form unless they are commercialized. In research conducted by Matejun (2016), he posits that the scope of operations that constitute part of technology entrepreneurship needs simultaneous and cooperative involvement of the enterprise in four basic areas which include:

i. Internal company entrepreneurship - involving identifying market opportunities and commercializing ideas to create value.
ii. Individual or firm's technology and innovation potential - involving identifying and developing competencies, knowledge, skills and engaging in research and development.
iii. Integration of business and science - cooperation with research institutes, building a network of connections and gaining access to external knowledge.

iv. Market distribution of technological and innovation effects - identifying market demands, implementing technologies and gaining feedback from customers.

Today, it is completely clear that according to a report from OECD, development of technology plays an essential role in economic growth and development and technology-oriented industries may play ever increasing and major role in international trade. While emerging technopreneurship may cause ever growing appearance of knowledge-based SMEs (Dahlstrand, 2007). Technopreneurship as a leadership style of business including identifying extremely technological economic opportunities with high capacity for growth, collection of resources like expert manpower and capital, rapid growth and remarkable risk management by means of decision-making skills (Dorf & Byers, 2005). The rapid advancement of technology has encouraged small and medium-sized businesses (SMEs) to utilize the opportunity to establish, expand, as well as prosper their businesses capable of generating employment opportunities, mobilizing the local resources, creating a balanced and affluent society, and playing a significant complementary role to large firms and eventually strengthening the economic development of the nation (Fowosire, et al, 2017).

Statement of the Problem

The Sustainable Development Goals (SDGs) have been adopted as a global objective to be achieved by every country in the world by 2030, addressing economic, social and environmental challenges. While governments around the world have adopted the goals and created strategies to reach them, evidence abound of the compelling need to emphasize the development of the nature, role and productivity of the private sector in achieving most of the SDGs (no poverty, zero hunger and decent work and economic growth).

In sub–Saharan Africa and indeed, Nigeria, there is an acute insufficiency of science and technology, most especially high-tech entrepreneurial competence needed to propel technology entrepreneurship. As Bubou and Siyanbola (2010) pointed out, this situation has led to the near non-existent productive capacity of the continent, with quite minimal potentials for innovation. However, the situation has actually improved in the last decade with more and more tech start-ups springing up in Africa and Nigeria recording the largest number of young tech companies and the largest tech hub in Africa. The challenges, however, are mostly that of the business eco-system and support mechanisms that will allow technopreneurship to thrive in the country. There seem to be not enough support and policies from both the private and public sectors towards technopreneurship in Nigeria despite its huge potential for sustainable growth and development. Hence, this study seeks to examine public and public sector partnership in technopreneurship for the achievement of sustainable development goal "1" among youths in Ogba/Ndoni/Egbema Local Government Area.

Purpose of the Study

The purpose of the study is to examine public and public sector partnership in technopreneurship for the achievement of sustainable development goal "1" among youths in Ogba/Ndoni/Egbema Local Government Area. Specifically, the study seeks to;

1. Find out how public and private sector partnership enhance computer maintenance for the achievement of sustainable development goal "1" among youths in Ogba/Ndoni/Egbema Local Government Area.
2. Find out how public and private sector partnership enhance mobile devices maintenance for the achievement of sustainable development goal "1" among youths in Ogba/Ndoni/Egbema Local Government Area.

Research Questions

The following questions were answered to guide the study.

1. How does public and private sector partnership enhance computer maintenance for the achievement of sustainable development goal "1" among youths in Ogba/Ndoni/Egbema Local Government Area?
2. How does public and private sector partnership enhance mobile devices maintenance for the achievement of sustainable development goal "1" among youths in Ogba/Ndoni/Egbema Local Government Area?

Review

Technology and Sustainable Development

The goals of sustainable development include managing resources, reducing waste, and saving the environment. The sustainability challenges are numerous, from climate change, energy and water supply, biodiversity and land use, chemicals, toxics, and heavy metals, air pollution, waste management, ozone layer depletion, oceans and fisheries to deforestation (Esty & Winston, 2006). Addressing these issues is a complex task, requiring different units of society to fulfill certain specific obligations. For businesses, a shift to sustainable business process demands the alignment of business with sustainability goals (Cardoso & Carvalho, 2010). The business world has responded to the issues of sustainability in varied but similar ways. The general goal of a sustainable business strategy is to positively impact the environment, society, or both, while also benefiting shareholders. This is often referred to as the triple bottom line (TBL).

Being complex, sustainability development requires the adoption of new methods, tools and processes (De Moor &Kleef, 2005). It has been established that Information Technologies (ITs) as well as its emerging Information System (IS) are seen as key to achieving business sustainability (Hilty, 2008). These technologies are changing the behaviour of business owner (entrepreneurs) and consumers and through these changes, IT can help the environment without affecting economic output. Science, Technology and Innovation (STI) can increase the efficiency, effectiveness and impact of efforts to meet the ambitions of the 2030 Agenda for Sustainable Development. The successful adoption of existing innovations has enabled many economies to sustain economic growth. Innovation can expand access to education and health-care services. Technologies, such as those supporting renewable energy, are also providing options for more environmentally sustainable development paths.

Private-Sector Collaboration for Sustainable Development through Technopreneurship

Technological innovation enables increased productivity, economic progress and opportunities to leapfrog. However, it particularly benefits larger enterprises and certain sectors. As a business opportunity, it benefits the private sector more to identify, nurture and finance technopreneurships.

Private-sector collaboration for sustainable development is not a new business activity. It emerged in the early 1990s, offering companies the opportunity to engage, influence, and support social and economic development more legitimately. Since then, we have witnessed a plethora of collaboration models and methods that, in different ways, have sought to contribute to more resilient and inclusive economies while also building business value. While some of these collaborations have had significant impact, others have failed to achieve their objectives (Enright, et al, 2018). However, all have provided valuable lessons to future practitioners on how best to leverage the collective resources of the private sector through collaboration. We need to learn from past successes and failures to build stronger

collaborations for the future. A review of the past points to the fact there is not one model of success. Rather, companies, foundations, civil society, advisors, governments, and other stakeholders – need to be able to embrace and step into a diversity of collaborations essential to driving technopreneruship in Nigeria.

Methodology

The descriptive survey research design was adopted for the study. Quantitative research methods were used in this study through the distribution of questionnaires to collect quantitative data. This method is used to identify the technopreneurship dimension and the public, private partnerships strategies for sustainable development goal "1" through technopreneurship. The study was carried out in Ogba/Egbema/Ndoni Local Government Area of Rivers State. Ogba/Egbema/Ndoni is one of the 23 local government area in Rivers State and belongs to the Orashi region. The population of the study is 108 respondents in ONELGA, comprising 90 tech businessmen/women and 18 experts mainly lecturers with experience in entrepreneurship. Purposive sampling techniques was used to sample 61 respondents for the study, comprising 43 technopreneurs with registered businesses and employing at least three (3) persons and 18 experts who are lecturers teaching entrepreneurship. The instrument for data collection was a self-structured questionnaire rating scale of four levels of the measured responses of respondents to provide a quantitative measure of a character or a personality trait. The questionnaire was face validated by experts in the faculty of education, Rivers State University. The instrument was checked to ensure that the items measured what it was supposed to measure and that it used appropriate language and sentence. The instrument was trial tested on 18 respondents through a test-retest method. The data obtained was subjected to a Cronbach alpha test, which gave a value of 0.89. The data for the study was collected through visits to offices and business premises of experts and the technopreneurs in ONELGA and its environs. The data collected were analyzed using mean and standard deviation. Item with mean score of 2.50 and above was taken as "Agree" while item wit mean value less than 2.50 was taken as "Disagree".

Results

The results of the study is presented in Table 1 – 3.

Research Question 1: How does public and private sector partnership enhance computer maintenance for the achievement of sustainable development goal "1" among youths in Ogba/Ndoni/Egbema Local Government Area?

Table 1: Mean Response on How Public and Private Sector Partnership Enhance Computer Maintenance for Sustainable Development Goal "1"

S/N	*Item Statement*	*Mean*	*SD*	*Remark*
1	Provision of comfortable environment for apprenticeship training	3.10	0.68	Agree
2	Organizing professional training for predictive, corrective, predictive and evolutionary maintenance.	3.15	0.71	Agree
3	Provision of moderate tax payment mode.	2.67	0.60	Agree
4	Monitoring the use of skill and skill needs and link computer corrective skill with the labor/product market	3.04	0.55	Agree
5	Making up-date technological tools for diagnoses and repair available	2.91	0.84	Agree
	Average Mean/SD	**2.97**	**0.67**	**Agree**

Result from Table 1 shows that public and private sector can enhance computer maintenance for the achievement of sustainable development goal for poverty reduction and zero hunger among youths of ONELGA by providing a comfortable environment to do business, Organizing training for computer technician, Provision of moderate tax payment mode and Provision of security and safety. This was

shown in the mean response that is greater than 2.50 as the cut-off mark. An average mean of 2.97 with standard deviation value of 0.67 was obtained. This result is in line with Igboro and Mangare (2014) who found that computer maintenance can be effective if the cost of buying, transportation and that parts are always available.

Research Question 2: How does public and private sector partnership enhance mobile devices maintenance for the achievement of sustainable development goal "1" among youths in Ogba/Ndoni/Egbema Local Government Area?

Table 2: Mean Response on How Public and Private Sector Partnership Enhance Mobile Device Maintenance for Sustainable Development Goal "1"

S/N	*Item Statement*	*Mean*	*SD*	*Remark*
6	A change in industrial policy that leads to industry-public collaboration to fusion mobile device maintenance as vocational programme	3.05	0.66	Agree
7	Providing Innovative and accelerate mutual exchange between industries and craftsmanship for professional training.	3.11	1.01	Agree
8	Creating a zonal investment fund for technoprenuership sector	2.84	0.57	Agree
9	Engaging all technoprenurship skill areas in mutual competitiveness to gain approval for public-private partnership project	2.63	0.66	Agree
10	By stimulating and facilitating successful development of technoprenurship centers for profiling and recognition.	3.01	0.74	Agree
	Average Mean/SD	**2.93**	**0.73**	**Agree**

Result from Table 2 shows that public and private sector can enhance mobile devices for the achievement of sustainable development goal for poverty reduction and zero hunger among youths of ONELGA by providing a comfortable environment to do business, Organizing training for computer technician, Provision of moderate tax payment mode and Provision of security and safety. This was shown in the mean response that is greater than 2.50 as the cut-off mark. An average mean of 2.93 with standard deviation value of 0.73 was obtained. This result is in line with Igboro and Mangare (2014) who found that computer maintenance can be effective if the cost of buying, transportation and that part are always available.

Discussion of Findings

The findings of the study on how public and private sector partnership enhance computer maintenance for the achievement of sustainable development goal "1" among youths revealed that the item statements identified where some significant approaches public and private partnership could enhance computer maintenance skill for sustainable development goal "1" among youths. This finding is in-line with the concern of European Training Foundation (2020) that direct concerns about innovation and labour market competencies have gained a foothold at the upper-secondary and tertiary levels with current initiatives aimed to connect both upper-secondary vocational education and higher professional education with innovations in the labour and product markets. Within this overarching ambition, the author revealed three specific goals to: increase the number of technical students in STEM areas (science, technology, engineering and mathematics) and enhance educational innovation in the context of regional development; innovate the practice of professions and production processes; encourage lifelong learning. To reach these goals, the author advocate that Public and Private Partnership be chosen on the assumption that the speed of change needed to enhance innovation in schools can only be achieved with the help of external incentives. As a result, the PPP centers be set up to equip young learners and

adult learners with the right tools and innovation skills (STEM fields, entrepreneurship, creativity) to succeed in the reality of 21st century labour markets.

Conclusion

The study concludes that public and private sector enhances maintenance of computers and mobile devices for the achievement of sustainable development goal for poverty reduction and zero hunger among youths of ONELGA.

Recommendations

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

i. Government and investors should provide a favourable environment where business can thrive well thereby boosting profitability of computer technician to achieve sustainable development goal 1 (poverty reduction and zero hunger) among ONELGA youths.
ii. Government and investors should provide a favourable environment where business can thrive well thereby boosting profitability of mobile device technician to achieve sustainable development goal 1 (poverty reduction and zero hunger) among ONELGA youths.

References

Antoncic, B. & Prodan, I. (2008). Alliances, corporate technological entrepreneurship and firm performance: testing a model on manufacturing firms. *Technovation*, 28, 257-65.

Cardoso, A.C. & Carvalho, J.A. (2010). Green information systems: the use of information systems to enhance sustainable development. Semana de Engenharia 2010, *Guimarães, 11 a 15 de Outubro.*

De Moor, A. &Kleef, R. (2005) A social context model for discussion process analysis, In L.M. Hilty, E. K. Seifert & R. Treibert, (eds) *Information systems for sustainable development*, Idea Group Inc.

Enright, S, Cecile, O., Pruzan-Jorgensen, P. & Farrag-Thibault, A. (2018). *Private-sector collaboration for sustainable development.* Report. BSR, San Francisco.

ETF (2020). Public–private partnerships for skills development: A governance perspective. *(3-142). Retrived online: doi:10.2816/371790*

Esty, D. C. & Winston, A. S. (2006). *Green to gold: How smart companies use environmental strategy to innovate, create value, and build competitive advantage* (1st ed., p. 384). Yale University Press.

Fowosire, R. A, Idris, O.Y. & Opoola, E. (2017). Technopreneurship: A view of technology, innovations and entrepreneurship. *Global Journal of Research in Engineering: Electrical and Electronics Engineering*, 17(7), 41-46.

Hilty, L. (2008) *Information technology and sustainability: Essays on the relationship between ICT and sustainable development*, Herstellung und Verlag: Books on Demand GmbH, Norderstedt

Jones-Evans, D. (2015). A typology of technology-based entrepreneurs: a model based on previous occupational background. *International Journal of Entrepreneurial Behaviour and Research, 1*(1), 26-47.

Ola, O., Paul, I., Idris, O., Derera, E. & Mutiu, O. (2020). Technopreneurship as a pathway to sustainable business performance: empirical evidence from SMES in Nigeria. *Journal of accounting and management,* 10(2), 20-33.

Olusegun, O. O., Akpoviroro, K. S., Adebowale, O. M. (2019). Impact of technopreneurship on business performance. *Journal of Economics and Management Research.*

Putri MK, Anggadwita G, Wicaksono MB. 2019. Identification of the influence of academics' personal characteristics and academic perceived support on university students' intention to become

technopreneur. *Journal of Management (JAM)* 17(2). DOI:http://dx.doi.org/10.21776/ub.jam.2019.017.02.20.

Shane, S. & Venkataraman, S. (2020). The promise of entrepreneurship as a field of research. *The Academy of Management Review*, *25*(1), 217-226.

Wood, M. S. (2011). A process model of academic entrepreneurship. *Business Horizons*, 54(2), 153-161