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Students' Knowledge and Attitudes in Behaviors about Sustainable Development Goals (SDGs) In Lagos State University, Lagos Nigeria

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Abstract. The present study examined students' knowledge and attitudes in behavior about the United Nations Sustainable Development Goals (SDGs) at Lagos State University, Lagos State, Nigeria. The data for the study were extracted and analyzed from the 353 copies of structured questionnaires that were self-administered to students across the ten (10) faculties. Data was analyzed using simple percentages, tables, One-Way Analysis of Variance (ANOVA), and logistic regression analysis. Results showed that a good percentage (77.1%) of the respondents had knowledge of and were aware of the term SDGs. Social media (33.1%), lectures (14.4%), and television (12.5%) were the prominent sources of SDGs awareness by the respondents who claimed they were aware of the term SDGs. The level of awareness of the various SDGs also varied among the students with most students being aware of 14 of the SDGs (77%),

while the remaining (23%) claimed they were not familiar with three goals (9, 12, and 17). The result of the awareness further showed that among the SDGs they claimed they were aware of (91%) were for SDG 1 (NO POVERTY), while, the percentage of the level of awareness for the remaining varied from 1.1% to 13.5%. The students displayed behavioral support toward the actualization of sustainable development goals by encouraging a sustainable energy approach, encouraging sustainable consumption patterns, and discouraging biodiversity loss through their behaviors. Based on these findings, it is strongly recommended that the universities in Nigeria revise and incorporate the teaching of the SDGs into their academic curricula. This step will afford the students adequate knowledge about the UN SDGs and how these can be achieved and sustained.

Keyword:

Knowledge, Attitudes, Behavior, Sustainable Development Goals

1. Introduction

Sustainable development is not a new terminology. Amongst some students, it could be and may show in their relationship with the environment. Among students who are familiar with the terms, their attitude and behavior towards the environment in terms of being environment-friendly may not be different from those with low knowledge of the tenets of the term. Hence, the level of awareness amongst people, particularly students who are the key players in the campaign for a sustainable environment, remains a serious concern towards attaining the United Nations Sustainable Development Goals (SDGs). SDGs represent a globally accepted developmental agenda, and it is expected that everyone from every part of the world would be aware, knowledgeable, and willing to contribute to its attainment. But this is not the case, as its goals are unknown to many people as a result of low awareness [2],[10],[20],[25].

As such, one of the challenges affecting the accomplishment of SDGs in several countries, particularly in Nigeria is students' low level of awareness concerning the goals of sustainable development, what they entail, and how their perception impacts the sustainability of the social, economic, and environmental well-being of the society [4]. This concern is also shared by Ekere [26] who reported that approximately 50 percent of the Nigerian population is ignorant of what the sustainable development goals are and how they affect their development. This low awareness of SDGs and their applications as well as requirements has affected their attainment. However, the only way for sustainable development to accomplish its goals and become a way of life among Nigerians is to raise their level of awareness as well as create a positive attitude and behavior that shape their lives in the direction of sustainable development principles [4],[6],[19].

This is imperative as education remains the ley medium of creating and raising awareness concerning SDGs on the one hand and the other hand, as a means of making people from the knowledge gained develop positive attitudes and behavior toward its application for the attainment of sustainable development [7],[20]. The SDGs contain a five "Ps" agenda which are: people, prosperity, planet, peace, and partnership, and these five "Ps" are for all

countries and peoples of the world [20],[24]. Before these goals became a global agenda, consultations were made among various bodies/sectors including governments, civil society organizations, the private sector, scientist, academicians, and individual citizens across the world. Accordingly, the educational sector was not left out of its formulation [20]. The role of education is fundamental in achieving the SDGs. In this regard, the United Nations Educational and Scientific and Cultural Organization recognizes education as a major key to sustainable development with its declaration that "sustainable development cannot be achieved by technological solutions, political regulation or financial instruments alone. We need to change the way we think and act. This requires quality education and learning for sustainable development at all levels and in all social contexts" [20]. It is believed that if the level of societal awareness concerning SDGs is high, stakeholders from varying sectors can challenge governments to implement global development plants nationally.

This can only be achieved through mainstreaming SDGs at the tertiary institutions. Tertiary institutions are higher educational institutions often regarded as the ivory towers of learning, and thus, the level of awareness and knowledge about the SDGs must be explored in a university setting so that possible gaps can be identified and addressed. This can also be achieved by involving the youth through adequate training. The youth are our best investment toward a bright future through their vitality, energy, and innovative ideas [16]. Provided with the necessary skills and opportunities needed to reach their potential, young people can be driving force to support development and contribute to peace and security. Youth-led organizations need to be encouraged and empowered to participate in translating the 20230 Agenda into local, national, and regional policy. With political commitment and adequate resources, young people have the potential to make the most effective transformation of the world into a better place for all. The role of our future change makers in sustainable development is inevitable, and their level of knowledge and participation can make or break the progress that the present-day leaders have worked to reach. By providing our youngest society members with the education, tools, and participation they need to grasp topics like sustainability and consciousness, we can prepare them for their futures on thriving planet.

The active engagement of youth in sustainable development efforts is central to achieving sustainable, inclusive, and stable societies by the target date and to avert the worst threats and challenges to sustainable development, including the impacts of climate change, unemployment, poverty, gender quality, conflict, and migration. The goals and targets of the 2030 Agenda are interconnected, aiming to integrate the three dimensions of sustainable development: economic, social, and environmental. Explicitly or implicitly, young people are considered to be deeply embedded within their fabrics: their knowledge, reach, and innovative solutions are essential if sustainable development is to be realizable. According to Ahmed and Ruby [3], educational institutions play a crucial role in socializing and educating students about the environment. At the national and international levels, educational institutions are active in respect of matters related to sustainable development. In the words of the first and former President of South Africa, Nelson Mandela, "Education is the most powerful weapon which you can use to change the world". Therefore, education can be that golden thread to connect economic development, social equity, and environmental sustainability.

The attainment of SDGs remains a national and global priority due to the need to mainstream the objectives of sustainable development in all facets of human endeavors. As such, the need to assess people's awareness and knowledge, particularly students, on the United Nations Sustainable Development Goals (UN SDGs) that have attracted the attention of scholars globally and across different academic disciplines. Studies have examined students' awareness and knowledge of sustainable development [4],[6],[7],[10],[20],[22],[25]. These studies reported that the student's knowledge of the SDGs was terribly low, with possible serious negative consequences for the attainment of SDGs. They, however, failed to establish pattern of students' knowledge, attitudes, and behaviors on sustainable developments (SDGs) across different campuses, religions, and cultures. It is against this gap in the literature that the present study aimed to examine the students' knowledge, attitudes, and behaviors on sustainable development goals (SDGs) at Lagos State University, Lagos State, Nigeria. The study seeks to assess the perspectives of students across different cultures, religions, and ages on the SDGs to appraise the implications for the attainment of the UN SDGs.

2. Methodology

2.1. Research design, data, and sampling techniques

The study employed the descriptive cross-sectional survey design to examine the perception of undergraduate students across different cultures, religions, and ages concerning SDGs. Data on the knowledge, attitudes, and behaviors concerning sustainable development goals (SDGs) were extracted and analyzed from the copies of the self-administered structured questionnaires to undergraduate students across the ten (10) selected Faculties across the three campuses of the Lagos State University, Lagos State, Nigeria. Multistage sampling technique was adopted in selecting the students used for the survey. The University was divided in to different campuses, faculties and departments using stratified sampling technique, systematic technique was adopted to select level of study of the students to be selected for the survey which was amongst the 2nd to 4th year undergraduate students, while, random sampling technique was adopted in administering four hundred and sixty-seven (467) questionnaire copies to undergraduate students across the selected departments, out of which three hundred and fifty-seven (357) were completed and returned. Participant's consent and permission were sought before the questionnaires were administered.

2.2. Instrumentation and data collection

Data for the survey was primarily sourced through questionnaire administration. The questionnaire was segmented into four sections. Section A of the questionnaire had five (5) sets of questions that measured respondents' socioeconomic characteristics; Section B contained eleven (11) sets of questions that measured students' knowledge about sustainability and sustainable development goals; Section C contained fourteen (14) sets of questions that measured students' attitudes toward sustainable development goals, while Section D also had 14 questions designed to measure students' behavior of toward sustainable development goals. The items in Section A of the questionnaire were measured in nominal scales, while those in Sections B to D were measured in ordinal scales with responses ranging from strongly agree (4) to strongly disagree (1). The questionnaire was

administered to the target population with the help of eight (8) field assistants and two (2) field supervisors. After the purpose of the survey had been explained to the respective respondents and consent for the survey was given, the questionnaire was administered to the respondents. To avoid questionnaire loss, respondents were encouraged to respond to the questions soon enough and return the same afterward.

2.3. Method of data analysis

The collected data were analyzed using descriptive and inferential statistical methods. The descriptive tools employed included tables and simple percentages, while One-Way Analysis of Variance (ANOVA) and logistic regression analysis were the inferential tools. Before the inferential statistical tools were performed, suitable items from the questionnaire were recoded into dummies of 1 for positive responses and 0 for negative responses (Stockburger, [23]; Grotenhuis and Thijs, [19]. This approach was used to successfully analyze a dichotomous dependent variable and a dichotomous independent variable. Statistical analyses were executed with the aid of Microsoft Excel and SPSS (22.0) software for Windows. Data collected was cleaned and coded in SPSS by creating categories using numeric values. The dependent variable is achieving Sustainable Development Goals while, the independent variables are **Students' Knowledge, Students Attitudes and Students Behaviors.**

An Independent Samples Test was employed to determine if undergraduate students' knowledge and behavior toward sustainability and sustainable development goals differed significantly between genders. One-way analysis of Variance Test (ANOVA) was performed to determine if undergraduate students' knowledge, attitude, and behavior toward sustainable development goals varied significantly across departments, religions, and cultures, while logistic regression analysis was performed to find out if undergraduate students' knowledge, attitude and behavior had a significant influence on the level of participation in sustainability activities.

3. Results and discussions

3.1. Socioeconomic characteristics of respondents

The socioeconomic characteristics of respondents are shown in Table 1. The result revealed that most respondents were females (61.5%) and within the group of 16-25 years (94.4%). A similar age and sex distribution pattern of the respondents in Southwestern Nigeria was previously obtained and reported by Omisore *et al.* [20]. Also, the age group distribution pattern revealed that students between 16-25 years formed a larger proportion of persons in the institution. The result further revealed that a larger percentage of the respondents were undergraduates on the Ojo campus of the university (92.9%). The high student percentage in the Ojo Campus is expected to be the main operational base of the University and where the majority of the faculties are situated. The result in Table 1 also identified the faculties of Education, Arts, Management Sciences, and Social Science to constitute the majority of the respondents. These faculties have high student ratios.

3.2. Knowledge about sustainable development goals and sources

Table 2 gives vital information on respondents' level of knowledge concerning sustainable development goals (SDGs) and their sources of information concerning SDGs. The results showed that a good percentage (77.1%) of the respondents had heard and were aware of SDGs. In a related study in Ghana, Odoom *et al.* [18] found that most respondents

were highly aware of sustainable development goals (SDGs). Also, in another study carried out in Indonesia, Novieastari *et al.* [17] reported that 76.8% of the respondents had good knowledge about SDGs, 73.9% had a positive perception of the SDGs, and 42.0% of the respondents were not aware of SDGs. The result suggested that SDGs are not new or strange to students at Lagos State University. The increased knowledge and awareness of SDGs among the respondents may be attributable to the global and national concerns about the importance of SDGs that have rocked the world in the past two decades.

Table 1: Socioeconomic characteristics of respondents

Variables	Category	Freq	Percent
Sex	Male	136	38.5
	Female	217	61.5
Age group	16-20yrs	182	51.6
	21-25yrs	151	42.8
	26-30yrs	17	4.8
	>30yrs	3	.8
Type of degree	Undergraduate	351	99.4
	Postgraduate	2	.6
Faculty	Social Sciences	41	11.6
	Management Science	64	18.1
	Education	87	24.6
	Communication	28	7.9
	Engineering	21	5.9
	Environmental Science	2	.6
	Science	14	4.0
	Agriculture	2	.6
	Medical Science	16	4.5
	Arts	78	22.1
Campus	Ojo	328	92.9
	Epe	25	7.1

This result is not unexpected as the call to promote sustainable development and address global challenges such as flooding, environmental pollution, urban expansion, and biodiversity loss have been at the center of international discussions over time, and these have been on several media channels. As such, the need for sustainable living considering the future and unborn generations has increased people's knowledge of climate change. The increased knowledge of climate change may also be due to the increased literacy level of the respondents and the diverse media sources. The result further showed that the respondents had access to various media sources through which information was disseminated. Thus, this may be responsible for the high level of knowledge and awareness of the SDGs among the

respondents. However, an appreciable percentage of the respondents were unaware of SDGs; this is unsurprising because issues of SDGs are not well embedded and well defined in the school curricula.

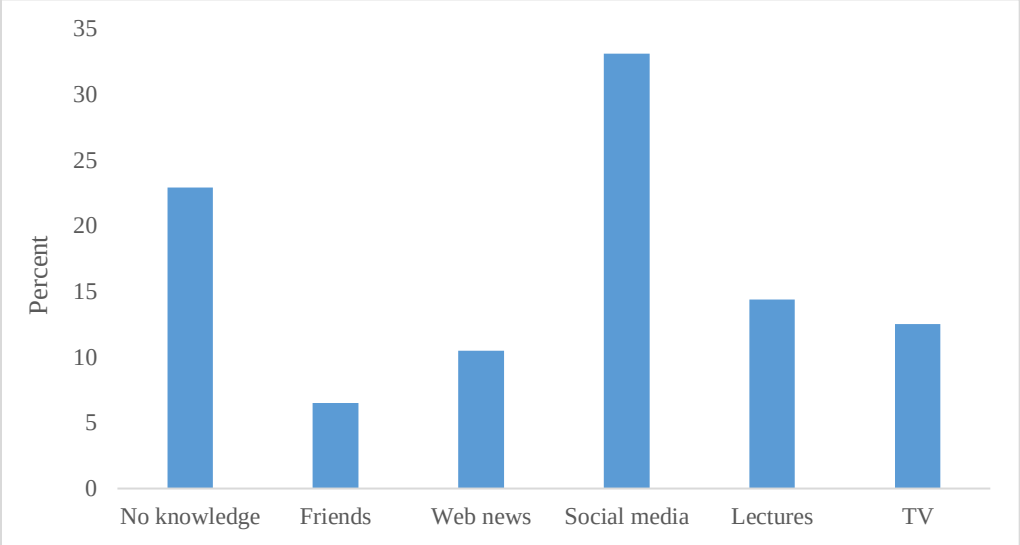

Figure 1. Knowledge about SDGs

Table 2: Knowledge about sustainable development goals and sources

Variables	Category	Freq	Percent
Knowledge of SDGs	Yes	272	77.1
	No	81	22.9
Source of knowledge	No knowledge	81	22.9
	Friends	23	6.5
	Web news	37	10.5
	Social media	117	33.1
	Lectures	51	14.4
	TV	44	12.5

Furthermore, Table 2 and Figure 1 identified social media (33.1%), lectures (14.4%), and television (12.5%) as the prominent sources of SDG awareness creation dissemination. In a related study, Leiva-Brondo *et al.*, [13] in Spain identified lectures, social media, and web news as the main sources of SDG-related information. Also, Omisore *et al.*, [20] identified radio/TV (39.6%); followed by internet (36.5%), and lectures/conferences (35.9%) as the most common sources of information about the SDGs. The result obtained in the present study further indicated that social media and universities are crucial focal avenues for increasing SDG knowledge, even though 22.9% of the students were unaware of the term. Social media, the foremost means of awareness creation these days, was unsurprisingly expected because it is the most common electronic media available to students who own smartphones and are constantly "surfing" the internet for new information. Thus, this era of digital technology has

made it possible for students to come across issues of SDGs as such a topical issue is readily available on social media platforms that are naturally of a wide geographical spread. Through this process, students using social media and listening to web news become aware and knowledgeable of SDGs. The identified mass media channels have a wide geographic spread and can appeal to the respondents. Through these media, SDG-related issues are taught to the students in the university.

3.3. Age variation in knowledge about sustainable development goals

This part of the analysis investigates if there is a significant age variation in students' knowledge about SDGs. The result showed no significant age variation in students' knowledge about the SDGs ($F = 1.011$, $p = 0.388$) (Table 3). The insignificant variation is expected and attributed to the youthful nature of the respondents despite being exposed to a similar range of environmental factors. However, the differences in students' knowledge of the SDGs, were further tested statistically, using the post hoc test of multiple comparisons (using the least square difference method) (Table 3). The result showed that students' knowledge about sustainable development goals did not differ significantly between age groups ($p>0.05$). For instance, it revealed no significant age differences in the knowledge about sustainable development goals between respondents of 16-20 years and 21-25 years as well as those between the ages of 16-20 years and 26-30 years, etc. These showed that age is not a potent factor in students' knowledge about SDGs as students across different age groups, academic programs, and levels of study were expected to be aware of SDGs. The result, thus, showed no significant age differences in students' knowledge about SDGs. Also, the result suggested that the students at Lagos State University have a high awareness of SDGs made possible by a mosaic of mass media channels, with social media, lectures, television, and lectures being the foremost contributory channels.

Table 3: Age variation in knowledge about SDGs

Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.856	3	1.285	1.011	0.388
Within Groups	340.615	268	1.271		
Total	344.471	271			
LSD multiple comparison					
(I) Ages	**(J) Age groups**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	
16-20yrs	21-25yrs	-.085	.141	.546	
	26-30yrs	-.076	.327	.816	
	>30yrs	-1.346	.803	.095	
21-25yrs	16-20yrs	.085	.141	.546	
	26-30yrs	.009	.329	.978	
	>30yrs	-1.260	.804	.118	
26-30yrs	16-20yrs	.076	.327	.816	
	21-25yrs	-.009	.329	.978	
	>30yrs	-1.269	.856	.139	
>30yrs	16-20yrs	1.346	.803	.095	
	21-25yrs	1.260	.804	.118	
	26-30yrs	1.269	.856	.139	

*Insignificant at 5% significance level; Note students (81) with no knowledge of SDGs were excluded from the analysis.

3.4. Level of awareness of the SDG components

Table 4: Sustainable development goals mostly aware of

SDGs	Freq	Percent
SDG 1: No poverty	91	33.5
SDG 2: Zero hunger	37	13.6
SDG 3: Good health/well-being	17	6.3
SDG 4: Quality education	23	8.5
SDG 5: Gender equality	20	7.4
SDG 6: Clean water and sanitation	3	1.1
SDG 7: Affordable and clean Energy	21	7.7
SDG 8: Decent work and economic growth	4	1.5
SDG 9: Industry, innovation and infrastructure	0	0.0
SDG 10: Reduced inequality	11	4.0
SDG 11: Sustainable cities and communities	5	1.8
SDG12: Responsible consumption and production	0	0.0
SDG13: Climate action	27	9.9
SDG 14: Life below water	5	1.8
SDG 15: Life on land	4	1.5
SDG 16: Peace, justice strong institution	4	1.5
SDG 17: Partnership to achieve the Goals	0	0.0
Total	**272**	**100**

Note students (81) with no knowledge of SDGs were excluded

Sustainable development goals (SDGs) have seventeen (17) agendas or components that guide humans on the ways to protect their well-being and to live in harmony with the environment. The respective goals and the extent students are aware of them are presented in Table 4. The result revealed that out of the 17 sustainable development goals (SDGs), students of Lagos State University were mostly aware of 14 of the goals. The students were not familiar with goals number 9, 12, and 17. The result, however, showed that 33.5%, 13.6%, 8.4%, and 9.9% of the students had high knowledge about SDGs 1, 2, 4, and 13, respectively. A high level of awareness among the students about goal 1 (ending poverty in all its forms) is expected the issue of poverty is a global problem that has a serious impact on human well-being; as such interventions are being discussed on the ways to ensure equity in resource distribution to reduce poverty-gap in every sphere of human endeavors. Aside from this, students in the study area have a high awareness of Goal 2 (ending hunger, achieving food security, improving nutrition, and promoting sustainable agriculture) and Goal 13 (taking urgent action to combat climate change and its impacts). This high level of awareness of these goals is expected as they constitute issues frequently discussed in school, social gatherings, and among friends. For instance, the issue of gender equality and sustainable climate issues associated with climate change have taken over the social media space over the years. Governments and NGOs across the globe have taken several actions and measures to address

the SDG issues. On the other hand, the study found the students' awareness levels of SDGs to be low. For instance, students were lowly aware of issues associated with clean water (ensuring available and sustainable management of water as well as ensuring sustainable management of sanitation) and decent work and economic growth (promoting sustained, inclusive, and sustainable economic growth, decent work, and full employment for all. In effect, low awareness about these goals will hinder commitment toward the actualization of the overall SDG goals. In all, the result in Table 4 clearly shows that a good proportion of the students at Lagos State University have a high level of awareness of SDGs, particularly, Goals 1, 2, and 13. However, there was a low awareness of Goals 6, 8, 15, and 16, while there was no knowledge of Goals 9, 12, and 17. The high level of awareness about goals 1, 2, and 13 pays credence to the studies of Odoom *et al.*, [18] and Oziwele and Ilaya [21] who also reported high awareness in goals 1 and 2. However, Table 4 showed a generally moderate level of knowledge of the overall SDGs; this is because students at Lagos State University are observed to have high awareness and knowledge on eight (8) of the seventeen (17) SDGs. A similar low level of awareness was reported by Adedeji *et al.*, [1] and Omisore *et al.*, [20].

3.5. Effects of socioeconomic factors on students' knowledge about SDGs

The part of the analysis examines the effects of socioeconomic factors on students' knowledge about sustainable development goals**.** This was tested using logistic regression analysis. Socioeconomic factors are important aspect of life because they determine life chances and people access to information concerning SDGs. The result in Table 5 revealed that the logistic regression was significant (χ^2 **=** 179.210, p<0.05). This implies that the socioeconomic factors which comprise sex, age, level of study, and location are able to predict students' knowledge about sustainable development goals. The strength of logistic regression which is represented by the Nagelkerke R Square which revealed that 60.4% (0.604) of the variability in the dependent variable (knowledge about SDGs) was explained by the independent variables (sex, age, level of study, and location) used in the model. The result in the model shows that the socioeconomic factors are appropriate and significant in the explanation of knowledge about sustainable development goals. Also, the result of the overall percentage accuracy of 87.3% shows that the logistic regression model is very useful in explaining knowledge about sustainable development goals using socioeconomic factors because the score is above the accuracy criteria of 56.6% given by [5].

The Wald statistics results in Table 5 which provides index of the significance of each predictor variable in the equation using the chi square approach shows among the socioeconomic variables used in the model, only age (χ^2 **=** 88.066, p<0.05) significantly predicted knowledge about SDGs. The result of odd ratio (OR) represented by Exp (B) column which explains the extent to which raising the corresponding measure by one unit influences the odds ratio shows that among the variables, age is 77 times more likely to predict knowledge about SDGs than other variables, like location (OR = 4). Looking at the odd ratios (OR), it is deduced that age has the highest odd ratio that predicts knowledge about SDGs, this is followed by location. These two socioeconomic factors greatly influence students' knowledge about SDGs. The influence of socioeconomic characteristics on the level of knowledge about SDGs has been established in previous studies. For instance, the study of Liu *et al.*, [15] showed that socioeconomic conditions are more important than climate policies in

achieving SDGs, particularly SDGs concerned with food security and energy affordability, as well as in simultaneously achieving multiple SDGs. In the present study, age is observed as the fundamental factor that influences students' knowledge about SDGs in the study area. This is apparent as students who are above 20 years are more curious about knowledge and as such spend more time on different platforms reading which positively impact on their learning abilities and knowledge concerning a wide range of subjects. Also, considering the age of students in this study, it goes to show the need to lay solid foundations in the teaching of SDGs in the universities to enable this category of students have the required knowledge of the various components of SDGs, what they imply and ways of achieving them. The moderate level of SDGs is also expected as majority of the students are undergraduates who are still undergoing training and many may not have taken any course that deals squarely on SDGs.

Table 5: Summary of logistic regression result showing effects of socioeconomic factors on in knowledge about SDGs

Predictors	B	S.E.	Wald	Df	Sig.	Exp(B) (Odd ratio)
Sex	-.371	.370	1.005	1	0.316	0.690
Age	4.343	.463	88.066*	1	0.000	76.932
Level of study	1.374	2.348	.343	1	0.558	3.952
Location	.002	.609	.000	1	0.998	1.002
Constant	-1.802	2.433	.549	1	0.459	0.165
Overall model estimation						
	Chi-square			Df		Sig.
Step	179.210*			4		0.000
Block	179.210*			4		0.000
Model	179.210*			4		0.000

Nagelkerke R Square = 0.604; Overall model classification = 87.3%; *Significant at 5% confidence level

3.6. Attitudes of students towards sustainable development goals

In assessing students' attitude towards SDGs, the factor analysis (FA) was employed. The essence of performing FA was to find the number of separate factors that existed among the group of items used to measure attitude as well as identify the factors underlying students' attitude towards sustainable development goals. Result of FA using varimax normalized rotation produced four (4) factors that explained 65% of the variation in the original data set (Table 6). Based on the Kaiser criterion of extracting variables with eigenvalues >1 (Hu *et al*., 2013), 5 factors were extracted from the 14 set of items used to measure students' attitude towards sustainable development goals. In the present study, loading (correlation coefficients) of ±≥0.8 were used to select as significant items and to identify the factors underlying students' attitude towards sustainable development goals. Thus, based on the criterion of selecting only items with loading of ±≥0.7. Factor 1 (F_1) explained 15.4% of total variance in the data set and had two attitudinal items that loaded positively on it. It is generally believed that sustainable lifestyle brings peace and justice

(0.751) and as such support campaigns on sustainability (0.717). The positive loadings indicated positive attitude towards the actualization of sustainable development goals by supporting the idea that reducing poverty and hunger in the world are more important than increasing the economic welfare of the industrialized countries as well as supporting the idea that research and educational institutions should take greater responsibility in promoting sustainability in their various activities.

This factor was named support for sustainable lifestyle/sustainable campaigns by the educational sector. F_2 explained 14.6% of total variance in the data set. F_2 also had one attitudinal item that loaded positively on it (0.737). The positive loading indicated increase in environmental awareness with the increase in environmental stewardship in terms of taking part in waste reduction through collection and recycling. This factor was named desire for waste reduction. F_3 was responsible for 12% of total variance in the data set and had two items that loaded positively on it which were it is necessary to raise awareness about SDGs (0.730) and I support the provision of free basic health services (0.720). The positive loadings indicated increase in environmental awareness/promotion of healthy living with the increase in environmental attitude. This factor symbolized promotion of environmental awareness/ healthy living. F4 was responsible for 9.2% of total variance in the overall data set and had one item that loaded positively on it. The item was basic environmental courses be part of our university curriculum (0.833). The positive loading meant increase in environmental education with the increase in environmental attitude towards the incorporation of environmental courses in universities' curriculum. This factor was named incorporating environmental courses in universities' curriculum.

The FA results in Table 6 identify sustainable lifestyle/sustainable campaigns by the educational sector, desire for waste reduction, environmental awareness/promotion of healthy living, and incorporating environmental-based courses in universities' curricula as principal factors explaining students' attitudes towards sustainable development goals. The result generally showed that students of Lagos State University have a positive attitude towards SDGs. The first-factor structure portrays students promoting sustainable lifestyles and sustainable campaigns by the educational sector. This finding infers that the students were aware of the need to protect the environment and support the campaign for healthy living in our environment. This result is similar to that of Huang and Lin [12], who reported that students in Taiwan and America have positive attitudes toward sustainable living aimed at environmental protection. This result implies that students have identified the importance of protecting the environment through a sustainable lifestyle that ensures peace and justice, which are SDGs 3 and 12, respectively.

In addition, the second (desire for waste reduction) and third (environmental awareness/promotion of healthy living) factor structures show that students have a positive attitude toward sustainable development goals through participation in waste reduction and recycling, the promotion of environmental awareness, and healthy living. Students believe that raising awareness about SDGs and making students know about the respective components and how to achieve these will go a long way in attaining them. These efforts will help raise awareness about these goals and contribute towards their actualization at home, places of work, and the school environment. According to some respondents, raising awareness of SDGs is imperative in determining their relationship with the environment.

These two-factor structures address sustainable development goals number (SDGs) 3, 12, and 4. The second extracted factor that shows students' desire for waste reduction through waste collecting pays credence to the study of Licy *et al*., [14] which reported that high school students in Thrissur, Kerala, India, were reported to have a positive attitude towards environmental sanitation and this positive attitude enabled them to develop proper ideas and practices of waste management, such as waste segregation and conversion of waste to kitchen compost.

The fourth-factor structure that incorporates environmental courses into universities' curricula showed that most students viewed environmental education as essential in the universities' curricula. The respondents strongly believed and showed a positive attitude towards having environmental-based courses in the universities' curricula. Students are eager for its inclusion in every stage of universities' curriculum to educate them and enable them to change their negative attitude towards the environment. Through increased environmental education, solutions to a deteriorating relationship between man and the environment and sustainable living could become achievable. This assertion agrees with that of Erhabor and Don [8] that environmental education helps to infuse environmental content into students to enhance their awareness of environmental issues at all levels of education.

Table 6: Factor loadings on students' attitude toward sustainable development goals[a]

Variables	**Factors**			
	F_1	**F_2**	**F_3**	**F_4**
I believe sustainable lifestyle will bring peace and justice	.751	-.006	.105	-.047
I support campaigns on sustainability	.717	.139	.136	-.045
Greater account of sustainability in political decision	.660	.181	-.039	.144
Absence of racism	.539	.363	-.018	.291
I try to reduce the wastes by collecting and recycling materials	-.163	.737	.138	.034
Environmental problems are a matter of my concern.	.177	.693	-.046	.158
I believe in functioning and resilient infrastructure	.151	.621	.134	.026
I try to conserve the use of electric energy	.283	.602	.050	.078
It is necessary to raise awareness about SDGs	.061	.042	.730	.027
I support the provision of free basic health services	.119	.000	.720	.121
I support the reduction of poverty and hunger in the world	-.356	.186	.509	-.113
The rise of global temperature has increased water scarcity	.169	.162	.446	.322
Basic environmental courses be part of our university curriculum	-.047	.113	-.040	.833
I support gender equality in all aspects of life	.136	.073	.317	.562
Eigenvalues	**2.16**	**2.04**	**1.69**	**1.29**
% variance	**15.42**	**14.55**	**12.03**	**9.18**
Cumulative exp.	**15.42**	**29.97**	**42**	**51.18**

[a]the underlined coefficients of ±≥0.7 are considered significant

Overall, the identified factor structures in Table 6 show that students have positive attitudes toward sustainable development goals. This result is in complete agreement with the findings of Erhabor and Don [8] in Enugu, Nigeria, which revealed a high level of knowledge and positive attitude towards the environment among the students.

3.7. Students' behaviour towards sustainable development goals

Table 7: Students' behaviour towards sustainable development goals

Variables	Total % response		Mean	Rank
	SA	SD		
I prefer public transport rather than a private one	76.8	23.2	3.03	1
I avoid using plastic straws at restaurants/cafes	75.9	24.1	2.72	2
I avoid using the animal skinned (animal skin) product	73.2	26.8	2.54	3

SA = strongly agree and SD = strongly disagree

In this part of the study, the population mean was used to determine students' behaviour towards sustainable development goals. This was achieved using the responses of students which were measured using Likert Scale on 14 items. For easy interpretation and inference, only the first-three items with the highest mean values were used to appraise students' behaviour towards sustainable development goals (Table 7). The first ranked item revealed that 76.8% of the students prefer public transport rather than a private one. This means the students have a positive attitude towards environmental protection by reducing the number of vehicles on our roads which will invariably reduce carbon emission. This drive for efficient transport system sustainable development goal number (SDG) 7 which is aimed at increasing access to affordable energy for all as well as increase access to reliable energy and above all to increase access to sustainable and modern energy for all. Actualizing this will protect the environment and help in climate change mitigation. Reducing the volumes of vehicles on our road is indeed a sustainable energy approach which will go a long way in reducing greenhouse gases in our environment. The second ranked item showed that 75.9% of students display positive attitude towards the attainment of sustainable development goals by discouraging the use plastic straws at restaurants/cafes. The reduction and campaign against plastic straws will help reduce plastic pollution which is presently a serious environmental problem. By avoiding the use of plastic straws, students in their little ways contribute to environment protection and conservation and this behaviour is in line with the sustainable development goal number (SDG) 12 which is aimed at guaranteeing sustainable consumption patterns and sustainable production patterns. The aim of this goal is to enjoy the resources available in a sustainable manner that will not further pollute the environment and affect human health. The third ranked item also showed that 73.2% of the students show support the attainment of SDGs by the use of animal skinned (animal skin) product. Achieving this according to the students will reduce biodiversity loss and demands on animal products. Reducing the use of animals in the production of shoes, clothes and other products is believed by the students to result in biodiversity conservation as well as actualizing the targets of SDGs 12 (ensuring sustainable consumption patterns and sustainable production patterns) and 15 (protecting, restoring and promoting sustainable use of terrestrial ecosystems and halting biodiversity loss). The result in Table 7 therefore shows that majority

of the students strongly support the actualization of sustainable development goals by encouraging sustainable energy approach, encouraging sustainable consumption patterns and discouraging biodiversity loss by their behaviors.

4. Conclusion

The study has shown that a significant number of the students at Lagos State University are aware of SDGs and have positive attitudes and behavior toward their achievement to ensure environmental protection and promote healthy living. The study revealed that students were mostly aware of 14 of the SDGs, but were completely not familiar with SDGs 9, 12, and 17. The students are observed to display behavioral support towards the actualization of SDGs by encouraging a sustainable energy approach, encouraging sustainable consumption patterns, and discouraging biodiversity loss through their behaviors. The study further identifies age as the only socioeconomic variable that significantly predicted knowledge about SDGs. Though, an appreciable proportion of the students is poorly aware and has limited knowledge concerning SDGs, their attitude and behavior towards their attainment is worthy of praise. However, the study found that some students are not aware of SDGs, and many have low knowledge of the specific goals; it is, therefore, strongly recommended that the university curricula, particularly in offered courses having environmental components, should be revised to reflect SDGs in all aspects. This will enable students to have adequate knowledge about SDGs and how these could be attained.

References

1. Adedeji, E. O., Adebayo, O. A., Chikezie, J., Joshua, D. A., Oyediran, O. B., & Onihunwa, J. O. (2021). Knowledge, Awareness and Perception of Sustainable Development Goals among Agricultural College Students in Niger State, Nigeria. *KIU Interdisciplinary Journal of Humanities and Social Sciences*, *2*(1), 345-353.

2. Afroz, N., & Ilham, Z. (2020). Assessment of knowledge, attitude and practice of University Students towards Sustainable Development Goals (SDGs). *The Journal of Indonesia Sustainable Development Planning*, *1*(1), 31-44.

3. Ahmed and Ruby (2023). The Role of Higher Education Institutions in Sustainability Initiatives at the Local Level", Journal of Cleaner Production, 233: 1004-1015

4. Amaonye, C. B., & Anyaeji, A. V. (2024). Level of awareness and perception of Nigerian undergraduate students on the United Nations sustainable development goals. *West African Journal on Sustainable Development*, *1*(1), 79-87.

5. Bayaga A. (2010). Multinominal logistic regression: usage and application in risk analysis. Journal of Applied Quantitative Methods, 5 (2): 288-297.

6. Concina, E., & Frate, S. (2023). Assessing University Students' Beliefs and Attitudes towards Sustainability and Sustainable Development: A Systematic Review. *Trends in Higher Education*, *2*(4), 705-717.

7. Dlamini, S., Block, E. K., & Mathibela, N. (2023). Knowledge of and attitudes towards Sustainable Development Goals among adults in South Africa. *South African Geographical Journal*, *105*(3), 384-401.

8. Ekere, M.E. (2023). A Mid-Term Review of Nigeria's Progress Towards Achieving the Sustainable Development Goals. *AKSU Journal of Administration and Corporate Governance*, 3(3): 35-47.

9. Erhabor, N. I. & Don, J. U. (2016). Impact of environmental education on the knowledge and attitude of students towards the environment. *International Journal of Environmental & Science Education*, 11 (12): 5367-5375.

10. Grotenhuis, M. T. and Thijs, P. (2015). Dummy variables and their interactions in regression analysis: examples from research on body mass index. Retrieved from: https://arxiv.org/ftp/arxiv/papers/1511/1511.05728.pdf

11. Hdeib, R., Aouad, M., Awawdeh, S., & Mahfoodh, S. A. (2024). Assessing students' awareness, attitudes, and actions towards sustainable development goals (SDGs). In *2024 ASU International Conference in Emerging Technologies for Sustainability and Intelligent Systems (ICETSIS)* (pp. 188-194). IEEE.

12. Hu Y, Tang, H.B., Liu, N.N., Tong, X.J., Dang, W., Duan, Y.M., Fu, X.H., Zhang, Y., Peng, J., Meng, F.L., & Zhou, J.Q.. (2013) Telomerase-null survivor screening identifies novel telomere recombination regulators. *PLoS Genetics* 9(1): e1003208

13. Huang, H. & Lin, Y. K. (2014). Undergraduate students' attitudes toward biodiversity. *Universal Journal of Educational Research*, 2(4): 379-386.

14. Leiva-Brondo, M., Lajara-Camilleri, N., Vidal-Meló, A., Atarés, A., & Lull, C. (2022). Spanish university students' awareness and perception of sustainable development goals and sustainability literacy. *Sustainability*, *14*(8), 4552.

15. Licy, C.D., Vivek, R., Saritha, K., Anies, T.K. & Josphina, C.T. (2013). Awareness, attitude and practice of school students towards household waste management. *Journal of Environment,* 2 (6): 147-150.

16. Liu, J. Y., Fujimori, S., Takahashi, K., Hasegawa, T., Wu, W., Geng, Y., ... & Masui, T. (2020). The importance of socioeconomic conditions in mitigating climate change impacts and achieving Sustainable Development Goals. *Environmental Research Letters*, *16*(1), 014010.

17. Nasim, A. and Ruby (2023). Role of Educational Institutions in Achieving Sustainable Development International Journal of Humanities Social Science and Management (IJHSSM) Volume 3, Issue 3, May-June, 2023, pp: 102-10

18. Novieastari, E., Pujasari, H., Abdul Rahman, L. O., Ganefianty, A., & Rerung, M. P. (2022). Knowledge, perception, and awareness about Sustainable Development Goals (SDGs)

among students of a public university in Indonesia. *International Journal of Health Promotion and Education*, 60(4), 195-203.

19. Odoom, D., Mensah, E. O., Dick-Sagoe, C., Lee, K. Y., Opoku, E., & Obeng-Baah, J. (2024). Examining the level of public awareness on the Sustainable Development Goals in Africa: Empirical evidence from Ghana. *Environment, Development and Sustainability*, *26*(3), 6221-6238.

20. Olonade, O., Balogun, I., George, T., Adetunde, C., Ozoya, M., & Adebayo, M. (2022). Academic Performance and Secondary School Students' Disposition: Imperatives for Sustainable Development Solutions for the Africa We Want. In *The United Nations and Sustainable Development Goals* (pp. 133-148). Cham: Springer International Publishing.

21. Omisore, A. G., Babarinde, G. M., Bakare, D. P., & Asekun-Olarinmoye, E. O. (2017). Awareness and knowledge of the sustainable development goals in a University Community in Southwestern Nigeria. *Ethiopian Journal of Health Sciences*, 27(6), 669-676.

22. Oziwele, E. P., & Ilaya, M. E. (2022). Level of Awareness of the United Nation's Sustainable Development Goals in Delta State, Nigeria. *SAU Journal of Management and Social Sciences*, 7(3), 105-113.

23. Smaniotto, C., Battistella, C., Brunelli, L., Ruscio, E., Agodi, A., Auxilia, F., ... & Sisi, S. (2020). Sustainable development goals and 2030 agenda: Awareness, knowledge and attitudes in nine Italian universities, 2019. *International Journal of Environmental Research and Public Health*, 17(23), 8968.

24. Stockburger, D. W. (2012). Multiple regression with categorical variables. Retrieved from: http://www.psychstat.missouristate.edu/multibook/mlt08m.html

25. United Nations (2015). Transforming Our World: The 2030 Agenda for Sustainable Development. 2015. Accessed March 25, 2017. Available at https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustaina ble%20Development%20web.pdf

26. Zamora-Polo, F., Sánchez-Martín, J., Corrales-Serrano, M., & Espejo-Antúnez, L. (2019). What do university students know about sustainable development goals? A realistic approach to the reception of this UN program amongst the youth population. *Sustainability*, *11*(13), 3533.