LEVERAGING NARRATIVE IMAGES THROUGH ENVIRONMENTAL DEGRADATION MESSAGES FOR ENVIRONMENTAL AWARENESS IN KAFANCHAN CITY, NIGERIA

Timothy Titus[1], Nurul Hanim Romainoor[2]*
& Muhammad Uzair Ismail[3]
*Corresponding Author
[1,2]*Department of Graphics Communication, Universiti Sains Malaysia*
[3]*Department of Fine Arts, Universiti Sains Malaysia*

tim@student.usm.my, hanim.romainoor@usm.my
uzairismail@usm.my

ABSTRACT

The environment in Kafanchan, Nigeria deteriorates daily due to human factors such as refuse dumping, bush burning, deforestation, and open grazing. Narrative Images have been acknowledged to significantly impact molding perceptions, attitudes, and behaviours across many fields. This article explores the potential of narrative images as a compelling tool for raising environmental awareness. Narrative images, such as photographs, are essential in communicating and addressing environmental issues, engaging audiences, and motivating positive action. This study aims to raise environmental awareness in Kafanchan, Nigeria by leveraging narrative images. The study is committed to capture photographs that depict the various environmental problems in Kafanchan City, Nigeria and to evaluate the impact of images in conveying environmental degradation messages. Photography was used as a method to capture images that depict environmental concerns in Kafanchan City, Nigeria, analysed using visual narrative method. The images used for this study were selected using inclusion and exclusion criteria. The photographs categorised into bush burning, deforestation, and refuse dumping, erosion, open grazing and poster pasting. Interview was used to get the opinion of the respondents about the impact of images in conveying environmental degradation

messages. Most of the participants rated the images to have a very strong and strong impact. However, 14.30% believed images 4, 9 and 11 had a weak impact. 7.10% also believed images 6 and 7 have a weak impact. The authors argue that leveraging narrative images for environmental awareness is an effective medium in visual communication.

INTRODUCTION

Kafanchan is a renowned city located in the southern region of Kaduna State in Nigeria, which is the headquarters of Jema'a Local Government Area (LGA). The city is widely recognised as a prominent transportation hub due to the Nigerian Railway Corporation (NRC) station established in 1927, which boasts rail connections to major cities like Port Harcourt, Enugu, Jos, Bauchi, and Maiduguri. Kafanchan City has a population of 83,092, accounting for 33.5% of the overall population of Jema'a LGA., which is 278,202 based on the 2006 census by National Population Commission of Nigeria (Mallam & Binboi). However, the environment in Kafanchan City, Nigeria heavily deteriorates every day due to human factors such as refuse dumping, bush burning, deforestation, and open grazing. Among the concerns frequently highlighted is global warming, which is largely attributed to human activities that have resulted in the depletion and leakage of the ozone layer. This depletion leaves the Earth's surface exposed to direct sunlight and is believed by scientists to be caused primarily by human actions, particularly those that contribute to air pollution (Andenumra & Oyeoku, 2011). There are two primary phenomena that contribute to environmental degradation in Kafanchan: natural factors (such as floods, erosion, and pollution) and human factors (such as refuse dumping, bush burning, and deforestation) (Mande, 2020; Maurya et al., 2020). The lack of understanding of environmental issues by Policymakers hampers their ability to resolve them (Maidin et al., 2021). It is crucial to acknowledge the authentic challenges of environmental degradation (Kamarudin et al., 2022).

According to Miller et al. (2007), environments, whether natural or built, shape the backdrop for narratives, influencing characters' experiences

and plot developments. Additionally, stories can reflect societal attitudes towards the environment, addressing issues like climate change or human impact. Consequently, narratives have the power to shape perceptions and attitudes of people towards the environment. By providing insights, imparting values, and exposing individuals to novel experiences, stories have immense significance towards the richness of the human experience. Nevertheless, storytelling's effectiveness and enchantment often need to be noticed, as many need to recognise the impact of narratives. A well-crafted tale can take its audience to different realms and periods, offer glimpses into the workings of the mind, and reveal secrets or stir admiration for heroic deeds (Miller et al., 2007).

In terms of communication, narratives convey what occurred to particular people and how they felt during those moments. Comprehending how the audience perceives images to communicate environmental messages effectively is imperative because interpreting environmental conservation related messages through visual media significantly impacts the successful conveyance of the intended message to the targeted audience (Owen, 2018). While narratives have been predominantly scrutinised in literary/ film theory and criticism, they are utilised across various domains where providing a coherent storyline or comprehensible concept can facilitate the Communication or exploration of information in a specific context. It includes sharing experiences to deepen understanding or provoke transformation (Short et al., 2020)

Efforts have been made to create environmental awareness by some Nigerian artists who regard aesthetics as being alarmed by the lack of proactive environmental protection or conservation measures. Nigerian contemporary artists like Onyirioha Alozie, Anike Ekene, Ochiebo Thaddeus, Eke Bright, and Anatsui El used and manipulated waste materials like scraps (metal), plastics, wrappers of biscuits, cans of beverage, corks, and sachets of water to create artworks that reflect their environmental concerns and advocates for solutions. However, these artworks are installations (example shown in Figures 1 & 2), and they cannot have the same level of direct communication impact as narrative images.

Figure 1. The conversation by El Anatsui, 2014.

Photo: Jonathan Greet. Courtesy of the October Gallery in London.
Source: Online https://artafricamagazine.org/the-innovation-issue-13-3-a-journey-of-materiality-and-art-practice-in-conversation-with-el-anatsui/

Figure 2. Acid Rain by Bright Ugochukwu Eke, 2009

Source: http://letters-from-the-sky-project.blogspot.com/2011/08/artists-on-climate-change-bright.html

Morgan (2018) also made a conscious effort to address environmental issues in Nigeria through posters. These posters (Figures 3, 4 & 5) featured imagery captured from everyday practices, allowing viewers to connect with the localised images and become aware of their actions. However, his posters could not communicate environmental messages effectively because the images were more aesthetic and abstract in form.
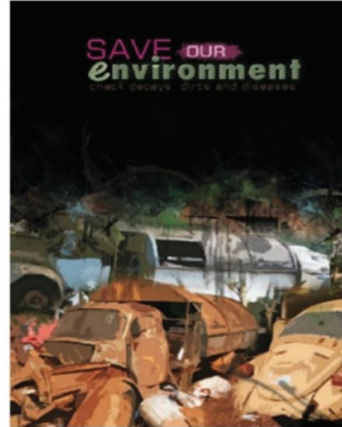
Figure 3. Garbage in, Garbage Out

Figure 4. Save our Environment

Source: Morgan (2018)

Figure 5a & b. Disadvantage (posters)

Source: Morgan (2018)

This study aims to raise environmental awareness in Kafanchan, Nigeria through Narrative images with a focus on factors that cause environmental degradation.

LITERATURE REVIEW

Environmental Degradation in Kafanchan, Nigeria

Environmental degradation in Kafanchan, Nigeria, is a multifaceted issue involving various detrimental activities. Bush burning, deforestation, erosion, refuse dumping, open grazing, and poster pasting collectively contribute to the degradation. These activities compromise the region's ecological balance, biodiversity, and overall environmental health. Addressing these concerns is crucial for sustainable development and the well-being of the local community.

Bush Burning

In Kafanchan, Nigeria, there are no natural fires in our forests, as seen in other countries. Instead, humans intentionally set the surrounding bushes on fire, threatening the entire ecosystem. This practice results in the harmful effects of heat on both the soil and vegetation (Gill, 2023). These burning activities commonly occur during the dry season when the plant leaves are dry and highly flammable (October-March). The burning process has significant environmental consequences for the forest soil (Ajikah, 2022) and other organisms within the mangrove forest (Numbere, 2022). The intense heat causes soil chemicals to vaporise and enter the atmosphere, eventually returning as acid rain (Zhou et al., 2022). Moreover, these chemicals in a liquefied form percolate through the groundwater aquifer during rainfall, contaminating the groundwater source and neighbouring water bodies (Lee et al., 2022). The raging fires during the burning process result in the death of grasses and organisms inhabiting the soil. One major issue with bush burning is that it disrupts the structure of the soil (Filkov et al., 2023) and leads to the Erosion of chemicals into the surrounding swampy mangrove soil and water.

Deforestation

Legal and illegal logging is another prominent cause of deforestation in Nigeria, often linked to corruption and weak law enforcement. The Food and Agricultural Organization (FAO) estimates that Nigerians destroy approximately 600,000 hectares of forest annually through careless

exploitation and inadequate management. This rampant Deforestation has contributed to various environmental issues in the country, including soil erosion, infertility, desertification, and flooding (Isife, 2012). Hence, deforestation poses a critical challenge in Kafanchan Nigeria, impacting both the environment and the livelihoods of its people. A significant deforestation challenge is confronting the entire country due to its rapid expansion in population and the increasing need for timber, fuelwood, and agricultural land.

Erosion

Soil erosion poses a significant threat to sustained agricultural production in not only Kafanchan, but nationwide, representing a crucial form of land degradation. The three Northern Savanna Regions, particularly the Upper East Region of the nation, have been severely impacted by water erosion, leading to the destruction of large land areas, reduced soil depth, declining soil fertility, and the siltation of rivers and reservoirs (Adwubi et al., 2009). Forest conversion into cropland is critical in this process, as it diminishes vegetative cover and accelerates soil erosion (Aniah et al., 2013). Furthermore, land use changes can alter the hydrological patterns of runoff, reducing infiltration and increasing stream flow during and after rainfall events.

In Nigeria, a significant portion of the soils is characterised by light-textured surface horizons and extensive areas of shallow concretionary and rocky soils, leading to limited water and nutrient retention capabilities, making them less conducive for agriculture (Quansah et al., 2000).

Refuse Dumping

Dumping of refuse, even in public places, has unfortunately become common in Kafanchan, Nigeria. Waste is disposed of in gutters and water channels, leading to blockages and flooding during the rainy season (Mande, 2020). The activity also results in environmental pollution, which can be categorized into three groups: air or atmospheric pollution, aquatic or water pollution, and land or surface area pollution. Human activities on Earth's surface have significantly deteriorated the quality of the lower atmosphere. Factors such as industrial growth, urbanisation, and combustion-related

activities have resulted in an excessive release of carbon monoxide. This harmful gas reacts with blood vessels, impeding oxygen uptake and leading to suffocation (Mande, 2020).

Open Grazing

Estimates indicate that approximately 50-75 per cent of the land area in states like Bauchi, Borno, Gombe, Jigawa, Kano, Katsina, Kebbi, Sokoto, Yobe, and Zamfara is gradually undergoing desertification. This significant desertification has adversely affected agriculture and human livelihoods, prompting many herders, particularly the Fulani community, to migrate to Kaduna State in search of fertile land (Mande, 2020). Initially, the migration of pastoralists from the northern regions to Kaduna State, specifically the southern part, was seasonal. During this time, herders spent the months from December to May before returning to their places of origin (Agboola, 2020).

In the last two decades, the availability of pastures in the far north has significantly decreased, leading herders to extend their stay from December to June or even July, particularly during the rainy season (Agboola, 2020). More recently, some herders have decided to permanently graze their herds in the Kafanchan communities of Jema'a Local Government Area due to the availability of suitable land. Fulani herders and their grazing activities have threatened local farmers significantly. The cattle consume crops, trees are cut down to feed them, and overgrazing has led to land degradation, transforming the area into a semi-desert.

Poster Pasting

The practice of indiscriminate poster pasting for political and religious purposes has become increasingly common and accepted in Kafanchan Nigeria. This act degrades the beauty of the environment and is encouraged because even government officials and policymakers, who should be monitoring and preventing such practices, are often involved. These pasted posters are left unremoved, gathering dust, and becoming breeding grounds for microorganisms that can cause respiratory diseases. When these posters, made of cloth or paper, are pasted on buildings, roundabouts, and billboards, the result becomes eyesores. Removing the posters can release particles that may trigger lung diseases like asthma, affecting the health

officers or assistants tasked with their removal (Ogunbodede & Rufai, 2014). Consequently, the increasing number of people suffering from allergies may be linked to this source of pollution. Moreover, a significant amount of paper waste generated in Nigerian cities, including Kafanchan City, can be attributed to posters and banners. Attempts to reduce paper waste through paperless actions, such as e-advertisements, must be more effective. Instead of reducing paper waste in cities, its volume continues to increase (Martindale, 2010). The visual pollution caused by the excessive poster pasting by politicians, religious bodies, and corporate entities has risen without a corresponding effort to remove them once the purpose is fulfilled.

In conclusion, the study on environmental degradation in Kafanchan, Nigeria, which includes various issues such as bush burning, deforestation, erosion, refuse dumping, open grazing, and poster pasting, sheds light on the severity of environmental problems facing the region. Each of these issues has been thoroughly examined, revealing their distinct impacts on the environment and the community. Therefore, narrative images would be utilised for this study given that they are a compelling and multifaceted documentation method for revealing the environmental degradation problems facing Kafanchan, Nigeria. Narrative images will visually convey the issues and add depth, context, and emotional significance to the research.

Narrative Images

Narrative images are any illustration or image other than a table. Narrative images are visual representations that tell a story or convey a message. Examples of narrative images include photographs, paintings, drawings, and infographics. Narrative images are visual representations, typically in pictures or illustrations, that tell a story or convey a message. These images are carefully composed to capture a specific moment or concept, often to evoke emotions, spark conversations, or convey information (Cleland et al., 2021).

Narrative images go beyond mere documentation. Narrative images aim to engage the viewer intellectually and emotionally, prompting them to think, feel, and reflect on the subject matter. In the context of environmental awareness, photographic images are a powerful tool for communicating complex environmental issues, such as biodiversity loss,

climate change, pollution, deforestation, and other ecological concerns. By using compelling visual storytelling, these images can captivate audiences and inspire them to take necessary action (Seelig, 2015).For quite some time, photographers have employed the camera to illuminate various issues impacting people, locations, and spaces. In the past, nature photographers focused on capturing the land's pristine beauty and nature, presenting an original world that required conservation efforts (Blewitt, 2010; Hansen & MacHin, 2008; Ward, 2008; Wells, 2011). These researchers collaborated with conservationists to influence public opinion and lawmakers, creating America's National Parks and laying the foundation for the environmental movement.
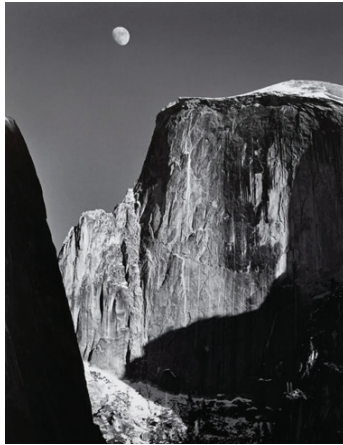
Figure 6. Moon and half Dome, 1960

Photographer: Ansel Adams
Source: The Ansel Adams Gallery (online); Ross (2019)

Ansel Adams effectively employed the aesthetics of the wilderness through photographic compositions to advocate for the preservation of vulnerable landscapes (Cahn, 1981). One of Ansel Adams' enduring masterpieces is the photograph titled "Moon and Half Dome," showcasing his prowess as a renowned American photographer and environmentalist. Widely regarded as one of his most mature works, the image exemplifies the artistic refinement and confidence that comes with age, as noted by the Ansel Adams Gallery (online). This photograph captures Ansel's photographic philosophy, revealing only the moon, the rock's appearance, and the photographer's intent. It serves as evidence to Ansel's vibrant creative ability and lasting appreciation for the natural beauty of Yosemite National

Park. Hence, this picture stands as a symbol of Ansel's impact on individuals who value both nature and the art of photography.

Therefore, understanding how the audience interprets images when conveying environmental messages is vital. This understanding is essential because of how ecological conservation messages through visual media play a crucial role in the successful conveyance of messages to the specific target audience (Owen, 2018). Hence, this study will use photographs as narrative images given that they tell a story about environmental issues in Kafanchan, Nigeria.

Advantages of Narrative Images in Raising Environmental Awareness

Narrative images can *evoke emotions* and create a connection between issues. With the viewer. They can elicit empathy, concern, and a sense of urgency, motivating individuals to act (Del Moral Pérez et al., 2023; Li, 2021). Visual storytelling in photography is a powerful tool for emotionally connecting the viewer and the photographer's subject. Narrative can help breathe life into the story and create emotional bonds with the audience. Photographers can create a more robust and evocative story by choosing, editing, and arranging images that convey the desired emotion (Flemming et al., 2018). Images can capture attention and evoke emotions, making them an effective way to convey large amounts of information quickly.

Engagement is another advantage of using narrative images in raising awareness of environmental issues. Narrative images capture attention and engage the viewer. Narrative images can tell a story, convey a message, and communicate complex environmental issues visually compellingly. It can hold the viewer's interest and increase their understanding of the topic (Del Moral Pérez et al., n.d.; Li, 2021). A study investigating the impact of audio and visual narratives on engagement found that self-reported engagement was affected by the delivery medium of the story (Li, 2021). The study used a narrative engagement scale to measure engagement across four dimensions of experiential engagement related to physiological measures (Richardson et al., 2020). Recipients of narratives create mental images of the story, and using narrative engagement concepts can help create more engaging stories (Van Leeuwen et al., 2016).

Narrative images are more *remembered* than text-only information. The combination of visuals and storytelling can enhance the retention of information and increase the likelihood of individuals recalling the environmental issue and its impact (Del Moral Pérez et al., 2023). Using narrative images can effectively raise environmental issues while making the content accessible to a broader audience. Narrative images can improve narrative accessibility in various mediums, such as video games. By taking advantage of the medium, creative solutions that can make the narrative more accessible to a broader audience are propounded (Spiegel et al., 2020).

Using narrative images can effectively promote *behaviour change* related to environmental issues. A narrative effectively changes beliefs, attitudes, and behaviours related to environmental issues (McCormack et al., 2021). The audience can be engaged and persuaded to take action by using narrative images. Narrative methods improve environmental awareness and attitudes in people. Imagery can increase readiness for action and promote enacting imagined behaviour related to environmental issues (Boomsma et al., 2016; Sabherwal & Shreedhar, 2022).

Therefore, exploring the potential of narrative images in environmental Communication could lead to innovative ways of inspiring positive change. Therefore, narrative images are used in this research to evoke emotions and connect the viewers and the environmental issues being conveyed, raise awareness, capture the viewers' attention and make a call to behaviour change towards the environment.

METHODOLOGY

Research Design

An exploratory research design with a qualitative research method was used for this study. It is essential to producing high-quality research (Romney & Johnson, 2018). Without the desire to discover new information, research will become stagnant (Thomas & Lawal, 2020). Conversely, non-exploratory research is limited to repeating what is already known. For this study, an exploratory research design was utilised as it provides an opportunity to

gain new knowledge and insights. This approach is particularly fitting for the study because it does not necessitate a large sample size. It saves time and makes it simpler to conduct. Researchers who use this approach value an inductive style of reasoning and acknowledge the importance of understanding individual perspectives (Creswell & Creswell, 2017). This study involves capturing images that depict different environmental issues in Kafanchan City, Nigeria, to create awareness to conserve the environment. The study used a qualitative method to get the opinion of the research participants through interviews on the images (photographs) taken for the study.

Sampling

The target population for this study is Kafanchan City, Nigeria. In this research, the process of participants' selection involved the use of stratified sampling to ensure a good representation of the sample. Stratified sampling is a method where the population is divided into distinct subgroups or strata based on certain characteristics that are relevant to the research (Krippendorf, 2016). In this case, the strata were defined by employment status, consisting of civil servants and non-government workers. Each stratum was then treated as an independent subgroup, and participants were randomly selected from each stratum using simple random sampling.

Simple random sampling is a technique in which every individual in the population has an equal chance of being selected (Krippendorf, 2016). For this study, within each stratum, a random selection process was employed to choose 7 participants from civil servants and 7 participants from the non-government workers categories. This ensured that both civil servants and non-government workers were equally represented in the final sample of 14 participants.

Instruments

Choosing an appropriate data collection instrument is crucial in the research process, and it largely depends on the Nature of the data being collected and the methodology employed (Setia, 2018; Sekeran & Bougie, 2016). Therefore, this study collected qualitative data by using photography (image-making) and interviews. The interview questions contained 12

images, with 2 representing each of the categories of environmental degradation images. The interview questions consisted of close-ended (Likert scale) and open-ended questions to be responded to.

Data Collection and Analysis

In this study, random shots were taken, but organized issues based on six categories. The student researcher went to different locations where the six categories of environmental problems occur in Kafanchan City at different times and dates. After taking pictures depicting various aspects of environmental degradation in the City, the authors selected the captured images for interview. This study interviewed 14 people, including seven civil servants and seven non-government workers in Kafanchan City, Nigeria. The study participants were selected using the stratified sampling technique. The participants rated their responses on a 3-point Likert Scale of Very Strong, Strong, and Weak. Furthermore, participants provided additional comments to express their opinions on the questions related to each image, which were based on theme, plot, character, viewpoint, and style with general views.

Narrative analysis was used for this study. When applied to narrative images, narrative analysis can be regarded as a form of narrative that utilises images to depict (convey) a message or a story. In narrative images, narrative analysis examines the elements of photographs (visual), including composition, lighting, and subject matter, to comprehend how they contribute to the narrative being shown (Rose, 2016). The rating of the impact of photographic images on conveying environmental degradation messages based on the Likert scale (Very Strong, Strong, and Weak) was analysed using simple percentages. The formula for calculating a simple percentage is:

Percentage $= \frac{NR}{NP}$ x $100 = \%$

Where:

NR = The number of Responses.

NP = Number of Participants

Example: $\frac{14}{14} x 100 = 100\%$

RESULTS AND DISCUSSION

Capturing of Photographs

Photographs depicting various environmental degradation issues happening in Kafanchan City were taken in different locations and at different dates. The student researcher took pictures with a Nikon D3000 camera and smartphone from 2nd January 2023 to 30th February 2023. The number of images taken were 281.

Image selection and Categorisation

The captured photographs were carefully selected by the authors using stratified random sampling. The 281 images earlier captured were divided into strata, 40 images were randomly chosen to give every image the probability of being selected. The authors later used four inclusion and exclusion criteria to further select 12 images from the 40. The criteria include: Clarity (sharpness, contrast and exposure), subject matter (based on the categories), composition (combination of subject matter and issue), and quality (SLR and smartphone). These images were classified into 6 categories based on the environmental issue they depict such as bush burning, deforestation, refuse dumping, erosion, open grazing and poster pasting. 2 images representing each category of environmental issues that formed the final outcome were used to interview the respondents after viewing them.

Rating the impact of images in conveying environmental degradation messages

Table 1. Descriptive Statistics of the Impact of Photographic Images on Conveying Environmental Degradation Messages

S/N	ITEM(S)	VS	S	W	TOTAL
1	Image 1. Bush Burning. How would you rate the impact of this image in conveying environmental degradation message in your locality?	6 42.90%	8 57.10%	0 0%	14 100%

2	Image 2. Bush Burning. How would you rate the impact of this image in conveying an environmental degradation message in your locality?	12 85%	2 15	0 0%	14 100%
3	Image 3. Deforestation. How would you rate the impact of this image in conveying an environmental degradation message in your locality?	8 57.10%	6 42.90%	0 0%	14 100%
4	Image 4. Deforestation. How would you rate the impact of this image in conveying an environmental degradation message in your locality?	6 43%	6 43%	2 14%	14 100%
5	Image 5. Refuse Dumping. How would you rate the impact of this image in conveying an environmental degradation message in your locality?	9 64.30%	5 35.70%	0 0%	14 100%
6	Image 6. Refuse Dumping. How would you rate the impact of this image in conveying an environmental degradation message in your locality?	9 64.30%	4 28.60%	1 7.10%	14 100%
7	Image 7. Erosion. How would you rate the impact of this image in conveying an environmental degradation message in your locality?	10 71.40%	4 28.60%	0%	14 100%
8	Image 8. Erosion. How would you rate the impact of this image in conveying an environmental degradation message in your locality?	8 57.10%	6 42.90%	0 0%	14 100%
9	Image 9. Open Grazing. How would you rate the impact of this image in conveying an environmental degradation message in your locality?	4 28.60%	8 57.10%	2 14.30%	14 100%
10	Image 10. Open Grazing. How would you rate the impact of this image in conveying an environmental degradation message in your locality?	8 51.10%	5 35.70%	1 7.10%	14 100%
11	Image 11. Poster Pasting. How would you rate the impact of this image in conveying an environmental degradation message in your locality?	5 35.70%	7 50%	2 14.30%	14 100%
12	Image 12. Poster Pasting. How would you rate the impact of this image in conveying an environmental degradation message in your locality?	7 50%	7 50%	0 0%	14 100%

The results in Table 1 show the rating of the impact of images on conveying environmental degradation messages by the study participants.

Table 2 indicates that 42.90% of the respondents believe that Image 1 strongly conveyed the message of environmental degradation, while 57.10% rated it as having a very strong impact. It is therefore concluded that Image

1 conveys an environmental degradation message. In the case of image 2, 85% rated it as having a very strong impact, 15% of the respondents believed that it has a strong impact. The result indicates that Image 2 has an impact in conveying an environmental degradation message. 57.10% of the respondents realised image 3 to have a very strong impact, but 42.90% rated it as having a strong impact. From the result, a conclusion can be drawn that Image 3 has an impact in conveying an environmental degradation message. 43% of the respondents believed that image 4 had a very strong impact, and another 43% also believed that it had a very strong impact. In comparison, 14% viewed it as presenting a weak impact. It is clear from this result that Image 4 impacts conveying the environmental degradation message. The ratings on image 5 indicate that 64.30% of the respondents understood the image as having a very strong impact on conveying environmental degradation messages, but 35.70% assessed it as having a strong impact. According to 64.3% of the respondents, image 6 had a very strong impact, 28.6% believed it to have a strong impact, and 7.1% considered it to have a weak impact. Regarding image 7, 71.40% of the respondents agreed that it had a very strong impact, while 28.60% believed it had a strong impact. 57.10% of the respondents rated image 8 as having a very strong impact, and 42.90% considered it to have a strong impact. Based on the ratings provided by 28.60% of the respondents, image 9 had a very strong impact, 57.10% judged it had a strong impact, and 14.30% showed a weak impact. 51.10% of the respondents suggested that image 10 had a very strong impact, while 35.70% evaluated it as having a strong impact, and 14.30% perceived it to have a weak impact. Image 11 was evaluated as having a very strong impact by 35.70% of the respondents. In comparison, 50% rated it as having a strong impact, and 14.30% agreed that the Image had a weak impact. Finally, the results for image 12 signify that 50% of the respondents believed it to have a very strong impact. In comparison, the other 50% perceived it strongly impacted, conveying the message of environmental degradation. The results in Table 2 show that photographic images significantly impact conveying environmental degradation messages.

Narrative Analysis of Images

Below is the Narrative analysis of the 12 images used in this study.

Image 1　　　　　　　　　　　**Image 2**

　　　

Title: Bush Burning　　　　　　　Title: Bush Burning
Location: Katsit　　　　　　　　　Location: Zauru
Medium: Photography　　　　　　Medium: Photography
Photographer: Timothy Titus　　　Photographer: Timothy Titus

The central plot of images 1 and 2 is the "danger of fire on the soil." The images tell a story of the destructive force of fire, particularly within the natural environment, and the immediate consequences it poses. The visual narrative presented in the photographs emphasise the vivid and intense colours, specifically the bright, fiery reds, grays and blues and oranges, to evoke a strong emotional response from the viewers. The intense colours create a sense of urgency, emphasizing the severity of the situation and eliciting a visceral reaction from those who observe the image.

The photographs also serve as a stark illustration of how human actions are damaging the natural environment, especially the forested areas in and around Katsit (image 1) and Zauru (image 2) areas. Bush burning, often practised for various reasons, including clearing land for agriculture or other land-use purposes, is depicted as a perilous activity. The images show the forested area engulfed in flames, with trees and vegetation ablaze, representing the immediate and long-term consequences of this destructive practice.

Image 1

Title: Deforestation.
Location: Mallagum
Medium: Photography
Photographer: Timothy Titus

Image 2

Title: Deforestation
Location: Garaje
Medium: Photography
Photographer: Timothy Titus

Image 3 portrays a distressing scene of deforestation, shedding light on the environmental consequences of palm wine tapping by the people of Mallagum Kagoro. The central plot of the image revolves around the destruction of various trees, particularly commercial trees, without any replacement or sustainable management. Image 4 depicts harvested woods from the forest for commercial purposes. The image shows a depot for selling firewood. The primary narrative conveyed by both photographs is the devastating impact of deforestation, specifically in the context of palm wine tapping and destruction of the forests for firewood. Image 3 showcases the aftermath of this activity, with numerous severely damaged. The trees, which likely served as a source of livelihood for the local community due to their commercial value, have been exploited without consideration for their replenishment or the long-term sustainability of the environment.

Image 5

Title: Refuse Dumping
Location: Kafanchan
Medium: Photography
Photographer: Timothy Titus

Image 6

Title: Refuse Dumping
Location: Takau Road
Medium: Photography
Photographer: Timothy Titus

Images 5 and 6 depict the act of dumping refuse into the gutter around a business premises and water channel in Kafanchan City, Nigeria. This practice raises several significant concerns and dangers, which can be attributed to a careless attitude by some individuals. The plot of the images shows the danger of dumping refuse. This action increases the risk of flooding, especially during the rainy season. When the gutters and other water channels are blocked with waste, rainwater cannot flow freely, resulting in stagnant water that can flood the surrounding area. This can cause damage to properties, disrupt daily life, and lead to financial losses for businesses. The stagnant water can become a breeding ground for disease-carrying mosquitoes and other pests. Furthermore, the decomposition of organic waste in such an environment can produce foul odours and potentially spread waterborne diseases like cholera.

Image 7

Image 8

Title: Erosion
Location: Ungwan Bala
Medium: Photography
Photographer: Timothy Titus

Title: Erosion
Location: Gidan Waya
Medium: Photography
Photographer: Timothy Titus

Images 7 and 8 vividly depict the detrimental impact of erosion on the environment, particularly in residential areas. In Image 7, the consequences of erosion are evident as a flat land located in Ungwan Bala has been eroded, possibly due to inadequate planning of buildings. The image highlights an uncompleted building that has collapsed, underscoring the severity of the erosion. The touching depiction of the building's owner standing inside the fallen structure emphasizes the personal toll of such environmental degradation. The destruction is extensive, extending beyond the collapsed building to encompass nearby houses, which have been lost as a result of the erosion.

Image 8 reinforces the theme of erosion-induced havoc in a residential

area in Gidan Waya. The image portrays the aftermath of erosion, with parts of buildings having already collapsed. The composition of the photograph suggests the potential for further danger, as the erosion continues to threaten the stability of the remaining structures. A poignant element is introduced with the inclusion of a boy standing and looking at the photographer. This adds a human dimension to the environmental crisis, implying that more buildings may be at risk, and the young boy's gaze captures the gravity of the situation. The image serves as a powerful visual representation of the ongoing threat posed by erosion to the built environment.

Image 9	Image 10

Title: Open Grazing
Location: Zikpak
Medium: Photography
Photographer: Timothy Titus

Title: Open Grazing
Location: Dangwa
Medium: Photography
Photographer: Timothy Titus

Image 9 provides a visual narrative of open grazing activities in Zikpak Kafanchan. The photograph captures the essence of this practice, suggesting that it is a prevalent and ongoing activity in the area. The image implies a potential threat to the environment, particularly to agricultural landscapes. Open grazing, as depicted in the photograph, poses a danger to farmers, as their crops may be adversely affected or destroyed by the activities of Fulani herders. The visual documentation of this open grazing activity serves as a valuable record of the environmental challenges associated with this traditional practice.

In Image 10, the focus shifts to a location called Dangwa, where the photograph captures a different form of environmental degradation. The image portrays pigs degrading a site due to what is described as a careless attitude by their owners. The degradation is attributed to the careless excavation of soil for mud-brick making, resulting in the transformation of

the site into a waterlogged area. This, in turn, has become a playground for the pigs. The consequences are evident, as farming activities are rendered impractical in the waterlogged conditions. The image serves as a visual testament to the far-reaching impact of human activities on the environment, emphasizing the need for responsible practices.

Image 11 **Image 12**

Title: Poster Pasting
Context: Kafanchan old Stadium
Medium: Photography
Photographer: Timothy Titus

Title: Poster Pasting
Context: NEPA Round-about Kafanchan
Medium: Photography
Photographer: Timothy Titus

Based on Images 11 and 12, it is evident that both photographs depict instances of visual pollution caused by the indiscriminate pasting of posters by individuals, contributing to the deterioration of the aesthetic quality of the environment.

In Image 11, the frontage of the old Kafanchan Township stadium is the focal point. The visual disorder created by the posters on the walls is apparent, and this act of poster pasting detracts from the overall visual appeal of the stadium's surroundings. The image conveys a message about the negative impact of such practices on the aesthetics of the public spaces, suggesting a lack of regard for the visual harmony of the environment. Image 12 captures the NEPA roundabout in Kafanchan, showcasing a similar scenario of visual pollution resulting from the pasting of posters. The roundabout, which is meant to be a public space, is defaced by the presence of numerous posters. This not only detracts from the intended purpose and design of the roundabout but also contributes to the visual degradation of the area. The photograph communicates a clear message that the aesthetic quality of public spaces is compromised when individuals engage in the indiscriminate pasting of posters.

DISCUSSION

The literature review in this study provides a comprehensive overview of narrative images, advantages of narrative images in raising environmental awareness. The discussion highlights various aspects related to the use of narrative images for environmental communication. The concept of narrative images is well-explained, emphasizing their role in conveying messages and telling stories visually. It establishes the foundation for understanding how narrative images can be a powerful tool for environmental awareness.

The advantages of using narrative images in raising environmental awareness are well-articulated. The emotional impact, engagement, memorability, accessibility, and behaviour change aspects are thoroughly explored. This section emphasizes how narrative images can create a profound connection between viewers and environmental issues, leading to a greater understanding and a call to action.

The inclusion of specific environmental photographs and their analysis adds a practical dimension to the literature review, illustrating how narrative images can be used to convey environmental messages effectively. Each photograph is discussed in detail, highlighting the environmental issues they represent and the messages they aim to convey. Photographs serve as a window into the past, conveying valuable information and preserving memories (Short et al., 2020).

The methodology used for the study is clearly presented, detailing the use of practice-based photography and exploratory design with a qualitative approach. It explains the selection criteria for the photographs and provides insight into how the images were captured and categorized.

This study also used an interview conducted on two groups: the civil servants and non-government workers within the study area. These two groups responded to 12-item questions to present their views in rating the impact of photographic images on conveying environmental degradation messages. Based on the findings, most respondents indicated that the images have a very strong impact in conveying environmental degradation messages. However, 14.30% believed images 4, 9 and 11 had a weak impact. 7.10% also believed images 6 and 7 have a weak impact in conveying

environmental degradation messages. It shows that a single image could be interpreted differently by different people.

During the interview, the respondents were also asked open-ended questions, seeking their opinions about the twelve images viewed. The study's participants gave their opinions on the images based on the theme, plot, character of the images, the camera viewpoint, style, and general opinions. The participants' responses were brief and descriptive. The research discovered that while the participants expressed varying opinions regarding the theme, plot, characters, point of view, and style utilised by the photographer, their perspectives ultimately aligned with concerns about environmental degradation. This alignment confirmed that the images effectively conveyed the intended messages to 13the desired audience. Seelig (2015) added that By using compelling visual storytelling, images can captivate audiences and inspire them to take necessary action.

This study is designed to create environmental awareness in Kafanchan City, Nigeria, using Narrative Images. The findings from this study show that the participants understood the visual narratives of the photographs they viewed during the interview. The study reveals that narrative images can convey environmental concerns effectively. The majority of the participants were with the opinion that the images have a very strong impact.

CONCLUSION

The images captured for the study revealed significant environmental issues in certain areas of Kafanchan City, primarily caused by human activities. It necessitates immediate action from the government, NGOs, and the public to prevent future deterioration of the environment.

The research generated considerable interest in using narrative images to sensitise communities about environmental degradation issues. Most respondents acknowledged that the images had a significant impact in conveying messages about environmental degradation.

Therefore, this research can be pursued as an effective medium for promoting environmental awareness in Nigeria and beyond, contributing

to mitigating degradation's environmental effects. Narrative images are a type of visual communication needed to impact audiences' attitudes positively. Finally, we researchers argue that leveraging narrative images for environmental awareness is an effective medium in visual communication.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest with any organisation or individual.

AUTHOR CONTRIBUTIONS

The student-researcher took the photographs used for the study and wrote all the sections that made up the article. The selection and categorisation of the photographs was done by all authors. The co-authors contributed immensely in reading and restructuring the article.

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