EMPIRICAL ANALYSES OF THE EFFECT OF SUSTAINABILITY ON DEVELOPMENT STUDIES IN SELECTED TERTIARY INSTITUTIONS IN SOUTH-SOUTH, NIGERIA

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Abstract
This study examined empirical analyses of the effect of sustainability on development studies in selected tertiary institutions in South – South, Nigeria. The purpose of the study was to examine the impact of sustainable development goal (SDG) on development studies, to examine the impact of education for sustainable development (ESD) on development studies. The study employed primary sources of data and survey design, using questionnaire instrument. A total of 123 copies of questionnaire were correctly filled and returned from the respondents. Least square regression analysis was adopted as a statistical tool to examine the relationship between dependent and independent variables. The findings revealed that there is a significant effect of sustainable development goals on development studies in selected institutions in South-South of Nigeria. It was also revealed that there is a significant effect of education for sustainable development on development studies in selected institutions in South-South of Nigeria. It was concluded that sustainable development goals (SDGs) and education for sustainable development (ESD) both have a significant effect on development studies. Therefore, it was recommended that development studies curriculum should be designed with topics that focus more on the three strands of education for sustainable development which will help in preparing

teachers and students for more effective propagation of sustainable development ethics. It was also recommended that there should be a train -the -trainer program for stakeholders such as teachers, trainers and curriculum developers in charge of teacher education in Nigeria to equip them on the various notions of sustainability in development studies.

Keywords: Sustainability, sustainable development goals, education for sustainable development, development studies

Introduction

Development studies is a new discipline, still in a process of formation, concentrating on the exclusive problems and preconditions for development in different parts of the world. It contains a set of theoretical cores like modernization, structuralism, and dependency representing a progressively increasing degree of knowledge about the specific nature of the problem of development in the so-called Third World. The field of development studies is concerned with the existence and seemingly deepening global poverty and inequality (Potter, 2014), although there are disagreements about the precise nature or core goals of the field (Schuurman, 2009). Development studies grew from the late 1940s and then developed as a discipline in the 1960s with the establishment of research institutes in the UK, followed by courses and journals (Potter, 2014). As a multidisciplinary field, it has a combination of economics, agricultural science, sociology and other fields to promote positive changes in the human condition in economically poor areas of the world. Although being a new discipline, it has some personnel and ideological continuity with previous development initiatives and related colonially-focused research (Potter, 2014).

Development studies also seems to have been affected by the world economic crisis of 2007-2008, which may have caused a re-appraisal of previously dominant economic strategies (Schuurman, 2009). One outcome of this was a shift towards a postmodern focus on promoting diverse rather than universal solutions (Schuurman, 2009), perhaps undermining the role of academic theory. Also, the academic discourse within the field has moved from focusing on Keynesian economic growth models to expressing wider concerns for the environment, gender, ethnicity and social welfare. Nevertheless, although new theories and ideas have been introduced over time, the different underlying aims of researchers have allowed older ideas and theories to continue in parallel (Potter, 2014).

Also, academic research on sustainability in education has co-evolved alongside the increasing presence of sustainability in development studies curricula. Issues related to the insertion and integration of sustainability into development studies are therefore gaining importance. This importance has translated into increased academic interest and a multiplication of publications. Waddock (2007) opined that the shift towards sustainability has challenged educators in development studies programs to take both the environment and society into account in their teaching. Furthermore, the Brundtland report (1987) criticized the existing educational systems on how sustainability issues are taught, and put forth the idea that programs should incorporate education that would contribute to a sustainable society. Considering the discussions above, the major objective of this study is to empirically analyze the effect of sustainability on development studies in selected tertiary institutions in South –South, Nigeria while the specific objectives of the study include; to examine the impact of sustainable development goal (SDG) on development studies, to examine the impact of education for sustainable development (ESD) on development studies. The remainder of this study is organized into review of literature, research methods,

findings, discussions of findings, conclusions, and recommendations.

Concept of development studies

Development studies is interdisciplinary by nature (Little, 2000) and there are five well-established streams within this field of study which are: (1) environment and development; (2) the economics of development; (3) governance and development; (4) population and development; or (5) gender and development. These specialized streams reflect academic and policy-oriented professional specializations, and as such they serve students well in their career development, whether scholarly or professional. Also, as a field of study, it captures the twin objectives of understanding and action, analysis and advocacy, or policy analysis and policy prescription (Little, 2000). The interdisciplinary nature of development studies is necessary to build into teaching plans, whether these be reading lists, course syllabi or major requirements. Furthermore, in planning development studies curricula, it is also important to expose students to the diversity of theoretical perspectives on professional development practice. Indeed, curricular design should address the criticism that the development enterprise is largely neo-colonial in character (Little, 2000), and students should be expected to engage with these perspectives, as well.

Moreso, at the core of development studies, it combines both concern over the existence of poverty within society as well as the quest to understand and shape how society changes over time. In this respect, development studies has deep historical roots that stretch across time connecting different thinkers and eras. The current concept of development studies originated from the 1949 inaugural speech of President Harry S. Truman (Schuurman, 2009). It also argued for the need to support international development, focused almost exclusively on facilitating economic growth because development studies is problem-oriented, concerned with the global disparities in material resources, the social consequences of this situation in different societies, and political strategies to change it. Development studies has been defined as knowledge and understanding of the world in which we live and informed by practice and facts on the ground, it includes ideas, concepts and theories that constitute our knowledge of how societies change (Hulme & Toye, 2005).

The concept of sustainability

Literally, sustainability means a capacity to maintain some entity, outcome or process over time. However, most academics, researchers and practitioners apply the concept to connote improving and sustaining a healthy economic, ecological and social system for human development (Mensah & Enu-Kwesi, 2018). Kanashiro, Sadao, Souza & Dias (2020) defines sustainability as the efficient and equitable distribution of resources intra-generationally and inter-generationally with the operation of socio-economic activities within the confines of a finite ecosystem. Ben-Eli (2015), on the other hand, sees sustainability as a dynamic equilibrium in the process of interaction between the population and the carrying capacity of its environment such that the population develops to express its full potential without producing irreversible adverse effects on the carrying capacity of the environment upon which it depends. From this standpoint (Mensah & Enu-Kwesi, 2018) continues that sustainability brings into focus human activities and their ability to satisfy human needs and wants without depleting or exhausting the productive resources at their disposal. This, therefore, provokes thoughts on the manner in which people should lead their economic and social lives drawing on the available ecological resources for human development. However, Hák, Janoušková & Moldan (2016) argued that transforming global society, environment and economy to a sustainable one is one of the most uphill tasks confronting man today since it is to be done within the context of the planet's carrying capacity.

According to Taylor (2016), the three main issues of sustainable development are economic growth, environmental protection and social equality. Economic sustainability implies a system of production that satisfies present consumption levels without compromising future needs. Traditionally, economists assuming that the supply of natural resources was unlimited, placed undue emphasis on the capacity of the market to allocate resources efficiently (Du & Kang, 2016). However, it has been realized that natural resources are not infinite (Du & Kang, 2016). Therefore, economic sustainability requires that decisions are made in the most equitable and fiscally sound way possible, while considering the other aspects of sustainability (Zhai & Chang, 2019). Also, social sustainability as a concept implies that people matter since development is about people. This concept connotes a system of social organization that alleviates poverty. However, social sustainability relates to the nexus between social conditions such as poverty and environmental destruction (Farazmand, 2016). However, environmental sustainability is about the natural environment and how it remains productive and resilient to support human life (Ekpiken & Ukpabio, 2014).

Impact of sustainable development goal on development studies

The MDGs have been relatively effective after been rolled out for 15 years (2000-2015), however, not all the targets of the eight goals were achieved, hence, the introduction of the SDGs to continue with the development agenda. Member states of the UN from 193 nations formally adopted 17 SDGs in September 2015, aimed at ending extreme poverty, protecting the planet and ensuring prosperity for all by 2030 (Taylor, 2016; UN, 2020). The 17 SDGs requires all countries to take action, including those with high levels of development, primarily seeking to achieve the following summarized objectives.

- Eliminate poverty and hunger thereby guaranteeing a healthy life.
- Provide access to basic services such as water, sanitation and sustainable energy universally.
- Support the generation of development opportunities through inclusive education and decent work.
- Foster innovation and resilient infrastructure, creating communities and cities able to produce and consume sustainably.
- Reduce inequality in the world, especially gender related inequalities.
- Care for the environmental integrity through combatting climate change and protecting the oceans and land ecosystems.
- Promote collaboration between different social agents to create an environment of peace and ensure responsible consumption and production (Hylton, 2019).

The UN (2020) argues that the SDGs encourage a spirit of partnership among governments, private sector, research, academia and civil society organizations (CSOs) with support of the UN. This partnership is meant to ensure that the right choices are made now to improve life, in a sustainable way for future generations (Breuer, Janetschek & Malerba, 2019). The Agenda 2030 has five overarching concerns for people, planet, prosperity, peace and partnerships, which span across the 17 SDGs (Hylton, 2019; Zhai & Chang, 2019). They are intended to tackle the root causes of poverty, covering areas such as hunger, health, education, gender equality, water and sanitation, energy, economic growth, industry, innovation & infrastructure, inequalities, sustainable cities and communities, consumption & production, climate change, natural resources, and peace and justice. The clear awareness of these objectives are essential in the formulation of development curricula as development studies is concerned with the existence of poverty within society and how to deal with such issues.

Furthermore, a key feature of the SDGs is that their development objectives and targets are basically interdependent and interlinked (Tosun & Leininger, 2017). SDGs involve complementarities or synergies as well as trade-offs or tensions which have implications for global and national contexts. The complementarities imply that addressing one goal could help to address some others at the same time. For instance, addressing issues of climate change could have co-benefits for energy security, health, biodiversity, and oceans. However, Fasoli (2018) noted that the SDGs are not stand alone goals. They are interconnected, implying that achieving one goal leads to achieving another and, therefore, they should be seen as indispensable pieces in a big and complex puzzle. In order to take advantage of the complementarities among the SDGs, Taylor (2016) suggested that the various countries review the numerous targets to identify the ones most likely to be catalytic as well as those that have multi-pronged impacts, while also aiming to implement the entire agenda.

Impact of education for sustainable development on development studies

Education for Sustainable Development (ESD) is a transformative learning process that equips students, teachers, and school systems with new knowledge and ways of thinking needed to achieve economic prosperity and responsible citizenship while restoring the health of the living systems upon which lives depend on. It centers on a new vision of education which empowers learners to assume responsibility for creating and enjoying a sustainable future (UNESCO, 2014). This involves educating the various stakeholders that include all human beings in every nook and corner of the world about sustainable development. Education for Sustainable development (ESD) helps in preparing the individuals to decide for themselves the activities that help in attaining sustainability. It is the part of each and every individual to practice those actions that helps in attaining sustainability. Sustainability helps in attaining that quality of life whereby all individuals enjoy the nature and its resources equally based on their needs (Bourn, 2014).

Also, education for sustainable development is a holistic approach for development studies and the curriculum. It requires reflection on what to teach, and how to teach in order to clarify and extend the ability of students to think for themselves, encourage students to reflect and debate issues to enable them to form their own opinions, foster learning that emerges from discovery and is relevant to the learner's life experiences. It has been suggested that development studies is one of the most crucial facilitators of ESD implementation in practice (Scott, 2013). A specific goal of ESD is to improve learning that helps students become responsible individuals, thereby fostering sustainability for the sake of world equity and conservation of natural resources at local to global levels (Bourn, 2014). Thus, the ESD ideal supports development studies processes, and involves addressing both specific issues such as climate, poverty, biodiversity, and the reflexive application of appropriate methods, approaches, skills, abilities, visions and practices. Many scholars (e.g. Nikel & Lowe, 2010; Mader, Scott & Abdul Razak, 2013; Scott, 2013) emphasize the importance of studying general qualities used in development studies to understand characteristics of the ESD implementation process in education.

The impact of education in sustainable development can be summarized as follows according to Itari & Ugbe (2018)**:**

1. Education is an instrument of social change which could transform the society in significant ways. Education is paramount when trying to enable a change in values and attitudes towards sustainability. Education for sustainable development (ESD) is one of the most important tools for raising awareness about the environmental issues within a sustainable development context.

2. Education for sustainable development grows from a variety of sources and it is

delivered through casual, informal, non-formal and formal strategies. Topics of sustainable development usually addressed include but not limited to, conflict resolution, human rights, ethics, gender equity, poverty alleviation, peace, democracy and governance, energy, health, water, rural and urban development, social and environmental effects of globalization, production and consumption patterns, cultural diversity, biological diversity, ecological principles and eco-systems, natural resources, management, climate change and disaster prevention.

3. Education for sustainable development helps to make decisions that considers the long term future of the economy, ecology and equity of all communities. UNESCO (2014) argues that education has a special responsibility to generate the knowledge needed as well as communicate this knowledge to decision makers and the public at large.

4. Education for sustainable development educates, trains and undertake research to contribute to the sustainable development of the society.

5. Educational institutions play a leading role in building more sustainable societies and creating new paradigms as they have the mission to promote development through both teaching and research.

Theoretical framework

This study anchored on the social learning theory postulated by Albert Bandura in 1977. This theory has been applied to the adoption of (development studies) pro-environmental behavior in both educational and workplace settings. It proposes that learning takes place in a social setting via observation, but it also involves cognitive processes; that is, learners internalize and make sense of what they see in order to reproduce the behaviour themselves. Gibson (2004) argues that this involves the psychological matching of cognitive skills and patterns of behaviour between a person and an observing individual (Gibson, 2004). Bandura (1977) proposed that this type of learning involved four different stages: attention, retention, reproduction and motivation. The first stage is attention whereby learners need to attend to the behaviour. They need to actually see the behaviour that they want to reproduce or that others want them to reproduce. Secondly, they need to internalize and retain what they have seen. This involves cognitive processes in which a learner mentally rehearses the behaviour or actions that are to be reproduced. Thirdly, they need opportunity to reproduce the behaviour by converting the information obtained from attention and retention processes into action. Finally, learners need to be motivated to enact or imitate the behaviour they have observed. This motivation occurs via reinforcement, of which Bandura proposes three different types: direct reinforcement, vicarious reinforcement and self-reinforcement.

Moreso, a comprehensive model of the adoption of voluntary pro-environmental behavior by employees in the workplace posits that supervisors are an important source of social norms regarding environmental behavior, and that supervisory provision of these norms can lead to the development of powerful personal norms for such behavior (Lulfs & Hahn, 2013). Empirical support for this notion has also been found (Ramus & Killmer, 2007; Robertson & Barling, 2013). Abrahamsie & Matthies (2012) opined that attempting to promote environmental behavior change through transmitting information is of limited effectiveness, but that adding the modeling of desired behavior increases the effectiveness of this strategy.

Higgs & McMillan (2006) conducted a case study on four secondary schools' modeling of sustainability practices. They concluded that teachers' personal sustainability behaviors fostered sustainability understanding, as students learned from direct observations and were able to transfer sustainability values to personal and tangible applications. These studies suggest that faculty modeling of

personal sustainability behavior may be impactful, as teachers are in a privileged position to influence a wider audience because they are seen as experts in the field (Cavallaro, Boucher & Steelman, 2016; Nejati & Shafaei, 2018). Moreover, a faculty member's ability to mobilize and inspire others is much stronger if these abilities are consistent with personal stories.

Methods

This study adopted survey research design. This design best suits this study because it involves the process of gathering data from a target population through questionnaire and subjecting such data to statistical analysis for the purpose of drawing empirical generalizations. The study area was selected tertiary institutions in South-South of Nigeria which are; University of Calabar, Cross River State University of Technology, University of Uyo, Akwa Ibom State, Ambrose Alli University, Rivers State University and Federal University, Otueke. The population of the study consisted of 6,281 staff of the University of Calabar, 724 staff of Cross River State University of Technology, 3570 staff of University of Uyo, 812 staff of Akwa Ibom State University, 846 staff of Ambrose Alli University, 942 staff of Rivers State University and 2184 staff of the Federal University, Otueke, making a total of 15359 staff of the selected universities. 250 staff from the seven tertiary institutions were selected using judgmental sampling**.** In determining the sample size for the study the Taro Yamane (1967) formula was used.

$$= \frac{N}{I + N\,(e)^2}$$

Where:

n	=	Sample size
N	=	Finite population
e	=	Unit of tolerable error (0.05)
I	=	Constant

The formula applied is stated thus.

Substituting

$$= \frac{250}{1+ 250\,(0.05)^2}$$

$$= \frac{250}{1 + 250(0.0025)}$$

$$= \frac{250}{1+0.625}$$

$$= \frac{250}{1.625}$$

$$= 153.8$$

$$= 154$$

Thus, the sample size 154 respondents. However, only 123 copies of questionnaire were correctly filled and returned.

Data were gathered from primary sources (questionnaire). The questionnaire consisted of two parts. The study used Likert scale measure which ranged mode of responses for the respondents from strongly agree (SA), agree (A), undecided (U), disagree (D) to strongly disagree (SD). This was basically structured for the respondents for easy understanding. The data gathered for this study were summarized and tabulated using simple percentage. Since the study seeks to establish the effect of sustainability on development studies, regression analysis was the appropriate analytical technique because it tests the effect between two or more variables.

The formula for simple linear regression is given as;

$$Y = a + bixi + e$$

Where Y = Dependent variable (development studies)

a	=	Constant
b	=	Slop of the equation
x	=	Independent variable (sustainability)
e	=	Error

For the purpose of this study, the empirical model for this study is specified thus;

S = f (DS)

Where S = Sustainability
DS = Development studies

To obtain the ordinary least square model

$S = ao + b_1DS + e$

Where
ao= Regression Constant
b_1 = Regression Parameters to be estimated

Data Presentation

TABLE 1: Distribution of responses

Responses	**Frequency**	**Percentage**
Sex		
Male	83	67.48
Female	40	32.52
Total	123	100.00
Age		
18-30 years	22	17.89
31-40 years	53	43.09
41-50 years	37	30.08
51 years and above	11	8.94
Total	123	100.00
Marital status		
Single	32	26.02
Married	91	73.98
Total	123	100.00
Educational qualification		
Masters	34	27.64
Ph.D	52	42.28
Professors	37	30.08
Total	123	100.00
Work experience		
1-5 years	27	21.95
6-10 years	36	29.27
11-15 years	41	33.33
16 and above years	19	15.45
Total	123	100.00

Source: Field survey 2020.

TABLE 2: Distribution of responses

Questions	Frequency				
	SA (%)	A(%)	U (%)	D (%)	SD (%)
Sustainable development goals strive to balance the economic, social and environmental pillars of sustainable development.	37 (30.08)	24 (19.51)	12 (9.76)	12 (9.76)	38 (30.89)
Sustainable development goals should contribute to the design of development studies curriculum in your faculty.	39 (31.71)	24 (19.51)	12 (9.76)	24 (19.51)	24 (19.51)
Preserving nature is not necessary for sustainable development	25 (20.33)	24 (19.51)	12 (9.76)	48 (39.02)	12 (9.76)
Tertiary institutions play important roles in the implementation of education for sustainable development programs	22 (17.89)	40 (32.52)	18 (14.63)	22 (17.89)	21 (17.07)
Education for sustainable development should be incorporated into sustainability education at secondary school level	31 (25.20)	40 (32.52)	12 (9.76)	28 (22.76)	12 (9.76)

Source: Field survey 2020.

Results

H_{01}: Sustainable development goals does not affect development studies in the selected tertiary Institutions in South-South of Nigeria

Independent variable: Sustainable development goals
Dependent variable: Development studies
Test statistic: Least square regression statistic

The analysis shows coefficient of determination (R-square) of 0.929, which implies that 92.9 percent of the response variation in the dependent variable (development studies) was explained or caused by the explanatory variable (SDG); while 8 percent was unexplained. Thus, remaining 8 percent unexplained response could be caused by other factors or variables outside the mode. Also, the value of R-square was high enough to indicate a good relationship between the dependent (development studies) and independent variable (SDG). The Durbin Watson value was 0.197 which implies that the test fell within the range of autocorrelation 2.879 in conclusive region of D.W partition curve.

In testing for statistical significance of the model, the F-statistic was adopted at 5 percent significant level. The computed value of the f-statistic was 4578.83 far greater than the tabulated value of f-statistic of 3.84 at $df_1 = 1$ and $df_2 = 99$. Also, as confirmation, the calculated t-statistics of 67.667 was greater than the critical value of 1.64. It was then concluded that sustainable development goals have a significant effect on development studies.

TABLE 3: Least square regression result of Sustainability and development studies

Dependent variable – Development studies

Variable	B	Standard error	B	T	Sig
Constant	.420	.050		8.440	.009
SDG	.893	.013	.964	67.667 .	.000

R	R^2	Adj. R^2	Std. error	DW	Cal. F*	Cri. F*	df_1	df_2	Sig.
.964	.929	.929	.323	.197	4578.83	3.84	1	99	P<0,05

Source: SPSS output.

H_{01}: Education for sustainable development does not affect development studies in selected tertiary Institutions in South-South of Nigeria
Independent variable: Education for sustainable development
Dependent variable: Development studies
Test statistic: Least square regression statistic

The analysis shows coefficient of determination (R-square) of 0.912, which implies that 91 percent of the response variation in the dependent variable (development studies) was explained or caused by the explanatory variable (ESD); while 9 percent was unexplained. Thus, remaining 9 percent unexplained response could be caused by other factors or variables outside the mode. Also, the value of R-square was high enough to indicate a good relationship between the dependent (development studies) and independent variable (ESD). The Durbin Watson value was 0.186 which implies that the test fell within the range of autocorrelation 2.971 in conclusive region of D.W partition curve.

In testing for statistical significance of the model, the F-statistic was adopted at 5 percent significant level. The computed value of the f-statistic was 238.41 far greater than the tabulated value of f-statistic of 3.84 at $df_1 = 1$ and $df_2 = 99$. Also, as confirmation, the calculated t-statistics of 48.925 was greater than the critical value of 1.76. It was then concluded that education for sustainable development has a significant effect on development studies.

TABLE 4: Least square regression result of education for sustainable development and development studies

Dependent variable – Development studies

Variable	B	Standard error	B	T	Sig
Constant	.362	.028		8.670	.003
ESD	.873	.018	.964	48.925 .	.000

R	R^2	Adj. R^2	Std. error	DW	Cal. F*	Cri. F*	df_1	df_2	Sig.
.956	.912	.901	.361	.186	238.41	3.84	1	99	P<0,05

Source: SPSS output.

Summary of findings

Based on the results, the following findings were made;

1. There is a significant effect of sustainable development goals on development studies in selected Institutions in South-South of Nigeria.
2. There is a significant effect of education for sustainable development on development studies in selected Institutions in South-South of Nigeria.

Summary and conclusions

Tertiary institutions play important roles in the implementation of education for sustainable development and sustainable development goals programs to attain sustainability in development studies. This paper explored the various models of sustainability which includes economic, social and environmental sustainability. Education for sustainable development and sustainable development goals models were also explored. We found from our analysis that despite the varying perspectives conveyed in these models, one important feature was common to all these perspectives, and that is the fact that they try to envision a world that is sustainable, and that meet the needs of present generation without compromising the ability of future generations to do the same. Therefore, education for sustainable development must be centered on educating individuals, to adopt sustainable ways of living in such a way that a balance in the economic, social and environmental aspects of nations can be fostered. The results of the survey carried out in this study revealed that sustainable development goals and education for sustainable education should influence the design of development studies curriculum in faculties and that education for sustainable development should be incorporated into sustainability education at secondary school level.

Recommendations

Although development studies is a new discipline and still in the process of formation, issues related to the insertion and integration of sustainability into development studies are gaining importance and there is increased academic and research interest in the field. Therefore, in the light of the research findings and conclusions above, the researchers hereby recommend the following suggestions:

1. Development studies curriculum should be designed with topics that focus more on the three strands of education for sustainable development which will help in preparing teachers and students for more effective propagation of sustainable development ethics.
2. There should be a train -the -trainer program for stakeholders such as teachers, trainers and curriculum developers in charge of teacher education in Nigeria to equip them on

the various notions of sustainability in development studies.
3. Administrators of tertiary institutions must reconsider their attitudes, tools, methods, and approaches in delivery of the topics in development studies for effective teachings.
4. Administrators of tertiary institutions should integrate sustainability into development studies curricula.

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