ASSESSING THE PRACTICES OF GOOD GOVERNANCE PRINCIPLES IN TVET AND ITS INFLUENCE IN ACHIEVING SUSTAINABLE DEVELOPMENT GOAL 4 AGENDAS IN POST-COVID-19 ERA

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Abstract

The aim of this study was to assess the practice of good governance principles in TVET and the achievement level of SDG 4 agendas in Post-COVID-19 era. The study also aimed to assess the interplay between the practice of good governance principles and the achievement level of SDG 4 agendas in post-COVID-19 era. A non-experimental quantitative design was used to achieve the aims of the study. A total of 1,072 respondents (292 TVET lecturers and 780 TVET students) participated in the study. Data collection instruments were validated by three experts. Cronbach's alpha was used to calculate the internal consistency of the items in the instruments, which yielded coefficient values of all the study variables such as effectiveness/efficiency (α=0.83), accountability (α=0.81), transparency (α=0.74), integ (α=0.82), equal access to TVET (α=0.72), equal engagement in lifelong learning (α=0.78) and equal acquisition of ICT skills (α=0.76). Mean, standard deviation, correlation, regression and t-test statistics were used for data analyses. The results indicated that TVET lecturers rarely practiced good governance principles and TVET students rarely achieved SDG 4 agendas in Post-COVID-19 era. The results also indicated that male students have more opportunities to access TVET, engage in lifelong learning and acquire ICT skills than their female counterpart. Further results indicated that the practice good governance principles (e.g. effectiveness/efficiency, accountability, transparency and integrity in the use of funds) do not significantly associate with achievement of SDG 4 agendas (e.g. equitable access to TVET, equitable engagement in lifelong learning, and equitable acquisition of ICT skills). The authors recommended, among others, that there is need for all relevant stakeholders to put in place policies that could address the problem of poor practices of good governance principles in TVET in a relatively short period of time in order to provide equitable opportunities for men and women to access TVET in Post-COVID-19 era.

Keywords: Good governance principles, Post-COVID-19 Era, SDG 4 agendas, TVET lecturers, TVET programme, TVET students.

Introduction

On the 25th of September 2015, world leaders formally adopted and declared the 2030 universal Agenda for Sustainable Development Goals (SDGs) and its associated targets and indicators at the United Nations (UN) General Assembly held in the United States of America, as a commitment and a blueprint to embark on a collective journey to achieve a more inclusive and sustainable future for all. The 2030 universal Agenda for SDGs is a plan of action for people, planet and prosperity that emphasizes the role of peace and collaboration in achieving sustainable development that leaves no one behind. The 2030 universal Agenda

for SDGs comprises of 17 goals and its associated 169 targets and 230 indicators and are expected to be achieved in all the Nations of the world, including Nigeria by 2030. However, education has been identified as a first step to achieving the SDGs by 2030 (UNESCO, *et al.,* 2016; UNESCO Institute for Statistics, 2018). Within the 2030 universal Agenda for SDGs, quality education has been articulated, more specifically, as a stand-alone goal, as entrenched in SDG 4 with its associated 7 targets and 3 means of achievement (UNESCO, 2017; Webb, Holford, Hodge, Milana & Waller, 2017; Ferguson, Iliško, Roofe & Hill, 2018; McKay, 2018).

In the 2030 universal Agenda for SDGs, education is not restricted only to SDG 4. Education is specifically mentioned in the targets of SDG 3 (Good Health and Well-being), SDG 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth), SDG 12 (Responsible Consumption and Promotion) and SDG 13 (Climate Action and Change Mitigation). Education also runs through every other SDGs in one way or the other (Thomson, 2016; UNESCO, 2017). This means that education is not only imperative to achieving SDG 4, but also to almost every other SDGs. This accounted for why SDG 4 stresses the need to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (UNESCO, 2015). SDG 4 aims to ensure that every youths and young adults (male and female alike) have equal chances to access quality education and engage in lifelong learning by 2030 (Demirbağ & Sezgin, 2021; Shiohira, 2021). SDG 4 also focuses on the need to acquire relevant skills to function well and contribute to societal transformation (Government of the Federal Republic of Nigeria, 2017).

The targets associated with SDG 4 are numerous. For instance, target 4.3 stated that: "*By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university" (UNESCO Institute for Statistics, 2018, p. 28).* Target 4.4 also stated that: "*By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship" (UNESCO Institute for Statistics, 2018, p. 30).* Target 4.6 further stated that: "*By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy (UNESCO Institute for Statistics, 2018, p. 34).*

SDG 4 and its associated targets focuses on the equitable access to TVET; acquisition of relevant skills; education and training 'for' and 'through' life; and the skills, knowledge and values required to function effectively and contribute to societal transformation. Based on the focused attention that the SDG 4 and its associated targets depicted, there is need to provide a functional mechanism that would provide a greater and more equal opportunity for all men and women to access quality TVET; engage in lifelong learning; and acquire ICT skills for work. Therefore, equity can be regarded in this study as one of the characteristics of SDG 4 Agendas. The term "equity" refers to different concepts related to fairness and compensatory actions that recognize disadvantage (UNESCO Institute for Statistics, 2018). Thus, parity index appears to be a key indicator that can be used for monitoring all SDG 4 Agendas. As such, equity-related indicators seem to account for the largest data required to monitor SDG 4 Agendas as a whole.

In Nigeria, government at all levels have committed themselves to achieving 2030 SDG 4 agendas, seeking to promote human right, public good and gender equality by ensuring equal access to TVET and learning in a lifelong perspective, making sure no one is left behind. To fulfill the right for all to equally engage learning in a lifelong perspective, TVET must aim at the holistic development of human personality. According to a publication by the Kaduna State Government on the achievement level of SDGs, Nigeria have recorded a significant progress, such that the achievement level of SDGs strongly aligns with the progress towards ensuring equal access to TVET for

all men and women, including those with disabilities. The publication reported that before the emergence of COVID-19 pandemic, Government at all levels devoted full attention toward achieving inclusive and quality TVET (Kaduna State Government, 2019).

According to a UN publication released after the emergence of COVID-19 pandemic on the need for SDGs to be rescued urgently, the lingering effects of COVID-19 pandemic and all other associated challenges have hindered the hard-earned progress towards achieving 2030 SDG 4 agendas. The publication stated that while the lack of progress towards achieving 2030 SDG 4 agendas is widespread, it is the developing countries including Nigeria who experienced the worst effects of COVID-19 outbreak and all other associated challenges (UN, 2023). The effects of COVID-19 outbreak spurred the need to strictly adhere to its measures and protocols such as school closures, exacerbating the need for a new mode of instruction, especially in a practical-based programme such as TVET, thereby providing opportunities for lecturers and students to acquire relevant ICT skills to continually gain access to digital platforms. In most developing countries and higher education institutions offering TVET programmes, no online teaching and learning during the COVID-19 outbreak, talk less in the Post-COVID period. This situation can be traceable to costly or insufficient Internet access, lack of laptop computers and lack of remote teaching abilities or tools (Ile & Edokpolor, 2021). Only few private institutions adopted and sustained the use of digital platforms for teaching and learning during and in Post-COVID-19 era. Most vulnerable students and those who were unable to access digital learning platforms were at risk of opting out of schools; been forced to marry early or engage in hard labour; or become jobless or underemployed (UN, 2021). This situation resulted in widening skills gap, gender inequalities and discontinuities in acquiring skills in a lifelong perspective (Blaskó, Costa & Schnepf, 2021; Di Pietro, Biagi, Costa, Karpiński & Mazza, 2020).

Before and after the COVID-19 outbreak, TVET was characterized by under-funding, shortage and uneven distribution of qualified lecturers, outdated curriculum and low provision of befitting infrastructures and state-of-the-art facilities (Okoye & Arimonu, 2016; Ayonmike, Okwelle & Chukwumaijem, 2015; Ayonmike, 2015; Oviawe, 2018; Edokpolor, Edokpolor & Olupayimo, 2017; Kagara, Ibrahim & Kareem, 2020). This situation seems to promote skills deficiency, unequal access to TVET, discontinuity in skills acquisition, in turn, exacerbated the alarming incidence of joblessness and underemployment among graduates (Edokpolor, 2020). These situations may have also hindered the progress towards achieving SDG 4 agendas. It is, therefore, imperative to eradicate the barriers that truncate the achievement of SDG 4 agendas.

It is therefore necessary to put in place a strong and functional mechanisms to tackle existing challenges (e.g. inadequate supply of material and human resources due to a decrease in transparency and lack of information) which would help in ensuring that the scarce resources are judiciously utilized and accounted for (Transparency International, 2017). The inadequate supply of material and human resources and lack of information on how scarce resources are judiciously used for the execution of projects have called for the practices of good governance principles in TVET, in turn, provide opportunity for TVET managers to have 'value for money' in the post-COVID-19 era. Value for money refers to effectiveness, efficiency, economy and equity in the use of scarce resources for the execution of projects (Transparency International, 2017). This definition supported the notion that the practices of poor governance principles (i.e. low level of effectiveness, efficiency, accountability, transparency and integrity in the use of funds) can lead to the inadequate supply of material and human resources, in turn, hinder the execution of projects. These situations appear to be the main issues responsible for unequal access to TVET, unequal engagement in

lifelong learning and unequal acquisition of ICT skills. This suggest that the practice of poor governance principles in TVET has been a treat towards achieving SDG 4 agendas. Similarly, the practice of poor governance principles in TVET can help in achieving SDG 4 agendas in Post-COVID-19 era. Therefore, there is a need for TVET managers to formulate and implement a policy that bring into existence a functional mechanism (i.e. the practice of good governance principles) to promote equal access to TVET, engagement in lifelong learning and acquisition of ICT skills. Hence, the practice of good governance principles involves effectiveness, efficiency, transparency, accountability and integrity in the use of scarce resources to promote the achievement of SDG 4 agendas in Post-COVID-19 era.

Purpose of the Study

The purpose of this study is twofold: (1) to examine the practice of good governance principles in TVET and the achievement of SDG 4 agendas; and (2) to examine the interplay between the practices of good governance principles in TVET and the achievement of SDG 4.

Research Questions

The following research questions were raised to guide the study.

1. What is the level of resource effectiveness/efficiency in TVET programme?
2. What is the level of accountability in TVET programme?
3. What is the level of transparency in TVET programme?
4. What is the level of integrity in TVET programme?
5. What is the level of difference between mean scores of male and female students as regards equal access to TVET programme?
6. What is the level of difference between mean scores of male and female students as regards equal engagement in lifelong learning?
7. What is the level of difference between mean scores of male and female students as regards equal acquisition of specialized ICT skills?
8. To what extent does the practice of good governance principles in TVET promote equal access to TVET programme?
9. To what extent does the practice of good governance principles in TVET promote equal engagement in lifelong learning?
10. To what extent does the practice of good governance principles in TVET promote equal acquisition of specialized ICT skills?

Research Hypotheses

The following research hypotheses were formed to guide the study.

1. The practice of good governance principles in TVET does not significantly promote equal access to TVET programme.
2. The practice of good governance principles in TVET does not significantly promote engagement in lifelong learning.
3. The practice of good governance principles in TVET does not significantly promote acquisition of specialized ICT skills.
4. The mean scores of male and female students does not significantly differ as regards the level of achievement of SDG 4 agendas.

Methodology

Nonexperimental quantitative (i.e. descriptive and correlational) survey research designs was used to achieve the aim of the study. A total of 1,072 participants (292 TVET lecturers and 780 TVET students) participated in the study. Were 62 (21%) of TVET lecturers specialized in industrial technical education, 33 (11%) specialized in agricultural science education, 113 (39%) specialized in business and entrepreneurship education, 84 (29%) specialized in home economics education. 482 (62%) were male TVET students, and 298 (38%) were female TVET students. 163 (21%) of TVET students currently studying industrial technical

education, 98 (13%) of TVET students currently studying agricultural science education, 304 (39%) of TVET students currently studying business and entrepreneurship education, 215 (27%) of TVET students currently studying home economics education.

A convenience sampling technique was used in selecting the participants for the study. This technique was used because the participants were available to the authors as at the time the research was conducted. Structured questionnaires were used as the instruments for data collection, titled "Good governance principles questionnaire" and "SDG 4 Agendas questionnaire". Good governance principles questionnaire was adapted from the study of Edokpolor and Imafidon (2019) and SDG 4 Agendas questionnaire was developed from a pertinent literature (UNESCO Institute for Statistics, 2018; UNESCO, 2020). TVET lecturers rated the level of the practices of good governance principles and TVET students rated the level of the achievement of SDG 4 agendas on a 4-point rating scale ranging from 4 = High to 1 = Low.

A panel of four experts ensured that the instruments for data collection are capable of measuring what they claim to measure. Their suggestions were effected into the final copies of the instruments and were reproduced for data collection. Copies of the first instrument were administered on 25 TVET lecturers who were not part of the sample for the study. Copies of the second instrument were also administered on 30 TVET students who were not part of the sample for the study. Cronbach's alpha reliability test was applied to establish the internal consistency of the items in the instruments, which yielded coefficient alpha values of 0.83 for effectiveness/efficiency, 0.81 for accountability, 0.74 for transparency, 0.82 for integrity, 0.72 for equal access to TVET, 0.78 for equal engagement in lifelong learning and 0.76 for equal acquisition of ICT skills. All coefficient alpha values obtained for each of the constructs of the study variables suggest that the measuring instruments are highly reliable and can be applied for data collection in any setting to measure the same items at any given points of time.

The IBM SPSS version 27.0 for Windows was employed for data analysis. Descriptive statistics (e.g. mean and standard deviation) and inferential statistic (e.g. Pearson's correlation) were used in answering the research questions, ranging from high to low. Inferential statistics (e.g. regression and t-test) were used in testing the hypotheses at a 0.05 level of significance.

Results

Descriptive Statistics (Mean and Standard Deviation)

Research Question 1: What is the level of resource effectiveness/efficiency in TVET programme?

Table 1: Mean and Standard Deviation of the Level of Resource Effectiveness/Efficiency in TVET Programme.

S/N	Items	*M*	*SD*	Remark
1.	disbursement of funds for TVET programme.	1.70	.868	Low
2.	recruitment of the right calibre of staff for TVET programme.	1.58	.640	Low
3.	provision of state-of-the-art facilities for TVET programme.	1.58	.776	Low
4.	procurement of quality instructional resources for TVET programme.	1.54	.704	Low
5.	constant changing and overhauling of curriculum for TVET programme.	1.53	.680	Low
	Aggregate	1.59	.321	Low

Note. *M* = mean, *SD* = standard deviation

Table 1 showed the aggregate mean score of 1.59 and standard deviation value of .321. The Table also showed that 5 items (i.e. serial number 1, 2, 3, 4 and 5) had the mean

scores ranging from 1.70 and 1.53 and standard deviation values ranging from .868 and .640. The mean scores implied that TVET managers poorly practiced resource effectiveness/efficiency, and the standard deviation values implied that TVET lecturers' responses are very close.

Research Question 2: What is the level of accountability in TVET programme?

Table 2: Mean and Standard Deviation of the Level of Accountability in TVET Programme.

S/N	Items	*M*	*SD*	Remark
1.	disbursement of funds for recruitment of qualified lecturers are often documented in financial reports	1.51	.671	Low
2.	disbursement of funds for academic research are often documented in financial reports	1.63	.638	Low
3.	disbursement of funds for career development are often documented in financial reports	1.43	.555	Low
4.	disbursement of funds for provision of state-of-the-art facilities are often documented in financial reports	1.55	.648	Low
5.	disbursement of funds for procurement of quality instructional resources are often documented in financial reports	1.56	.648	Low
6.	disbursement of funds for constant changing and overhauling of curriculum are often documented in financial reports	1.61	.736	Low
7.	disbursement of funds for accreditation of TVET programme are often documented in financial reports	1.57	.636	Low
8.	provision of mechanisms to vet or review the validity and reliability of financial reports	1.51	.583	Low
9.	audit of funds disbursed for execution of projects, such as, those identified above are conducted frequently	1.72	.676	Low
10.	audit of funds disbursed for execution of projects, such as, those identified above are available to the general public	1.52	.612	Low
11.	decisions and procedures to disbursed funds for execution of projects are subject to timely review	1.57	.573	Low
12.	decisions and procedures to disbursed funds for execution of projects are publicly available	1.57	.580	Low
13	policies and procedures which requires sanctions and punishments for any corrupt practices are exhibited at all levels of project execution	1.60	.587	Low
14.	information on policies and procedures about sanctions and punishments are publicly available	1.63	.537	Low
	Aggregate	1.57	.173	Low

Note. *M* = mean, *SD* = standard deviation

Table 2 showed the aggregate mean score of 1.57 and standard deviation value of .173. The Table also showed that 14 items (i.e. serial number 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14) had the mean scores ranging from 1.63 and 1.43 and standard deviation values ranging from .736 and .537. The mean scores implied that TVET lecturers poorly practiced accountability and the standard deviation values implied that TVET lecturers' responses are very close.

Research Question 3: What is the level of transparency in TVET programme?

Table 3: Mean and Standard Deviation of the Level of Transparency in TVET Programme.

S/N	Items	*M*	*SD*	Remark
1.	information conveyed through meetings or documentations are available to the general public	1.60	.550	Low
2.	information relating to TVET matters are available online or offline, not on request by the general public.	1.55	.525	Low
3.	information available online or offline for public consumption are accurate and complete	1.49	.534	Low
4.	information available online or offline for public consumption are coherent and understandable	1.51	.571	Low
5.	information available online or offline for public consumption are timely and reliable	1.45	.498	Low
6.	information available online or offline for public consumption are updated regularly.	1.29	.491	Low
7.	information available online or offline for public consumption exist within certain timeframes and deadlines	1.63	.485	Low
8.	information on execution of projects, such as recruitment, procurement, overhauling and provision are unveiled to the general public	1.51	.514	Low
	Total	1.50	.176	Low

Note. *M* = mean, *SD* = standard deviation

Table 3 showed the aggregate mean score of 1.50 and standard deviation value of .176. The Table also showed that 8 items (i.e. serial number 1, 2, 3, 4, 5, 6, 7 and 8) had the mean scores ranging from 1.63 and 1.29 and standard deviation values ranging from .571 and .485. The mean scores implied that TVET lecturers poorly practices transparency, and the standard deviation values implied that TVET lecturers' responses are very close.

Research Question 4: What is the level of integrity in TVET programme?

Table 4: Mean and Standard Deviation of the Level of Integrity in TVET Programme.

S/N	Items	*M*	*SD*	Remark
1.	comprehensive codes of conduct are written in the guiding documents of funds disbursed for projects execution.	1.45	.499	Low
2.	comprehensive codes of conduct written in the guiding documents of funds disbursed are publicly available.	1.52	.540	Low
3.	comprehensive code of conduct written in the guiding documents of funds disbursed for projects execution are enforced.	1.45	.499	Low
4.	TVET lecturers who are recruited comport themselves according to widely accepted standards of professional conduct.	1.50	.501	Low
5.	integrity screening are conducted or integrity background are checked among TVET lecturers before embarking on any project.	1.51	.501	Low
6.	integrity screening or background checks are conducted among TVET lecturers by internal and external bodies before embarking on any project.	1.54	.499	Low
7.	integrity screening or background of TVET lecturers covers their education, employment history, credentials, criminal records, sanctions by relevant regulatory bodies, and more, before embarking on any project.	1.39	.488	Low
8.	TVET lecturers are trained on codes of professional conduct or	1.52	.501	Low

	integrity as part of their professional orientation.			
9.	TVET lecturers attend classes or briefings explaining in detail the respective codes of conduct they are expected to be subjected to.	1.54	.499	Low
10.	TVET lecturers who do not not comply to the codes of conduct are sanctioned and punished.	1.57	.497	Low
11.	TVET lecturers are sanctioned and punished for not attending classes or briefings.	1.44	.511	Low
12.	Sanctions and punishment for non-compliance to the codes of conduct by TVET lecturers are written in the guiding documents.	1.46	.499	Low
	Total	1.49	.150	Low

Note. M = mean, *SD* = standard deviation

Table 4 showed the aggregate mean score of 1.49 and standard deviation value of .150. The Table also showed that 12 items (i.e. serial number 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12) had the mean scores ranging from 1.57 and 1.39 and standard deviation values ranging from .511 and .488. The mean scores implied that TVET lecturers poorly practiced integrity, and the standard deviation values implied that TVET lecturers' responses are very close.

Research Question 5: What is the level of difference between mean scores of male and female students as regards equal access to TVET programme?

Table 5: Mean and Standard Deviation of the Level of Equal Access to TVET Based on Gender.

		Equal Access to TVET Based on Gender			
		Male (n=482)		Female (n=298)	
S/N	Items	*M*	*SD*	*M*	*SD*
1.	my school/institution grant equal opportunity for male and female students or applicants to access quality TVET.	3.15	.660	1.48	.500
2.	opportunity to complete quality TVET is equitably granted to male and female students or applicants in my school/institution.	2.97	.900	1.58	.528
	Total	3.06	.568	1.53	.358

Note. M = mean, *SD* = standard deviation

Table 5 showed the aggregate mean score of male students' responses to be 3.06 and standard deviation value to be .568. The Table also showed the aggregate mean score of female students' responses to be 1.53 and standard deviation value to be .358. The Table also showed that 2 items of male students mean scores ranged from 3.15 to 2.97 and standard deviations values ranged from .900 to .660. The Table also showed that 2 items of female students mean score ranged from 1.58 to 1.48 and standard deviations values ranged from .528 to .500. Comparatively, each items of the mean scores and standard deviation values for male students differ from that of female students. This implied that male and female students do not equally access TVET. Standard deviation values implied that male and female students mean scores as regards access to TVET are not very close, which further implied that their responses are scattered around the mean.

Research Question 6: What is the level of difference between mean scores of male and female students as regards equal engagement in lifelong learning?

Table 6: Mean and Standard Deviation of the Level of Equal Engagement in Lifelong Learning Based on Gender.

		Equal Engagement in Lifelong Learning Based on Gender			
		Male (n=482)		Female (n=298)	
S/N	Items	*M*	*SD*	*M*	*SD*
1.	opportunity to engage in continuous learning is equitably granted to male and female students or applicants in my school/institution.	3.10	.850	1.56	.523
2.	opportunity to learn within and outside my school environment is equitably granted to male and female applicants or students.	3.33	.699	1.54	.506
	Total	3.22	.529	1.55	.342

Note. *M* = mean, *SD* = standard deviation

Table 6 showed the aggregate mean score of male students' responses to be 3.22 and standard deviation value to be .529. The Table also showed the aggregate mean score of female students' responses to be 1.55 and standard deviation value to be .342. The Table also showed that 2 items of male students mean scores ranged from 3.33 to 3.10 and standard deviations values ranged from .850 to .699. The Table also showed that 2 items of female students mean score ranged from 1.56 to 1.54 and standard deviations values ranged from .523 to .506. Comparatively, each items of the mean scores and standard deviation values for male students differ from that of female students. This implied that male and female students do not equally engage in lifelong learning. Standard deviation values implied that male and female students mean scores as regards engagement in lifelong learning are not very close, which further implied that their responses are scattered around the mean.

Research Question 7: What is the level of difference between mean scores of male and female students as regards equal acquisition of specialized ICT skills?

Table 7: Mean and Standard Deviation of the Level of Equal Acquisition of Specialized ICT Skills Based on Gender.

		Equal Acquisition of Specialized ICT Skills Based on Gender			
		Male (n=482)		Female (n=298)	
S/N	Items	*M*	*SD*	*M*	*SD*
1.	male and female students possesses the skills to copy or move a file or folder.	3.26	.668	1.53	.500
2.	male and female students possesses the skills to copy and paste tools to duplicate or move information in a document.	3.23	.717	1.47	.500
3.	male and female students possesses the skills to find, download, install and configure software.	3.22	.710	1.40	.497
4.	male and female students possesses the skills to create e-presentations with presentation software (including text, images, sound, video or charts).	3.25	.689	1.44	.497
5.	male and female students possesses the skills to send e-mails	3.20	.732	1.39	.489

	with attached files (e.g. document, picture, video).				
6.	male and female students possesses the skills to use basic arithmetic formulae in a spreadsheet.	3.15	.906	1.34	.496
7.	male and female students possesses the skills to connect and install new devices (e.g. modem, camera, printer).	3.23	.736	1.52	.533
8.	male and female students possesses the skills to transfer files between a computer and other devices.	3.15	.742	1.51	.514
9.	male and female students possesses the skills to write a computer programme using a specialized programming language.	3.13	.900	1.49	.507
	Total	3.20	.252	1.45	.150

Note. M = mean, SD = standard deviation

Table 7 showed the aggregate mean score of male students' responses to be 3.20 and standard deviation value to be .252. The Table also showed the aggregate mean score of female students' responses to be 1.45 and standard deviation value to be .150. The Table also showed that 9 items of male students mean scores ranged from 3.26 to 3.13 and standard deviations values ranged from .906 to .668. The Table also showed that 9 items of female students mean score ranged from 1.53 to 1.34 and standard deviations values ranged from .533 to .489. Comparatively, each items of the mean scores and standard deviation values for male students differ from that of female students. This implied that male and female students do not equally acquire specialized ICT skills. Standard deviation values implied that male and female students mean scores as regards acquisition of specialized ICT skills are not very close, which further implied that their responses are scattered around the mean.

Inferential Statistic (Pearson's Correlation)

Research Question 8: To what extent does the practice of good governance principles in TVET promote equal access to TVET programme?

Table 8: Correlation between the Practice of Good Governance Principles in TVET and Equal Access to TVET Programme.

S/N	Variables	1	2	3	4	5	6
1.	REE	1					
2.	ACC	-.076	1				
3.	TRA	.069	.093	1			
4.	INT	.034	.021	.043	1		
5.	OPGGPTVET	.413**	.646**	.476**	.515**	1	
6.	EATVET	.019	-.019	-.103	.055	-.016	1

Note. N = 1,072, p>0.05, REE=Resource Effectiveness and Efficiency, ACC=Accountability, TRA=Transparency, INT=Integrity, OPGGPTVET=Overall Practice of Good Governance Principles in TVET, EATVET=Equal Access to TVET.

Table 8 showed the correlation between the practice of good governance principles in TVET and equal access to TVET. The Table showed that resource effectiveness/efficiency negatively associate with equal access to TVET (r = .019). The Table also showed that accountability negatively associate with equal access to TVET (r = -.019). The Table showed that transparency negatively associate with equal access to TVET (r = -.103). The Table also showed that integrity negatively associate with equal access to TVET (r = .055). The Table also showed that overall good

governance practices in TVET negatively associate with equal access to TVET (r = -.016). All in all, the practice of good governance principles in TVET were statistically found to negatively associate with equal access to TVET.

Research Question 9: To what extent does the practice of good governance principles in TVET promote equal engagement in lifelong learning?

Table 11: Correlation between the Practice of Good Governance Principles and Equal Engagement in Lifelong Learning.

S/N	Variables	1	2	3	4	5	6
1.	REE	1					
2.	ACC	-.076	1				
3.	TRA	.069	.093	1			
4.	INT	.034	.021	.043	1		
5.	OPGGPTVET	.413**	.646**	.476**	.515**	1	
6.	EELLL	-.037	-.005	.050	-.051	-.024	1

Note. N=1,072, $p > 0.05$, REE = Resource Effectiveness and Efficiency, ACC = Accountability, TRA = Transparency, INT = Integrity, OPGGPTVET=Overall Practice of Good Governance Principles in TVET, EELLL = Equal Engagement in Lifelong Learning.

Table 9 showed the correlation between the practice of good governance principles in TVET and equal access to TVET. The Table showed that resource effectiveness/efficiency negatively associate with equal engagement in lifelong learning (r = -.037). The Table also showed that accountability negatively associate with equal engagement in lifelong learning (r = -.005). The Table showed that transparency negatively associate with equal engagement in lifelong learning (r = .050). The Table also showed that integrity negatively associate with equal engagement in lifelong learning (r = -.051). The Table also showed that overall good governance practices in TVET negatively associate with equal engagement in lifelong learning (r = -.024). All in all, the practice of good governance principles in TVET were statistically found to negatively associate with equal engagement in lifelong learning.

Research Question 10: To what extent does the practice of good governance principles in TVET promote equal acquisition of specialized ICT skills?

Table 10: Pearson's Correlation between the Practice of Good Governance Principles and Equal Acquisition of Specialized ICT Skills.

S/N	Variables	1	2	3	4	5	6
1.	REE	1					
2.	ACC	-.076	1				
3.	TRA	.069	.093	1			
4.	INT	.034	.021	.043	1		
5.	OPGGPTVET	.413**	.646**	.476**	.515**	1	
6.	EALLL	-.008	.029	.012	-.006	.017	1

Note. N=1,072, $p > 0.05$, REE= Resource Effectiveness and Efficiency, ACC=Accountability, TRA=Transparency, INT=Integrity, OGGPTVETP=Overall Practice of Good Governance Principles in TVET, EASICTSA=Equal Acquisition of Specialized ICT Skills Acquisition.

Table 10 showed the correlation between the practice of good governance principles in TVET and equal acquisition of specialized ICT skills. The Table showed that resource effectiveness/efficiency negatively associate with equal acquisition of specialized ICT skills (r = -.008). The Table also showed that accountability negatively associate with equal acquisition of specialized ICT skills (r = .029). The Table showed that transparency negatively associate with equal acquisition of specialized ICT skills (r = .012). The Table also showed that integrity negatively associate with equal acquisition of specialized ICT skills (r = -.006). The Table also showed that overall good governance practices in TVET negatively associate with equal acquisition of specialized ICT skills (r = .017). All in all, the practice of good governance principles in TVET were statistically found to negatively associate with equal acquisition of specialized ICT skills.

Inferential Statistic (Linear Regression)

Research Hypothesis 1: The practice of good governance principles in TVET does not significantly promote equal access to TVET programme.

Table 11: Regression Estimates of the Relationship between the Practice of Good Governance Principles in TVET and Equal Access to TVET Programme.

Variables	β	p	*SE*	t	R^2	*Adj.* R^2	F	Decision
PGGPTVET								
	-.016	.783	.340	-.275	.000	-.003	.076	*ns*
EATVET								

Note. N = 1,072, $p > 0.05$, PGGPTVET = Practice of Good Governance Principles in TVET, EATVET = Equal Access to TVET.

Table 11 showed the relationship between the practice of good governance principles in TVET and equal access to TVET. The Table showed the significant coefficients (F = .076, β = -.016, t = -.275, $p > 0.05$), which confirmed the results obtained. The adjusted r-square (-.003) showed that less than 1% of variance in equal access to TVET is determined by the practice of good governance principles in TVET. All in all, the practice of good governance principles in TVET negatively promote equal access to TVET. Hence, hypothesis 1 is accepted.

Research Hypothesis 2: The practice of good governance principles in TVET does not significantly promote engagement in lifelong learning.

Table 12: Regression Estimates of the Relationship between the Practice of Good Governance Principles in TVET and Equal Engagement in Lifelong Learning.

Variables	β	p	*SE*	t	R^2	*Adj.* R^2	F	Decision
PGGPTVET								
	-.024	.680	.322	-.413	.001	-.003	.170	*ns*
EELLL								

Note. N = 1,072, $p > 0.05$, PGGPTVET = Practice of Good Governance Principles in TVET, EELLL = Equal Engagement in Lifelong Learning.

Table 12 showed the relationship between the practice of good governance principles in TVET and equal engagement in lifelong learning. The Table showed the significant coefficients (F = .170, β = -.240, t = -.413, $p > 0.05$), which confirmed the results obtained. The adjusted r-square (-.003) showed that less than 1% of variance in equal engagement in lifelong learning is determined by the practice of good governance principles in TVET. All in all, the practice of good governance principles in TVET negatively promote equal

engagement in lifelong learning. Hence, hypothesis 2 is accepted.

Research Hypothesis 3: The practice of good governance principles in TVET does not significantly promote acquisition of specialized ICT skills.

Table 13: Regression Estimates of the Relationship between the Practice of Good Governance Principles in TVET and Equal Acquisition of Specialized ICT Skills.

Variables	*β*	*p*	*SE*	*t*	R^2	*Adj.* R^2	*F*	Decision
PGGPTVET								
	.017	.777	.152	.283	.000	-.003	.080	*ns*
EASICTSA								

Note. N = 1,072, $p > 0.05$, OGGPTVETP = Practice of Good Governance Principles in TVET, EASICTS = Equal Acquisition of Specialized ICT Skills.

Table 13 showed the relationship between the practice of good governance principles in TVET and equal acquisition of specialized ICT skills. The Table showed the significant coefficients (F = .080, β = .017, t = .283, $p >$ 0.05), which confirmed the results obtained. The adjusted r-square (-.003) showed that less than 1% of variance in equal acquisition of specialized ICT skills is determined by the practice of good governance principles in TVET. All in all, the practice of good governance principles in TVET negatively promote equal acquisition of specialized ICT skills. Hence, hypothesis 3 is accepted.

Inferential Statistic (Independent Samples T-Test)

Research Hypothesis 4: The mean scores of male and female students does not significantly differ as regards the level of achievement of SDG 4 agendas.

Table 14: Mean and Standard Deviation on the Level of Achievement of SDG 4 Agendas Based on Gender.

Level of Achievement of SDG 4 Agendas Based on Gender									
		Male (n=482)		Female (n=298)					
S/N	Variables	*M*	*SD*	*M*	*SD*	*t*	*p*	*F*	Decision
1.	EATVET	3.06	.568	1.53	.358	41.633	.000	63.542	*Sig.*
2.	EELLL	3.22	.529	1.55	.342	48.364	.000	94.935	*Sig.*
3.	EAICTS	3.18	.252	1.45	.159	107.224	.000	52.627	*Sig.*
4.	OSDGA	3.18	.211	1.48	.139	123.695	.000	46.487	*Sig.*

Note. N = 1,072, $p > 0.05$, EATVET = Equal Access to TVET, EELLL = Equal Engagement in Lifelong Learning. EASICTS = Equal Acquisition of Specialized ICT Skills, M = mean, SD = standard deviation

Table 14 showed a significant difference in the mean scores of male and female students as regards the level of achievement of sustainable development goal 4 agendas, specifically for all the four items, for example: equal access to quality TVET programme (t = -27.672, p = .000), equal access to to lifelong learning (t = -34.556, p = .000), equal access to specialized ICT skills acquisition (t = -24.490, p = .000), and overall sustainable development goal 4 agendas (t = -26.634, p = .000). Comparatively, each items of the mean ratings for male students were found to be higher than that of female students on the four items of sustainable development goal 4. The p-values in the four items were greater than 0.05 level of significance, which implied that male and female students mean responses as regards the level of SDG 4 achievement were found to significantly differ. Hence, research hypothesis 4 is rejected.

Discussion

The aim of this study is twofold: (1) to examine the practice of good governance principles in TVET and the achievement of SDG 4 agendas; and (2) to examine the interplay between the practices of good governance principles in TVET and the achievement of SDG 4 agendas in Post-COVID-19 era. The results showed that TVET lecturers poorly practiced good governance principles (e.g. resource effectiveness and efficiency, accountability, transparency and integrity). The reason for these findings seem to be because of the limited involvement and participation of stakeholders whose major responsibility is to formulate and implement policies aimed at promoting the practice of good governance principles in TVET. With regards to the formulation and implementation of policies, the European Training Foundation (2013) outlined the important roles of stakeholders in ensuring the practices of good governance principles (e.g. effectiveness, efficiency, coherence, transparency, accountability, and performance) in TVET. In a corporate conference organized by the European Training Foundation, tagged: "Multilevel governance in education and training: Challenges and opportunities", the involvement and participation of stakeholders in management of TVET were discussed as a means to promote effectiveness, efficiency, coherence, transparency, accountability and performance in TVET.

The results also indicated that male students have more opportunities to access TVET, engage in lifelong learning and acquire ICT skills than their female counterpart. In order words, male and female students mean scores regarding the achievement of SDG 4 significantly differ. Women generally appear to be discriminated as regards access to TVET (Asian Development Bank, 2009). The effort of promoting women access to TVET could have been lagging behind. Males tend to have better access to education, and while this situation has improved for females in the last few decades (particularly at the primary level, and in several countries both at the secondary and higher level), TVET persists with a preference towards male gender (UNESCO, 2012). In Nigeria, for instance, females access to TVET has been low generally in industrial technology disciplines, where females access to a male-dominated disciplines (e.g., mechanics, plumbing, civil works, medical technicians, ICT or designs) is less than 28% (Afeti & Adubra, 2012). Even in some developed nations where gender equality is highly achieved, women also experience discrimination as regards access to TVET discipline (UNESCO, 2011). Unequal gaps as regards access to TVET, lifelong learning, and ICT skills acquisition are exacerbated by shortage of trained lecturers and instructors (UNESCO, 2017). As such, recruiting more female lecturers and instructors are a key resource input for guaranteeing women's access to TVET, and provide opportunities for them to engage in lifelong learning and acquire ICT skills.

Women's discrimination as regards access to TVET may explain the differences that exist between male and female students in lifelong learning (Edokpolor & Abusomwan, 2017) and ICT skills acquisition (Edokpolor & Chukwuedo, 2018). The differences between men and women as regards access to TVET may exist because of social plaques encountered by women (Bandura, Barbaranelli, Caprara & Pastorelli, 2001). The differences between male and female students in lifelong learning and ICT skills acquisition may be due to their exposure to career socialization. Because of their exposure to the ongoing career socialization processes, lifelong learning and ICT skills acquisition tend to differ between men and women. These assumptions support the study by Okoye and Edokpolor (2021) who found a significant difference between the male and female students as regards ICT skills acquisition after exposure to role models.

The results also showed that the practices of good governance principles negatively predicted the achievement of SDG 4 agendas. This result implied that as the practices of good governance principles

decreases, the achievement of SDG 4 agendas decreases. The reasons for women to lag behind as regards access to TVET, lifelong learning and ICT skills acquisition may be that the practices of good governance principles are poorly practiced (UNESCO, 2012). Therefore, the practices of good governance principles are germane to achieving SDG 4 (Swiss Agency for Development and Cooperation, 2020). This means that urgent attention is required to empower, recruit, remunerate, motivate and support qualified lecturers and instructors within a well-resourced, efficient and effective governed systems, because they are key resource input for guaranteeing the success of achieving SDG 4 agendas.

Conclusion

The study assessed the practice of good governance principles in TVET and the achievement of SDG 4 agendas. It also the interplay between the practices of good governance principles in TVET and achievement of SDG 4 agendas in post-COVID-19 era. TVET lecturers poorly practiced good governance principles and TVET students poorly achieved SDG 4 agendas. Men have more opportunities to access TVET, engage in lifelong learning and acquire ICT skills than women. Poorly achieved SDG 4 agendas is attributed to poorly practice of good governance principles. This implied that as the practice of good governance principles decreases, the achievement of SDG 4 agendas decreases.

Recommendations

Based on the results of the study, the following recommendations are made.

1. Relevant stakeholders should endeavour to put in place policies that could address the problem of poor practices of good governance principles in TVET in a relatively short period of time as this will help to provide equal opportunities for men and women to access quality TVET in Post-COVID-19 era.
2. Relevant stakeholders should endeavour to put in place policies that could address the problem of poor practices of good governance principles in TVET in a relatively short period of time as this will help to provide equal opportunities for men and women to engage in lifelong learning in Post-COVID-19 era.
3. Relevant stakeholders should endeavour to put in place policies that could address the problem of poor practices of good governance principles in TVET in a relatively short period of time as this will help to provide equal opportunities for men and women to acquire ICT skills in Post-COVID-19 era.

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