

Arab Journal of Media & Communication Research

Usage of Climate Change Imagery in boosting Public Engagement on Instagram

⁽¹⁾Mai Magdy Abo Al Saoud, ⁽²⁾Shaimaa ZoelFakar

⁽¹⁾Assistant Professor in New Media and Communication Department School of Visual Arts and Creativity Management, ESLSCA University - Egypt ⁽²⁾ Professor of Media the Faculty of Mass Communication, Cairo University

Abstract

The rapid changes in digital media and communication methods have significantly impacted the conceptualization of climate change. To effectively communicate climate images, it is crucial to consider how these images are embraced by the general population.

This study uses a quantitative approach to investigate the impact of climate change visuals on public participation. In a quantitative quasi-experiment posttest, participants are divided into response and epistemic skeptic groups, examining their climate skepticism. Participants complete an Instagram form during the experiment to see how they respond to different images related to climate change. The experiment involves 120 university students, with 60 in each group, with an equal distribution of males and females.

The results indicate that young people prefer to view images of climate solutions rather than images of climate effects and that a significant portion of the subjects lack digital literacy. The reaction group is more likely than the epistemic group to recognize video clips as a sort of visual. It is discovered that public engagement declines with increasing psychological distance from the image.

Keywords: public participation, climate change communication, climate visuals, climate skeptics, climate skepticism, Instagram, and climate images.

Introduction

In 2022, Egypt hosted the COP 27 Climate Summit in Sharm El Sheikh, with the UN serving as the African Continent's representative. Egypt Vision 2030, the nation's sustainable development agenda, is accompanied by five clearly stated strategic goals. Climate is the fifth strategic objective. Heat waves struck Egypt in August 2021. Since then, Egypt has created power producing projects using wind farms and solar parks, among other renewable energy sources. To combat climate change challenges, the Egyptian Supreme Council for Climate Change has cooperated with the United Nations Framework Convention on Climate Change (UN-FCC). Additionally, the shift to increasingly electrified, low-emission vehicles that run on natural gas (UNDP, 2023).

Egypt's increasing reliance on irrigation for agriculture and food production is putting strain on the country's water supply. In addition to the yearly water loss, the water source is being significantly reduced by declining rainfall, rising temperatures, and drought. These are the primary causes of Egypt's climate change problems. Climate change has the potential to destroy the fertile Nile Delta by reducing agricultural output. Indeed, Egypt is particularly susceptible to the negative consequences of climate change, the first of which is air pollution.

It goes without saying that the mass media must educate the public about the various perspectives on the climate change issue and provide a fair assessment at least not at the expense of deceiving them about climate collapse.

Importance of Research

1. It points out the community and its inhabitants in the direction of managing ecological resilience.

2. When interacting with the audience, communicators can use the best tools or visual media that this study offers.

Literature Review

Climate in Social Media

Social media and mass media are the two main channels via which information about climate change is disseminated. *In mass media*, newspapers, radio, and television are only a few of the mass media outlets that have been identified in the research as important providers of environmental knowledge. When knowledge and confidence in science are high, there are no discernible gender disparities in the adoption of ecologically beneficial behaviors. This implies that although while media coverage of environmental stories is frequently cyclical and fleeting, the use of mass media is a significant determinant in pro-environmental actions (Baiardi, 2022).

Examine the coverage of climate change in 27 nations' media from 1996 to 2010. The top print media outlets in each nation are considered, and stories that specifically discuss "climate change," "global warming," or the "greenhouse effect" are chosen. It has been discovered that awareness of climate change has grown over time, particularly among nations that ratified the Kyoto Protocol. Following the start of a nationwide effort in 2005 to cut greenhouse gas emissions, there was a noticeable and significant increase in the public's knowledge of climate change in Japan (Baiardi, 2022).

It was found that Indian customers are more likely to have green purchase intents and to show higher levels of environmental awareness when they use television, newspapers, and magazines. The same holds true for 1144 Singaporeans in a nationally representative sample. In Taiwan, watching television, reading newspapers, and using the Internet have a good impact on several pro-environmental initiatives, such as looking up more information, getting involved in the community, and adopting proactive environmental habits (Baiardi, 2022).

Climate Grief and Eco-anxiety

One of climate change problems is its effect on our mental health, although other psychological and socio-demographic factors may be stronger predictors of pro-environmental behaviors, the findings of "Climate Anxiety: What predicts it and How is it related to Climate Action?" are generally consistent with recent studies suggesting that climate anxiety could be an adaptive, motivating response to climate change that encourages effective action. We broke down pro-environmental behaviors into a variety of green consumption and dietary acts for the first time, and we discovered that while climate fear predicted some actions, it did not predict others. This could help to explain the contradictory results of earlier studies examining the connections between pro-environmental practices and climate concern. More specifically, other studies discovered no connection between pro-environmental activity and climate worry (Whitmarsh et al., 2022). A review found that the definition of eco-anxiety was not entirely clear. For example, a few phrases linked to nervousness, terror, grief, burden, fear, and despair overlap or are closely related. Instead of using the terms eco-anxiety or ecological anxiety, other authors chose to use phrases that are comparable, including climate change discomfort, climate change anxiety, or environmental anxiety. Variations were also observed in the degree of symptom severity. To reduce misunderstandings, there is a need to explore the various facets of eco-anxiety and to continue working on defining the terms. The American Psychological Association's concept of eco-anxiety, which is defined as "a chronic fear of environmental doom," was frequently used in scoping review publications and may offer a uniform definition (Coffey et al., 2021).

The results indicated that eco-anxiety mostly affects certain vulnerable populations, such as youth, Indigenous people, and persons who have a connection to the natural world. Children and young people may face negative effects on their emotional, mental, and spiritual well-being because of climate change, according to an increasing corpus of study on the psychological effects of climate change on kids. This is consistent with findings from studies on childhood stressful events, which emphasize the long-term effects of early stressful life events or negative experiences (Coffey et al., 2021).

Theoretical Framework

The complexity theory of new media is one of the digital media theories used in this study. It is used in new media and highlights if digital material may be boiled down to a specific number of impractical characteristics. This concept is influenced by social determinism, as opposed to technical determinism, which maintains that an individual's behavior is influenced by social interactions and constructions rather than only media or technological advancements (Littlejohn & Foss, 2009).

According to the study, high social interactions and perceptions of climate imagery have grown dramatically across social media networks as digital media becomes more and more ingrained in our daily lives. The availability of social media and the status of climate change imagery has led to the emergence of climate artists and photographers in new media journalism, the growth of interactive approaches, and the appearance of producers and influencers on social media platforms like Instagram. The image is abstract, lacks a specific location, and is shared with communal or time-based elements. In other words, social media use changed how people behaved when dealing with climate-related issues. The evolution of media and the emergence of new media are examined to discuss the implications of complexity theory for developing social complexity management. Because people behave in complex ways and the tools they use have a long history of development, this model helps us understand how digital media spreads (social media networks evolve).

Research Problem

Current research confirms that the way climate change imagery is portrayed in the public's view does not actually encourage public engagement since it is psychologically remote and lacks human interaction. The best way to assure public interaction with climate change imagery is yet unknown, and there is currently no established system or methodology. As per Knoema, Egypt's CO2 emissions in 2021 was 259.3 million tons, with CO2 emissions per person estimated to be 2.48 metric tons, expanding at an average yearly rate of 2.61%. This indicates the seriousness of the problem.

NGOs, artists, photographers, and environmental journalists use photos related to climate change on Instagram, which poses a research challenge because the platform relies heavily on visuals to encourage public participation. Given this quandary, the research aims to investigate the difficulties faced by communicators in conveying their intended message and how these difficulties manifest in evaluating the characteristics of visual aspects across various visual mediums. Therefore, evaluating the connections between unique types of public participation and visual components is important.

The Objectives

1. Determine public perceptions about climate change.

2. Recognize the effective method for achieving public engagement using climate change imagery.

3. Evaluate each sort of climate visualizations' effectiveness.

Hypotheses

1. The more climate change image is psychologically distant, the more likely public engagement decreases.

2. There is a correlation between public engagement and the following:

A. The portrayal of climate change imagery (climate impact and climate solution images).

B. The use of climate change images featuring humans.

C. The type of climate skepticism (epistemic or response skeptic).

3. Public Engagement is affected by:

A. The portrayal of climate change imagery (climate impact and climate solution images).

B. The use of climate change images featuring humans.

C. The type of climate skepticism (epistemic or response skeptic).

Methodology

Quantitative Approach

The posttest will be conducted in a controlled setting with the application of experimental methods, namely *laboratory experiments*. This approach is chosen because it facilitates the establishment of cause and effect. It gives the researcher authority over the environment, the factors, and the participants. When compared to other approaches, the expense of an experiment can be minimal, and it can be replicated. When measuring engagement, this is a far better method than using a survey.

To determine whether using various types of climate change imagery (visualizations) in communicators' messages promotes public engagement and which one influences climate-related attitudes and emotions, the researcher manipulates the independent variables in this experiment. Observing how the general population or sample reacts to various visual media formats on Instagram.

The experimental design is *posttest-only*, or *after-only design*, and the experimental type is *Quasi-experiment*. Testing danger to internal validity: The pretest data collection method may help participants or provide them with hints about the anticipated outcome of therapy. This could have an impact on how participants engage with the actual intervention as opposed to how they would have behaved

in a posttest-only design if they hadn't known anything beforehand. This pattern is frequently employed to manage competing interpretations among multiple images. The two groups, the response group and the epistemic group, are exposed to therapy; both groups then have a post test. Neither group has a pretest. After that, a comparison between the groups is made to ascertain whether there is a statistical difference or not. *Simple manipulation*, written materials, spoken instructions, or other stimuli given to the subjects will all be used to change the independent variables.

In a repeated measures design, subjects can react to various climatic photos. It is possible to measure the imagery factor more than once by exposing participants in the two climate skepticism groups to a variety of Instagram photos depicting climate change. A mixed design is one that combines independent and recurrent group measures.

The sample will be exposed to a wide range of visual media types, such as computer-generated images, real photos, films, infographics, interactive graphics, and personalized visualization. The public's reaction will be reflected in a variety of engagement formats, including share, comment, and reaction. The following variables will be examined: psychological distance, climate effect, and climate solution imagery; these images will include humans and unique characters, as well as various forms of climate skepticism.

Conceptual and Operational Definitions of the Variables

2025
March)
(January
48

No	Variable	Concentual Defu	nition	Operational Definition
1				
1.	Psychological distant image	Psychological dist	ant is a	In the post-test nonequivalent
	(Indonandant variable)	cognitive	a colf and	aroun design alements
	(independent variable)	other instances su	ic sell allu	of psychological distant
		nersons events	or	image are provimity and the use
		times Such an image	, or	of tailored
		of two	001131313	visualization will be examined
		aspects and they		using <i>photos</i> .
		are proximity (iear	graphics, reels, and video clips
		or close in space. t	ime or	posted on Instagram.
		relationship) and ta	ailored	P
		visualizatior	1	
		(Visual is changed to I	be suitable	
		for a situation	or)	
2.	Public engagement	It is about monitor	ing and	Forms of engagement will be
		discussing local risks	s through	tested that
	(Dependent variable)	people's lives and nat	ional risks	
		considering climate change as a		include sharing
		.social issue		
				information, talk over
				such topics in group chat, their
				reactions or responses and com-
				.ments
3.	Portrayal of climate change	Climate impact ima	ige: it is	Whether its climate impact image
	imagery	salient and shows car	tastrophe	or climate solution image, both
	(Independent variable)			will be examined using
		Climate solution im	age: it is	
		efficacy and shows res	solution to	infographics, 3D image, video
		,climate change pr	oblems	graphics, 360 image, anima-
		mitigation and adaptation		tion, cartoon, interactive maps,
A	Climate els	11		Such imaging and GIF s/Memes
4.	Climate change images	Humans		Such images will be examined
	(Independent verichte)	fike politicians public		using photos
	(Independent variable)	ligures, celebrities or		
		vicums.		
1		1		1

□ Chapman et al. (2017) classified the categories of climate images.

□ All variables are categorical – nominal variables.

Types of Climate Skepticism (Independent variable)

o Epistemic skepticism: a question on the state of research and knowledge generation regarding climate change as a physical reality.

o Response Skepticism: doubts regarding the efficiency of climate change action as well as the issue's relevance to individuals and society at large.

Sampling

Population - Subjects will be chosen among 120 university students between the ages of 18 and 25. Young people utilize social media networks the most frequently and extensively. University students are among the 98.3% of young (18–29) Internet users in Egypt who use social media, according to CAPMAS 2021. This suggests that university students use social media extensively. The primary factors influencing the audience's response to climate change issues are political affiliation, level of worry, and skepticism. In this study, skepticism and concern level are discussed. Non-random sampling, convenience or availability sample, is the type of sampling.

Furthermore, having a suspicion that a subject's response to climate change is influenced by their level of climate skepticism. 120 participants will take a climate skepticism scale or test, and their results will be tallied. The Capstick & Pidgeon (2012) scale. Either response skepticism or epistemic skepticism will be covered. The treatment will involve the subjects who score skeptical in response and epistemic matters. Only those who reject climate change will be included; those who do not will be eliminated.

Sample Size is 60 participants in which each treatment group is 30 subjects, an adequate sample size in an experiment. Gender: There will be 30 males and 30 females in each group, with an approximate age range of 18 to 25. These are control variables, meaning that they are held constant to guarantee homogeneity and equal representation between groups, leaving the experimental variable—the visuals—as the only factor that influences the results. The test of climate skepticism is voluntary for the subjects to complete.

Experimental Design

Preparation of Stimulus Manipulation or Tools

• Regarding psychologically distant imagery and tailored visualization: 12 visuals will be used. As for the tailored visuals are in Alexandria – coastal areas, red sea – coral reefs, other provinces – biodiversity, and Delta. The psychological distant images include Africa, Middle East, Asia, US, Canada, and Europe.

Concerning climate change imagery: 11 visuals

5 climate impact images and 6 climate solution images (3 climate adaptation and 3 climate mitigation)

About climate change images featuring humans: 6 visuals

comprise climate activist, protester, negotiator or politician, celebrities or public figure, scientist and victim or climate change refugees. Therefore, the total of climate visuals used is 28 posts thus 29 visuals.

The Procedures of the Experiment

A crucial part of keeping control in an experiment is to manage the setting for gathering data in an efficient manner. A thorough protocol is developed, usually in the form of written instructions. The procedure is extremely thorough, including anything from extremely useful information to exact scripted instructions for outlining different metrics to patients.

There is a form that will be distributed among the subjects while conducting the experiment. They will fill out this form for each visual, which includes the exact reactions of Instagram that characterize public engagement (love, comment, and share), but comment represents the dislike of the visual only, in which when they like the image, they choose love and when they don't, they choose comment, and they must mention why they dislike it in the comment. They are enabled to choose love and share together or to comment and share together, but they cannot choose to comment and love at the same time. The experiment has a degree of control over extraneous variables, and subjects are free to be randomly exposed to the visuals. In other words, there is a random assignment of subjects to different versions of climate visuals.

Pretesting Stimuli:

Numerous potential problems can be found and resolved, such as unclear questionnaire items, a lack of time for respondents to respond to dependent measure items, and technical difficulties. A pretest is used to confirm experimental manipulation. The following are the visual codes:

Tailored Visualization A					
A1 Photo Alexandria's map					
A2	Graphics	Coral Reefs in Red Sea			
A3	Photo	Biodiversity in Egypt			
A4	Video clip	Nile Delta			

Psychologically Distant Images B					
B1	B1 Photo Electronic Waste in Ghana				
B2	Graphics	Gender and Climate Change in Jordan			
B3	Reel	Climate Change in Philippine			
B4	Photo	Impact of Climate Change on Water Resources in Canada			
B5	Photo	Forest Fires in United States			
B6	Photo	Global Warming in Europe			

Climate Change Imagery – Climate Impacts Images C						
C1	C1 Infographic Climate Risks					
C2	C2 3D image Extreme Weather Conditions					
C3	Video-graph	Defining Climate Change in 60 seconds				
C4	C4 image 360 Climate Change and Agriculture					
C5	C5 Animation Climate Change and Health					

Climate Change Imagery – Climate Solutions Images D					
D1	D1 Interactive map Nature based Solutions – Climate Adaptation				
D2	D2 Archive Climate Change Resilience				
D3	D3 Cartoon Mangroves – Climate Adaptation				
D4 Infographic (process)		Energy and Emission - Climate Mitigation			
D5 GIF Recycling - Climate Mitigation		Recycling - Climate Mitigation			
D6 Meme Solutions in Urban and Rural areas – Climate Adap		Solutions in Urban and Rural areas - Climate Adaptation			
D7	Infographic (timeline)	Plan to Zero Out Net Carbon - Climate Mitigation			

	Climate Change Image featuring Humans E					
E1	E1 Photo Climate activist – Greta Thunberg					
E2	Photo	Climate Protesters in Germany				
E3	Photo	Officials – Climate Negotiations				
E4	Photo	Celebrity Activism				
E5	Photo	Climate Scientists in Australia				
E6	Photo	Climate Refugee/Climate Migration				

Results of the Experiment

A quasi-experiment (posttest only) was conducted on 60 subjects out of 120, in which 60 subjects were divided equally into two groups. A group of epistemic skeptics and a group of response skeptics. Males and females were divided similarly. Subjects were free to be randomly exposed to the visuals.

The nature of the respondent refers to the type of climate skepticism (epistemic or response skeptic).

	No	Yes	
Epistemic	(10%) 6	(40%) 24	
Response	(17%) 10	(33%) 20	

Table (3): The Nature of Respondents and their Agreement to follow a Page with Climate Content

Noticing table 3, expectedly, those who are epistemic are more likely to follow the pages with content related to climate change and awareness. Around 80% of those who are epistemic agreed to follow those pages. However, those who are response skeptic in nature refrained from following those pages when compared to epistemic. One-third of those who responded objected to following the climate change accounts.

Data Management

1. The data did not suffer from any missing or outliers.

2. The data was mainly qualitative variables, and some had to be generated as dummy variables to obtain the required statistics.

3. A variable of knowledge was generated to each visual to obtain the average percentage of the correct recognition between both groups.

Data Analysis

Table (4): The Highest Reacted Image in Each Category for the Overall Sample

	Love	Comment	Share	Love & Share	Comment & Share
А	A4	A3	A1	A1	A1-A3
В	B3	B2	B6	B1	B6
С	C3-C5	C4	C5	C5	-
D	D3	D4	D7	D7	-
E	E2	E1	E6	E6	E1

Table (5): The Highest Reacted Image in Each Category for the Epistemic Respondents

	Love	Comment	Share	Love & Share	Comment & Share
А	A1	A3	A1	A1	A1
В	В3	B2	B6	B1	B6
С	C3	C1-C4	C5	C5	-
D	D3	D4	D7	D7	-
Е	E2	E1	E6	E6	E1

Table (6): The Highest Reacted Image in Each Category for the Response Respondents

	Love	Comment	Share	Love & Share	Comment & Share
А	A4	A3	A1	A1	A1
В	В3	B2-B5	B6	B1	B6
С	C4	C2-C4	C5	C5	-
D	D4	D6	D7	D7	-
Е	E5	E1	E6	E6	E1

Observing tables 4, 5, and 6, the most shared tailored visualization image was A1 (photo: Alexandria), while the most commented image was A3 (photo: biodiversity in Egypt) for both epistemic and response respondents. This showed

a relatively high level of agreement. However, the most loved image was A4 (video clip: Nile Delta) for those who were response skeptic in nature, and the epistemic loved A1 more. *This can be* because A4 for the response group is a video that elaborates on Egyptians capabilities in dealing with agricultural problems like rising seas and soil salination peasants face because of climate change or warmth. *In comparison*, the epistemic group favors A1 more, as it is a photo that shows a map reflecting scientific knowledge or information about the land of A1exandria, which will be underwater by 2050.

As for the psychologically distant image, public engagement was found to be high in shares for image B6 (video clip: Europe) and comments for image B2 (graphics: Jordan). Comparing epistemic to response, the response skeptic individuals also highly commented on B5 (photo: US). The explanation for this is that the response group highly reacts when the visual displays how humans are responding to the climate crisis since the photo illustrates how firefighters are trying to put out the forest fire in the United States. Their comment or dislike is high, indicating that the negativity around the post is due to the uncertainty of whether firefighters can extinguish the fire. This shows how B5 attracts specific types of individuals and shows that there might be a relationship between the photo being a distant image and the nature of the respondent. The most loved image was B3 (reel: Philippine). This showed the overall level of agreement among the individuals.

Regarding category C, the most shared was C5 (animation: climate change and public health) for all types of respondents. Those who were epistemic commented mainly on C4 (360 image: climate change and agriculture) and C1 (infographic: climate risks), while those who were response skeptic also commented equally highly on both C4 and C2 (3D image: extreme weather conditions). The most loved visual by epistemic respondents was C3 (video-graph: defining climate change), and for response skeptic was C4. However, when collecting the overall scores, C3 and C5 were the highest. *Probably, this can be explained by the fact* that C5 is already the most shared visual for both groups, and C3 delivers the definition of climate change in its easiest and simplest form through multiple graphs.

The level of sharing and commenting was the same for the overall and each type of respondent in category D7 (infographic: timeline about carbon) and D4 (infographic: process about sustainable production), respectively. However, the response group loved visual D4, while the epistemic preferred D3 (cartoon: mangroves). This shows overall agreement on the D category since this category of climate visuals tackles climate solutions. Category E shows the same as category D regarding the overall agreement on which visual is most shared and commented on between groups and the overall sample. However, the most loved image was found to be E2 (photo: climate protesters) for the whole sample. When observing closely, the epistemic group also had the same loved visual E2 *because* a great number of people, mostly pupils, were demonstrating climate change. They find that it is worthy to consider rethinking the existence of climate change in which its science is real; *in contrast*, the response group was slightly different and loved the E5 (photo: climate scientists) visual more *in the interest of* "cynicism," assuring their belief in terms of how climate scientists or marine biologists still cannot protect coral reefs in the ocean and maintain marine protected areas that help increase coral cover and preserve major fish species since these areas also attract predators that eat corals because of the abundance of food.

	Mean	.Std.Err	Conf_95%]	[Interval
VisualA1	.3833333	.0632976	.256675	.5099916
VisualA2	.2333333	.0550637	.1231511	.3435156
VisualA3	.8833333	.0417936	.7997045	.9669621
VisualA4	.5833333	.064184	.4549014	.7117652
VisualB1	1	0		
VisualB2	.2833333	.0586653	.1659443	.4007224
VisualB3	.6666667	.0613716	.5438623	.789471
VisualB4	.9666667	.0233696	.9199042	1.013429
VisualB5	.9	.0390567	.8218478	.9781522
VisualB6	.35	.0620962	.2257459	.4742541
VisualC1	.5	.0650945	.3697463	.6302537
VisualC2	.1666667	.0485185	.0695813	.263752
VisualC3	.35	.0620962	.2257459	.4742541
VisualC4	.4833333	.0650583	.353152	.6135147
VisualC5	.2833333	.0586653	.1659443	.4007224
VisualD1	.5833333	.064184	.4549014	.7117652
VisualD2	.0833333	.0359823	.0113329	.1553338
VisualD3	.35	.0620962	.2257459	.4742541
VisualD4	.05	.028374	0067763	.1067763
VisualD5	.3333333	.0613716	.210529	.4561377
VisualD6	.0166667	.0166667	0166833	.0500166
VisualD7	.45	.0647682	.3203992	.5796008
VisualE1	.9	.0390567	.8218478	.9781522
VisualE2	.9666667	.0233696	.9199042	1.013429
VisualE3	1	0		
VisualE4	.9166667	.0359823	.8446662	.9886671
VisualE5	.9833333	.0166667	.9499834	1.016683
VisualE6	.9666667	.0233696	.9199042	1.013429

Table (7): The Average Recognition of the Visuals for Overall sampleMean estimationNumber of obs = 60

From table 7, it is observed that there is overall some confusion in the types of visuals. Observing in category A, it is noticed that 23.3% to 88.3% of the respondents were able to guess it. It was found to be significantly recognized by the sample. A3 was the most correctly guessed by 88.3%, and visual A2 (graphics: coral reefs) was the least with 23.3%.

Regarding visual B, there was considerably high variation. Regarding visuals B1 (photo: Ghana), B3, B4 (photo: Canada), and B5, it was clear they were recognized and not mistaken for all the individuals. However, visual B2 and B6 were slightly unrecognized by 28.3% and 35%, respectively.

Visuals C and D were highly mistaken by individuals, ranging from 16% to 50% for visuals C and 5% to 58% for visuals D. They are considered confusing in their nature and type of visuals. It is also noticed that for visuals in D, especially D4 (infographic: process about sustainable production) and D6 (meme: climate solutions), there is not enough evidence that people recognize them clearly. This means that the confidence interval includes zero, so there is a chance that none of the population would understand these visuals.

Observing Category E, it is noticeable that the highly clear and recognizable visuals present an average of 90% to the lowest understood visuals, E1 (photo: climate activist) and E3 (photo: climate negotiations), the highest recognized with a 100%. This shows how clearly the visuals were chosen.

Table (8): The Average Recognition of the Visuals for Each Group

Mean estimation

```
Number of obs = 60
```

1:	Epistemic			
2:	Response			
Over	Mean	Std.Err.	[95%_Conf	Interval]
VisualA1				
1	.4333333	.0920187	.2492044	.6174622
2	.3333333	.0875376	.158171	.5084957
VisualA2				
1	.2333333	.0785403	.0761745	.3904922
2	.2333333	.0785403	.0761745	.3904922
VisualA3				
1	.9	.0557086	.7885273	1.011473
2	.8666667	.0631243	.7403553	.9929781
VisualA4				
1	.4666667	.0926411	.2812922	.6520411
2	.7	.0850963	.5297227	.8702773
VisualB1				
1	1	0		
2	1	0		
VisualB2				
1	.3333333	.0875376	.158171	.5084957
2	2333333	.0785403	.0761745	3904922
VisualB3				
1	7333333	0821176	5690165	8976502
2	6	0909718	4179659	7820341
VisualB4		.0,0,10		.,020011
1	9666667	0333333	8999668	1 033367
2	9666667	0333333	8999668	1.033367
VisualB5				
1	9	0557086	7885273	1 011473
2	9	0557086	7885273	1 011473
 VisualB6	.,	.0227000	.1003213	1.011175
1	1666667	0692046	0281886	3051447
2	5333333	0926411	3479589	7187078
VisualC1		.0720111	.5177507	./10/0/0
1	4333333	0920187	2492044	6174622
2	5666667	0920187	3825378	7507956
VisualC2		.0920107		
1	1666667	0692046	0281886	3051447
2	1666667	0692046	0281886	3051447
	.1000007	.0072040	.0201000	.5051777
1	3	0850963	1297227	4702773
2		0909718	2179659	5820341
Z VisualC/	т.	.0707/10	.2117037	.5620571
1	5	0928477	3142122	6857878
2	.5	0926411	2812022	6520/11
	.+000007	.0720411	.2012722	.0320411
1		0742791	0512609	3486202
1	.2	.0/42/01	.0313098	.3400302

2	.3666667	.0894855	.1876065	.5457268
VisualD1				
1	.4	.0909718	.2179659	.5820341
2	.7666667	.0785403	.6095078	.9238255
VisualD2				
1	0	(omitted)		
2	.1666667	.0692046	.0281886	.3051447
VisualD3				
1	.3	.0850963	.1297227	.4702773
2	.4	.0909718	.2179659	.5820341
VisualD4				
1	.0333333	.0333333	0333665	.1000332
2	.0666667	.0463206	0260206	.1593539
VisualD5				
1	.3	.0850963	.1297227	.4702773
2	.3666667	.0894855	.1876065	.5457268
VisualD6				
1	0	(omitted)		
2	.0333333	.0333333	0333665	.1000332
VisualD7				
1	.4333333	.0920187	.2492044	.6174622
2	.4666667	.0926411	.2812922	.6520411
VisualE1				
1	.9333333	.0463206	.8406461	1.026021
2	.8666667	.0631243	.7403553	.9929781
VisualE2				
1	.9666667	.0333333	.8999668	1.033367
2	.9666667	.0333333	.8999668	1.033367
VisualE3				
1	1	0		
2	1	0		
VisualE4		-		-
1	.9	.0557086	.7885273	1.011473
2	9333333	0463206	8406461	1.026021
VisualE5	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.0103200	.0100101	1.020021
1	1	0		
2	9666667	0333333		1 033367
- VisualE6	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		.0777000	1.000007
1	9666667	0333333	8999668	1 033367
2	9666667	0333333	8999668	1.033367
4	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		.0777000	1.055507

From table 8, it is observed that there is confusion regarding those who are response skeptics in acknowledging types of visuals in category A. Observing the means, A1, A2, and A3, were more recognized by epistemic respondents. However, A4 was slightly more recognized by the response. However, it was noticed that there was an insignificant difference between the two groups. Regarding visuals category B, apart from B6, there was an insignificant difference between both groups. B6 showed that there is a significant difference in that B6 is more correct-

ly recognized by response groups (53%), compared to the epistemic group (16%). Visuals category C is noticed to have no significant difference between groups. This shows an overall low level of recognition for categories C and D. For visuals in category D, D2 (photo: climate change resilience), and D6 are reported to be unrecognized completely by the epistemic respondents, reaching a value of zero percentage of correct guesses. Regarding visuals category E, there was an insignificant difference between the two groups as they both exhibited a high percentage of recognition of the visuals, reaching almost 100% for E3 and the same values between the two groups for E2 and E6 (photo: climate refugees) at 96%.

Hypotheses Testing

H1: The more climate change image is psychologically distant; the more likely public engagement decreases.

	Value	DF	(Asymptotic Significance (2-sided
Pearson Chi-Square	25.314ª	15	046.
Likelihood Ratio	24.079	15	064.
N of Valid Cases	360		

Table (9): Distance in Psychologically Distant Images and the Reactions of Individuals

Source: Calculated using SPSS 26 based on sampled data

To test if there is a relationship between the psychologically distant image and the reactions of the individuals. The chi square test of independence shows that the p-value (0.046) is less than 5% significance level. There is enough evidence that there is a relationship between distance and reactions at a 95% confidence level.

T 11 (10)			D (*	1.0.1		D. / / T
Table (10):	The Relationship	between	Reactions	and Psycho	ologicaliv	Distant Images

		Com- ment	Comment, Share	Love	Love, Share	
	Jordan	12	0	40	8	60
	Europe	3	1	42	14	60
Distance	Ghana	7	0	43	10	60
	PHL	4	0	52	4	60
	Canada	9	0	46	5	60
	US	11	0	44	5	60
Tota	al	46	1	267	46	360

Distance wise, the closest to the furthest from Egypt. PHL is a short form for Philippine

Observing the frequencies, a pattern emerges for the reactions. The more psychologically distant images are, the more the individuals loved the visuals until a certain point, at which point they significantly decreased. However, the closer the psychologically distant image, the more the image is shared and commented on. Therefore, it is noticed that youth are more concerned about understanding the image when the distance is closer to them compared to visuals capturing further places. The hypothesis is thus proved.

Second Hypothesis:

To test the second hypothesis, a chi square test of independence should be applied to test the relationship between visuals and reactions. If there was a significant relationship, a deeper insight from the cross-tabulation results would be required to understand the relationship.

H2: There is a correlation between public engagement and the following:

the portrayal of climate change imagery (climate impact and climate solution images), the use of climate change images featuring humans and the type of climate skepticism.

	Value	DF	Asymptotic Significance (2-sided)
Pearson Chi-Square	63.074	12	.000
Likelihood Ratio	66.668	12	.000
N of Valid Cases	1680		

Table (11): Visuals and the Reactions of Individuals

Source: Calculated using SPSS 26 based on sampled data

The chi square test of independence shows that there is a significant relationship between visual categories and reactions since the p-value=0.000<0.05. Therefore, a closer look into the cross tabulation of the reactions and visuals is required.

The Portrayal of Climate Change Imagery (Climate Impact and Climate Solution Images)

Reactions		А	В	С	D	Е	Total
Commont	Count	10 _a	46 _b	35 _b	79 _c	67 _c	237
Comment	%	4.2%	19.4%	14.8%	33.3%	28.3%	100.0%
Comment,	Count	2 _a	1_a	0_a	0_a	1 _a	4
Share	%	50.0%	25.0%	0.0%	0.0%	25.0%	100.0%
T	Count	174 _a	267 _a	225 _a	308 _a	252 _a	1226
Love	%	14.2%	21.8%	18.4%	25.1%	20.6%	100.0%
Love, Share	Count	54 _a	46 _b	40 _b	33 _c	40 _{b.c}	213
	%	25.4%	21.6%	18.8%	15.5%	18.8%	100.0%
Total	Count	240	360	300	420	360	1680
	%	14.3%	21.4%	17.9%	25.0%	21.4%	100.0%

Table (12): The Relationship between Reactions and the Visuals

Source: Calculated using SPSS 26 based on sampled data

Observing categories C (climate impact image) and D (climate solution image), it is noticeable that D had a significantly high engagement level compared to other categories, as 25% of loved content belonged to D and 33.3% of the comments. In addition, category C also witnessed significantly higher engagement compared to category A. For example, regarding comments, category C contributed 15%, while category A contributed only 4%. However, when compared to category A, it is noticed that C and D have significantly higher engagement rates. A pattern emerges, proving the relationship between the portrayal of climate change imagery and reactions.

The Use of Climate Change Images featuring Humans

Referring to table 12, it is noticed that there is human inclusion in the visuals. The percentages of reactions increased significantly. Thus, for visuals category E, there are significantly more comments than compared to A, B, and C. In addition, it had significantly more love and share reactions from respondents compared to visuals in type A. Hence, there is a relationship between the reactions and portraying humans. It shows that the portrayal of humans could significantly increase public engagement with climate change.

Lastly, it is noticed that the tailored visualization represented by category A had the least level of engagement. This can be explained by the high unrecognition of visual type A and the absence of elements of human and climate change imagery portrayal.

<u>The Type of Climate Skepticism or Nature of the Respondent (Epistemic or</u> <u>Response Skeptic)</u>

Table (13):	The Relationship	between the Na	ature of Respondents	and Public Engagement
-------------	------------------	----------------	----------------------	-----------------------

	А	В	С	D	E
(Public Engagement (reaction	0.257	0.432	0.371	0.326	0.002
Significance	0.032	0.000	0.000	0.000	0.974

The Kendall Tau correlation coefficient was chosen due to the qualitative nature of the variables. There is found to be a significant positive relationship between the nature of respondents and their reactions at a 95% confidence level.

Robustness Test

This test is done to ensure the hypotheses are satisfied. The test chosen was the chi-square test of independence.

	Chi square test statistic	P-value
A Tailored Visualization	2.533	0.296
B Psychologically Distant	5.051	0.080
C Climate Impact Image	10.091	0.000
D Climate Solution Image	6.369	0.041
E Climate Change Image featuring Humans	0.476	0.788

Table (14): The Type of Visuals and Reaction for Each Category

It is known that the chi square test of independence is used to show if two variables are independent. If that assumption is rejected, then they are dependent. It is noticed that for B, C, and D, the reactions were dependent on the nature of the respondents. However, for A and E, there was an insignificant relationship between the reaction and the nature of the respondents. Since tailored visualization (A) deals with more familiarity and relevance of the place in the image, it has no relation to someone being epistemic or response skeptic, like climate images featuring humans; such images show climate victims, refugees, or negotiators; it is about the human factor and not the nature of the respondent. This is consistent with the results of Kendall Tau in terms of category E visuals. However, for category A, visuals need further inspection, and a larger dataset is required by future researchers.

Overall, there is a relationship between the type of respondent and public engagement. Thus, the second hypothesis is proved.

H3: Public engagement is affected by the portrayal of climate change imagery (climate impact and climate solution images), the use of climate change images featuring humans and the type of climate skepticism.

Regress	ion	Mode	
		1.10.00	-

Table (15): Model Summary								
Model	R	R Square	F	Sig.				
1	.470ª	.221	.027	2.76710	1.137	.346 ^b		
	a. Predicto	ors: (Constant						

Table (16):	Unstandardized	Coefficients
-------------	----------------	--------------

Model B					
		Std. Error		t	Sig.
	(Constant)	342	.197	-1.736	.086
-	C climate impact image	297	.278	-1.066	.346
	D climate solution image	.312	.296	1.054	.297
	E climate image - humans	.151	.301	.502	.618
	Gender	165	.129	-1.279	.206
	Type of climate skepticism	012	.103	116	.908

As presented in tables 15 and 16 above, the model was found to be insignificant since the p-value is greater than the significance level. Therefore, at a 95% confidence level, public engagement cannot be solely explained through climate visuals, gender, and type of climate skepticism (epistemic or response). This shows that other variables like culture variance, societal awareness, or educational background have been affecting the experiment, and this is according to Chapman et al. (2017). Such variables should be included in later research to control those variables and show the significant impact of the visual and type of climate skepticism (nature of the respondent) on public engagement. This is also the result of having a small sample size that is insufficient to build the regression model. In these cases, studies often rely on non-parametric techniques such as the chi squared test statistic. As it depends on loose assumptions, it provides an alternative to the model, especially in the absence of data and information about the distribution of individuals. Therefore, the third hypothesis is not proved.

Discussion

Regarding **tailored visualization images in category A**, the most commented (disliked) image for the overall sample is A3 (photo: sea turtles). The reason behind this is that the visual gives a negative emotional state because it contains information about the danger of sea turtles' extinction. Subjects also do not like the design; they find it dull, unattractive, and lacking in vivacity. This assures that the composition of the image plays an important role in conveying the message. The illustration is focusing on biodiversity in Egypt, and it turns out that a slight number of subjects do not know about "biodiversity." It is possible that this could have contributed to the disapproval of the image.

Moreover, the most loved and shared image is A1 (photo: Alexandria) for the whole sample. The photo is about a map that represents a new projection of the land of Alexandria, which can disappear by 2050. Alexandria is a beloved city and dear to the participants' hearts, and it is the second capital of Egypt. So, the participants are very touched and sympathetic about the matter. In addition, Alexandria is very close to subjects in terms of proximity. To them, it is very important to share this issue with their friends, Alexandrians, acquaintances, and whomever they know to disseminate the effects of climate change and a likely climate migration. That's why A1 obtained the highest public engagement among subjects.

Concerning climate change imagery, it includes a climate impact image and a climate solution image. About **climate impact image category C**, the results are contradictory in that, in comments, when comparing the epistemic group with the response group, the epistemic skeptics commented on or disfavored C4 (360 image: climate change and agriculture) and C1 (infographic: climate risks), and the response skeptics disliked C2 (3D image: extreme weather conditions) and C4. The epistemic group loved C3 (video graph: defining climate change). What is inconsistent is that the response group loved C4 and disapproved of it simultaneously. The interpretation lies in how response skeptics think about the effect of climate change in general and especially on agriculture; hence, they see in the climate impact image the human inability, if not a failure, to handle the consequences or problems caused by climate change on the environment. For both groups, it is hard to understand C4 because focus was absent since the 360 image is a 360 video to be uploaded on Instagram. 360 photos must be converted to 360 videos.

Epistemic skeptics detested C1 because the infographic is full of more information than data information that needs to be comprehended rather than data, which they prefer. Although the infographic easily clarifies the difference between 1.5 degrees Celsius and 2 degrees Celsius in the aspect of climate risks, they loved C3, a video graph, because it contains various charts, graphs, and data explaining the meaning of climate change in a transparent and smooth way.

On the other hand, for the **climate solution image**, which is represented in category D, the most shared and commented images are D7 (infographic: timeline about carbon) and D4 (infographic: process about sustainable production). As a type of visual, both are infographics. It seems that subjects are not familiar with this type of visual, which might have been used a lot recently, especially when it comes to visualizing data. Meanwhile, infographics help people comprehend complicated concepts through visual aids.

Nevertheless, they do like to share both visuals because they like their layout, and it appears exciting to them. After they find it difficult to understand, they share it with someone who can explain to them what the infographic is about. The response skeptics loved D4 for it enlightened *climate action* in the manufacturing process, in which a climate program involves the use of sustainable raw materials, packaging, and logistics, and the efficient use of renewable energy. The epistemic skeptics loved D3 (cartoon: mangroves) because the cartoon presents *scientific information* about mangroves in an amusing way. This evidence includes that mangroves are considered the most natural flood controllers; they are habitats for species; they capture carbon; and they prevent groundwater salinity.

A key finding is that it has been noticed that subjects love climate solutions images in category D (25.1%) more than climate impact images in category C (18.4%). This is an indication that they like to view quick fixed acts, climate actions, or some sort of climate control more than climate catastrophes or disasters. However, when it comes to "love and share," category C (18.8%) achieves a higher percent than category D (15.5%). This is because they go for sharing the effects of climate change, especially in Egypt, with others to disseminate with the world further knowledge about the hazards or damages of climate change to the environment and planet.

Comprehensively, regarding **the recognition of the types of visuals**, in category A subjects cannot recognize A2 (graphics: coral reefs), as it is the least correctly guessed with 23.3%. They classified it as a photo, not graphics. They are not adequately acquainted with graphics. Apparently, graphics as a visual format used in delivering a message to the audience is a problem because it is one of the least correctly recognized by subjects in category B, in which B2 (graphics: gender and climate change) with 28.3% is considered a photo and not graphics. An

other least correctly guessed visual in category B is B6. B6 (video clip: Europe) with 35%; this infers that subjects confuse video clip with video graph, and this is because the video has one graph, so they claim that it is a video graph while it is a video clip. The video is called a video graph when it is full or has numerous graphs and charts, like C3 (video graph: defining climate change).

About D4 (infographic: process about sustainable production) and D6 (meme: climate solution), it is not clear whether they are correctly recognized as a type of visual or not. This is because an infographic is already tough to recognize for some subjects. Another point is that subjects cannot differentiate between memes and cartoons, in which memes are done by ordinary people using an already existing depiction to create comedy, enjoyment, remark, mockery, and satire, while cartoons are done by professionals.

As for E1 (photo: climate activist), it is the least recognized photo in category E because seemingly subjects do not acknowledge climate activism, and Greta Thunberg, the Swedish climate activist, and are not aware of her activities in the climate change field.

Comparing the epistemic group with the response group in the recognition of the types of visuals, it is found that the response skeptics cannot recognize A1 (photo), A2 (graphics), and A3 (photo), but epistemic skeptics can recognize them. Yet, A4 (video clip) is more recognized by response than epistemic respondents. B6 (video clip) is more known by the response group than the epistemic group. It turns out that the video clip is not well perceived by epistemic skeptics. Category C and D are relatively unrecognized by both groups. Specifically, D2 (archive) and D6 (meme) are not correctly recognized by epistemic respondents. The justification for all this paradox is the lack of digital literacy among the subjects in the two groups, whether the subject is epistemic or response skeptic.

Interpretation having to do with the **first hypothesis** (psychologically distant images, category B) is that the result can be described in a parabola shape in which, when the image is psychologically distant, reactions increase until a certain point, and the more the image is psychologically distant, reaching a peak, then it starts to drop significantly. Though when the image is less psychologically distant, reactions, especially "share" and "comment," increase. This gives an indication that subjects think of closer nations like Jordan, European cities, or Ghana as brotherly countries and can be identified with us principally because we share strategic interests politically, economically, and socially. In addition, we have a common background or culture with some of these states, which is dissimilar from other far away countries, for instance, the United States, whose identity does not accord with ours. A similar finding has been previously stated in the research of Chapman et al. (2017), which claimed that the psychologically distant image has a role in encouraging or constraining public engagement towards climate change. Featuring the several magnitudes of psychological distance and different forms of engagement, like domestic vs. worldwide, imminent or long-haul repercussions, the settings under which distance is important.

Apart from the result of testing the **second hypothesis**, while perceiving the differences between climate impact images (category C) and climate solution images (category D), it shows that the "love" reaction is 18.4% for the climate impact image and 25.1% for the climate solution image. This implies that subjects adore and like to see posts or climate visuals that display many climate solutions, including climate adaptation and climate mitigation, rather than visuals that portray climate impacts. This is a winning point for constructive or positive journalism, a sign that environmental journalists should pay attention to and focus on. On the theme of "love and share" reactions, it is 18.8% for category C and 15.5% for category D. This suggests that the "share" reaction is influential, in which subjects like to share visuals that illustrate climate impacts or effects more than solutions to let other people know about the consequences of climate change on our planet.

Supplementary to the verification of the results, burning electronic waste in a dump in Ghana as depicted in B1 taken from the Climate Visuals image library, this study concurs with the Climate Visuals Project advanced by Climate Outreach (2015) that the photo does a great job of linking modern communities to pollution issues. Their investigation added that this visual demonstrates that embodying the health effects of air pollution is possible to ring a bell with audiences more than huge consequences deprived of distinguishable humans or characters. Since this image shows climate causes to some extent, there is a mutual consensus that it is extremely significant to localize serious climate impacts in such images according to the seven principles of effective visual communication on climate change initiated by Climate Outreach.

Respecting the findings, the clarification of the relationship between the type of climate skepticism and public engagement. When the person is response skeptic, public engagement increases, particularly "share and love". *On the contrary*, when the individual is an epistemic skeptic, public engagement decreases, notably "love," which scores the lowest. Logically, epistemic skeptics favor less engagement since they doubt the existence of climate change scientifically, *unlike* response skeptics.

48 (January / March) 2025

When it comes to comparing the tailored visualization images in category A and psychologically distant images in category B, generally, category B (21.4%) scores higher than category A (14.3%) in public engagement. This ratio creates a discrepancy since it is the opposite of what is expected in results because tailored visuals are visuals that subjects can relate to and find relevant, and they are personalized, in which the engagement is supposed to be higher than for psychologically distant images. Still, in "love & share," tailored visuals score 25.4% and psychologically distant images score 21.6%, which means that subjects love the images and would like to spread them to increase awareness of the climate change issue, particularly in Egypt. Likewise, in "comment & share," tailored visuals achieve 50% and psychologically distant images provoke the subjects in terms of the visual format and the content, and therefore, commentary and shares increase at the same time.

With reference to the **"understanding"** of subjects for each climate visual, it is very exciting to realize that the visual that none of the subjects understand the greatest is E3 (photo: climate negotiations), with 35 subjects choosing 'none' which means that they cannot understand the visual, although it is the ultimate recognized visual in category E. This gives a hint that youth do not quite follow the current events in relation to climate negotiations, conferences like the COP, and agreements on the scene now. The most understandable visual is A2 (graphics: coral reefs), with 1 subject choosing 'none'.

Conclusion

Often, the new initiatives that occurred recently in the digital arena because of climate-related events like COP 27 in Sharm El Sheikh, Egypt, that communicate new tales or diverse forms of visual communication and stimulate innovative images of climate change are the start of changing the affair in the public's mind.

The heavy flow of climate visuals on social media is increasing alarms that climate change imagery has an essential job in constructing public engagement, particularly in the long term. In this research, it is concluded that there are fundamental alterations in the digital media, and it is acclaimed how this has adjusted the accessibility and ingesting of climate change appearance, including proof from an analysis of public perceptions about how they respond to these images. The study reveals that individuals prefer climate solutions images in category D (25.1%) over climate impact images in category C (18.4%), indicating a preference for quick fixed actions rather than climate catastrophes. However, category C (18.8%) shows a higher love and share for climate change effects. This is a prescription practitioners should follow when communicating with the target audience (youth) or public on social media, specifically Instagram, to avoid public resistance climate skeptics.

Also, response skeptics cannot recognize certain visual types, while epistemic skeptics can. However, video clips are more recognized by response skeptics, and categories C and D are relatively unrecognized by both groups. This paradox is attributed to a lack of digital literacy among the subjects. If someone is a climate skeptic and is unable to recognize the visual format but obtains the information, the information is incomplete. This means that there is a subtraction in which the skeptic still does not fully understand what the image is conveying, and this is since he or she cannot read or utilize the visual.

Besides, the tailored visualization images in category A and psychologically distant images in category B generally score higher in public engagement, despite the expected higher engagement for tailored visuals. However, in "love & share" and "comment & share," tailored visuals are more engaging and encourage more commentary and shares, indicating a positive impact on subjects.

At the end, while an original pictorial image at a lone instant in time is doubtful to have a deep effect on any person, the regular stream and recurrence of illustrations make an influential visionary description that outlines public insights into climate change. An improved understanding of public engagement with climate photos and a well-arranged relationship between investigation and practice, whereas connection in the visual intermediate is such a persistent precedence for academics and communicators in an active digital sentiment where visual metaphors perform a progressively outstanding duty.

2025
March)
(January /
48

on	Form Would you foll social media?	ow climate related issues yes/no	or environmental activist pages				
1.	Code of the Vis Kindly identify Photo	the type of climate visual. Infographics	(you must choose only one) Archive				
	Graphics	3D image	GIFS/Memes				
	Reel	Video-graph	Cartoon				
	360 image	Animation					
2.	Video clip What reaction of	Interactive map do you choose? (you mus t	t react)				
	In case you don't like it, comment:						
	In case you snare (write in one sentence the reason for sharing):						
3. Express your understanding about this imagery in 1-3 words (do not exceed 3 words)							
		(or None				
Climate Visuals used in the Experiment A page was created on Instagram "Climate Comm 23" for Climate Change Imageryresearch							



climatecomm23 visual code: A1 The effects of rising seas will be far worse than previously thought, wiping out entire cities by 2050. New data shows, this is Alexandría, Egypt, under the old and new projections. NY Times.



:

:



48 (January / March) 2025



289

Arab Journal of Media & Communication Research



climatecomm23 Visual code: D6 Climate change solutions in urban and rural.



matecomm23 Visual code: 5.5 result brain files (J. Sastalia) imate scientists are assuring that compare the same of the same of the same create core and process (key files precise), at least tracts predators that eat the coreals, according to the tags of the same precision of the same precision of the same of the same of the same of the same precision of the same of the same of the same of the same precision of the same of the same of the same of the same precision of the same of the same of the same of the same precision of the same of the same of the same of the same precision of the same of the same of the same of the same precision of the same of the same of the same of the same precision of the same of the same of the same of the same precision of the same of the same of the same of the same precision of the same of the same of the same of the same precision of the same of the same of the same of the same precision of the same of the same of the same of the same precision of the same of the sam



climatecomm23 Visual Code: D2 Climate Change Resilience Photo source: Scientific American





C Recomm 23 Visual Code: B3 ADB worked with the Philippine government to build new roads in the Zambaarag province and provide its residents with safer travel, boosting business and access to education. Source: Asian Development Bank - ADB



climatecomm23 Visual code: C5 Climate change affects our Health Video source: WMO (World Meteorological Organization) -Youtube



Clead by xadam_ramadan_x dimatecomm23 Visual Cocie: B2 Gendera and cimate change Jordan's National Action Plan on Women, Peace, and Security (2022 co2025), is the first in the Arab region to address the links between climate change, security and gender-based volence. Photo source: Lebanese American University-LAU



climatecomm23 Visual Code: D3 Climate Solutions - climate adaptation on World Nature Conservation day. What on Earth' is grooving with the multitasking mangroves! The jack of all biodiversity! My they grow on us, with us! Photo source: CEEW



Climatecomm23 Visual Code: C2 Extreme weather conditions caused by climate change Photo source: 3D Bay.io



climatecomm23 Visual code: A3 Climate change can cause environment destruction sea turtles becomes endangered species. Photo source: Nature Conservation Egypt



climatecomm23 Visual code: C3 Climate change in 60 seconds "How the increase of carbon dioxide can cause climate change." Video source: The Royal Society, National Academy of Sciences, Youtube

References

- Baiardi, D. (2023). What do you think about climate change? *Journal of Economic Surveys*. Wiley. https://doi.org/10.1111/joes.12535
- Capstick, B.S., & Pidgeon, F.N. (2012). What is climate change skepticism? Examination of the Concept Using a Mixed Methods Study of the UK Public. Science Direct. *Global Environmental Change*. El Sevier. 24(Jan, 2014). pp 389 – 401. https://doi.org/10.1016/j. gloenvcha.2013.08.012
- Chapman, D., Corner, A., Markowitz, E., & Wang, S. (2017). Public Engagement with Climate Imagery in a Changing Digital Landscape. Wiley Interdisciplinary Reviews – WIREs Climate Change. 9(2). https://doi.org/10.1002/wcc.509
- Coffey, Y., Bhullar, N., Durkin, J., Islam, Md.S., & Usher, K. (2021). Understanding Eco-anxiety: A Systematic Scoping Review of Current Literature and Identified Knowledge gap. *Journal of Climate Change and Health*. ElSevier. https://doi.org/10.1016/j.joclim.2021.100047
- Littlejohn, W.S., & Foss, A.K. (2009). Encyclopedia of Communication Theory. SAGE Publication. https://teddykw2.files.wordpress.com/2013/10/encyclopedia-ofcommunication-theory.pdf
- Whitmarsh, L., Player, L., Jiongco, A., James, M., Williams, M., Marks, E., & Williams, K.P. (2022). Climate Anxiety: What Predicts it and how is it Related to Climate Action. *Journal of Environmental Psychology*. ElSevier. https://doi.org/10.1016/j.jenvp.2022.101866
- Capmas.2021. https://www.capmas.gov.eg/
- Climate Visuals. Climate Outreach Report 2020. https://talk.eco/wp-content/uploads/Appendices-to-Climate-Visuals-report.pdf
- Knoema.2020. https://knoema.com/atlas/Egypt/CO2-emissions.
- https://knoema.com/atlas/Egypt/CO2-emissions-per-capita
- Climate Change is a Matter of Justice Here's Why. (2023). Climate Promise. UNDP. https:// climatepromise.undp.org/news-and-stories/climate-change-matter-justice-heres-why