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How Access To Information Creates Environmental Awareness Among Students? A Cross-Sectional Analysis

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Abstract
This study explores the role of access to information in fostering environmental awareness among students. Environmental awareness is crucial for promoting sustainable practices and mitigating the adverse effects of human development. The study employs a cross-sectional research design and surveys students from two higher education institutions in Charsadda, Pakistan. Using multistage random sampling technique, 374 respondents were selected to assess the correlation between access to environmental information and awareness levels. Findings indicate a significant positive relationship between access to information and environmental awareness, with social media playing a critical role in information dissemination. The results also highlight gender and age-related variations in how individuals perceive and utilize environmental information. While universities provide essential platforms for environmental education, disparities in access to information still persist. The study underlines the need of developing communication networks and maximizing digital media to enhance public engagement in environmental issues. Strengthening access to environmental information can empower students to adopt sustainable behaviors and advocate for policy reforms, ultimately contributing to a more informed and environmentally responsible society.

Keywords: Access to Information, Social Media, Environmental Awareness, Students

Introduction

Environmental awareness serves as a strategic form of communication aimed at promoting understanding of environmental issues, highlighting the negative impacts of human development, and fostering comprehension of sustainable practices. It undoubtedly plays an important role in developing interest in ecology for the betterment of our planet (Iqbal et al., 2023). Spreading environmental awareness is an easy way to contribute to protecting the environment and building a bright future for our upcoming generation. To describe environmental cognition, we must first understand how the environment moves. The concept of environmentalism underscores the significance of respecting, safeguarding, and preserving the natural world from man-made disasters. The efficacy of this movement hinges greatly on environmental awareness. By educating our social circles about the critical importance of environmental preservation, we can initiate efforts to tackle threats to the physical environment (Kularbphettong, 2019). There are many ways to promote environmental awareness among students, including group studies, educational and motivational workshops, like books and brochures. While it's tempting to feel

pessimistic about environmental health, our commitment to securing a healthier planet for our children propels us forward. Raising awareness helps us to stop them from inheriting our environmental problems and therefore protect their future (Iqbal et al., 2023). Making environmental data available to the public is necessary for attaining sustainable development since society has the right of access to such information maintained by public authority (EIR, 1992). The people who have access to environmental knowledge know completely how their actions affect the surroundings and can therefore engage more constructively in decision making processes influencing the environment (UNESCO, 1992).

By learning themselves and others, supporting sustainable practices, and participating in community projects, students help significantly to raise environmental awareness. Participating in cleanup events, organizing educational programs, and embracing environmentally friendly practices all contribute to developing an ecological awareness. Furthermore, by pushing for more stringent environmental protections and guaranteeing access to essential environmental data, students can help to shape policy changes and so help to provide a more sustainable future for everyone.

Literature review

Since the Industrial Revolution, the fast development of natural sciences and manufacturing technology has resulted in more human influence on the environment. Overconsumption of resources and pollution accentuated by economic and population growth has caused serious environmental damage (Wang, Liu, & Hou, 2022). Although technological advancements in agriculture, industry, and transportation have raised living standards, they have also aided in the pollution of ground, air, water, and plants (Okojie, 1991).

The effects of these developments are clear in environmental issues such wind erosion in the north, coastal erosion in the south, oil spills, and urban pollution in places like Nigeria (Ikporukpo, 1988; NEST, 1991). Deforestation, bush burning, and soil degradation are among the problems rural regions suffer. One major cause of this environmental degradation is the link between poverty, poor education, and environmental destruction. In several African nations, including Nigeria, poverty and limited education levels lead to damaging environmental activities, hence perpetuating a cycle of poverty and ecological destruction (Ekpeyong, n.d). Attending to all these matters calls for public access to environmental knowledge to be encouraged. This guarantees that people are aware and can participate in decision making processes intended to foster sustainable development (EIR, 1992; UNESCO, 1992). Government and society at large are starting to see the value of openness, public engagement, and environmental information access. Encouragement of local environmentalism depends on the Internet and digital communication technologies, which enable the provision, distribution, and availability of information (Kutner, 2000).

The 1999 Rio de Janeiro meeting of the United Nations underlined once more the need of civilian participation regarding environmental problems. Governments concurred that the most effective way to tackle environmental issues is for people to have access to pertinent environmental data; including information on dangerous chemicals and to be engaged in policy creation. The summit stressed public awareness campaigns, guaranteeing environmental data access, and offering people a legal and institutional cure (McCammon, 1992).

Research methodology

Research design and universe of the study

The research was conducted following cross-sectional design (Babie, 1989) in two higher education institutions (Government Post Graduate Collage Charsadda and Bacha Khan University Charsadda) of District Charsadda of Khyber Pakhtunkhwa.

Sample size and sampling procedure

Multi-stage random sampling technique was selected for the selection of respondents which is consisting the following steps. In the first stage, District Charsadda was chosen as the study's universe. In the second stage, two higher education institutions, Bacha Khan University Charsadda and Government Post Graduate College Charsadda, were randomly selected. The third stage involved selecting respondents using a proportional allocation method. With a total population of 5,871 students (3,471 from Bacha Khan University and 2,400 from the college), a sample size of 374 was determined using Slovin's (1960) formula. The proportional allocation method was then used to ensure equal representation from each institution. Proportional Allocation sample size to each institution is given in Table 1

Students Sampling Frame

Table 1

S.No	Units	Students population	Sample size
1.	Bacha Khan University Charsadda	3471	221
2.	Government Post Graduate Collage Charsadda	2400	153
Total	**02**	**5871**	**374**

Conceptual framework of the study

A conceptual framework composed of one independent variable (Access to information) & one dependent variable (Environmental awareness) was adopted for the study given in below table 2.

Table 2 Conceptual Framework

Background variables	Independent Variable	Dependent Variable
• Gender • Age	Access to information	Environmental awareness

Reliability Analysis and Indexation

The process of consolidating multiple items into a single object is called indexation. The current study involved a process whereby a dependent variable was indexed, and then the independent variables were cross-tabulated at the bivariate level. Indexing of independent and dependent

variables was used in the multivariate analysis, with the gender and age was used as background variables. To determine the validity of the study scale, Cronbach's alpha was implemented before indexation. The test results show that the value of both variables, e.g., Access to information (independent) and Environmental awareness (dependent), was between 0.628 and 0.630 respectively (See in Table 3).

Table 3 Reliability Analysis

Statements	Cronbach's Alpha	No of Items	Total/Percentage
Access to information	0.628	11	374(100.0%)
Environmental awareness	0.630	10	374(100.0%)

Tool of data collection

Data were collected through questionnaire schedule, which was designed in the light of conceptual framework of the study given in table 2. The tool was pre-tested with 25 respondents before the final data collection to correct any errors. A team of female researchers was trained as well for the collection of data.

Ethical considerations

As the data was of sensitive nature, informed consensus from women was required before data collection. Additional, the data were collected from male and female, only female investigators were used for this purpose to avoid any troublesomeness. Anonymity of the respondents was assured to them.

Data Analysis

The association between dependent and independent variables were measure through Chi-square test as suggested by Tai (1978). Multivariate analysis was also carried out whether Gender and Age as a control variable.

Data analysis

The data was analyzed into Bi-variate and Milti-variate as presented below.

Bi-variate analysis

Association between Access to information and environmental awareness

Access to information is crucial for raising environmental awareness, enabling individuals to learn about issues like climate change, pollution, and resource depletion. Informed individuals are more likely to adopt sustainable practices and advocate for policy changes. Information on sustainable alternatives helps people reduce their ecological impact. In the digital age, global communication facilitates collaboration and the sharing of solutions, while access to credible sources empowers individuals to combat misinformation. Overall, easy access to information promotes a deeper understanding of environmental issues and encourages sustainable actions at both local and global levels. Table 4 shows association between access to information and environmental awareness.

The data indicates a significant and positive association ($p = 0.004$, $T^c = 0.32$) between environmental awareness and the provision of effective technology tools for accessing information by the educational institution. Moreover, a significant but week positive association

was found between environmental awareness and availability of information that influence students level of environmental awareness (p=0.03, T^c=.021). Since people with access to correct knowledge are better educated, delivering trustworthy environmental information on many media greatly increases general awareness of environmental problems. By means of programs that give students the needed tools and information to promote environmental awareness, colleges also have very important platforms. Brought people to realize turned environmental issues much by way of reliable environmental information on many channels people who have good means to get pertinent information usually have a more knowledgeable view on environmental issues (Dadhich, Rao, Mathur & Jain 2018). The part universities play in developing environmental consciousness by means of increased availability of information and technology University-provided channels seem to be essential in giving students the required resources and expertise for environmental education, according to their investigation (Abdullah & Ahmed, 2024).

Moreover, the association between environmental awareness and local environmental organization that provides information to public through social media was significant and positive with environmental awareness (p=0.003, T^c=0.53). Further, A high significant and positive association (p=0.000 T^c=0.52) was originate between environmental awareness and need for improving communication channels to enhance access to environmental information. Similarly, a highly significant and positive association wad found between environmental awareness and use of social media like YouTube or Facebook to find information (p=0.000, Tc=0.40). Facebook and YouTube contribute to the growth of people's awareness of and understanding of environmental issues, highlighting the beneficial relationship between digital media and conservation. These platforms facilitate environmental activism by offering easy access to information and promoting community involvement in environmental education. This research provides a clear indication of how social media platforms such as YouTube and Facebook help people become more aware and understand the importance of environmental issues. This study shows the positive association between social media and environmental knowledge shaping (Boulianne, 2015, Scott, Amel, & Manning, 2021).

Similarly, a highly significant and positive association between environmental awareness and access to information is important for talking action on environmental issues (p=0.000, T^c =.62). Awareness of environmental issues and environmentally responsible behavior are promoted through the dissemination of information, which highlights the importance of sharing information to shape public concern. People with more information about environmental issues are more likely to be environmentally conscious and actively involved in pro-environmental movements. i.e. This is important for public understanding and concern for environmental problems (Kollmuss & Agyeman, 2002). In his Theory of Planned Behavior (1991), Ajzen points out that attitudes toward environmental action can be influenced by access to information. Those who possess knowledge often display more favorable attitudes towards the environment, leading to positive environmental behaviors.

Furthermore, the data show a significance and positive (p=0.004, T^c =0.41) between individuals from marginalized community with equal access to social media and environmental information. Access to information about environmental issues fosters awareness and encourages environmentally responsible conduct, emphasizing the importance of sharing information to influence public concern. Studies have shown that social media platforms can provide

information about the environment and society, but they also create barriers for marginalized groups to access information. Studies indicate that the digital divide persists, with disadvantaged groups frequently lacking the necessary resources, technology, or expertise to participate fully in digital environments (DiMaggio, 2001). However, In contrast, social media sites may offer more accessible information, but as previously mentioned, ensuring equal access is crucial for effective communication (Lupton, 2017).

Moreover, a significant and strongly week association (p=0.004, T^c =.05) was found between environmental awareness and social media sites as a reliable resource of information for environmental issues. Social media platforms play a vital role in sharing information about environmental topics, effectively influencing public consciousness and behavior towards the environment (Schultz et al., 2005). These platforms offer significant opportunities for quick dissemination of information, making them crucial for generating widespread awareness about environmental issues (Kaplan & Haenlein, 2010). How social media and various communication methods can impact attitudes and behaviors related to the environment. The existing literature indicates that social media networks have emerged as a key resource for spreading information on environmental matters and shaping public awareness (Schultz, Cameron, Tankha, Gouveia, & Franěk, and Schmuck 2005). The numerous opportunities that social media presents for communication, particularly concerning environmental topics. It emphasizes how these platforms facilitate swift information dissemination, rendering them effective tools for fostering environmental awareness among large audiences (Kaplan & Haenlein, 2010).

However, further shows a non-significant and week positive association between access to information about environmental issues is equally available to everyone in your community (p =0.22, T^c =0.012). Likewise, non-significant and strong positive association was found between social networking sites as more powerful tool then other platform to provide awareness regarding environmental awareness (p=0.06, T^c =0.04) participated in any online platform or forums dedicated to sharing information about environmental awareness a non-significant and weak association with environmental awareness (p=0.45, T^c=0.012).

It is concluded from the above discussion that the vital importance of having reliable information and technology to improve environmental awareness, especially through tools provided by universities and platforms like Facebook and YouTube. Digital platforms play a significant role in increasing awareness, although their effect on behavior can differ based on how engaged users are. Access to environmental information is non-crucial for encouraging pro-environmental actions, particularly within marginalized communities. Additionally, social media serves as an effective means for sharing information and fostering environmental activism, highlighting the necessity for fair access to these resources.

Table 4 Association between Access to information and environmental awareness

STATEMENTS	Dependent variable	Statistic
Do you believe that the university provides you effective technology tools for accessing information?	Environmental awareness	χ^2 =30.21 P= 0.004 T^c=0.32
Do you believe that the availability of information influence your level of environmental awareness?	Environmental awareness	χ^2= 20.23 P=0.03

		T^c=.021
Are you aware of local environmental organization that provides information to the public through social media?	Environmental awareness	χ^2 = 15.31 P=0.003 T^c=0.53
Do you believe that there is a need for improved communication channels to enhance access to environmental information?	Environmental awareness	χ^2=20.23 P=0.000 T^c=0.52
Do you believe that access to information is important for taking action on environmental issues?	Environmental awareness	χ^2 =50.22 P=0.000 T^c= 0.62
Do you believe that individual from marginalized communities have equal access to social media and environmental information.	Environmental awareness	χ^2= 30.23 P=0.004 T^c=0.41
Do you believe that social media sites as reliable resource of information for environmental issues?	Environmental awareness	χ^2=50.12 P=0.004 T^c=0.05
Do you believe that use of social media like YouTube or Facebook to find information?	Environmental awareness	χ^2=62.23 P=0.000 T^c=0.40
Do you believe that access to information about environmental issues is equally available to everyone in your community?	Environmental awareness	χ^2 =3.23 P=0.22 T^c=0.012
Do you believe that social networking sites as more powerful tool than other platform to provide awareness regarding environmental awareness.	Environmental awareness	χ^2=20.21 P=0.06 T^c=0.04
Have you participated in any online platform or forums dedicated to sharing information about environmental awareness?	Environmental awareness	χ^2 =3.34 P=0.45 T^c=0.012

Association between access to information and Environmental awareness among students while controlling (gender)

Table 5 shows the association between access to information and towards environmental awareness among students in perspective of gender of the respondents displayed highly significant and weak positive (P=0.00, Tc=0.023) for males. Similarly, the association between access to information and environmental awareness in the context of female displayed highly significant and weak (P = 0.000, T^c = 0.02) for female. These findings suggest that access to information plays an important role in fostering environmental awareness among students, with the strength of the association being relatively modest but still statistically meaningful for both genders. Value of level of significance and T^c for whole table show highly significance and weak (P=0.000, T^c =0.30) association between access to information and environmental awareness for both the gender. Kendal T^c and Chi-square significance value for male gender indicated that association of access to information and environmental awareness was spurious (P=0.000, T^c =0.32). While, significance value for female gender indicated non-spurious (P=0.000, T^c =0.02) based on gender of the respondents. Thus the relationship of access to information and environmental awareness was not similar for both the gender. The difference is likely due to gender-related variations in how individuals gather, interpret, or respond to information. It is

possible that men's relationship with environmental issues can be deceiving due to external factors like cultural or social pressures that make it difficult for them to access information. On the flip side, women may perceive a more internal or uncomplicated connection between their access to information and their environmental awareness, leading to an authentic relationship. This could imply different ways of engaging or awareness about environmental issues that are gender-based.

A recent investigation conducted by Kaur and Chahal (2018) revealed that the promotion of environmental awareness requires communication that can be achieved through both in-person meetings and online platforms. They noted that modern lifestyles, technological advancements in technology and changes in education have all contributed to the rapid growth of internet usage (and various social networking tools and platforms). The research is primarily concerned with social media, which comprises both synchronous and asynchronous online communication methods. Jung & Lee (2021) investigate how digital platforms and virtual social interactions contribute to increasing people's awareness and understanding of environmental issues. The different gender-related factors that affect concern for environmental problems in the United States, showing that while women and men interpret environmental information in distinct ways, both are affected by their access to resources (Xiao & McCright, 2012). The results of these studies suggest that information availability and participation in online communities contribute to environmental awareness. The weak to moderate relationships found in your data are based on available data; while digital platforms and access to data are important to support information transfer, other factors such as gender, personal involvement, and social relationships also affect the quality of social interaction relationships information here.

Table 5 Association between access to information and towards Environmental awareness among students while controlling (gender).

Gender	**Relationship with Access to information**	**Level of Environmental awareness**			**Total**	**Statistic χ^2** (P-value) T^c	**Level of significance for whole table**
		High level of Environmental awareness	**Moderate level Environmental awareness**	**Low level Environmental awareness**			
Male	High level of Access to information	54 (50.5%)	04 (3.7%)	49 (45.8%)	107 (100%)	χ^2 =85.702	
	Moderate level of Access to information	59 (51.4%)	37 (32.1%)	19 (16.5%)	115 (100%)	P=0.000	
	Low level of Access to information	12 (30.0%)	10 (25.0%)	18 (45.4%)	40 (100%)	T^c=0.032	χ^2 =80.49
Female	High level of Access to information	23 (43.4%)	25 (47.1%)	05 (9.4%)	53 (100%)	χ^2 =70.96 P=0.000	P=0.000 T^c=0.30

Moderate level of Access to information	28(62.1%)	05 (11.0%)	12 (26.9%)	45 (100%)	T^c=0.02
Low level of Access to information	07(46.8%)	06 (40.0%)	02 (13.2%)	14 (100%)	

Association between Access to information and environmental awareness while controlling (Age)

The below table 6 revealed that association between access to information and environmental awareness in the relationship between the respondents' age and the variables examined was identified as highly significant and positive (P=0.000 and Tc =0.414 for those under 20 years old). Likewise, the correlation between access to information and the respondents' environmental awareness was determined to be non-significant and positive (P =0.000 and Tc =0.370 when controlling for those aged 21-30). Additionally, the connection among the aforementioned variables was also found to be non-significant and positive (P =0.000 and Kendal's Tc =0.383) for respondents aged above 31 years. Overall, the significance level for the whole table was determined to be highly significant and positive (P=0.000 and Tc =0.401). Value of level of significance and Kendal's T^c for entire table show highly significance and weak (P=0.000, T^c =0.400) association between access to information and environmental awareness for all three age groups. Chi-square and Kendal T^c significance value for under 20 years of the respondents showed that association between access to information and environmental awareness was non-spurious (P=0.000, T^c =0.374). Similarly, for 20-30 years of respondents was non-spurious (P=0.000, T^c =0.370). While, for above 30 years of the respondents was non-spurious (P=0.000, T^c =0.387) based on age of the respondents. Thus the relationship of access to information and environmental awareness was not similar for all the age group. Value of level of significance and T^c for entire table show highly significance and weak (P=0.000, T^c =0.199) association between online community participation and environmental awareness for all three age groups. Kendal T^c and Chi-square significance value for under 20 years of the respondents indicated that association of online community participation and environmental awareness was non-spurious (P=0.000, T^c =0.414). Similarly, for above 30 years of respondents was non-spurious (P=0.000, T^c =0.370). While, for above 20-30 years of the respondents was spurious (P=0.000, T^c =0.387) based on age of the respondents. Thus the relationship of digital advocacy skills and environmental awareness was similar for all the age group. On the bases of results it is concluded that the association between information access and environmental awareness. The research indicates a significant positive link between information access and environmental awareness among those under 20, with a weaker but still positive connection observed in older demographics. Although the relationship remains positive for individuals aged 21-30 and those over 31, it is not statistically significant in these categories. The overall findings imply that access to information is vital in influencing environmental awareness, especially among younger individuals. This highlights the need for focused information sharing to boost awareness across various age groups.

Environmental information is essential in influencing how the public views environmental concerns. It is indicated that younger generations, who are more frequently exposed to digital media, often experience a stronger link between information access and increased awareness of environmental issues (Dunlap & Jones, 2002). Having access to information is usually

advantageous; however, the effectiveness of this access depends on the quality of the information and one's personal values. Therefore, although this age group might have access to information, the importance of the relationship may weaken if the information does not resonate with their values or if they are less involved in environmental issues (Moser & Dilling, 2007).

Table 6 Association between Access to information and environmental awareness while controlling (Age)

Age (years)	Relationship with Access to information	Level of Environmental awareness			Totals	Statistics χ^2 (P- value) T^c	Overall statistics of Entire table
		High level of environmental awareness	Moderate level of awareness	Low level of awareness			
Under 20	High level Access to information	65 (56.52%)	8 (6.96%)	42(36.52%)	115 (100%)	χ^2=451.724 P=0.000 T^c =0.414	
	Moderate level Access to information	32 (61.4%)	12 (21.2%)	8 (15.4%)	52 (100%)		
	Low level of Access to information	19 (90.6%)	0 (0.0%)	2 (9.4%)	21 (100%)		
21-30	High level of Access to information	27 (45.1%)	6 (9.8%)	27 (45.1%)	60 (100%)	χ^2=252.463 P=0.000 T^C =0.370	χ^2=795.821 P=0.000 T^c =0.401
	Moderate level of Access to information	18 (46.5%)	12 (30.0%)	9 (23.5%)	39 (100%)		
	Low level of Access to information	9 (69.3%)	0 (0.0%)	4 (22.4%)	13 (100%)		
30 and above	High level of Access to information	17 (47.4%)	14 (42.1%)	03 (30.8%)	34 (100%)	χ^2=96.920 P=0.000 T^c =0.387	
	Moderate level Access to information	09 (25.0%)	17 (43.8%)	03 (31.3%)	29 (100%)		
	Low level of Access to information	04 (36.36%)	04(36.36%)	03 (27.27%)	11 (100%)		

Conclusions and recommendations

The study highlights the critical role of access to information in enhancing environmental awareness among students. Findings reveal a strong correlation between the availability of environmental information and students' engagement in eco-friendly behaviors. Social media and digital platforms play a significant role in information dissemination, bridging gaps in environmental knowledge. However, disparities exist, particularly among marginalized communities, limiting their access to crucial environmental information. Additionally, gender and age-related variations affect how students perceive and utilize environmental data. While universities provide essential platforms for environmental education, there is still room for improvement in making information more accessible and engaging. Strengthening information-sharing mechanisms can empower students to take proactive measures toward sustainability and advocate for better environmental policies. The study recommended that through improving digital infrastructure for students, integrating environmental-related issues in curriculum, by utilizing social media platforms and educational institutions and other organizations should work in collaboration for involving students and make it convenient for them to access to online database, workshops and interacting learning tools.

References

Abdullah, H. A., & Ahmed, Z. F. (2024). The Role of Digital Transformation Strategy Capabilities In Knowledge Leadership At Iraqi Universities. World Economics and Finance Bulletin, 33, 196-210.

Ajzen, I. (1991). The Theory of planned behavior. Organizational Behavior and Human Decision Processes.

Boulianne, S. (2015). Social media use and participation: A meta-analysis of current research. Information, communication & society, 18(5), 524-538.

DiMaggio, P. (2001). From the "digital divide" to digital inequality: Studying Internet use as penetration increases.

EIR (1992). The Environmental Information Regulations 1992 Approved by both Houses of Parliament.http://www.englandlegislation.hmso.gov.uk/si/si1992/Uksi_19923240_en_1.htm

Ekpeyong, E. (n.d.) Environmental Awareness as a Panacea for Sustainable environmental managementinAfrica.http://www.iaia.org/iaia09ghana/documents/cs/CS5_Ekpenyong_Environmental_Awareness_as_a_Panacea.pdf

Ikporukpo, B. C. O. (1988). Managing oil pollution in Nigeria. In P. 0. Sada & F O. Odemerho (Eds.), Environmental issues and management in Nigerian development (pp. 224-229). Ibadan, Nigeria: Evans Brothers Ltd.

Iqbal, A., Akram, H., & Haroon, S. (2023). Exploring The Role Of Media In Creating Awareness About Environment Among University Students. *Journal of Positive School Psychology*, 208-226.

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. Business horizons, 53(1), 59-68.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior?. Environmental education research, 8(3), 239-260.

Kularbphettong, K. (2019). The Awareness of environment conservation based on opinion data mining from social media. *GEOMATE Journal*, *17*(61), 74-79.

Kutner, L. A. (2000). Environmental activism and the Internet. *Electronic Green Journal*, *1*(12).

Lester, L., & Hutchins, B. (2009). Power games: environmental protest, news media and the internet. *Media, Culture & Society*, *31*(4), 579-595.

Lupton, D. (2017). Digital health: critical and cross-disciplinary perspectives. Routledge.

McCammon, A. L. (1992). United nations conference on environment and development, held in Rio de Janeiro, Brazil, during 3–14 June 1992, and the'92 Global Forum, Rio de Janeiro, Brazil, 1–14 June 1992. *Environmental Conservation*, *19*(4), 372-373.

NEST (1991). Nigeria's Threatened Environment: A National Profile, Ibadan, Nigeria

Okojie, J.A (1991). Misuse of Renewable Natural Resources and Environmental Degradation. A Paper presented at the symposium to mark the African Year of the Environment in Ogun state, Abeokuta, June, 25.

Schultz, P. W., Gouveia, V. V., Cameron, L. D., Tankha, G., Schmuck, P., & Fran?k, M. (2005). Values and their relationship to environmental concern and conservation behavior. Journal of cross-cultural psychology, 36(4), 457-475.

Scott, B. A., Amel, E. L., & Manning, C. M. (2021). Psychology for sustainability. Routledge.

Slovin, E. (1960). Slovin's formula for sampling technique. Retrieved on February, 13, 2013.

UNESCO (1992). Report of the United Nations Conference on Environment and Development (UNCED) Rio de Janeiro, 3-14 June.http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm

UNESCO (1992). Report of the United Nations Conference on Environment and Development (UNCED) Rio de Janeiro, 3-14 June. http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm

Wang, Z., Liu, Q., & Hou, B. (2022). How Does Government Information Service Quality Influence Public Environmental Awareness?. *International Journal of Environmental Research and Public Health*, *20*(1), 177.