Article

Examining the Influence of Communication Technology, Image Technicalities, and Image Narrative on Environmental Awareness in the Digital Age: A Study of Worlds Top 20 Environmental Photography Winners 2020

Mohd Pirdaus Mat Husain[1,2]*, Mohd Nor Shahizan Ali[1] & Ammar Redza Ahmad Rizal[1]

[1]Centre for Research in Media & Communication, Faculty of Social Science & Humanities, Universiti Kebangsaan Malaysia (UKM), 43600 Bangi, Selangor, Malaysia
[2]Faculty of Technology, Design & Management, UCYP University, Main Campus, 25050 Kuantan, Pahang, Malaysia

*Corresponding Author: p97285@siswa.ukm.edu.my

Abstract: In today's digital era, photography has experienced a transformative shift, revolutionizing how we capture, share, and engage with images. Advancements in technology and the widespread availability of digital devices have made photography more accessible than ever. This has resulted in a proliferation of visual content across various platforms, shaping our visual culture and influencing societal perceptions. With the rise of social media and online platforms, photography has become a powerful tool for self-expression, storytelling, and documentation. Therefore, the main objective of this research is to identify the relationship between communication technology, image technicalities, and image narrative in documentary photographic images World Top 20 Environmental Photography Winner 2020 to audience awareness in the digital age. A quantitative approach (content analysis) was used to answer the study's objectives. The study data set was analyzed using IBM SPSS software version 27 to see whether there is a significant relationship. The study results found that the highest βeta value was the narrative image variable of 0.939, followed by the βeta value of the technical image of 0.035, and the last is the βeta value of the communication technology of 0.025. This suggests that image narrative variables are significantly related to interpreting documentary photo images of environmental issues that shape consciousness. The study's implications are anticipated to provide stakeholders insights into the critical elements of photography, serving as a guide for producing high-quality photographic images with meaningful content and effectively educating the public about environmental issues.

Keywords: Environmental photography; photography documentary; digital era; narratives; content analysis

Introduction

Photography has undergone a significant transformation in the digital age, fundamentally changing how we capture, distribute, and interact with images. The advent of advanced technology and the widespread availability of digital devices have made photography more easily accessible. Consequently, there has been a surge in visual content across diverse platforms, shaping our visual culture and impacting societal perspectives. With the emergence of social media and online platforms, photography has become an influential medium for self-expression, narrative creation, and documentation. Lu et al. (2022) explain that during the late 20th century and early 21st century, digital photography emerged as a significant advancement in the technology-driven world. Researchers have consistently strived to capture and improve this innovative form

of photography. This revolution propels photography into computer-mediated communication, where computerized photographs are shared on web pages and photoblogs, published on internet news sites, and transmitted via networks. This shows that this concept underscores the efficacy of photography as a powerful medium of visual communication in articulating and bringing attention to issues that impact the community. Photographers use cameras as a powerful tool to shape the consciousness of individuals, which underlines the increased importance of photography in today's context more than ever (Bedi & Varga, 2021).

Leon (2018) also describes that digital photography is part of the transformation of photography, which previously only focused on individual photography and changed to partnership photography. Each audience feels the resulting photographic images must be shared with several other audiences to display patterns of life, culture, social, and shared experiences. Sæther (2020) also states that the photographic image is important in conveying meaning. It is not just an image but can convey emotion once the image is produced, even if it is just a display of objects, communities, and places.

Photography can be used as a method to represent what is happening in the form of actual documentation (Moran & Tegano, 2020). Since the 1960s, photography has also been influential in addressing environmental issues. According to Seppanen and Valiverronen (2010), the problem of environmental issues not being presented to the public leads to the public needing to have the desire to take an interest in the environmental issues that frequently arise. The basic premise for defining the environmental issue is that " the environment cannot speak" (Haila & Levins, 1992). This means that if environmental problems are not represented with the help of photography, they disappear and are overlooked by the public.

The main factors driving this study are based on environmental problems that are common today. Towards the end of the 20th century, photography increased rapidly due to the explosion of communication technology, with various media platforms being used by photographers to convey a particular theme. Furthermore, the study highlights the role of social media platforms as powerful tools for disseminating documentary photographs and amplifying their impact. Platforms such as Instagram and Facebook provide photographers with a global audience and the potential for their images to go viral. Through strategic use of hashtags, captions, and sharing features, documentary photographers can reach a wide range of viewers, sparking conversations and mobilizing collective action.

These include environmental threats that pose a danger to both humans and the earth. The photographic images depicting these threats to the environment have visually portrayed to the audience that the environment today is threatened by river pollution, open fire burning, flash floods, global warming, and other effects that can harm the earth.

For example, among them is a documentary photography image that was selected as the World's Top 20 Environmental Photography Winner 2020. This competition is the largest platform for professional photographers to produce quality photographic images and must have an implicit meaning in every image production. Li and Xie (2020) propose that visual appeal is the most important factor in conveying information quickly and effectively, especially in a world where attention spans are decreasing. It effectively shows that the audience visually evaluates each image and impacts them. Visual communication can further enhance the audience's understanding of the issues, especially environmental ones. Hence, the primary goal of this study is to examine the correlation between communication technology, image technicalities, and image narrative in documentary photographs from the World Top 20 Environmental Photography Winner 2020, aiming to raise audience awareness in the digital era.

Literature Review

Visual communication is an essential aspect of contemporary society, with photography being a powerful tool for conveying messages and telling stories. Visual communication and photography are closely related because photography is a powerful tool used in visual communication. Günay (2021) explains visual communication has become increasingly important in modern society, heavily influencing advertising, social media, and daily life activities. Photography involves capturing images using a camera, which can then be used to convey messages, tell stories, evoke emotions, and communicate ideas visually. Photography can capture and communicate complex ideas and emotions, making it a highly effective medium for visual

communication. With the rise of digital technology and social media, the reach and impact of photography have expanded significantly, allowing for greater engagement and interaction with audiences.

According to a recent study by Wang et al. (2021), photography has become an increasingly important form of visual communication in the digital era. The study found that Instagram, one of the most popular social media platforms for sharing images, has become a significant source of visual communication for users. The platform's visual nature, combined with its ease of use and accessibility, has made it a powerful tool for individuals and organizations to communicate their messages and engage with audiences.

Photographers can create a powerful emotional connection that engages viewers on a deeper level by using images to tell stories that resonate with audiences. Nabi and Green (2015) suggested that emotions fly in every narrative and can enhance engagement. This approach has been used effectively in various contexts, including advertising, journalism, and social activism. Its ability to capture and convey complex ideas and emotions makes it a highly effective medium for engaging audiences. Photographers can create impactful images that communicate important messages and inspire action by using visual communication, storytelling techniques, and leveraging digital platforms like Instagram.

Visual communication and photography are intricately linked, with photography serving as a powerful tool within visual communication. In today's digital age, where visual content dominates various platforms and channels, photography plays a crucial role in conveying messages, telling stories, and engaging audiences. Visual communication is an effective way to express thoughts and ideas, and critically and visually evaluating presented information has become a central skill in a digital environment (Lana & Chenb, 2021). The dynamic nature of visual communication emphasizes its importance in contemporary contexts where the ability to evaluate critically is increasingly essential (Page & Duffy, 2019).

As a visual medium, photography has the unique ability to capture moments, emotions, and narratives in a single frame. It allows individuals and organizations to communicate complex ideas and evoke powerful emotions through visual storytelling. Lehmuskallio et al. (2018) suggested that photography is a medium that goes beyond capturing mere images. It can tell compelling stories, evoke deep emotions, and provoke thought-provoking narratives. Whether in advertising, journalism, art, or social media, photography is a visual communication that transcends language barriers and resonates with viewers on a universal level. In recent years, the rise of social media platforms like Instagram has further amplified the relevance of photography in visual communication. With millions of users sharing and consuming visual content daily, photography has become its language. It enables individuals and brands to establish their identity, convey their values, and connect with audiences visually compellingly.

According to a study by Dhir et al. (2021), visual content on social media platforms, particularly images and photographs, significantly influences user engagement and communication. The study found that users are likelier to engage with posts that include visually appealing and well-composed photographs. These highlight the importance of photography as a critical component of visual communication in the digital realm. Furthermore, the study emphasized the role of visual storytelling in photography as a means of effective communication. By carefully crafting narratives through images, photographers can captivate audiences, evoke emotions, and convey messages more effectively than text alone. The power of visual storytelling lies in its ability to create an emotional connection with viewers, driving engagement and fostering deeper understanding.

Therefore, visual communication and photography are closely intertwined in today's digital landscape. Photography is an essential tool for conveying messages, telling stories, and engaging audiences through visual storytelling. With the increasing prominence of social media platforms, the relevance of photography in visual communication has only grown stronger.

1. Documentary Photography

Documentary photography emerged as a means of recording significant historical events. It is a prevalent photography style that aims to document noteworthy and historical occurrences, typically associated with professional photojournalism or real-life reportage (Selvin, 2017). However, it can also be pursued by

amateurs, artists, or scientists. The photographer produces honest, impartial, and sometimes spontaneous images, primarily focusing on capturing individuals.

Documentary photography holds immense power in raising awareness and catalyzing action on environmental issues. Through compelling visual narratives, documentary photographers capture the realities and consequences of environmental degradation, serving as witnesses and advocates for change. Their images can evoke emotions, provoke thought, and inspire individuals, communities, and policymakers to take action toward environmental conservation and sustainability.

A study by Farnsworth et al. (2021) emphasizes the significance of documentary photography in engaging audiences and fostering environmental awareness. The study found that documentary photographs portraying the impacts of pollution, deforestation, climate change, and other environmental challenges effectively capture public attention and generate empathy. These images create a visual connection that transcends language barriers, allowing individuals from diverse backgrounds to understand the urgency and complexity of environmental issues.

In the context of documentary photography, it is seen as a medium of delivering accurate information to the audience by constructing events or issues of reality, such as the selection of essential themes in producing accurate and factual photographic images. The output of these photographic images serves as a tool to convey meaning, clarify issues, and build audience awareness. Using the proper subject matter in every photographic image can persuade audiences and effect behavior change (Bleiker & Kay 2007). The construction of this meaning is considered polysemic as the audience interprets the meaning. The different meanings interpreted by the audience are closely related to the main characteristics of documentary photography.

The main characteristic of documentary photography is truthfulness. The discussion about truth has long been conducted by stating that documentary photography has the advantage of capturing the reality of truth and presenting it to the audience (Aaltonen, 2016). Photography has value as documentary evidence of an event. Photography, unlike painting, has a value that can last forever.

A study by Jones et al. (2020) explores the long-term impact of documentary photography on environmental advocacy. The study reveals that powerful photographic narratives can shift public perceptions, influence policy decisions, and drive changes in behaviour.

Methodology

1. Research Design
This study applied quantitative content analysis techniques to selected documentary photographic images. The various instruments used for content analysis methods are any form of visual display. Content analysis is a method of collecting research data based on analysis done in a visual form that is printed and published in the media and seen to have a message. Babbie (2010) explains the message contained in the visual, whether seen, heard, or referred to, based on the content of images, text, symbols, ideas, or communicated message.

Quantitative content analysis, "the systematic, objective, quantitative analysis of message characteristics," has succeeded in fields such as communications, marketing, sociology, and psychology in monitoring trends and identifying patterns of covariation in message characteristics (Neuendorf & Kumar, 2016). This study used quantitative content analysis methods to see the relationship between the message to be conveyed and the documentary photography images of the World Top 20 Environmental Photography Winner 2020, which focuses on environmental issues.

McMullin (2023) explains that every content analysis needs to be systematically recorded, and the pattern of text structuring and themes needs to be fully identified. Content analysis is also a study technique that systematically and quantitatively elaborates objectives on the communication of the content of a text. This content analysis technique must have the following characteristics namely objectives, systems, and generalities.

This technique is characterized by the fact that the entity of the analysis does not always depend on the word but on the meaning (synonyms or words with similar meanings are grouped into a category and are usually included in the theme and the whole phrase) (Banks & Zeitlyn, 2015).

```
┌─────────────────────────────────────────────┐
│          ┌──────────────────────────┐        │
│          │      Quantitative        │        │
│          │   (Content analysis)     │        │
│          └──────────────────────────┘        │
│                      │                        │
│          ┌──────────────────────────┐        │
│          │ Narrative Interpretation │        │
│          │   Of Environmental       │        │
│          │   Issues On              │        │
│          │   Documentary            │        │
│          │   Photographic           │        │
│          │   Images In The          │        │
│          │   Digital Age            │        │
│          └──────────────────────────┘        │
│                      │                        │
│          ┌──────────────────────────┐        │
│          │ 1. Communication         │        │
│          │    Technology            │        │
│          │ 2. Image Technicalities  │        │
│          │ 3. Image Narrative       │        │
│          └──────────────────────────┘        │
│                      │                        │
│          ┌──────────────────────────┐        │
│          │ Descriptive Analysis &   │        │
│          │    Regression            │        │
│          └──────────────────────────┘        │
│                      │                        │
│          ┌──────────────────────────┐        │
│          │       Findings           │        │
│          └──────────────────────────┘        │
└─────────────────────────────────────────────┘
```
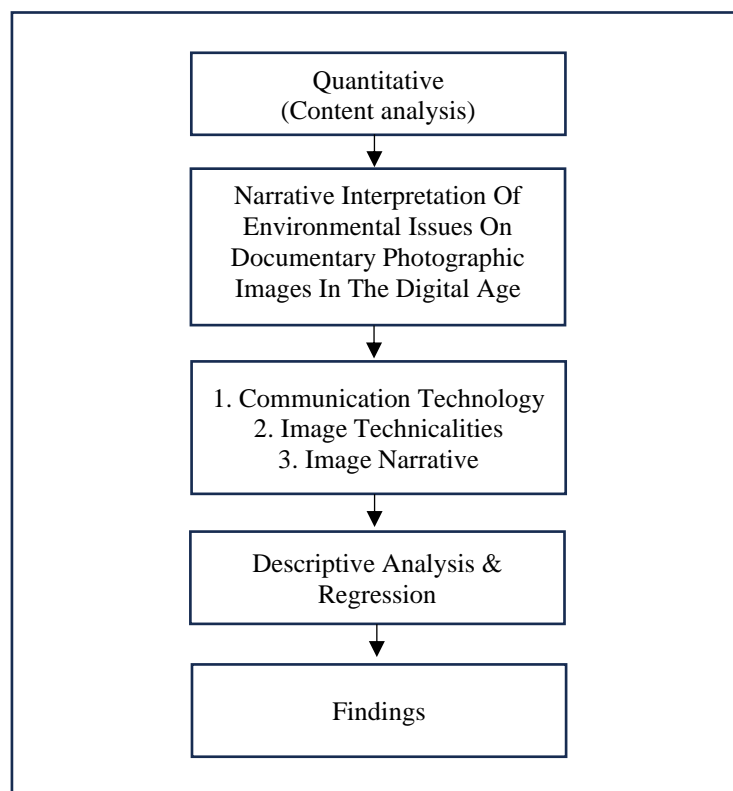
Figure 1. Research design quantitative (content analysis)

The research process starts by defining the research goals and hypotheses to explore how narrative interpretations of environmental issues in documentary photos are connected to communication technology, image technicalities, and image narrative. Next, a diverse set of the World's Top 20 Environmental Photography Winner 2020 is carefully chosen to cover various concerns worldwide. Then, data is gathered focusing on the technology used for capturing and sharing images, along with details like image quality, composition, and editing methods, while understanding the story within the photos.

Quantitative content analysis examines the data systematically, uncovering patterns, themes, and connections among the key factors. Descriptive analysis helps understand the data's characteristics and distributions, offering a thorough grasp of the subject. Regression analysis then reveals how communication technology, image details, storytelling, and environmental interpretations in the photos are interrelated. This structured approach ensures a systematic exploration of how visual communication, technology, and ecological stories interact in the digital age.

2. Data Analysis

The researcher is trying to determine the dominant element in the World's Top 20 Environmental Photography Winner 2020 and how it affects the relationship between communication technology, image technicalities, and image narrative. Using a simple regression analysis determined the connection between the independent variable (iv) and the dependent variable (dv). The word "regression" refers to the statistical analysis of the connection between two or more variables (Naga et al., 2021). Two variables are utilized in simple Regression.
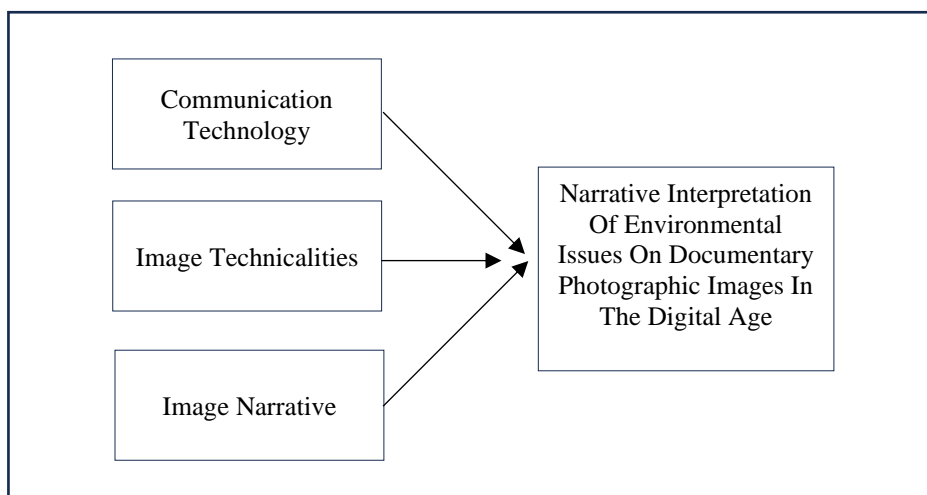
Figure 2. Research framework

Findings

The research findings are divided into three analyses: descriptive analysis (general information analysis), inferential analysis and regression analysis. Creswell and Garrett (2008) also stated that descriptive statistics is used to answer descriptive questions. Statistical inference is used when the research question requires us to see the difference between variables and the relationship between variables.

1. Descriptive Analysis

Table 1 displays the total number of documentary photography images from the World's Top 20 Environmental Photography Winners in 2020. The study includes 20 selected documentary photography images, which are categorized into five primary image meanings that can be seen in Table 2 below.

Table 1. Total of World's Top 20 Environmental Photography Winners 2020

Content	Quantity
World Top 20 Environmental Photography Winner 2020	20

N = 20

Table 2 displays the environmental issues portrayed in the World's Top 20 Environmental Photography Winners in 2020. Based on the analysis, most environmental images focus on water pollution issues, with a total of 6 images (30%), followed by the humanitarian crisis, with a total of 5 images (25%). Additionally, open burning issues with a total of 4 images (20%), flash/big flood, 3 images (15%), and the last is logging issues with 2 images (10%). This indirectly shows that water pollution is a significant issue, given the focus on creating photographic images of the environment followed by the humanitarian crisis.

Table 2. Types of Environmental Issues in the World's Top 20 Environmental Photography Winners 2020

Types of Issues (Image Content)	Frequency (f)	Percentage (%)
Flash/big flood	3	15.0
Logging	2	10.0
Water pollution	6	30.0
Humanitarian crisis	5	25.0
Open burning	4	20.0

N = 20

Table 3 shows the frequency distribution of image themes and image backgrounds of documentary photography in the World's Top 20 Environmental Photography Winners in 2020. A total of 2 images (13 percent) for the flash/big flood theme used a natural background image, while 1 image (7 percent) used a building/man-made background image. Next are the themes related to the logging themes with 2 Images (20 %) using natural image backgrounds.

Table 3. Frequency of image themes and image background in documentary photography images
World's Top 20 Environmental Photography Winners 2020

Images Themes	Image Background	Frequency (f)	Percentage (%)
Flash/big flood	Human	-	-
	Building/Man-made	1	7
	Nature	2	13
	Human	-	-
Logging	Building/Man-made	-	-
	Nature	2	20
Water pollution	Human	2	7
	Building/Man-made	-	-
	Nature	4	13
	Human	4	16
Humanitarian crisis	Building/Man-made	-	-
	Nature	1	4
	Human	1	5
Open burning	Building/Man-made	1	5
	Nature	2	10

As for the theme of water pollution, 4 images (13%) used natural backgrounds in creating documentary photography, while 2 images (7%) used backgrounds introducing humans as the main background. This indicates that the water pollution that occurs is the result of human activity and that the impact of the water pollution also affects human life. For the theme of humanitarian crisis, 4 images (16 %) focused more on the use of backgrounds of humans. This was in line with the theme of images referring to environmental pollution issues with the theme of a humanitarian crisis, while 1 image (4 %) used a natural background.

For the theme of open burning, a total of 2 images (10 %) using the background of natural images to show environmental issues related to the theme of open burning, 1 image (5 %) using the background of human images, and 1 image (5%) using the background of buildings. The background image of this building is in line with the theme of open burning, which contributes to the impact on the environment through human actions.

2. Inferential Analysis
Inferential analysis was conducted to see the relationship between communication technology, image technicality, and image narrative in documentary photographic images World Top 20 Environmental Photography Winner's 2020 environmental issues on audience awareness in the digital age. Regression analysis tested three hypotheses to answer the objective.

H1: There is a significant relationship between communication technology in the interpretation of the meaning of environmental documentary photography images on audience awareness of environmental issues in the digital age.

H2: There is a significant relationship between image technicalities in the interpretation of the meaning of environmental documentary photography images on public awareness of environmental issues in the digital age.

H3: There is a significant relationship between image narrative and the interpretation of the meaning of environmental documentary photography images on public awareness of environmental issues in the digital age.

The study adopts a regression test with a quantitative approach. Regression analysis is used to assess the strength of the relationship between independent variables, specifically communication technology, technical images, and narrative images, and the dependent variable, which is the narrative interpretation of environmental issues in the digital age. Regression studies, as defined by Gay et al. (2012), help determine the strength of the relationship between two or more variables. However, it is essential to note that regression studies cannot establish a causal relationship between variables, and in this particular study, the variables are not manipulated (Fraenkel & Wallen, 2006).

Data were obtained through codebook procedures applied to 20 selected photographic images of the environment. These images were then analyzed using IBM SPSS version 27 software. To understand the results, statistical inference was employed. Statistical inference involves drawing conclusions or assumptions about a population based on sample data. Using Pearson correlation analysis, this study used inferential analysis to measure the relationship between two variables. This analysis helps determine the strength and direction of the relationship between variables.

By using this analysis, researchers can interpret the data in more detail. It allows researchers to make generalizations about the larger population based on the sample data analyzed. This helps provide a deeper understanding of the relationship between the independent variables (communication technology, technical images, and image narrative) and the dependent variable (narrative interpretation of environmental issues in the digital age).

To address the main objective of the study, regression analysis was performed using IBM SPSS version 27 software. Regression analysis is a statistical technique used to examine the relationship between variables and to make predictions or estimations based on that relationship. Before conducting the regression analysis, certain assumptions were tested to ensure the validity of the results. One of these assumptions is the normality assumption, which assumes that the data follows a normal distribution. This assumption was examined by analyzing normal probability plots.

A normal probability plot is a graphical tool that helps assess whether a dataset follows a normal distribution. Figure 3, which is referenced in the paragraph, likely displays the normal probability plot of the data used in the study. The plot would show how closely the data points align with a straight line, indicating the degree of departure from normality. Based on the statement provided suggests that the normal probability plot indicated a normal distribution of the data. This implies that the normality assumption was met, indicating no significant deviations from a normal distribution in the variables under consideration.

Additionally, linearity and homogeneity were mentioned as acceptable. Linearity refers to the assumption that there is a linear relationship between the independent and dependent variables. Homogeneity, on the other hand, refers to the assumption that the variance of the errors is constant across all levels of the independent variables. Ensuring that these assumptions are met increases the reliability and validity of the regression analysis results and strengthens the conclusions drawn from the study.

Based on the probability plot, indicates a normal distribution, suggesting that the data follows an expected pattern. Additionally, the absence of issues related to homogeneity and linearity further supports the data quality. These factors contribute to the reliability and validity of the study's findings and conclusions.
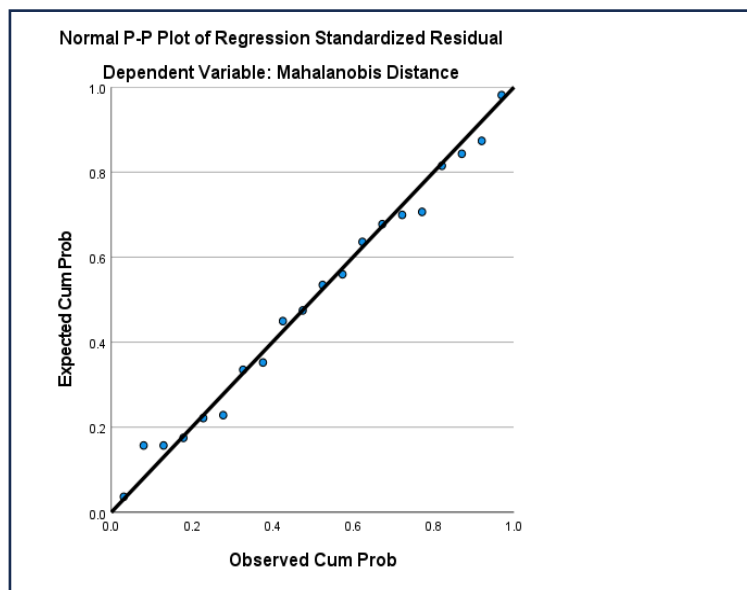
Figure 3. Normal probability plot

The normality analysis of the data is also carried out, and all the data are in a normal distribution in order." It suggests that the researchers have analyzed the data to assess its normality. The results of this analysis indicate that the data points are normally distributed, as shown in Figure 4.
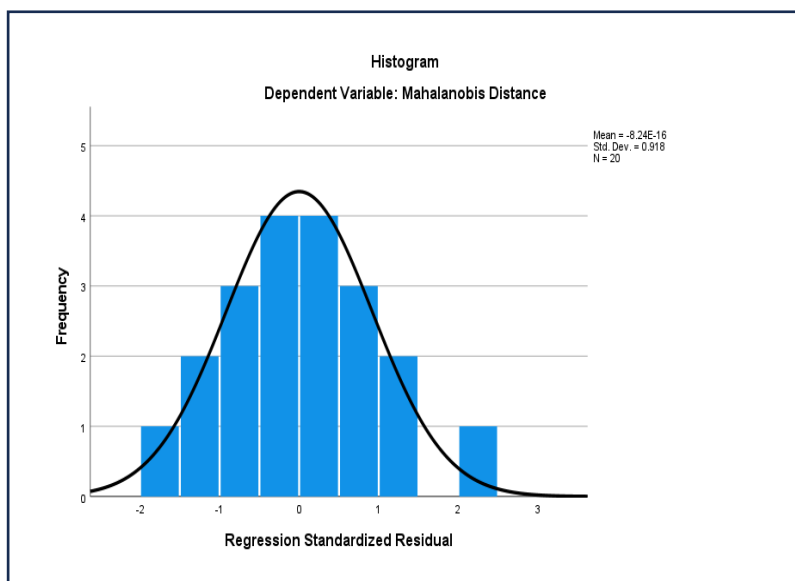

Figure 4. Histogram normality data

3. Regression Analysis

Table 4 displays the regression analysis results conducted on the independent variables, namely communication technology, image technicalities, and image narrative about the dependent variable of image interpretation on environmental awareness in the digital age. Regression analysis is a statistical tool for the investigation of relationships between variables.

Table 4. Regression analysis

	βeta	t	Sig.
Communication technology	0.025	0.267	0.793
Image narrative	0.939	10.075	0.001
Image technicalities	0.035	03.83	0.707

$**p < 0.05$ $r^2 = 0.500$ $F = 34.854$ Sig. = 0.000

The regression table showed a statistically significant F value of 34.854. Based on Table 5, the highest βeta value is the image narrative variable of 0.939, followed by the βeta value of the technical image of 0.035, and the last is the βeta value of the communications technology of 0.025.

This suggests that image narrative variables are significantly related to the interpretation of documentary photo images of environmental issues that shape audiences' awareness in the digital age.
The relationship between image narrative variables and the interpretation of documentary photographs of environmental issues plays a crucial role in shaping audience awareness in the digital age. By carefully selecting subjects, settings, and compositions, photographers can effectively convey powerful messages that resonate with viewers on a deeper level. Using these narrative elements helps connect the audience and the environmental issues portrayed in the images, fostering greater understanding and empathy.

In today's digital age, where visual content is widely shared and consumed, the strategic use of image narrative variables becomes even more important. Through compelling storytelling and visual representation, photographers can capture the attention of a broader audience and raise awareness about pressing environmental concerns. By leveraging these narrative techniques, photographers can engage viewers emotionally and intellectually, prompting them to reflect on the impact of human activities on the environment and inspiring them to take action toward positive change.

Nevertheless, this does not exclude the possibility of other variables significantly shaping audiences' awareness of documentary photographic images related to environmental issues.

The tolerance value also shows that the highest value is for the image narrative variable at 10.075, followed by the value of the technical image variable at 0.383, and the last one is the value of tolerance for communication technology, which is 0.267. In addition, the results of the analysis also show significant values for all variables. The results of the study showed that the highest significant value is the variable of communication technology, which is 0.793, followed by the value of the technical variables of 0.707 and the image of the technical variables, and the lowest is a significant value of 0.001. Therefore, all the initial hypotheses of this study are accepted and have a very significant correlation effect.

Discussion
The results of this study have shown that each of the main elements of the field of photography, specifically known as communication technology, image technicalities elements, and image narrative, are the main elements in the production of photographic images. The results have shown that the image narrative is among the three main elements that have the most significant relationship in the production of photography that can form awareness in the audience. The findings align with research by Leyva-Moral et al. (2022) that explaining narrative photography is a satisfactory learning method for nursing students, particularly in promoting creativity and understanding theoretical concepts. It explains how important narrative is in photography. Undeniably, the elements of communication technology and technical elements of the image also have significant relationship values and importance in producing quality photographic images. Bader (2018) also explains that photography is a crucial element in constructing histories, issues, and problems. However, the narrative of the image has a significant value compared to other elements when the subject in the image, the framing of the issue in the image, the number of subjects, the subject element, the influence of the image, the emotion of the image and the problem in the image are highlighted in each photographic image produced.

The use of image narrative as the main element in the production of photography can profoundly impact the audience's response to specific images. When narrative techniques are employed to shape the issue and content portrayed in each image, it establishes a relationship that influences the audience's perception.

Research conducted by Covert and Koro-Ljungberg (2015) supports the notion that narrative plays a crucial role in photography. Their study suggests that using narrative elements in shaping the content and message of images can significantly influence how viewers perceive and interpret them. The findings also align with findings by Seppänen and Väliverronen (2003) that photographs play a crucial role in environmental communication, highlighting aspects of reality and evoking emotions, while also serving as evidence and arousing emotions for conservation. By incorporating narrative techniques, photographers can create a storytelling aspect within their images, which enhances the audience's engagement and understanding. These highlight the importance of narrative in photography to effectively communicate ideas, emotions, and messages to the audience. Photographers can evoke specific responses and engage viewers deeper by utilizing narrative image elements. Scott (2019) proposes that environmental photography can promote environmental ethics and aid activists in their struggle against industrial pollution by promoting ecoanarchist theories through aesthetics.

As such, this image's narrative significance is intended to narrate and explain whatever issues occur. Kim (2016) explained that image narrative is a medium used to form an exciting understanding, has a clear relevance, and can communicate with the audience, especially in raising a significant issue.

Conclusion

In conclusion, overall after an analysis of all documentary photography images of the World Top 20 Environmental Photography Winner 2020, it was found that the use of elements for the main subject in each photographic image was seen to be more using natural subjects such as beaches and forests that more accentuate the impact or environmental impact. In addition, key subjects such as men, women, and children are also given concentration. These are intended to create an emotional impact and further explain the meaning of each image of this documentary photograph. By emphasizing these elements, the photographers effectively communicated the importance of environmental issues portrayed in their images.

Additionally, human subjects such as men, women, and children are prominently featured to create an emotional impact and convey the meaning of each photograph effectively. The use of natural subjects like beaches and forests in the documentary images serves to accentuate the environmental impact captured in the photographs. Human subjects add a personal touch to the images, making the environmental challenges more relatable and emotionally engaging. This approach humanizes the issues depicted in the photographs, fostering a deeper connection with the audience in the digital era. By focusing on natural settings and human subjects, photographers effectively communicate the critical importance and seriousness of environmental issues portrayed in their images.

The combination of natural landscapes and human presence helps convey the urgency for environmental conservation and sustainability efforts. This approach not only informs viewers but also motivates them to take action towards protecting the environment. In summary, the strategic use of natural subjects and human elements in documentary photography plays a crucial role in communicating the significance of environmental challenges today. By leveraging these elements effectively, photographers can engage viewers emotionally, provoke empathy, and highlight the significance of environmental protection efforts shown in their images.

In the context of documentary photography, narrative plays a vital role in conveying the message, meaning, and impact of the images. Through narrative, photographers can guide viewers through a visual journey that highlights the causes, effects, and potential solutions to environmental challenges. This storytelling approach enhances the overall impact of the images. By incorporating educational narratives, photographers can raise awareness, promote understanding, and inspire positive change in attitudes and behaviors toward environmental awareness.

A recommendation for future research could be to conduct a study focusing on the specific narrative techniques such as character and tension used in environmental photography that effectively engage viewers, evoke emotions, and educate audiences about environmental issues not only by focusing on photography but also video documentaries. Researchers could explore how different narrative elements such as the setting of

environment, conflict, props, composition, subject matter, visual storytelling techniques, and accompanying text contribute to the overall impact of environmental photographs.

Additionally, future research could also investigate the influence of environmental photography on inspiring action and promoting environmental conservation and sustainability efforts through digital channels. This could involve studying the responses of viewers to environmental photographs with varying narrative approaches to understand how different storytelling strategies affect audience perceptions, attitudes, and behaviors toward environmental issues.

To sum up the findings, narrative in environmental photography enriches the storytelling process, fosters emotional connections with viewers, and educates audiences about pressing environmental issues. By integrating narrative elements effectively, photographers can amplify the impact of their images, inspire action, and contribute to a greater awareness of environmental conservation and sustainability efforts.

References

Aaltonen, J. (2016). Spirits and ceremonies: How to construct religious experience in documentary film. *Journal of Religion & Film*, 20(1), Article 15.

Babbie, E. (2010). *The practice of social research* (12th ed.). Wadsworth Cengage Learning.

Bader, J. (2018). The use of photography as a mode of social and historical investigation. *Critique d'art*. https://doi.org/10.4000/CRITIQUEDART.36618

Banks, M., & Zeitlyn, D. (2015). *Visual methods in social research* (2nd ed.). SAGE Publications Ltd.

Bedi, K., & Varga, M. (2021). Visual perception and attitudes of students toward the role and importance of photography: Students' creative and artistic photographic works through project-based learning. *International Journal of Scholarly Papers for Media and Communications, 14*, 23-34. https://doi.org/10.14254/1800-7074/14-3/2

Bleiker, R., & Amy Kay. (2007). Representing HIV/AIDS in Africa: Pluralist photography and local empowerment. *International Studies Quarterly, 51*(1), 139–163. http://www.jstor.org/stable/4621705

Covert, H., & Koro, M. (2015). Layers of narratives, images, and analysis. *Qualitative Research Journal, 15*, 306. https://doi.org/10.1108/QRJ-08-2014-0042

Creswell, J., & Garrett, A. (2008). The "movement" of mixed methods research and the role of educators. *South African Journal of Education, 28*, 321-333. https://doi.org/10.15700/saje.v28n3a176

Dhir, A., Kaur, P., & Rajala, R. (2021). Visual content on social media: Impact on user engagement and communication. *Journal of Business Research, 135*, 494-504. https://doi.org/10.1016/j.jbusres.2021.05.014

Farnsworth, K. D., Ducey, M., & Carroll, N. (2021). The impact of documentary photographs on environmental concern: An experimental investigation. *Visual Communication Quarterly, 28*(2), 99–114. https://doi.org/10.1080/15551393.2021.1895864

Fraenkel, J. R., & Wallen, N. E. (2006). *How to design and evaluate research in education* (5th ed.). New York: McGraw-Hill Publishing.

Gay, L. R., Mills, G. E., & Airasian, P. W. (2012). *Educational research: Competencies for analysis and application* (10th ed.). Pearson, Upper Saddle River.

Günay, M. (2021). Design in Visual Communication. *Art and Design Review*. https://doi.org/10.4236/ADR.2021.92010

Jones, M., Holmes, K., & Pattison-Williams, J. (2020). The impact of environmental photography on advocacy: A case study of Greenpeace's Arctic campaign. *Environmental Communication, 14*(3), 382–396. https://doi.org/10.1080/17524032.2019.1668199

Haila, Y., & Levins, R. (1992). *Humanity and nature: Ecology, science and society*. Pluto Press.

Kim, J. (2016). *Understanding narrative inquiry*. Sage Publications.

Lana, J., & Chen, W. (2021). An analysis of the characteristics of cross-media photography based on visual communication design. *Frontiers in Art Research Language, 3*(2), 30-34.

Lehmuskallio, A., Häkkinen, J., & Seppänen, J. (2019). Photorealistic computer-generated images are difficult to distinguish from digital photographs: A case study with professional photographers and photo-editors. *Visual Communication, 18*(4), 427-451. https://doi.org/10.1177/1470357218759809

Leon, S. (2018). *The meaning in photography*. Routledge.

Leyva-Moral, J., Aguayo-González, M., Folch, C., Rafael, S., & Gómez-Ibáñez, R. (2022). Nursing students' perceptions of the efficacy of narrative photography as a learning method: a cross-sectional study. *Nursing & Health Sciences*. https://doi.org/10.1111/nhs.12932

Li, Y., & Xie, Y. (2020). Is a picture worth a thousand words? An empirical study of image content and social media engagement. *Journal of Marketing Research, 57*(1), 1–19. https://doi.org/10.1177/0022243719881113

Lu, Y., Liu, S., & Bai, Y. (2022). Analysis of digital photography technology in the era of big data. *Mobile Information Systems, 2022*, 1-8. https://doi.org/10.1155/2022/3880755

McMullin, C. (2023). Transcription and qualitative methods: Implications for third sector research. *Voluntas, 34*, 140–153. https://doi.org/10.1007/s11266-021-00400-3

Moran, M. J., & Tegano, D. W. (2020). Moving toward visual literacy: Photography as a language of teacher inquiry. *Early Childhood Research and Practice, 7*(1), 1-20.

Nabi, R., & Green, M. (2015). The role of a narrative's emotional flow in promoting persuasive outcomes. *Media Psychology, 18*, 137–162. https://doi.org/10.1080/15213269.2014.912585

Neuendorf, K., & Kumar, A. (2016). Content analysis. In *Encyclopedia of communication research methods*. https://doi.org/10.1002/9781118541555.wbiepc065

Page, J. T., & Duffy, M. (2021). *Visual communication: Insights and strategies*. John Wiley & Sons.

Naga, V., Challa, S., Padmalatha, P., & Vamsi, B. (2022). Influence of relationship marketing variables on social media marketing. *The Empirical Economics Letters, pp. 20*, 241–249.

Sæther, S. Ø. (2020). *Why photography? Why photography?* N. pag. Print.

Scott, C. (2019). The eco-anarchist potential of environmental photography. *The Routledge Companion to Photography Theory*. https://doi.org/10.4324/9781315727998-18

Selvin, E. (2017). *The beauty of documentary photography*. Zekri Publisher.

Seppänen, J., & Väliverronen, E. (2003). Visualizing biodiversity: The role of photographs in environmental discourse. *Science as Culture, 12*, 59-85. https://doi.org/10.1080/09505430320000062263

Wang, Y., Chen, Y., & Zhou, X. (2021). Visual communication in the digital age: An empirical study of Instagram use. *Journal of Business Research, pp. 129*, 412–421. https://doi.org/10.1016/j.jbusres.2021.06.042