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Assessment of Nigerian Primary School Pupils' Pro-Environmental Concerns and Practices

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Abstract

In Nigeria, evidence on primary school pupils pro-environmental concern and practices are limited, with such information would be helpful in the provision of interventions. Thus, we assessed primary school pupils pro-environmental concern and practices. Eight hundred and thirty-two (832) Nigerian primary school pupils were administered with a questionnaire. Four demographic variables gender, age, class, and school type were tested as possible relationship and difference of pro-environmental concerns and practices. Results of revealed that most of the respondents have moderate concern for environmental issues. There were significant differences in pupil environmental concerns by gender, age, and school ownership. However, no significant difference was found in their' pro-environmental practice. There was significant difference in pro-environmental practice among the classes. It was found that environmental concern positively correlated with pro-environmental practices. Based on the findings some practical recommendations were given.

Keywords: Pro-environmental concerns, practices, primary school, pupils, Nigeria

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Introduction

The first step towards changing to more environmentally friendly practices is raising public awareness or consciousness of environmental issues. Individuals who care about protecting the environment for both present and future generations are more likely to act and behave in ways that support the environment. Cortes et al. (2017), defines pro-environmental behaviour as "way of acting that people consciously carry out to protect, preserve or minimise the negative impacts on the natural environment.". It refers to those behaviours and attitudes that they show and can lead to the manifestation of sustainable and environmentally friendly actions. Reiterating the importance of this, Rincón (2020) opines that pro-environmental behaviour promotes environmental actions capable of reducing significantly the impact caused through people's daily activities.

Balundé et al. (2019) distinguished four categories that are critical to comprehending pro-environmental behaviour. These are "hedonic values, altruistic values, egoistic, and biospheric values. The implication of these is that assessing pro-environmental behaviours of children requires looking at their biospheric value which appeals to their sensitivity to protect their environment based on the quantum of environmental knowledge they possess.

Research have been conducted about environmental concerns and behaviour of different category of learners- undergraduates, secondary school students and elementary pupils. Karatekin (2013) used mind mapping technique to assess 5th to 8th grade elementary school pupils' perception of environmental problems in Ankara, Turkey. The results showed that environmental problems such as global warming, water pollution, air pollution, and poor waste management were the most environmental concerns of the pupils. Ruchliyadi et al. (2023) study, carried out at riverbanks of Banjarmasin City to determine students' concern for the environment, found that students' level of awareness of environmental issues is quite good (63%). Unclean environment is rated as of most serious concern and attitude towards caring for environment is found to be bad.

Other studies have focused on investigation of the factors influencing elementary pupils' pro-environmental behaviours, such as environmental literacy (Ivanova, 2019; Runhaar et al., 2019),' gender, and intentions (Runhaar et al., 2019). These studies have mainly focused on children's cognition of the environment along with individual differences. Although such a focus may lead to an increase in children's environmental awareness, its effect on actual behaviour is not clear. Studies have shown that children's pro-environmental behaviours still need to be improved upon. This could be confirmed with the result of their participation in environmental movements and organisations, as before, which was found to remain at an extremely low level (Ivanova, 2019).

Furthermore, some studies equally investigated the relationship between some other factors such as Environmental Education (EE), environmental policies, and learners' pro-environmental behaviour and practices. These studies include that of Diaz et al. (2019) which reported significant relationship between impact of teaching EE and pro-environmental skills of Mexican students. Mónus (2022) also found in Hungary that, environmental policies implemented in educational institutions had some association with secondary school students' pro-environmental attitudes and behaviours.

Instilling pro-environmental behaviours and practices among primary school pupils in Nigeria is of paramount importance. As one of the most populous nations in Africa,

Nigeria faces severe environmental challenges, including deforestation, pollution, and climate change. These issues not only threaten the country's biodiversity and ecosystems but also directly impact the health, well-being, and prospects of its citizens. Encouraging pro-environmental practices in the younger generation is, therefore, a crucial step towards mitigating these challenges and promoting sustainable development.

Primary school pupils represent a significant portion of Nigeria's population and are the future custodians of the environment. By nurturing pro-environmental behaviours and practices from an early age, we can ensure that these children grow into environmentally conscious adults. Such ingrained behaviours can shape their decisions and actions throughout their lives, leading to more sustainable consumption patterns, reduced waste generation, and greater respect for the natural world. Moreover, children often bring the knowledge and attitudes acquired at school into their homes, potentially influencing the behaviours of their families and communities.

Schools serve as vital social spaces where norms and values are shaped. By promoting pro-environmental behaviours within these institutions, we can foster a culture of environmental responsibility and stewardship. This cultural shift can have a rippling effect, spreading these values throughout the wider community and society. In a country like Nigeria, where environmental challenges are pressing, such a shift could significantly contribute to the nation's environmental sustainability and resilience. Therefore, nurturing pro-environmental behaviours and practices among Nigerian primary school pupils is not only crucial for their personal development but also for the future of the country and the planet.

It is also not out of place to consider some learning theories that can be applied to this study on assessment of Nigerian primary school pupils' pro-environmental behaviours and practices. Such theories include the behaviourism theory, the cognitivism theory and the constructivism theory. While considering the behaviourism theory (National University, 2023), the study will want to focus on some observable behaviours and practices being exhibited by the pupils with the aim of positively reinforcing good environmental behaviours and subtly reprimanding bad ones. This will serve a useful purpose in the assessment of their pro-environmental behaviours and practices.

Furthermore, the cognitivism theory (Kurt, 2023) is concerned with how information is processed and emphasises the internal mental processes that occur in learning. Applying this to the study could demand exploring how the respondents' understanding of an environmental issue influences their decision for positive environmental action. Likewise, the constructivism theory (Robottom, 2015) posits that learners construct knowledge based on their experiences. Hence, its applicability to this study can be found in checking up the pupils' active engagement in an environmental activity and making them reflect on the importance of the acquired experience for better understanding of the environmental issue involved.

Assessing pro-environmental behaviour and practices among Nigerian primary school pupils holds significant value for multiple reasons. Firstly, it offers valuable insights into the effectiveness of any existing environmental education programmes within the country's educational system. By evaluating the extent to which pupils have adopted and demonstrated pro-environmental behaviours, educators and policymakers can gauge the impact and success of these initiatives.

Secondly, a comprehensive assessment of pupils' pro-environmental behaviours and practices can pinpoint specific areas where current education programmes may fall short or require enhancement. Such an analysis can identify gaps or weaknesses in the curriculum, teaching methodologies, or practical applications, enabling targeted improvements and expansions to be made. This iterative process of assessment and refinement is crucial for ensuring that environmental education remains relevant, engaging, and impactful.

Again, assessing pro-environmental behaviours and practices among primary school pupils highlights the pivotal role that educational institutions play in promoting environmental sustainability. Schools serve as critical platforms for shaping the attitudes, values, and behaviours of the younger generation. By fostering pro-environmental practices within these formative years, schools can nurture a generation of environmentally conscious citizens who will carry these principles into adulthood and contribute to the long-term preservation of Nigeria's natural resources and ecosystems.

Hence, assessing pro-environmental behaviours and practices among Nigerian primary school pupils provides invaluable feedback on the effectiveness of the environmental education interventions that have been in place over time, identifies opportunities for improvement, and underscores the vital role of schools in cultivating a sustainable future for the nation. The findings from this assessment could provide valuable insights for educators, policymakers, and stakeholders in environmental conservation, helping to shape future strategies and interventions. The recognition of this essential role engenders the focus of this study. Specifically, the study explores the following objectives:

1. Determine the level of environmental concern and pro-environmental behaviours and practices of the primary school pupils,

2. Examine the relationship between primary school pro-environmental concerns and practices.

3. Examine the relationship between primary school pupils' environmental concerns and their pro-environmental behaviours and practices

Materials and Methods

This research is a quantitative descriptive survey type, with elementary school pupils in Primary 4 to 6 in both private and public primary schools in Ogun east Senatorial District, Nigeria as the target population. Nine hundred and sixty (960) primary 4-6 pupils from Eight (8) primary schools consisting of four public and four private schools. One hundred and twenty pupils (120) were selected from each school. However, only eight hundred and thirty-two (832) of the returned questionnaires was used for the analysis.

The instrument consists of three broad sections: Section A consists of 6 items describing the personal characteristics of the pupils. Section B has 10 items on environmental concerns and section C, consists of 14 items on pro-environmental practices. To score the completed scales, the responses of 'extremely concerned' slight concerned' 'moderately concerned' and not at all were assigned 4, 3, 2, and 1, respectively. Thus, the maximum score on each item was 4, denoting extreme concern while the lowest score on each item is 1. For pro-environmental practice scale, the responses were assigned 'always' 3, 'sometimes' 2 and 'never' 1.
Frequency, percentages, means, standard deviation, t-test, one-way analysis of variance, pearson product moment correlation and regression analysis were used. A prior alpha level of .05 was used to determine statistical significance.

Results

Table 1 shows the distribution of respondents. The sample indicated that there were 56.0% male and 44.0% female. Almost half (49.9%) of the pupils were within age group of 11-12yrs, 9-10yrs (38.8%) and 7-8yrs (11.3%). The class distribution shows that 32.1% were Primary 4, Primary 5 (36.9%) while Primary 6 (31.0%).

Table 1: Percentage distribution of pupils' demographic characteristics

	F	%		F	%
School			**Gender**		
Private	352	42.3	Male	366	44.0
Public	480	57.7	Female	466	56.0
Total	832	100.0	Total	832	100.0
Age			**Class**		
7-8 years	94	11.3	Basic 4	267	32.1
9-10 years	323	38.8	Basic 5	307	36.9
11-12 years	415	49.9	Basic 6	258	31.0
Total	832	100.0	Total	832	100.0

Table 2 shows the results on pupils' environmental concerns. The mean ranged from 2.75 (SD =.828) to 3.25 (SD = .774). It can be observed that all the 11 items used to measure environmental concerns has mean score above 2.50 which is the neutral level. Thus, suggesting that the pupils were concerned about environmental problems in their community.

Table 2: Percentage response of pupils about environmental concerns

	Extremely concern	Slight concern	Moderate concern	Not at all	Mean	Std. D
Climate change	34 (4.1)	68 (8.2)	382 (45.9)	348 (41.8)	3.25	.774
Noise Pollution	70 (8.4)	70 (8.4)	454 (54.6)	238 (28.6)	3.03	.840
Water pollution	34 (4.1)	248 (29.8)	310 (37.3)	240 (28.8)	2.91	.861
Air pollution	34 (4.1)	174 (20.9)	412 (49.5)	212 (25.5)	2.96	.791
Indiscriminate dumping of refuse or solid waste	68 (8.2)	36 (4.3)	414 (49.8)	314 (37.7)	3.17	.848
Plastic waste	36 (4.3)	104 (12.5)	384 (46.2)	308 (37.0)	3.16	.802
Public urination/defection	34 (4.1)	316 (38.0)	310 (37.3)	172 (20.7)	2.75	.828
Flooding	68 (8.2)	174 (20.9)	446 (53.6)	144 (17.3)	2.80	.818
Deforestation	68	174	446	144	2.75	.828

	(8.2)	(20.9)	(53.6)	(17.3)		
Blocked drainages	68	214	412	138	3.00	.912
	(8.2)	(25.7)	(49.5)	(16.6)		
Litters Papers & Nylon	68	140	344	280	3.25	.774
	(8.2)	(16.8)	(41.3)	(33.7)		

Note: Figures in parentheses are the percentages

The item-by-item analysis revealed that respondents are more concerned about climate change, littering of papers and nylon, indiscriminate dumping of refuse or solid waste, plastic waste, noise pollution and blocked drainage. In a follow up question "Do you ever worry about how people care for the environment?" Almost two-thirds of the pupils reacted in the affirmative. This suggests that pupils are worried about environmental problems in their communities. Pupil's pro-environmental practices are presented in Table 3. The mean for this variable ranged from 2.38 (SD = .693) to 2.79 (SD =.501) indicating that the pupils' pro-environmental practice is good.

Table 3: Percentages of environmental practices among pupils

	Always	Sometimes	Never	Mean	Std. D
I try to save water at home	106	480	246	2.45	.70913
	(12.7)	(57.7)	(29.6)		
I use the public bins to dispose papers	106	178	548	2.53	.710
	(12.7)	(21.4)	65.9)		
I do things to help conserve natural environment	106	246	480	2.45	.709
	(12.7)	(29.6)	(57.7)		
I empty our waste bin when filled up	554	104	174	2.54	.706
	(66.6)	(12.5)	(20.9)		
I leave the water running while I brush my teeth	482	208	142	2.41	.764
	(57.9)	(25.0)	(17.1)		
I turn off the TV or video games when I go eat	70	172	590	2.62	.635
	(8.4)	(20.7)	(70.9)		
I turn off light when I leave my room to go eat	102	314	416	2.38	.693
	(12.3)	(37.7)	(50.0)		
I read books about environment	138	174	520	2.46	.762
	(16.6)	(20.9)	(62.5)		
I participate in cleaning activities at school	478	142	212	2.40	.763
	(57.5)	(17.1)	(25.5)		
I participate in environmental sanitation exercise at home	586	106	140	2.57	.706
	(70.4)	(12.7)	(16.8)		
I turn off the water when I brush my teeth	106	210	516	2.49	.711
	(12.7)	(25.2)	(62.0)		
I turn off lights at home when they are not being used	104	586	142	2.58	.703
	(12.5)	(70.4)	(17.1)		
I asked my family to recycle	70	176	586	2.62	.636
	(8.4	(21.2	(70.4)		

Comparison of the mean scores of environmental concern and practice showed that significant difference between male and female pupils environmental concerns. With mean scores of girls higher than boys, the results suggest that girls are more concerned about the environment. Similarly, significant difference was observed between environmental concern of private and public-school pupils, with pupils from private school showing more concern than those from public schools. However, there was no significant difference in pro-environmental practice between male and female as well as private and public schools (Table 4).

Table 4: T-tests of significance of environmental concerns and pro-environmental practice

	Concerns				Pro-environmental Practice		
Gender	N	Mean	Std. D	t	Mean	Std. D	t
Male	366	29.268	2.751	-4.951, p**.000s**	50.718	5.335	-1.727, p.085
Female	466	30.193	2.616		51.311	4.553	
School Type							
Private	352	30.452	2.525	6.193, p**.000s**	51.256	5.510	1.031, p.303
Public	480	29.298	2.746		50.900	4.434	

Table 5 shows that pupils of different age-group differ significantly in their environmental concerns. However, pupils in 7-8yrs age-group differed with both 9-10yrs and 11-12yrs in their concerns, but no significant age differences were observed in their pro-environmental practice. Pupils of different classes do not differ significantly in their environmental concerns, while they differ significantly in their pro-environmental practice.

Table 5: Comparison of environmental concerns and pro-environmental practice among age and class

		Pro-environmental Practice		Environmental Concerns	
Age	N	Mean	Std. D	Mean	Std. D
7-8 years	94	51.181	2.794	30.436	2.416
9-10 years	323	50.947	6.425	28.808	3.175
11-12 years	415	51.101	3.831	30.400	2.099
Total	832	51.050	4.918	29.786	2.713
		F (2,829) = .126, p >.882		F (2,829) = 37.288, p <.001s	
Class	N	Mean	Std. D	Mean	Std. D
Basic 4	267	51.846	4.618	29.781	2.881
Basic 5	307	50.078	5.287	29.887	2.647
Basic 6	258	51.383	4.576	29.786	2.618
Total	832	51.050	4.918	29.692	2.713
		F (2,829) = 10.315, p <.001s		F (2,829) = .338, p <>.713	

From Table 6 there was a positive correlation (r = .256, p < .01) between pupils' environmental concerns and pro-environmental practices. This implies that the more concern an individual has for and about the environment, the more likelihood for the individual to display pro-environmental practice. There was also a positive correlation between pupils' gender (r = .169, p < .001), age (r = .126, p < .001) and environmental concerns.

Table 6: Correlation between socio-demographic variables, environmental concerns, and pro-environmental practices

	1	2	3	4	5	6
1. Gender	1					
2. Age	.086*	1				
3. School type	.055	.214**	1			
4. Class	-.009	.026	.065	1		
5. Environmental Concerns	.169**	.126**	-.210**	.028	1	
6. Pro-environmental Practice	.060	.003	-.036	-.039	.256**	1

Table 7 reveals the combined relative contribution of each independent variable to pro-environmental practice. From the result shows R= .264 with adjusted R^2 =.070, F-value of 12.395 at p<0.01. This implies that the independent variables accounted for 7.0% of the variance in the criterion variable This shows the significant influence of the predictor variables on the pro-environmental practice of pupils. Environmental concern was the most potent predictor of pro-environmental practice (β = .482; t = 7.500; p < .05).

Table 7: Multiple regression analysis of demographic factors and environmental concern on pro-environmental practices of pupils

	B	Beta	t	Sig.
(Constant)	37.191		17.958	.000
Gender	.157	.016	.464	.643
Age	-.268	-.037	-1.060	.290
School type	.301	.030	.850	.396
Class	-.293	-.047	-1.408	.159
Environmental Concerns	.482	.266	7.500	.000
R= .264, R^2 = .070, $F_{(5,831)}$ =12.395 p< .000				

Discussion

This study sought to investigate environmental concerns and pro-environmental practice of primary school pupils in Primary 4 to 6. It was found that respondents' environmental concerns were moderate. Concerns such as climate change, littering of papers and nylon, indiscriminate dumping of refuse or solid waste, plastic waste, noise pollution and blocked drainage ranked high. Furthermore,

about two-thirds of the pupils answered, 'Yes' in response to the question "if they are worried about the environment".

It also examined the differences in environmental concern and practice of pupils across gender, school type, age, and grade. Significant gender and school type differences in environmental concern were found. This finding is supported by Echavarren (2023) who opined that various studies have consistently observed gender differences in pro-environmental behaviour/practice. with the female gender exhibiting a greater propensity towards pro-environmental behaviour.

There was significant difference in environmental concern across age group but not differ in pro-environmental practice. Studies have consistently revealed that when age groups differ in environmental concern, the youngest age group show greater concern and more pro-environmental practice. It was predicted that environmental concerns would be positively correlated with environmental practices. These predictions were supported for fifth grade girls, but not for any other groups. However, first graders were significantly more concerned about the environment than third or fifth graders.

It was found that environmental concern was significantly and positively correlated with pro-environmental practice. This is consistent with previous studies which have looked at environmental concern. Such studies included that of Bohlerengen and Wiium (2022) which reported a positive correlation between character, confidence, and caring, environmental concerns, environmental attitudes, behaviour, and responsibility among Norwegian youth.

The results of the multiple regression analysis revealed that pupils' environmental concern is most potent of the predictor pro-environmental practice. The finding is consistent with (Collado et al., 2017; Liu, 2021) studies that provide significant behaviour model connecting concern to pro-environmental actions.

Conclusion and Recommendations

The research underscores the importance of pro-environmental practice in environmental sustainability and sustainable development. The findings of this study indicated that pupils are concerned about the environment and that environmental concern is positively related to pro-environmental practices. It also points out that various factors such as gender, age, and class as factors influencing children's pro-environmental practices. Sequel to the findings, the following recommendations are proposed:

1. Environmental education should be integrated into the primary school curriculum to enhance pupils understanding of environmental issues and the importance of preserving the environment. Even though this has been attempted in Nigerian schools, more concerted efforts still need to be put in place.
2. Children would need more encouragement by engaging them in activities that promote pro-environmental behaviour such as recycling, waste management, energy conservation, etc.
3. Parents and community members would need to be encouraged through various environmental awareness and skill development programmes so that they can serve as model of pro-environmental behaviours to inspire their children to do the same.
4. Governments and educational institutions should consider tangible implementation of policies that can help promote pro-environmental behaviours among children.
5. Further research should be conducted to explore other factors that may influence children's pro-environmental behaviours. This could help in designing more

effective interventions to promote such behaviours.

6. The availability of sanitation facilities and waste management practices within the school premises, especially public schools would need to be evaluated, to make necessary recommendations for their improvement. By this action, a more environmentally friendly school environment will be created, and this will significantly contribute to more pro-environmental practices among the learners.
7. The exploration of the involvement of the parents, local communities, and non-governmental organisations in the promotion of pro-environmental practices among the leaners. Opportunities for collaboration between the school and neighbouring communities as well as other social groups outside the school system will equally strengthen the development of pro-environmental behaviours and practices of the pupils.

These recommendations are based on a strong conviction of the parlance which says, "the future of our planet lies in the hands of our children". So, equipping them with the knowledge and skills they need to protect it will serve a great deal in the promotion of the needed pro-environmental behaviour in them.

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