

Effectiveness of AI-Generated Short form Videos in Instilling Environmental Awareness among Gen Z

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ABSTRACT

Artificial Intelligence (AI) is a developed technology to create digital content using prompts. AI-driven websites and applications play a vital role in creating digital content. Social media platforms like YouTube and Instagram are accepting AI-generated content from content creators. The generative AI application helps content creators create videos of their choices using their prompts. There are content creators who create videos related to the environment, nature and the issues faced by humans every day. The short-form environmental videos are created with film songs and music to attract viewers.

The short-form environmental videos will be of 15, 30 and 60 Seconds long, respectively. The videos are posted on YouTube as shorts, which entertain millions of users while scrolling. Visual media creates a deeper understanding on environmental issues. The short-form videos about environmental issues can create awareness among Gen Z (Peiro-Signes, 2025). This research study aims to find the effectiveness of AI-generated short-form environmental videos and their role in creating awareness of environmental issues, climate change and eco-friendly practices. The research will use quantitative methods, specifically surveys with questionnaires to collect data. The collected data will be analyzed, and findings will be presented in the form of charts and graphs.

Keywords: Artificial Intelligence, Environment, Digital Content, Social Media

INTRODUCTION

AI-generated short-form videos are becoming an influential medium for digital communication, particularly among Generation Z. This generation spends significant time on digital platforms and generally prefers visually engaging, concise content that can be quickly consumed. Artificial intelligence tools that automate video creation enable the rapid production of interactive, personalized, and visually appealing content. As environmental problems such as climate change and ecological degradation continue to intensify, there is a growing need for innovative communication methods that can simplify complex environmental information and present it in an engaging way for younger audiences.

Recent developments in digital education suggest that video-based learning can effectively improve environmental knowledge, engagement, and pro-environmental attitudes among young people. Students were easily bored by long, text-based learning methods and often struggled to understand abstract climate-change concepts. Their learning mainly depended on textbooks and teacher explanations, which limited engagement and reduced opportunities for interactive or experiential understanding of complex environmental issues (Indriyanti et al., 2024). Short, mobile-friendly videos about climate change and sustainability align well with Generation Z's media consumption habits and are often well received as learning tools. AI-enhanced video technologies also allow educators and content creators to produce visually rich narratives that connect global environmental challenges with local experiences. This approach can make environmental issues more relatable and meaningful. For Generation Z, who will face the long-term consequences of current environmental decisions, strengthening environmental awareness is not only an educational goal but also an important societal responsibility.

LITERATURE REVIEW

Artificial intelligence is the most advanced technology that is combined with today's social media to make easy content for small content creators. The short form videos that are created using AI prompts that are more realistic and attractive. The AI videos create impact among the social media users in terms of their observation, knowledge and behavior. Numerous studies suggest that a supportive attitude toward sustainable products is one of the strongest and most reliable factors influencing consumers' intentions to buy green products and their actual purchasing behavior. When people value environmental responsibility, they may even be willing to compromise on cost or convenience to stay true to their sustainability principle (Xue et al., 2024). The understanding of AI generated videos was seen to be more likely among the Gen Z users. They are able to identify the AI generated videos and respond to them. AI is a highly efficient technology for designing digital advertising campaigns aimed at promoting environmental awareness and sustainability initiatives. It can be effectively used across multiple campaign stages, including audience analysis, personalized content creation, strategic targeting and continuous performance evaluation to improve campaign impact (Fakhry et al., 2025). The AI videos of the environment create awareness and knowledge on the various issues such as climate change, Sustainable development goals and eco-friendly practices.

Green behavior in a research study defined as the use of AI-based products and technologies to perform tasks in environmentally friendly ways. Such behavior encourages individuals and organizations to adopt sustainable practices that reduce environmental impact, promote efficient resource conservation, and improve waste management processes (Al-Sharafi et al., 2023). The AI generated videos of nature will be more appealing and make the viewer know more about the place or climate issue that is shown. AI generated video can also show an imaginary visual of the environment which can encourage the viewer to think more deeply about environment. Visual quality and originality strongly attract user engagement, capturing attention and encouraging interaction. However, flashy visual effects without a clear purpose or narrative can quickly lead to disengagement. Effective visuals should support the message and communicate meaning rather than create unnecessary visual chaos (Duong et al., 2025). The environmental issues are addressed more easily using AI generated short form videos. The viewers can understand them and take necessary actions towards the same. AI-supported environmental education significantly enhances environmental knowledge and attitudes, increases concern for environmental issues, and makes learning more engaging and less textbook-dependent. Prior work finds a strong positive correlation between AI and green innovation, highlighting AI's role in promoting environmental sustainability (Huang, 2018).

This study used a non-narrative vs. narrative information experimental design to explore the effects of message type and social media metrics (high vs. low numbers of plays) of low-carbon-themed social media short videos on people's willingness to protect the environment. Subjects who watched narrative videos had a higher level of immersion experience, which in turn was significantly and positively correlated with environmental intention, meanwhile, those who watched non-narrative videos experienced a higher level of social influence, which in turn was significantly and positively correlated with environmental intention. (Zheng et al., 2022). Digital tools have a generally positive impact on students' environmental knowledge and sustainability awareness. Immersive environments provide rich sensory and emotional experiences that strengthen engagement and embodied learning, helping transfer to real-world environmental understanding. Digital tools have potential to foster awareness of climate change, biodiversity conservation, pollution prevention, renewable energy, recycling, and environmental policy, as well as pro-environmental attitudes and competencies (Hajj-Hassan et al., 2024). Tourism advertising and tourism promotion have over the years been the core functions of tourism departments and major tourist sites. In relation to the progressing development of new media, the mobile short-form videos, which are short, focused, and have engaging content, appear to be a useful means of advertising tourist destinations. In the digital era, short videos have become a new communication tool between destinations and consumers (Liu et al 2024).

Objective of Research

- To assess the level of awareness on AI generated environmental videos among Gen Z.
- To examine the understanding of environmental issues through AI-generated nature shorts from videos.

- To analyze the impact of AI generated short-form videos among Gen Z’s environmental attitudes and behavioral intentions.
- To identify the awareness of sustainable Development Goals among Gen Z.

METHODOLOGY

The research on short form video awareness was conducted using awareness quantitative methodology. The samples were collected for Chennai. The survey research tool was used to collect data from samples. A questionnaire was prepared to collect data from the samples. The sample size of the research was determined as 200. Questions pertaining to environmental awareness, sustainable development and climate change were asked in the questionnaire. The collected data was analyzed and represented statistical analysis.

FINDINGS

The survey data collected from Gen Z was analyzed to find the average of the total respondents towards various questions raised. The data analysis also includes the analysis of variance tests to find the significance between groups. The research findings identify the number of respondents who watched AI generated shortform videos related to environment issues was 65%. The information presented in AI-generated environmental videos is easy to remember was agreed by 62%. The AI videos are visually engaging to watch was agreed by 61.5%. AI generated environmental videos positively influence my attitude toward protecting the environment was agreed by 56.5% of respondents. AI-generated short videos are more effective when compared to traditional media, in creating awareness on environmental issues was agreed by 52.5% of them. Short form videos influence on sustainable development goals was agreed by 50%. The above research data shows the impact of AI generated shortform videos among Gen Z.

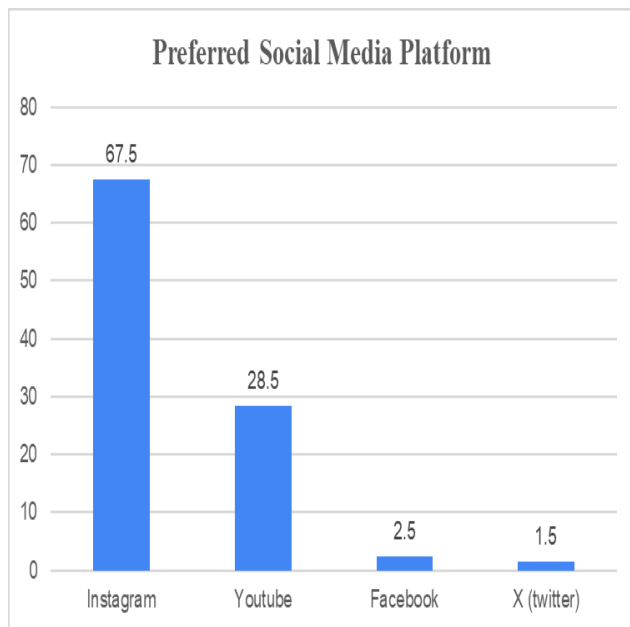


Figure 1

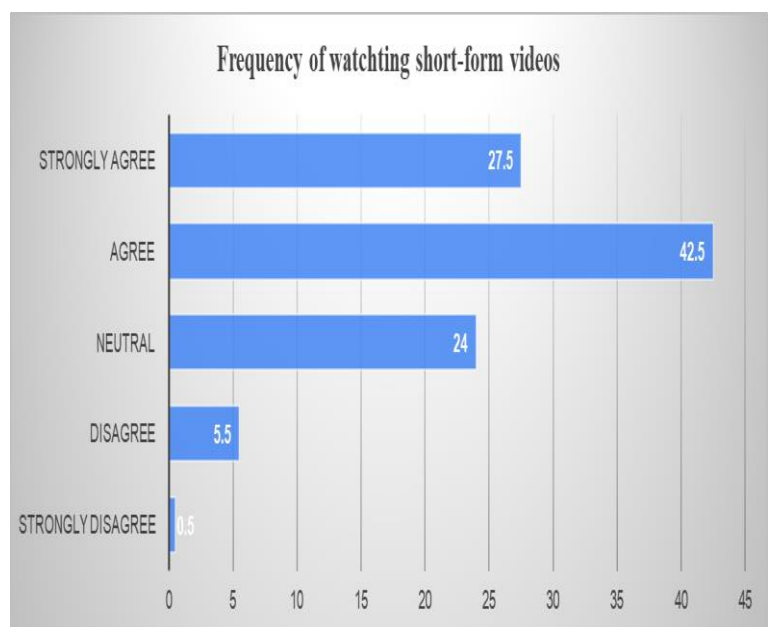


Figure - 2

Figure 1 represents the preference of social media usage among the respondents. The research data identifies that 67.5% of the respondents are using Instagram, 28.5% of them using YouTube, 2.5% of them using Facebook and 1.5% of them use twitter (X) for watching AI generated environmental videos.

Figure 2 represents the frequency distribution of respondents watching short-form videos. The survey data represents 27.5% of respondents stating to strongly agree and 42.5% respondents to states to agree to the statement where 24% of them states neutral, 5.5% of disagree and only 0.5% of the respondents strongly disagree. This states 70% of respondents have the frequency of watching short form videos.

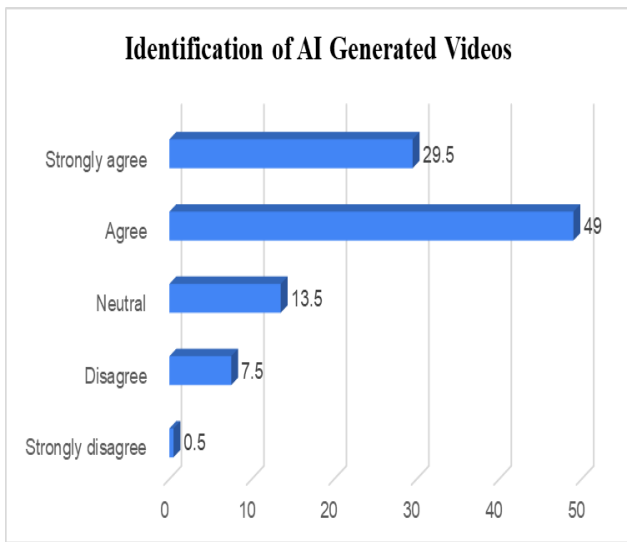


Figure 3

Figure 3 represents data for identification of AI generated videos. The survey finds that 29.5% of respondents have stated strongly agree, 49% of them responded to agree where 13.5% of them responded to neutral and 7.5% of them disagree and 0.5% of them strongly disagree with the statement. The finding states 78.5% of the respondents can identify AI-generated content.

Figur4

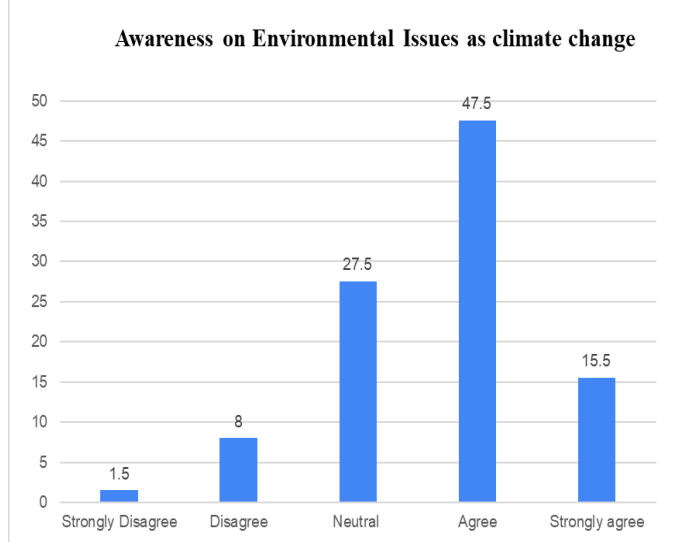


Figure 4 represents survey data of awareness on environmental issues such as climate change. The collected data states that 15.5% of respondents strongly agree, 47.5% of them agree, 27.5% of them are neutral to the statement. A minimal number such as 8% of them disagree and 1.5% of them strongly disagree with the statement. Therefore, it is noted that 63% of the respondents are aware about the environmental issues such as climate change through short form videos.

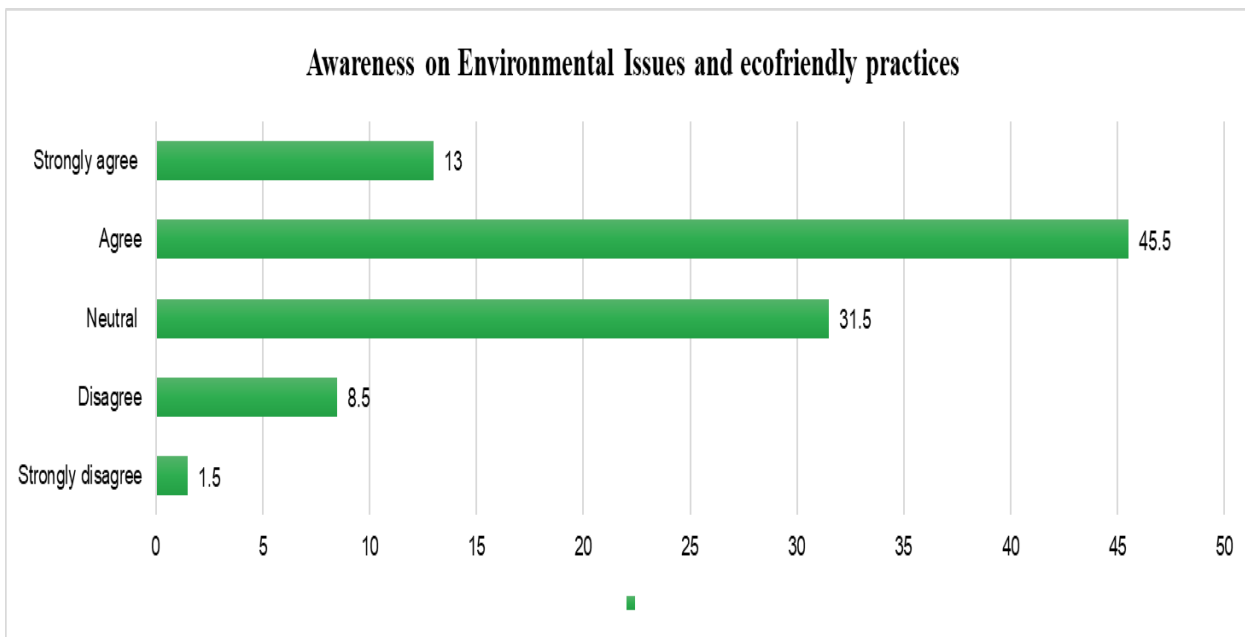


Figure 5

Ecofriendly practices are much needed for Gen Z. Figure 5 represents data of respondents stating 13% of them strongly aware, 45.5% of respondents are aware, 31.5% of them stated neutral, 8.5% of them stated disagree and 1.5% of respondents strongly disagree with the statement. The highest percentage of 58.5% of respondents are aware about the environmental issues as ecofriendly practices.

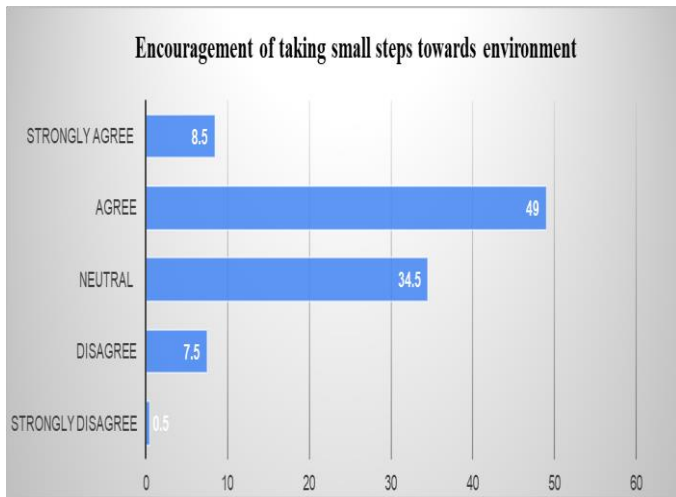


Figure 6

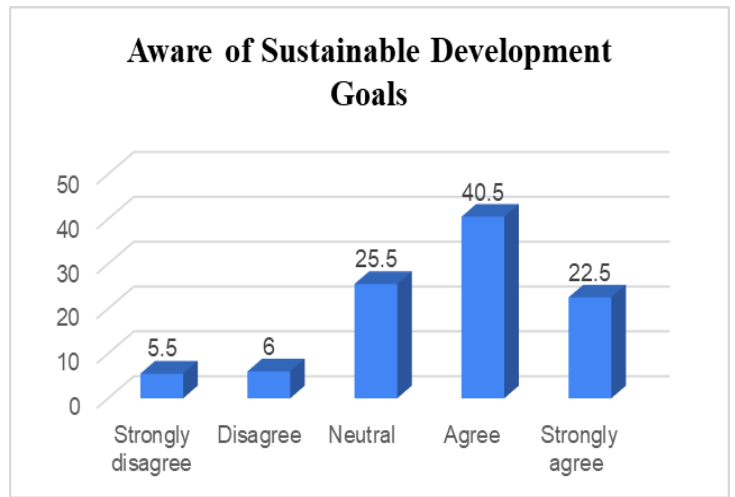


Figure 7

Figure 6 represents the encouragement of respondents to take actions in helping the environment such as Saving Water, Efficient Power Consumption, Planting Trees. The data shows 8.5% of them strongly agree, 49% of them agree, 34.5% of them state neutral, 7.5% of them stated disagree and a very low score of 0.5% of them stated strongly disagree. This clearly shows that 57.5% of respondents show interest towards helping the environment. The impact of AI shortform videos are seen here with 57.5%. Individuals who reported higher enjoyment of AI-generated stories also tended to demonstrate greater concern for environmental issues and were more likely to engage in behaviors that support environmental protection and sustainability in their daily lives.(Chen 2025).

Figure 7 represents the awareness of sustainable goals among Gen Z. The finding states that 40.5% of them responded to agree, 22.5% of them stated Strongly agree, 25.5% of them stated neutral, 6% of them stated disagree and 5.5% of them responded to strongly disagree. Therefore 63% of the respondents are aware of Sustainable development goals.

Anova: Single Factor						
SUMMARY						
Groups	Count	Sum	Average	Variance		
Education level	200	227	1.135	0.1374		
SDG	200	698.25	3.4912	0.5241		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	555.1914	1	555.1914	1678.409	0.00	3.8649
Within Groups	131.6522	398	0.3307			
Total	686.8436	399				

A One-way ANOVA was conducted to compare the Education level and awareness on Sustainable Development Goals. The value of f-value is 1678.409, which reaches significance with a p-value of 0.00 (which is less than 0.05 alpha level). There is a significant difference in the Educational Level and awareness on Sustainable Development Goals. The MS value is 555.19 between groups and 0.33 within groups suggest that there is a significant difference between two groups. Therefore, the $p < 0.05$ states that null hypothesis is rejected. The education of the participants has a significant influence on the awareness of sustainable development goals.

Anova: Single Factor						
SUMMARY						
Groups	Count	Sum	Average	Variance		
Education	200	227	1.135	0.1374		
Awareness	200	748	3.74	0.3223		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	678.6025	1	678.6025	2951.4622	0.00	3.8649
Within Groups	91.5084	398	0.2299			
Total	770.1109	399				

A One-way ANOVA was conducted to compare the Education level and understanding of AI generated environmental content and its awareness. The value of f-value is 2774.04, which reaches significance with a p-value of 0.00 (which is less than 0.05 alpha level). There is a significant difference in the Educational Level and AI generated environmental content and its awareness. The MS value is 536.50 between groups and 0.19 within groups suggest that there is a significant difference between two groups. Therefore, the $p < 0.05$ states that null hypothesis is rejected. The education of the participants has a significant influence on the AI generated environmental content and its awareness.

CONCLUSION

The AI generated short form videos created by social media content creators has made the viewers to engage themselves in watching the interesting environmental content. AI generated content makes the viewers watch more imaginary nature related content. The finding of the research study states that 67.5% of the respondents are using Instagram social media platform. GenAI can personalize learning, create interactive simulations of ecosystems, support futures thinking, and generate scenarios or narratives that help students explore complex human–environment interactions and design sustainable solutions (Henriksen et al., 2024) The frequency of watching short form videos and identifying the AI generated video content shows that Gen Z has a predominantly a wide exposure towards the AI generated environmental videos. The study finds that the impact on sustainable development goals adoption was seen to highest with 59%. Artificial intelligence has the potential to address these challenges and enhance sustainable education by improving access to quality education, creating personalized learning experiences, and supporting data- driven decision-making. Sustainable education aims to develop the competencies needed to meet the social and environmental needs of present and future generations (Lin et al., 2023). The analysis of variance results concludes that there is a significant difference between the educational level and awareness on Ai generated video and sustainable development goals. Rimadias 2025, in his study identifies that as green behavior increases among educated Gen Z individuals in Indonesia, environmental sustainability also improves. This effect is particularly evident through AI-enabled actions, such as reducing paper usage, conserving resources, and minimizing travel-related carbon emissions. Thus, the research concludes that AI generated short from videos are more effective in creating environmental awareness among Gen Z.

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