



Research Article

Influence of Climate Change Activism Videos on Climate Education of Gen Z TikTokers in Nigerian Universities

Gideon Uchechukwu Nwafor, PhD & Kate Azuka Omenugha, PhD

About Article

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About the Authors

Gideon Uchechukwu Nwafor, PhD
Department of Mass Communication
Chukwuemeka Odumegwu Ojukwu University
Anambra State
Email: gu.nwafor@coou.edu.ng

Kate Azuka Omenugha, PhD
Department of Mass Communication,
Chukwuemeka Odumegwu Ojukwu University
Email: ka.omenugha@coou.edu.ng

ABSTRACT

This study investigated the influence of TikTok climate change activism videos on the climate education of Generation Z (Gen Z) university students in Nigeria. Three federal universities were purposively selected: the University of Lagos (UNILAG), Ahmadu Bello University (ABU), Zaria, and the University of Nigeria, Nsukka (UNN), with a combined accessible Gen Z population of approximately 91,000 students. A convergent parallel mixed-methods design was employed. For the quantitative strand, a structured questionnaire was administered in a hybrid mode, through an online survey built on Google Forms and in printed copies, to 480 students selected through multi-stage sampling; 467 valid responses were retained (97.3% return rate). Qualitative data were obtained through semi-structured in-depth interviews with 30 purposively selected students (10 per university). Five research questions guided the study, covering exposure, knowledge, attitudes, behavioral intentions and personal experiences. Quantitative data were analyzed with frequency tables, percentages, means, standard deviations and Pearson correlation, presented with charts; qualitative data were analyzed thematically. Findings show that 87.2% of respondents encountered climate activism videos on TikTok at least once a week, and 74.3% did so daily or several times a week, mostly through the algorithmic For You Page (87.8%). Students with higher exposure recorded stronger climate knowledge ($r = .34, p < .001$) and held positive environmental attitudes, while behavioral intentions were strongest for low-cost actions and weakest for structurally demanding activism. Interviews revealed incidental algorithmic learning, emotional resonance, uneven credibility checking, a structural awareness-action gap and a demand for Nigerian climate content. The study is anchored on the Uses and Gratifications Theory and Social Cognitive Theory, and it offers practical implications for climate educators, communicators and policymakers in Nigeria.

Introduction

Climate change represents one of the most urgent global challenges of the twenty-first century, with disproportionate and accelerating consequences for sub-Saharan Africa. The Intergovernmental Panel on Climate Change reports that Africa is among the regions most exposed to rising temperatures, more frequent extreme weather and the resulting losses to food production and livelihoods (IPCC, 2022). Nigeria, Africa's most populous nation with over 200 million citizens, is particularly vulnerable to these hazards: desertification in the north, perennial flooding across the Niger Delta and Middle Belt, coastal erosion along the Atlantic coastline, and erratic rainfall that threatens the agricultural livelihoods of millions. Communicating adaptation and resilience strategies in forms that Nigerians can understand and act on has therefore become a central task of development communication in the country (Nwafor & Aghaebie, 2025). In this context, robust climate education among the nation's youth is not merely desirable but structurally essential.

Generation Z, commonly defined as individuals born between 1997 and 2012, constitutes the majority of Nigeria's current university cohort. This cohort is distinguished by its digital nativity: it has never inhabited a world without broadband internet, smartphones or social media. Unlike the Millennial generation, which witnessed the transition from analog to digital media, Gen Z assumes constant connectivity as a baseline condition of social and intellectual life. Consequently, social media platforms have become primary channels through which Gen Z members seek news, form opinions and engage with complex social issues, including environmental crises (Battocchio et al., 2023).

TikTok, which became widely available internationally in 2018 and reached one billion monthly active users in 2021, has become one of the fastest-growing platforms among Nigerian youth. Its defining features, namely an algorithmically curated For You Page (FYP), short-form video, duetting, stitching, trending audio and hashtag-driven discovery, have created a new infrastructure for informal learning and social advocacy. Hashtag communities such as #ClimateChange, #ClimateAction and #EcoTok have drawn climate scientists, youth activists and environmental educators into the platform's communicative ecology (Hautea et al., 2021; Pera & Aiello, 2023). Among Nigerian undergraduates, TikTok is used frequently, and learning new things is one of the gratifications students report alongside entertainment, self-expression and friendship (Nwafor & Nnaemeka, 2023).

Despite TikTok's demonstrable reach among Nigerian undergraduates, the link between the platform, climate activism content and environmental education in Nigerian universities remains empirically underexplored. This study addresses that gap by examining, through a mixed-methods design, how TikTok climate activism videos shape the climate knowledge, attitudes, behavioral intentions and personal experiences of Gen Z students at three major Nigerian federal universities.

Statement of the Problem

Climate change education in Nigerian universities is constrained by inadequate curriculum integration, lecture-centered teaching that is poorly suited to digitally native learners, and a persistent focus on memorized knowledge rather than critical,

action-oriented environmental literacy. At the same time, TikTok has become a daily-use platform among Nigerian undergraduates (Nwafor & Nnaemeka, 2023), and many young users encounter educational content passively through algorithmic recommendation rather than deliberate search (Rahmawati et al., 2026). These parallel realities raise pressing empirical questions. It is not known whether this informal digital exposure translates into meaningful climate literacy among Nigerian students, which content characteristics and contextual factors shape its educational value, and what gap, if any, exists between heightened awareness and actual pro-environmental behavior among Nigerian Gen Z TikTokers.

Objectives of the Study

The main objective of this study is to examine the influence of TikTok climate change activism videos on the climate education of Gen Z students in selected Nigerian universities. The specific objectives are to:

1. assess the extent of exposure to TikTok climate activism videos among Gen Z students in the three selected universities;
2. evaluate the influence of TikTok climate activism videos on students' climate change knowledge and awareness;
3. examine how TikTok climate activism videos shape students' attitudes toward climate change and environmental issues;
4. determine the relationship between engagement with TikTok climate content and students' pro-environmental behavioral intentions; and
5. explore Nigerian Gen Z students' personal experiences with TikTok climate activism videos.

Research Questions

The following research questions guided the study:

1. What is the extent of Nigerian Gen Z university students' exposure to climate change activism videos on TikTok?
2. To what degree do TikTok climate activism videos influence students' climate change knowledge and awareness?
3. How do TikTok climate activism videos affect students' attitudes toward climate change and environmental issues?
4. What is the relationship between engagement with TikTok climate content and students' pro-environmental behavioral intentions?
5. How do Nigerian Gen Z university students describe their personal experiences with climate activism videos on TikTok?

Literature Review

Climate Change Education in Nigerian Universities

Climate change education in Nigerian higher education remains fragmented and underfunded. While awareness of climate change as a global phenomenon is moderately high among Nigerian undergraduates, deep understanding of climate mechanisms, local impacts and mitigation strategies is considerably lower. Reviews of the

relationship between climate change and social media show that young people increasingly get climate information from mass and digital media rather than formal instruction, making informal digital channels de facto environmental educators (Sultana et al., 2024). Nigerian communication scholarship has also shown that environmental messages achieve more when they are delivered through channels and forms that audiences already use, whether indigenous or media or social media pages of public broadcasters (Nwafor & Aghaebie, 2025; Nwafor & Okamgba, 2024).

Environmental education in Nigerian institutions is largely confined to geography, environmental science and agricultural departments, with limited interdisciplinary reach. Teaching approaches favour didactic instruction over experiential, problem-based or action-oriented learning, which is a mismatch for Gen Z learners whose media diet is visual, participatory and algorithmically personalised (Costache & Enachescu, 2026; Nwammuo et al., 2022). These structural limitations make informal digital learning environments, including TikTok, increasingly important supplements to formal climate education.

Generation Z and Digital Media Consumption

Generation Z has grown up with constant digital connectivity, which shapes its thinking styles, social practices and information behavior. Research documents Gen Z's preference for short-form visual content, its reliance on algorithmic discovery over deliberate search, and its valuing of authenticity and peer credibility over institutional authority (Battocchio et al., 2023). On environmental issues, a study of Australian university students found that a

large majority of Gen Z respondents expressed high levels of climate concern, which marks climate change as a generation-defining issue (Salguero et al., 2024). Among Nigerian youths, social media affordances also shape self-presentation and the pursuit of social validation through likes, comments and shares (Nwafor et al., 2026).

Gen Z's approach to civic and environmental engagement differs from that of earlier cohorts. Where Millennials channeled political energy into formal campaigns and civil organizations, Gen Z gravitates toward networked forms of action such as hashtag campaigns, viral challenges, duet-based commentary and peer-to-peer content sharing (Battocchio et al., 2023). This repertoire fits TikTok's participatory architecture; participation in a carbon-neutrality TikTok challenge, for instance, has been associated with changes in young people's perception of environmental issues (Lee et al., 2024). However, scholars caution against uncritical celebration of digital activism and point to an awareness–action gap in which online engagement does not reliably translate into offline behavior change (Naz et al., 2026).

TikTok as an Educational Platform

TikTok has emerged as a significant, though contested, informal learning environment. Studies of Indonesian university students report daily usage of two to five hours, with educational content encountered mainly through algorithmic recommendation rather than deliberate search (Rahmawati et al., 2026). Learners in these studies valued concise audio-visual explanations and trusted creators, and saw TikTok as a suitable first source of information but not a standalone academic reference. In Nigeria, Nwafor and Nnaemeka (2023) found high TikTok usage among undergraduates of Chukwuemeka Odumegwu Ojukwu University, with learning

new things listed among the gratifications students derive from the platform. Research across science and health communication confirms that short videos can convey substantive content when they follow sound teaching principles: clear narrative, visual salience and connection to viewers' lived realities (Costache & Enachescu, 2026; Shahbazi & Nowaczyk, 2024).

TikTok's recommendation system, the For You Page, is a powerful mediator of educational exposure. Unlike subscription-based platforms, the FYP surfaces content to users who have not sought it, creating pathways for incidental learning but also raising concerns about filter bubbles and unequal access to information (Morales-Navarro et al., 2024). Virality on TikTok depends on engagement signals such as watch time, completion rate, shares and comments rather than on educational quality, which rewards emotional impact over informational depth. Pereira and Ha (2024) show that misleading environmental claims circulate on TikTok, which poses risks to climate literacy among uncritical viewers.

Climate Activism on Social Media

Climate activism has moved substantially onto social platforms over the past decade, with TikTok becoming a central space for youth-led environmental advocacy. Content analyses of climate-related TikTok videos reveal that effective creators use emotional storytelling, personal narratives, humor and popular culture to lower barriers to engagement with complex scientific topics (Happer & Aberg, 2024; Kang, 2024; Pera & Aiello, 2023). Compared with YouTube creators, TikTok creators adopt more emotionally resonant, self-referential and action-oriented styles that suit the platform

and its audience (Pera & Aiello, 2023).

Studies of Spanish youths' responses to TikTok climate videos found that geographical proximity to climate disasters intensifies emotional responses and shifts engagement from individual action toward demands for climate justice (Nieto-Sandoval & Ferre-Pavia, 2026). Hautea et al. (2021) describe the climate communities that form on TikTok as affective publics, groups that gather around shared emotional responses to climate urgency rather than formal ideological commitments, and Causa (2026) shows how Gen Z climate discourse on the platform is shaped by such emotionally charged exchanges. Anglada-Pujol et al. (2026), however, identify a tension between viral reach and community depth: virality extends awareness beyond committed audiences, but the rapid turnover of the FYP hinders stable communities organized around sustained environmental action.

Social Media and Environmental Awareness

Reviews confirm a positive, though variable, relationship between social media engagement with environmental content and ecological awareness (Sultana et al., 2024). Among Jordanian university students, social media use predicted sustainability awareness ($\beta = 0.59$, $p < .001$), which in turn predicted sustainability attitudes ($\beta = 0.61$, $p < .001$) and behavioral engagement ($\beta = 0.63$, $p < .001$), suggesting a sequential cognitive-affective pathway (Al-Dmour et al., 2026). Comparable findings come from Pakistan and other Asian settings, where social media campaigns raised environmental awareness among students, particularly when they used local languages, culturally resonant narratives and community endorsement (Ali & Ahmed, 2026; Pearl,

2026). In Nigeria, Nwafor and Okamgba (2024) show that a state broadcaster's Facebook messages on solid waste management can carry environmental information to the public and support sustainable development goals.

Social media influencers play an increasingly important role in shaping environmental attitudes and behaviors. Influencers perceived as authentic, knowledgeable and value-congruent generate stronger behavioral intentions than institutional voices (Citrawijaya & Jannah, 2025; Suryaputra et al., 2024). Emotional content, particularly personal stories, imagery of ecological impact and solution-oriented messages, tends to draw more engagement than abstract scientific information (Markazi & Magee, 2023; Acquaye et al., 2023). Yet the transfer from online to offline behaviour remains inconsistent: Naz et al. (2026) report that cost, inconvenience and low perceived individual efficacy weaken the behavioural impact of online environmental engagement.

The existing literature leaves several gaps that this study addresses. First, while research on TikTok climate activism has advanced in Western and East Asian contexts, empirical studies of Nigerian or sub-Saharan African youth engagement with TikTok climate content are scarce; existing Nigerian TikTok studies focus on general gratifications or health messages rather than climate education (Nwafor & Nnaemeka, 2023). Second, most existing studies use either surveys or content analyses; mixed-methods designs that capture both statistical patterns and lived experiences are rare. Third, the content characteristics and platform mechanisms through which TikTok climate videos influence Nigerian students' learning remain unclear. This study addresses these gaps with a three-university Nigerian

sample, a convergent parallel mixed-methods design and attention to how Nigerian socio-economic and environmental realities shape platform effects.

Theoretical Framework

This study is anchored on two theories: the Uses and Gratifications Theory, which explains why and how students come to be exposed to TikTok climate content, and Social Cognitive Theory, which explains how that exposure becomes learning, attitudes and behavioral intentions.

Uses and Gratifications Theory

The Uses and Gratifications Theory (UGT), associated with Katz, Blumler and Gurevitch (1974), conceives of media audiences as active agents who select content to satisfy felt needs. Applied to TikTok climate activism videos, UGT suggests that Nigerian Gen Z students engage with or avoid climate content according to the gratifications they expect: cognitive (knowledge and awareness of current events), affective (emotional release and solidarity), social (identity signaling and peer connection) and personal integrative (reinforcement of an environmental identity). Nwafor and Nnaemeka (2023) applied the theory to TikTok among Nigerian undergraduates and found that learning, entertainment, self-expression and friendship were the main gratifications sought. TikTok's algorithm complicates the classical assumption of deliberate media choice, however, because the FYP delivers climate content to students who have not searched for it. The study therefore uses an extended reading of UGT that accommodates passive, algorithm-driven exposure alongside active selection (Morales-Navarro et al., 2024; Rahmawati et al., 2026). The theory frames Research Questions 1 and 5.

Social Cognitive Theory

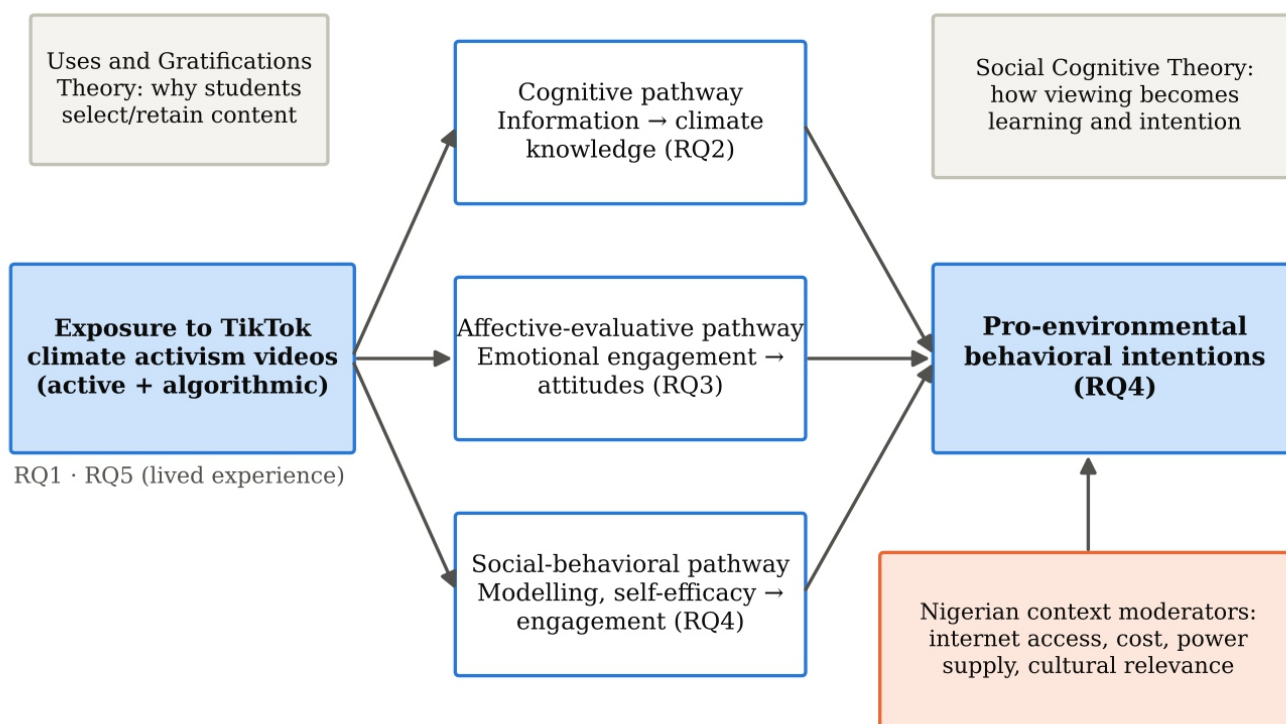
Bandura's (1986) Social Cognitive Theory specifies how media content becomes learning and behavior. Its key constructs are observational learning (students learn about climate issues and pro-environmental actions by watching TikTok models), self-efficacy (creators who demonstrate achievable actions can raise students' belief that they too can act), outcome expectations (videos that show the benefits of environmental action strengthen motivation) and vicarious reinforcement (visible likes, shares and comments signal social approval of climate-conscious content). The value that Nigerian youths place on such signals of social validation online (Nwafor et al., 2026) makes vicarious reinforcement particularly relevant here. The principle of reciprocal determinism holds that personal factors (existing attitudes, digital literacy), environmental factors (internet access, peer norms, cost of sustainable alternatives) and

behavioral factors (usage and engagement patterns) interact to shape learning outcomes (Acquaye et al., 2023; Gao et al., 2026).

Integrating the two theories, the study adopts a framework in which students' exposure to TikTok climate content, explained by UGT, operates through three interconnected pathways explained by Social Cognitive Theory: a cognitive pathway (information acquisition leading to knowledge), an affective-evaluative pathway (emotional engagement leading to attitude formation) and a social-behavioural pathway (observational learning and vicarious reinforcement leading to self-efficacy and behavioural intentions). Nigerian contextual factors, including internet infrastructure, economic constraints, power supply and the cultural relevance of available content, moderate these pathways. Figure 1 presents the framework.

Figure 1

Conceptual Framework of the Study



Methodology

The study employed a convergent parallel mixed-methods design in which quantitative and qualitative data were collected at the same time but independently, analyzed separately with methods suited to each strand, and integrated at the interpretation stage. The quantitative strand provides statistical breadth by describing patterns of exposure, knowledge, attitudes and behavioral intentions across the sample. The qualitative strand provides depth by exploring the processes, contextual factors and meanings that statistics alone cannot capture (Gao et al., 2026). The University of Lagos (UNILAG), Akoka, Lagos State, is a federal university with a total enrollment of approximately 55,000 students, of whom an estimated 38,500 (70%) are Gen Z undergraduates. UNILAG is situated in Nigeria's commercial capital, with relatively strong internet infrastructure and a cosmopolitan student body. Ahmadu Bello University (ABU), Zaria, Kaduna State, is a federal university with a total enrollment of approximately 40,000 students, of whom an estimated 28,000 (70%) are Gen Z undergraduates. ABU serves northern Nigeria and provides the geographical and cultural diversity needed for a nationally varied sample. The University of Nigeria, Nsukka (UNN), Enugu State, is a federal university with a total enrollment of approximately 35,000 students, of whom an estimated 24,500 (70%) are Gen Z undergraduates. UNN serves south-eastern Nigeria and completes the study's coverage of the north, south-west and south-east. The combined accessible Gen Z population across the three institutions is approximately 91,000 students.

The sample size was determined with Cochran's (1977) formula for estimating proportions from a large population: $n =$

Z^2pq/e^2 , where $Z = 1.96$ (95% confidence level), $p = 0.50$ (maximum variability), $q = 1 - p = 0.50$ and $e = 0.05$ (5% margin of error). This yields $n = (1.96)^2 \times 0.50 \times 0.50 / (0.05)^2 = 384.16$, rounded to 384. A 25% allowance for non-response raised the target to 480 questionnaires, distributed equally across the three universities (160 per institution). Of these, 467 valid questionnaires were retained (UNILAG: 157; ABU: 155; UNN: 155), giving a return rate of 97.3%. All quantitative analyses are based on these 467 respondents.

A multi-stage sampling procedure was employed. In the first stage, the three universities were purposively selected to represent distinct geopolitical zones (South-West, North-West and South-East) and to ensure variation in institutional size, cultural context and internet infrastructure. In the second stage, stratified random sampling was applied within each university, with strata defined by faculty clusters (Sciences, Social and Management Sciences, Engineering, and Arts, Education and Law). In the third stage, systematic random sampling from faculty enrollment lists selected individual respondents within each stratum.

Thirty students (10 per university) were selected for in-depth interviews through purposive sampling. The criteria were active TikTok use (at least one hour per day), self-reported exposure to climate-related content on TikTok, willingness to take part in a 45–60-minute audio-recorded interview, and gender balance and disciplinary diversity within each group. Participants were identified through screening questions embedded in the questionnaire. Chain referral was added at ABU Zaria and UNN, where initial uptake was lower, to reach the target of 10 per university. Table 1 presents the profile of the 30 interview participants.

Table 1*Profile of Qualitative Interview Participants (N = 30)*

ID	University	Gender	Age	Faculty/Department	Daily TikTok Use	Climate Content Engagement
P01	UNILAG	Female	21	Mass Communication	3+ hrs	High
P02	UNILAG	Male	22	Environmental Science	2–3 hrs	High
P03	UNILAG	Female	20	Social Sciences	1–2 hrs	Moderate
P04	UNILAG	Male	23	Engineering	2–3 hrs	Moderate
P05	UNILAG	Female	19	Arts/Humanities	3+ hrs	Low
P06	UNILAG	Male	24	Sciences	1–2 hrs	High
P07	UNILAG	Female	21	Social Sciences	2–3 hrs	Moderate
P08	UNILAG	Male	20	Law	1–2 hrs	Low
P09	UNILAG	Female	22	Education	2–3 hrs	High
P10	UNILAG	Male	25	Economics	1–2 hrs	Moderate
P11	ABU Zaria	Female	21	Geography	2–3 hrs	High
P12	ABU Zaria	Male	22	Agricultural Science	1–2 hrs	High
P13	ABU Zaria	Female	20	Sociology	2–3 hrs	Moderate
P14	ABU Zaria	Male	23	Civil Engineering	1–2 hrs	Moderate
P15	ABU Zaria	Female	19	Arts	3+ hrs	Low
P16	ABU Zaria	Male	24	Zoology	1–2 hrs	High
P17	ABU Zaria	Female	21	Political Science	2–3 hrs	Moderate
P18	ABU Zaria	Male	20	Law	1–2 hrs	Low
P19	ABU Zaria	Female	22	Education	2–3 hrs	High
P20	ABU Zaria	Male	25	Economics	1–2 hrs	Moderate
P21	UNN	Female	21	Mass Communication	3+ hrs	High
P22	UNN	Male	22	Environmental Management	2–3 hrs	High
P23	UNN	Female	20	Social Sciences	1–2 hrs	Moderate
P24	UNN	Male	23	Electrical Engineering	2–3 hrs	Moderate
P25	UNN	Female	19	History	3+ hrs	Low
P26	UNN	Male	24	Biology	1–2 hrs	High
P27	UNN	Female	21	Political Science	2–3 hrs	Moderate
P28	UNN	Male	20	Law	1–2 hrs	Low
P29	UNN	Female	22	Education	2–3 hrs	High
P30	UNN	Male	25	Economics	1–2 hrs	Moderate

Note. Participant codes are used in place of names. Climate content engagement: High = daily viewing; Moderate = several times per week; Low = occasional.

A structured questionnaire with five sections was developed and validated through expert review and a pilot test with 50 students who were excluded from the main study. Section A captured demographics and TikTok usage patterns; Section B assessed the frequency, type and route of climate content exposure; Section C measured climate change knowledge through 15 multiple-choice items; Section D used a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) to measure attitudes; and Section E measured pro-environmental behavioral intentions and engagement with climate content. Every item allowed only one response, so that each table sums to the number of respondents. Cronbach's alpha for the multi-item scales ranged from .76 to .84, indicating acceptable internal consistency.

A semi-structured interview guide covered five thematic areas: TikTok usage patterns and content discovery; engagement with climate activism videos; learning and understanding gained through TikTok; influence on attitudes and behavior; and the Nigerian experience of climate content. The questionnaire was administered in a hybrid mode that combined an online survey with printed copies. The online version was built on Google Forms, with the same items, order and response options as the printed version. The survey link was sent to the systematically selected respondents through their institutional email addresses and through faculty and departmental WhatsApp groups with the help of class representatives. To protect data quality, the form required respondents to sign in with a Google account and was set to accept only one response per account, all items were made compulsory, and an opening screening section confirmed age (18 years and above), current enrollment at one of the three

universities and active TikTok use before the main sections opened. The first page of the form carried the informed-consent statement, and respondents could not proceed without accepting it.

Selected respondents who could not be reached online, or who preferred paper, completed printed copies administered in person by trained research assistants in each university. Responses from the Google Forms spreadsheet and the printed copies were merged into a single data file. During data cleaning, incomplete responses, submissions that failed the screening questions and duplicate entries (identified by matching demographic profiles across the online and printed returns) were removed, which left 467 valid questionnaires from the 480 targeted.

Interviews were conducted individually in English or in code-switched English and Nigerian Pidgin, according to each participant's preference. Each interview lasted 45–60 minutes, was audio-recorded with consent and was transcribed verbatim.

Quantitative data were analysed with IBM SPSS Statistics version 27. Frequencies, percentages, means and standard deviations answered Research Questions 1 to 4, and Pearson correlation examined the relationships between exposure and knowledge (Research Question 2) and between engagement and behavioural intentions (Research Question 4). For the cross-tabulation of knowledge by exposure, respondents were split at the median of a composite exposure index into high-exposure ($n = 227$) and low/moderate-exposure ($n = 240$) groups. Results are presented in tables and illustrated with bar charts. Interview transcripts were analysed with Braun and Clarke's (2006) six-phase thematic analysis,

supported by NVivo 12, using deductive codes derived from the two theories and inductive codes that emerged from the data. Member checking and inter-coder reliability assessment ($\kappa = .83$) enhanced trustworthiness.

Data Presentation and Analysis

This section presents the data from the 467 valid questionnaires and the 30 interviews, organized by research question. All tables are based on single-response items, so each row or column total equals the number of respondents.

Research Question 1: Extent of Exposure to TikTok Climate Activism Videos

Table 2

Frequency of TikTok Use Among Respondents (N = 467)

Frequency of Use	Frequency	Percentage (%)
Several times a day	193	41.3
Once a day	153	32.8
3–4 times a week	84	18.0
1–2 times a week	37	7.9
Total	467	100.0

Table 2 shows that 74.1% of respondents use TikTok at least once daily, which confirms the platform's place in the daily lives of Gen Z students at the three universities.

Table 3: Daily Time Spent on TikTok (N = 467)

Hours per Day	Frequency	Percentage (%)
Less than 1 hour	84	18.0
1–2 hours	187	40.0
2–4 hours	134	28.7
More than 4 hours	62	13.3
Total	467	100.0

The most common usage bracket is 1–2 hours per day (40.0%), while 28.7% spend 2–4 hours and 13.3% spend more than four hours daily. This level of use creates frequent opportunities for incidental exposure to climate content.

Table 4*Frequency of Encountering Climate Activism Videos on TikTok (N = 467)*

Exposure Frequency	Frequency	Percentage (%)
Daily	82	17.6
Several times a week	265	56.7
About once a week	60	12.8
A few times a month	42	9.0
Rarely or never	18	3.9
Total	467	100.0

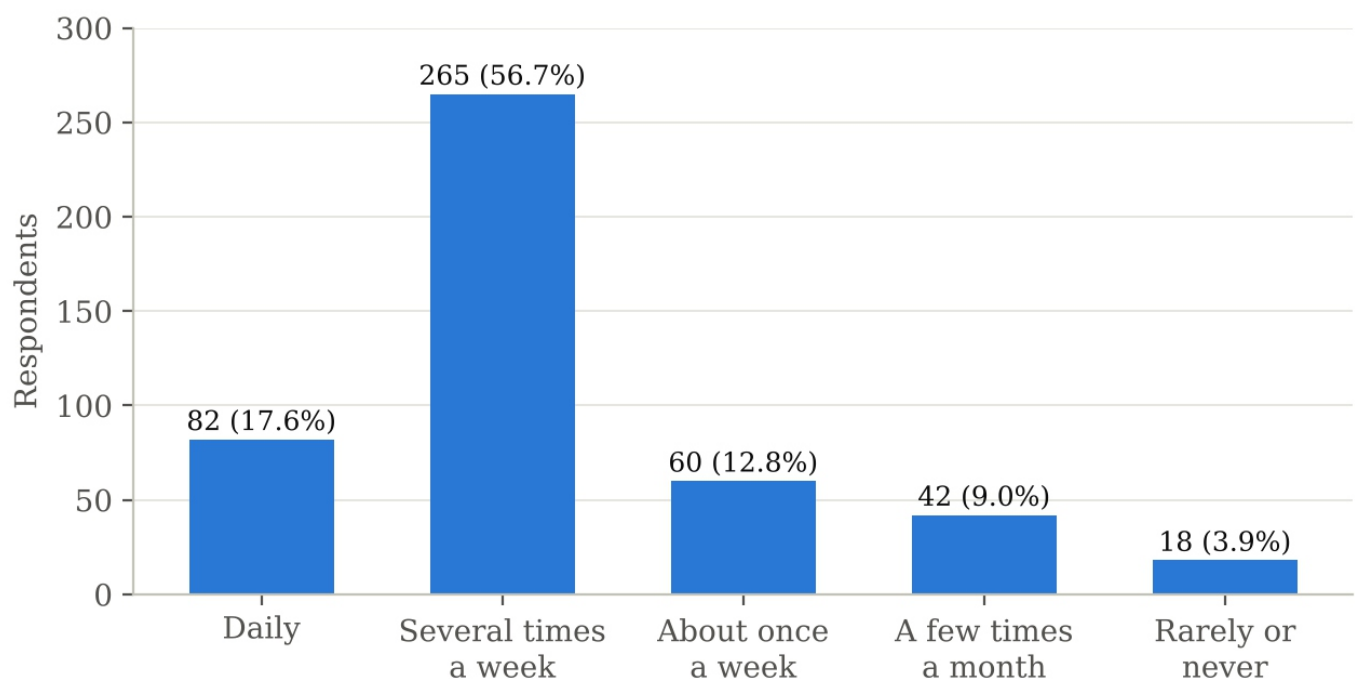
Figure 2*Frequency of Encountering Climate Activism Videos on TikTok (N = 467)*

Table 4 and Figure 2 show that 87.2% of respondents encountered climate activism videos at least once a week, and 74.3% did so daily (17.6%) or several times a week (56.7%). Only 3.9% reported rare or no exposure. Climate content is therefore a recurring part of what these students see on TikTok.

Table 5: *Main Route Through Which Climate Videos Reached Respondents (N = 467)*

Route of Discovery	Frequency	Percentage (%)
Recommended on the For You Page (algorithm)	410	87.8
Other routes (search, followed accounts, shared by friends)	57	12.2
Total	467	100.0

Table 5 shows that 87.8% of respondents received climate videos mainly through the algorithmic For You Page rather than through search, followed accounts or friends' shares.

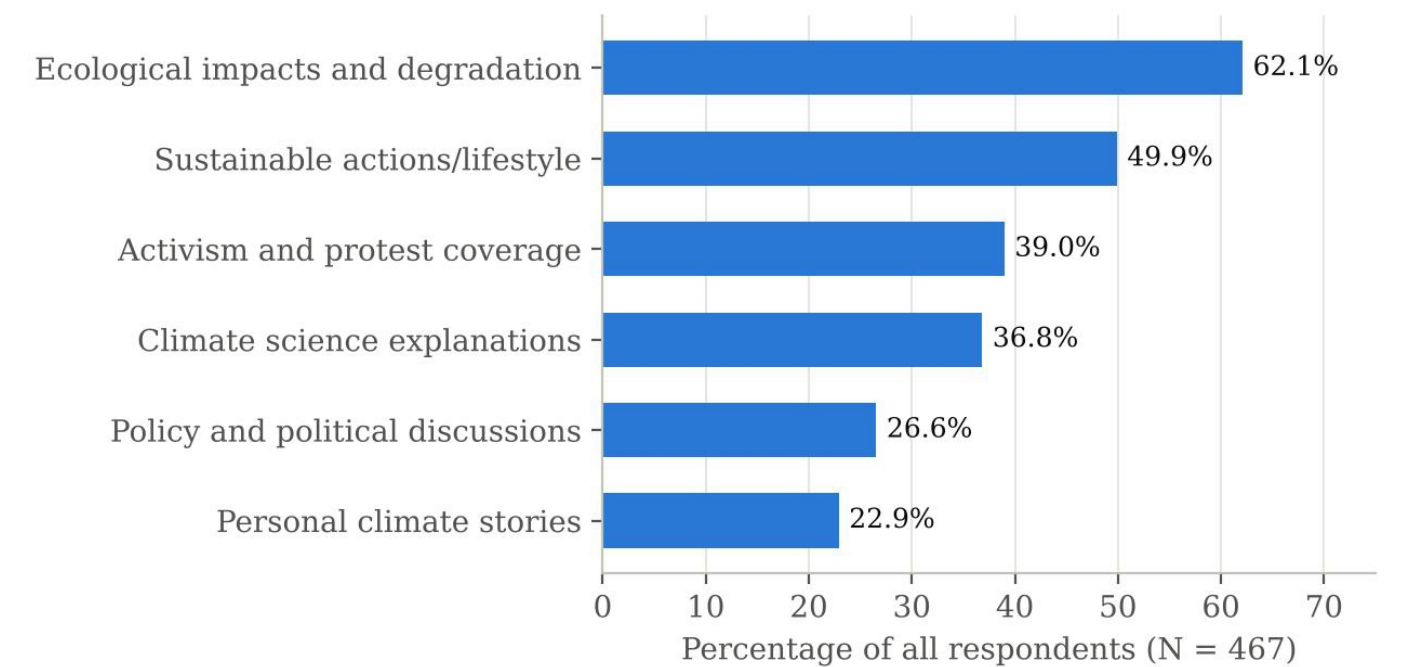
Table 6

Types of Climate Activism Content Encountered on TikTok (N = 467)

Content Type	Encountered n (%)	Not Encountered n (%)	Total
Ecological impacts and environmental degradation	290 (62.1)	177 (37.9)	467
Individual sustainable actions/lifestyle changes	233 (49.9)	234 (50.1)	467
Climate activism and protest coverage	182 (39.0)	285 (61.0)	467
Climate science explanations	172 (36.8)	295 (63.2)	467
Policy and political climate discussions	124 (26.6)	343 (73.4)	467
Personal stories about climate experiences	107 (22.9)	360 (77.1)	467

Note. Each content type was a separate yes/no item, so every row sums to 467. Respondents with rare or no exposure are counted under Not Encountered.

Figure 3
Percentage of Respondents Who Encountered Each Type of Climate Content (N = 467)



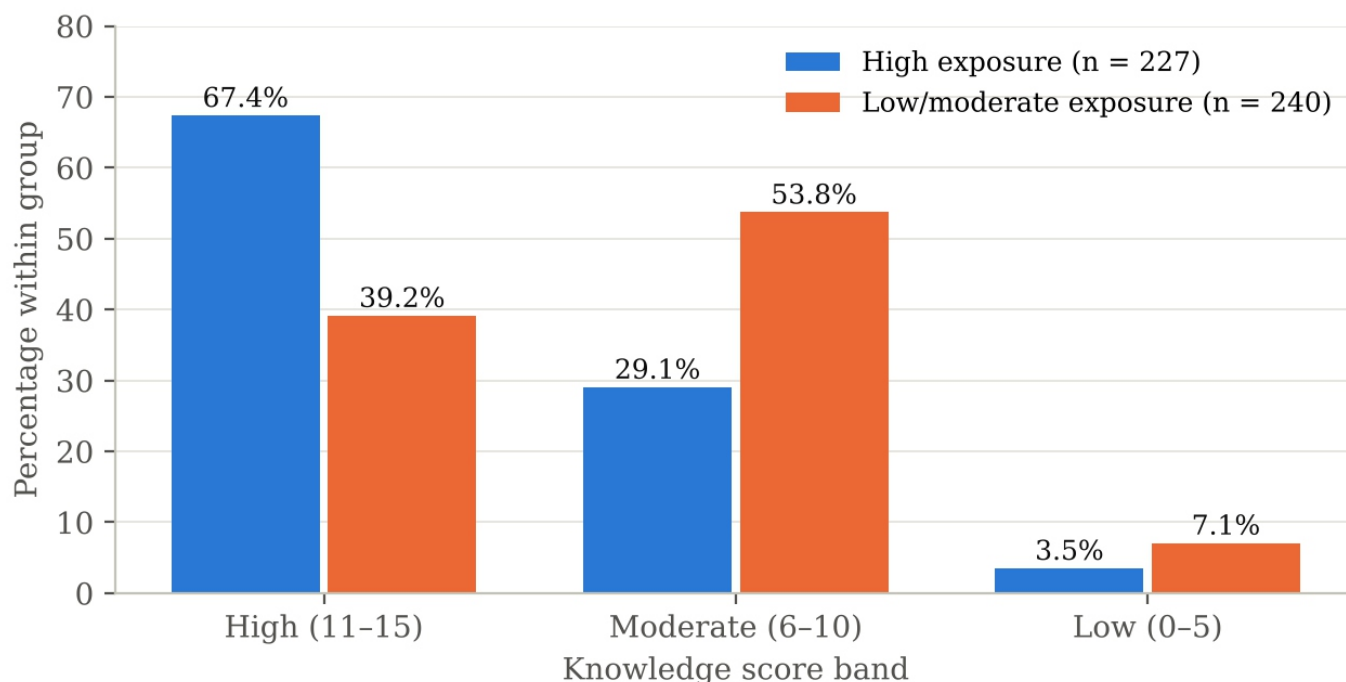
As Table 6 and Figure 3 show, ecological impact videos were the most widely encountered content type (62.1% of all respondents), followed by sustainable lifestyle content (49.9%) and activism coverage (39.0%). Scientific explanations reached 36.8% of respondents, while personal narratives reached only 22.9%, which suggests that narrative strategies are underused in the climate content that reaches Nigerian students.

Research Question 2: Influence on Climate Change Knowledge and Awareness

Table 7
Climate Knowledge Scores by Level of TikTok Climate Exposure (N = 467)

Knowledge Level	High Exposure (n = 227)	Low/Moderate Exposure (n = 240)	Total
High (11–15 correct)	153 (67.4%)	94 (39.2%)	247 (52.9%)
Moderate (6–10 correct)	66 (29.1%)	129 (53.8%)	195 (41.8%)
Low (0–5 correct)	8 (3.5%)	17 (7.1%)	25 (5.4%)
Total	227 (100%)	240 (100%)	467 (100%)

Note. Exposure groups were formed by a median split on the composite exposure index.

Figure 4*Climate Knowledge Bands by Exposure Group*

Students with high exposure to TikTok climate content were far more likely to score in the high knowledge band (67.4%) than their low/moderate-exposure counterparts (39.2%), as Table 7 and Figure 4 show.

Pearson correlation confirmed a significant positive relationship between exposure frequency and knowledge scores ($r = .34$, $p < .001$), which is a moderate effect.

Table 8*Responses to Individual Climate Knowledge Items (N = 467)*

Knowledge Item	Correct n (%)	Incorrect n (%)
Greenhouse gases as primary driver of climate change	417 (89.3)	50 (10.7)
Human activities as main cause of recent warming	395 (84.6)	72 (15.4)
Role of renewable energy in climate mitigation	375 (80.3)	92 (19.7)
Definition of carbon footprint	352 (75.4)	115 (24.6)
Impact of deforestation on climate systems	340 (72.8)	127 (27.2)
Paris Agreement temperature targets	261 (55.9)	206 (44.1)
Climate feedback loops	247 (52.9)	220 (47.1)
Climate change impacts specific to Nigeria	232 (49.7)	235 (50.3)

Note. Eight of the 15 knowledge items are shown.

Table 8 shows that large majorities answered foundational items correctly: 89.3% identified greenhouse gases as the main driver of climate change and 84.6% attributed recent warming to human activities. Knowledge of

Nigeria-specific impacts (49.7% correct) and of climate feedback loops (52.9% correct) was markedly lower, which reveals limits to the depth of climate learning that the platform supports.

Research Question 3: Attitudes Toward Climate Change and Environmental Issues

Table 9

Students' Attitudes Toward Climate Change (N = 467)

Attitude Statement	SA n (%)	A n (%)	N n (%)	D n (%)	SD n (%)	Mean	Std. Dev.
Climate change is a serious global problem	193 (41.3)	182 (39.0)	51 (10.9)	27 (5.8)	14 (3.0)	4.10	1.01
Nigeria is severely affected by climate change	172 (36.8)	188 (40.3)	65 (13.9)	28 (6.0)	14 (3.0)	4.02	1.01
I am personally concerned about climate change	150 (32.1)	193 (41.3)	76 (16.3)	33 (7.1)	15 (3.2)	3.92	1.03
TikTok videos have increased my climate awareness	163 (34.9)	208 (44.5)	60 (12.8)	24 (5.1)	12 (2.6)	4.04	0.96
Climate change requires urgent collective action	187 (40.0)	191 (40.9)	52 (11.1)	23 (4.9)	14 (3.0)	4.10	0.99
My TikTok exposure has changed how I view the environment	142 (30.4)	196 (42.0)	82 (17.6)	31 (6.6)	16 (3.4)	3.89	1.02

Note. SA = Strongly Agree (5); A = Agree (4); N = Neutral (3); D = Disagree (2); SD = Strongly Disagree (1). Each row sums to 467. Decision rule: mean $\geq$ 3.00 = agreement.

Figure 5*Mean Attitude Scores Toward Climate Change (N = 467)*

Table 9 and Figure 5 show that every attitude mean lies above the neutral point of 3.00, ranging from 3.89 to 4.10, which indicates positive environmental attitudes across the sample. The highest means were for "Climate change is a serious global problem" ($M = 4.10$, $SD = 1.01$) and "Climate change

requires urgent collective action" ($M = 4.10$, $SD = 0.99$). Notably, 79.4% of respondents agreed or strongly agreed that TikTok videos had increased their climate awareness, a direct self-reported attribution of attitude formation to the platform.

Table 10*Attitude Change Attributed to TikTok Climate Exposure by University (N = 467)*

University	Significant Change n (%)	Moderate Change n (%)	No Change n (%)	Total
UNILAG	79 (50.3)	58 (36.9)	20 (12.7)	157 (100)
ABU Zaria	71 (45.8)	64 (41.3)	20 (12.9)	155 (100)
UNN	73 (47.1)	62 (40.0)	20 (12.9)	155 (100)
Total	223 (47.8)	184 (39.4)	60 (12.8)	467 (100)

Across the three universities, 87.2% of respondents reported at least moderate attitude change attributable to TikTok climate exposure (Table 10). UNILAG students reported the highest rate of significant change

(50.3%), while ABU Zaria (45.8%) and UNN (47.1%) showed similar patterns, which indicates modest variation between institutions.

Research Question 4: Engagement and Pro-Environmental Behavioral Intentions

Table 11

Engagement Behaviors with TikTok Climate Content (N = 467)

Engagement Behavior	Always n (%)	Often n (%)	Sometimes n (%)	Rarely n (%)	Never n (%)
Watch entire climate video	94 (20.1)	143 (30.6)	158 (33.8)	38 (8.1)	34 (7.3)
Like or react to climate videos	85 (18.2)	142 (30.4)	160 (34.3)	43 (9.2)	37 (7.9)
Share climate videos with peers	62 (13.3)	109 (23.3)	173 (37.0)	85 (18.2)	38 (8.1)
Comment on climate videos	37 (7.9)	82 (17.6)	181 (38.8)	112 (24.0)	55 (11.8)
Save climate videos for later viewing	51 (10.9)	96 (20.6)	171 (36.6)	104 (22.3)	45 (9.6)
Create own climate-related content	17 (3.6)	36 (7.7)	84 (18.0)	172 (36.8)	158 (33.8)

Note. Each row sums to 467. The 18 respondents who rarely or never encountered climate videos are counted under Never.

Table 11 shows that passive engagement (watching videos in full, liking) was more common than active engagement (sharing, commenting, creating content). Content creation was rare: 70.7% of respondents rarely or never create climate content, which confirms that student engagement with TikTok climate content is mainly consumptive.

Table 12

Pro-Environmental Behavioral Intentions (N = 467)

Behavioral Intention	Very Likely n (%)	Likely n (%)	Unsure n (%)	Unlikely n (%)	Very Unlikely n (%)
Reduce personal energy consumption	125 (26.8)	191 (40.9)	90 (19.3)	47 (10.1)	14 (3.0)
Reduce use of single-use plastics	144 (30.8)	193 (41.3)	76 (16.3)	40 (8.6)	14 (3.0)
Share climate information with others	154 (33.0)	199 (42.6)	65 (13.9)	35 (7.5)	14 (3.0)
Participate in climate activism campaigns	94 (20.1)	152 (32.5)	125 (26.8)	65 (13.9)	31 (6.6)
Advocate for environmental policy change	85 (18.2)	140 (30.0)	152 (32.5)	66 (14.1)	24 (5.1)
Adopt a more sustainable overall lifestyle	109 (23.3)	179 (38.3)	100 (21.4)	55 (11.8)	24 (5.1)

Note. Each row sums to 467.

Figure 6
Distribution of Pro-Environmental Behavioral Intentions (N = 467)

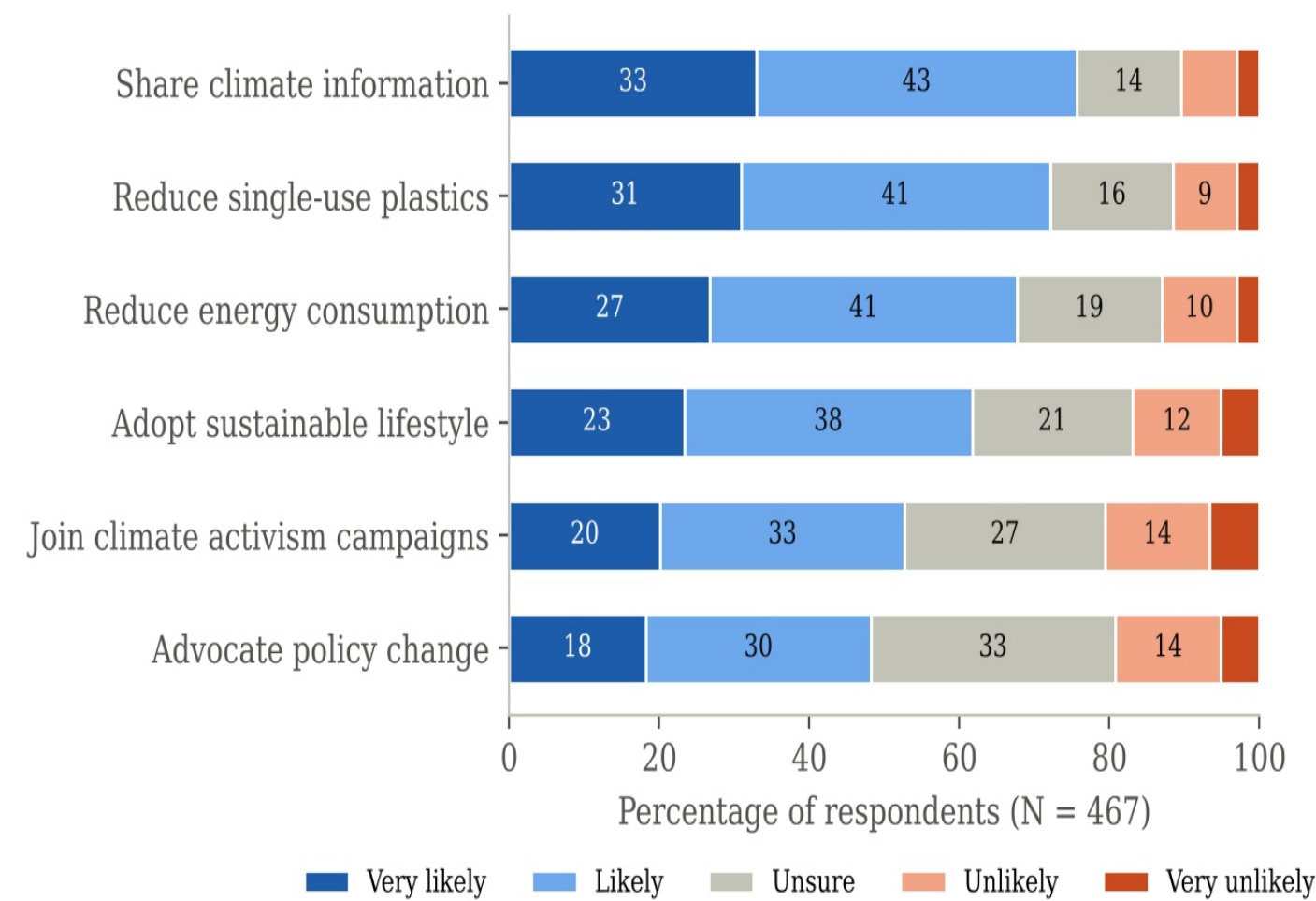
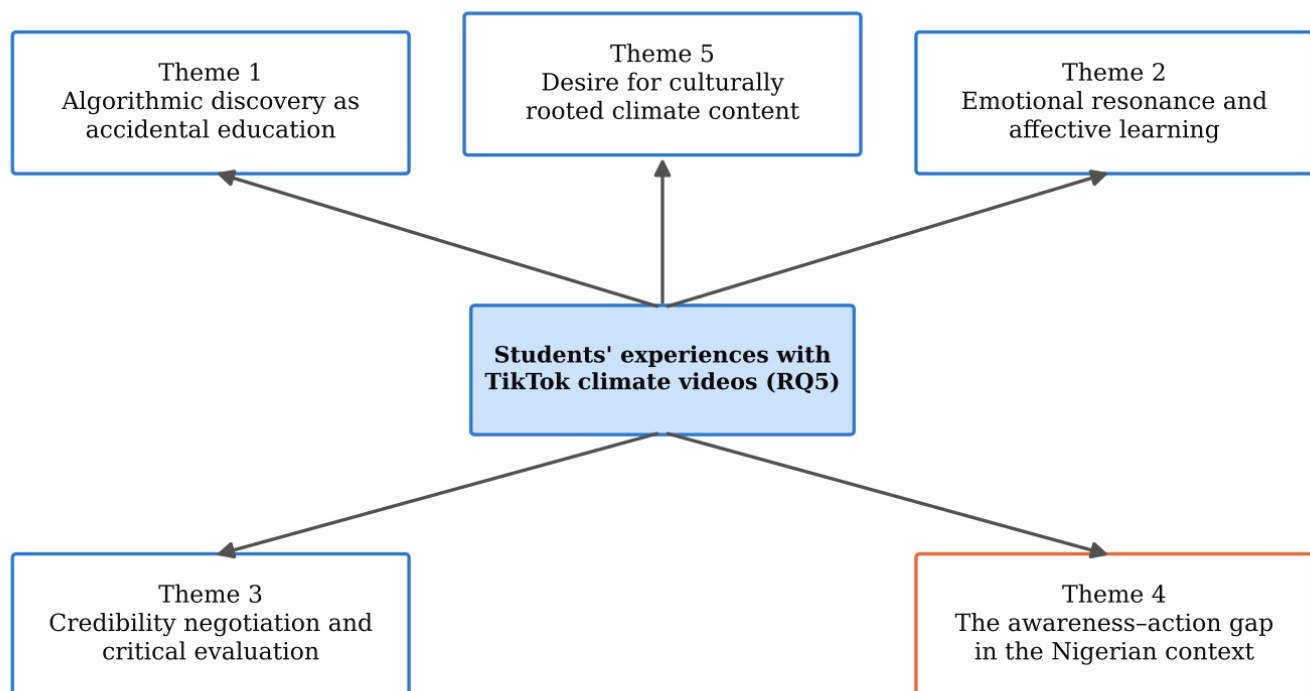


Table 12 and Figure 6 show that the strongest intentions were for sharing climate information (75.6% likely or very likely), reducing single-use plastics (72.2%) and reducing energy consumption (67.7%). Intentions that require deeper structural commitment, namely campaign participation (52.7%) and policy advocacy (48.2%), attracted much less certainty, with about a third of respondents unsure.

Research Question 5: Students' Personal Experiences with TikTok Climate Activism Videos
Thematic analysis of the 30 interviews generated five overarching themes, illustrated in Figure 7: algorithmic discovery as accidental education; emotional resonance and affective learning; credibility negotiation and critical evaluation; the awareness–action gap in the Nigerian context; and the desire for culturally rooted climate content.

Figure 7

Thematic Map of Students' Experiences with TikTok Climate Videos



Theme 1: Algorithmic discovery as accidental education. Most participants reported that climate videos reached their FYP without any search. P02 (UNILAG, Environmental Science) explained:

I was not looking for climate videos. I was watching football highlights and then suddenly there was this video of flooded villages in Benue State. I could not scroll past it.

P12 (ABU Zaria, Agricultural Science) similarly noted that "TikTok just puts it in front of you," adding that he sometimes watched several climate videos in a row without intending to. This pattern of incidental, algorithm-driven exposure appeared on all three campuses and is consistent with the quantitative finding that

87.8% of respondents received climate content mainly through the FYP (Table 5).

Theme 2: Emotional resonance and affective learning. Participants consistently identified emotional content as the strongest driver of engagement and learning. P21 (UNN, Mass Communication) stated:

The videos that hit me most are the ones showing places I know — Onitsha flooding, Sahel desertification. That is when climate change stopped being an abstract topic for me.

P09 (UNILAG, Education) recalled a creator who showed how the shoreline near her hometown had receded: "I cried. After that, I started watching every climate video that came my way." Hopeful content also

mattered. P11 (ABU Zaria, Geography) valued videos of farmers in Zamfara adapting through solar-powered irrigation and composting because "they give you hope that something is possible even here."

Theme 3: Credibility negotiation and critical evaluation. Participants showed uneven media literacy. Some, particularly those in science-related disciplines, used formal verification; P06 (UNILAG, Sciences) described cross-checking TikTok claims against academic sources. Many others relied on shortcuts such as the creator's follower count, university or NGO affiliation and the apparent authenticity of the video. P17 (ABU Zaria, Political Science) admitted:

I know some of these videos exaggerate things to get more views. But even if 60% is true, that is alarming enough for me to pay attention.

Awareness of misinformation was common in principle but unevenly applied in practice.

Theme 4: The awareness–action gap in the Nigerian context. All participants acknowledged a gap between the climate awareness they gained on TikTok and their capacity for offline action, and the barriers they cited were mainly structural rather than motivational. P22 (UNN, Environmental Management) said that nearly everything in the market is packaged in plastic and affordable alternatives are scarce. P14 (ABU Zaria, Civil Engineering) noted that with unreliable electricity, running a generator is sometimes unavoidable. P04 (UNILAG, Engineering) summarized the dilemma:

In a country where basic survival is the priority, asking students to make eco-lifestyle

choices feels like a luxury. TikTok makes me care deeply about climate change, but caring is not the same as being able to act.

Theme 5: Desire for culturally rooted climate content. Participants across the three universities were frustrated by the Western focus of most climate content. P03 (UNILAG, Social Sciences) asked, "Where are the Nigerian voices?", observing that most climate creators she saw were speaking to audiences in the countries that caused the problem. P13 (ABU Zaria, Sociology) wanted content on herder–farmer conflicts linked to desertification and on fishing communities losing their livelihoods: "That is the climate crisis I live in."

Discussion of Findings

Research Question 1: Extent of Exposure to TikTok Climate Activism Videos

Research Question 1 sought to establish the extent to which Nigerian Gen Z students are exposed to climate activism videos on TikTok. The findings show that exposure is high and recurring: 87.2% of respondents encounter such videos at least once a week and 74.3% do so daily or several times a week (Table 4). This high exposure rests on heavy general use of the platform, since 74.1% of students open TikTok at least once daily (Table 2). The result agrees with Nwafor and Nnaemeka (2023), who found high frequency of TikTok usage among Nigerian undergraduates and identified learning new things among the gratifications they derive from it. It means that a substantial share of the climate information reaching Nigerian students now arrives outside the lecture hall.

The route of this exposure is equally important. With 87.8% of respondents receiving climate videos mainly through the For You Page (Table 5), and interviewees describing the experience as stumbling on climate videos while watching football or comedy (Theme 1), exposure is largely incidental. This supports Rahmawati et al.'s (2026) finding among Indonesian Gen Z students and Morales-Navarro et al.'s (2024) observation that much learning on TikTok happens without the user setting out to learn. In terms of the Uses and Gratifications Theory, the finding qualifies the classical idea of the deliberately selecting audience: students choose TikTok to satisfy broad needs, and the algorithm then decides much of what climate content they meet. The predominance of impact imagery (62.1%) over scientific explanation (36.8%) and personal narratives (22.9%) (Table 6) mirrors global patterns in which visual spectacle outperforms technical explanation (Happer & Aberg, 2024; Kang, 2024).

Research Question 2: Influence on Climate Change Knowledge and Awareness

Research Question 2 examined the degree to which TikTok climate videos influence students' climate knowledge. The findings show a positive and significant association between exposure and knowledge ($r = .34, p < .001$): 67.4% of high-exposure students scored in the high knowledge band, compared with 39.2% of their low/moderate-exposure peers (Table 7). This supports the cognitive pathway of the conceptual framework, in which observational learning, as described by Social Cognitive Theory, turns repeated exposure into knowledge. It also agrees with Al-Dmour et al.'s (2026) finding that social media use predicts sustainability awareness among university students.

The knowledge gained is, however, uneven. Students did well on global, general items such as the role of greenhouse gases (89.3%) and human causation (84.6%), but barely half could answer items on climate impacts specific to Nigeria (49.7%) or on feedback loops (52.9%) (Table 8). This profile matches the content mix reported under Research Question 1, which is dominated by global impact imagery rather than explanation or local analysis. It also echoes Nwafor and Aghaebie's (2025) argument that climate adaptation information should be delivered through communication forms that are familiar to local audiences. TikTok, as currently consumed by these students, reinforces global climate frames more than the local, actionable knowledge needed to respond to Nigeria's own vulnerabilities, a gap that Nigerian creators, educators and broadcasters could fill with locally grounded content.

Research Question 3: Attitudes Toward Climate Change and Environmental Issues

Research Question 3 asked how TikTok climate videos affect students' attitudes. The findings show strongly positive attitudes, with all six means above the neutral point (3.89 to 4.10; Table 9). Students attributed much of this directly to TikTok: 79.4% agreed that the videos had increased their climate awareness, and 87.2% reported at least moderate attitude change attributable to the platform (Table 10). These results support the affective-evaluative pathway of the framework and are consistent with findings from Jordan (Al-Dmour et al., 2026), Australia (Salguero et al., 2024) and Indonesia (Rahmawati et al., 2026), suggesting that the attitude effect is a platform-level pattern rather than a peculiarly Nigerian one. They also align with Aburime and Nwafor's (2025) finding that regular

viewership of a media programme significantly shapes audience perception and attitudes toward its subject, here applied to short-form climate content.

The interviews explain how this attitude change happens. Students described being moved by videos of places they knew, such as Onitsha flooding or a receding hometown shoreline (Theme 2), which reflects what Hautea et al. (2021) describe as affective publics forming around shared emotional responses to climate urgency. Within Social Cognitive Theory, these emotionally charged models raise the personal relevance of climate change and strengthen outcome expectations. The slightly higher rate of significant change at UNILAG (50.3%) than at ABU Zaria (45.8%) and UNN (47.1%) may reflect the visibility of coastal erosion and flooding in Lagos, which is consistent with Nieto-Sandoval and Ferre-Pavia's (2026) finding that proximity to climate disasters intensifies responses to TikTok climate content. Because the differences are small, this interpretation should be treated as tentative.

Research Question 4: Engagement and Pro-Environmental Behavioral Intentions

Research Question 4 examined the relationship between engagement with TikTok climate content and pro-environmental behavioral intentions. The findings show a clear gradient: intentions were strongest for low-cost, socially visible actions such as sharing climate information (75.6%), reducing single-use plastics (72.2%) and saving energy (67.7%), and weakest for structurally demanding ones such as joining campaigns (52.7%) and advocating policy change (48.2%) (Table 12). Social Cognitive Theory predicts this pattern through its self-

efficacy construct: students express intentions toward behaviors they feel able to perform within their resources (Acquaye et al., 2023; Gao et al., 2026). The finding on plastics also connects with Nigerian evidence that social media can carry practical waste-management messages to the public (Nwafor & Okamgba, 2024).

Engagement itself was mainly passive. Watching and liking were common, while only 3.6% always create climate content and 70.7% rarely or never do (Table 11). This is consistent with Rahmawati et al.'s (2026) description of Gen Z students as mainly consumptive TikTok users. Nwafor et al. (2026) show that Nigerian youths engage on social media partly in pursuit of social validation, which may explain why low-risk acts such as liking and sharing dominate over creating content on a contested issue. Gao et al. (2026) found that active engagement, more than passive viewing, is linked to pro-environmental citizenship, so the predominance of passive use limits the behavioral power of TikTok climate content for most students.

The quantitative intention data and the interview accounts (Theme 4) agree that the awareness–action gap is structural rather than motivational. Students want to act but cite the lack of affordable plastic alternatives, unreliable power supply and economic pressure as the main obstacles. This mirrors the barriers of cost, inconvenience and low perceived efficacy reported by Naz et al. (2026). It is also an instance of reciprocal determinism in Social Cognitive Theory: environmental conditions limit what personal motivation can achieve. However effective TikTok may be at building awareness and

positive intentions, it cannot by itself overcome the conditions that constrain pro-environmental action in Nigeria.

Research Question 5: Students' Personal Experiences with TikTok Climate Activism Videos

Research Question 5 explored how students describe their experiences with TikTok climate videos. The five themes add depth to the quantitative results: algorithmic discovery explains the breadth of exposure (Research Question 1); emotional resonance with familiar places explains the strongest knowledge and attitude effects (Research Questions 2 and 3); and structural barriers explain the intention gap (Research Question 4). From a Uses and Gratifications perspective, students' accounts show cognitive gratification (learning about flooding and desertification), affective gratification (emotional connection and hope) and social gratification (sharing with peers) operating together.

The most significant qualitative finding is the demand for culturally rooted Nigerian climate content. Students' frustration with Western-centered climate narratives reflects a wider representational gap in which African climate experiences, such as herder–farmer conflicts worsened by desertification, coastal communities losing land and smallholders losing harvests to erratic rainfall, are underrepresented on the platform (Denicolai & Domenici, 2025). This is a question of educational effectiveness as well as of cultural preference, since familiar and proximate narratives produced the strongest learning responses in this study. It supports Nwafor and Aghaebe's (2025) case for communicating climate adaptation through

culturally familiar forms. The credibility theme shows that students are neither uncritical consumers nor uniformly skilled fact-checkers: shortcuts such as follower counts and institutional markers are more common than systematic verification, which leaves them exposed to the misleading environmental claims that Pereira and Ha (2024) document on TikTok.

Conclusion

This study examined the influence of TikTok climate activism videos on the climate education of Gen Z students at three Nigerian federal universities, using a convergent parallel mixed-methods design with 467 questionnaire respondents and 30 interviewees. Exposure was high, with 87.2% of students encountering climate activism videos at least weekly, mostly through the algorithmic For You Page. Greater exposure was associated with higher climate knowledge, although knowledge was stronger for global concepts than for Nigeria-specific impacts. Students held positive environmental attitudes, which most attributed in part to TikTok. Behavioral intentions were strongest for low-cost actions and weakest for structurally demanding activism, with structural rather than motivational barriers driving the awareness–action gap. The interviews confirmed incidental algorithmic learning, emotional resonance as a key learning mechanism, uneven media literacy and a widespread desire for Nigerian climate content. The study concludes that TikTok functions as an informal but partial climate educator for Nigerian Gen Z students: it builds awareness and concern effectively, but its contribution to local knowledge and sustained action depends on better content and supportive structural conditions.

Recommendations

Based on the findings, the following recommendations are made:

1. Nigerian universities should integrate TikTok and social media literacy into environmental education curricula, teaching students to evaluate the credibility of climate content, recognize misinformation and connect global climate narratives to local Nigerian realities.
2. Climate communicators, content creators and public broadcasters should produce Nigeria-specific TikTok climate content that features local voices, documents Nigerian climate vulnerabilities and showcases locally feasible adaptation strategies, using the participatory and culturally grounded approaches advocated in development communication.
3. Policymakers should pair digital awareness with infrastructure and policy interventions that make offline action possible, including affordable alternatives to single-use plastics, support for renewable energy adoption and community-based environmental initiatives accessible to students.
4. Climate educators and campus environmental clubs should encourage active engagement, such as creating, commenting on and discussing climate content, since active rather than passive engagement is more closely linked to pro-environmental citizenship.

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