

African Multidisciplinary Journal of Development (AMJD)

Page: 94-107

<https://amjd.kiu.ac.ug/>

HEALTH THROUGH LENS: IMPACT OF DIGITAL PHOTOGRAPHY ENGAGEMENT ON PRO-ENVIRONMENTAL BEHAVIOUR AND STRESS LEVEL AMONG UNDERGRADUATES IN NIGERIA

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Abstract

Against the backdrop of Nigeria's ecological challenges and rising university students' mental health concerns, this study examined the impact of digital photography engagement as a novel tool for promoting environmental consciousness and stress reduction among undergraduate students in Nigeria. A descriptive survey design was employed, sampling 150 students from Federal, State and Private universities in Osun State Nigeria. The results show that digital photography has a predominantly positive impact on environmental behaviour and mental health, serving as a therapeutic outlet for stress management, enhancing mindfulness and supporting emotional expression and self-esteem. However, social comparison and perfectionism emerged as potential drawbacks. Key findings indicated that 85% of the respondents reported being inspired to engage in pro-environmental behaviours through sharing photographs of the natural environment on social media while 86% acknowledged the positive role of digital photography on the mental health. Also, 69% of respondents recognized the potential for digital photography to exacerbate feelings of pressure. Regression analysis revealed that engagement in nature digital photography predicts pro-environmental behaviour as $R^2 = 56\%$, $F(1,148) = 75.334$; $P < 0.001$). The study recommends encouraging digital photography as a hobby or therapeutic activity and integrating it into a mindfulness programme. Educating individuals about the potential negative impacts of social comparison and perfectionism is also crucial. Federal and State Ministries of Education, National University Commission (NUC) and other stakeholders in education should incorporate nature photography in the curriculum for promotion of pro-environmental behaviour among undergraduates and graduates of Nigerian Universities.

Keywords: Digital photography, Pro-environmental behaviour, Mental health, Self-esteem, Stress reduction, Nigerian Undergraduates

Highlights

- 1) Exposure to nature photography can increase environmental concerns and pro-environmental behaviour
- 2) Taking photographs can promote mindfulness and provide a therapeutic outlet of emotional expression
- 3) Excessive consumption of visual media can potentially lead to environmental apathy

Introduction

In today's digitally connected world especially among the 'Gen Z', digital photography has become a powerful tool for expression and interactions among people and with the environment. Digital photography applications and their usage amongst students have rapidly increased in the last 10 years, and their effect on students' academic performance varies. The attractiveness of Digital photography continues to increase because it provides people with easy ways to interact with others. Digital photography usage is considered one of the most common activities among university students that could impact their daily lives (Maradutua et al., 2024).

Digital technology (DT) such as photography is capable of providing positive outcomes for its users. This is one major reason most users have become addicted to it. Studies like that of Poškus et al., (2019) affirmed that DT has a lot of positive impacts on its users which include peer support, information, professional online support informal benefits (peer pressure and rumour, distractions). However, Kelly et al., (2018) and Niederkrotenthaler et al (2019) were of the opinion that the use of digital photography can be linked to cases of depression, suicide and self-harm among the youths.

The transition from analogue to digital photography can significantly influence an individual's environmental consciousness. It can alter individual perception of nature and as well foster awareness of ecological issues. The transition from analogue to digital photography also holds the potential of changing how individuals perceive and interact with their surroundings which could encourage a more profound appreciation for nature and environmental conservation (Siri et al., 2022). It allows for spontaneous sharing and dissemination of images which can highlight environmental issues and inspire collective actions (Siri et al., 2022). It may also promote community building for example an online platform can facilitate how communities focus on nature advocacy. Photographs can serve as a tool for environmental story-telling and raising awareness among the youth.

Spending time in the natural ecosystem may improve mental health. Taking photographs of environment could make the photographers to spend some time in natural and noiseless environment thereby having access to fresh air. This can improve mental health which in turn may enhance individuals' motivation to engage in pro-environmental behaviours (Rahmadania et al., 2023). However, Brassine et al., (2020) have warned that portrayal of environmental degradation through digital images can sometimes lead to desensitization or stigma which may affect public perception and response concerning environmental issues.

Digital photography could be a beneficial tool that can impact youth stress levels significantly especially as a beneficial self-care strategy in the midst of economic hardship as being experienced in Nigeria currently. Scholars like Dyer, (2023) as indicated that daily digital photography promotes mindfulness, creativity and connections which may contribute to a reduction in stress in busy professional individuals. Digital photography can connect individual with nature for example capturing nature through the lens of camera could enhance well-being and reduce stress as it encourages individuals to step outside and appreciate their surroundings. Moreover, digital photography could enhance therapeutic settings and assist individuals with mental health issues by providing an outlet for them to express themselves. However, scholars like Nick et al., (2022) have warned that while digital photography can reduce stress, it could also lead to digital stress among adolescents who are addicted to excessive engagement with digital media.

The relationship between technology use and youth mental health issues such as depression, self-harm and anxiety is complex and multifaceted. Excessive screen time is linked to heightened depressive

symptoms among youths (Gabrielle et al., 2024). (Knopf, 2024) also identified social media platforms to be responsible for facilitating cyberbullying and promoting unrealistic beauty standards leading to decreased self-esteem and increased self-harm behaviours among youths (Talukdar, 2024). Cultural and socio-economic factors can influence how social media impacts mental health with marginalised youth facing greater risks (Haoran, 2024).

Given how deeply ingrained photography is in everyday life, it is important to understand the complex causal pathways that connect habitual digital photo activity and emotional well-being. Building cautious frameworks for safe adoption that address mental health needs is guided by an understanding of predictive variables and user characteristics that determine whether photography practices pose psychological threats or reassuring comforts. Examining digital photography's role in improving or worsening mental health markers is critically important for society, especially as depression, anxiety, suicide and body image disorders rise amid the Instagram era's constant depiction of inflated perfectionism. Even artificial filters and editing are made possible by photo manipulation apps, further widening the gaps between the real and imagined selves.

Over the past century, the widespread use of smartphones and social media has facilitated the explosive growth of digital photography and online photo sharing, which has completely changed the nature of photography from an expensive hobby save for special occasions to a commonplace daily activity entwined with social interaction. Nonetheless, the speed at which this adoption occurred far outpaced peoples' comprehension of the psychological effects of long-term digital photo capture and the public display habits that are now ingrained in everyday life (Barrow et al., 2023). While initial studies revealed promising benefits like enhanced pleasure in experiences when photographing rather than passive observing and improved mood when reminiscing over meaningful images, the prevalence of idealised self-portrayals flooding social media feeds is now associated with surging anxiety, emotional detachment issues, body image issues, isolation, depression symptoms (Barrow et al., 2023).

The World Health Organisation (WHO) emphasises the importance of environmental factors in determining health outcomes. It has become a ubiquitous aspect of modern life particularly among the generation Z. Limited studies have explored the intersection of digital photography, pro-environmental behaviour and stress levels among Nigerian university undergraduates. For Nigerian undergraduates, digital photography offers a unique opportunity to engage with nature, document environmental issues and share sustainable practices (Hassan & Deshun, 2024).

However, the extent to which digital photography influences pro-environmental behaviour and stress levels among this demographic remains unclear. Therefore, this study explores the intersection of digital photography, environment and wellbeing among Nigerian undergraduates contributing to a deeper understanding of the complex relationships between technology, nature and human health. Specifically, the study examined the influence of engaging in digital photography on stress reduction; evaluated the impact of digital photography on self-esteem and investigated the potential drawbacks of digital photography on mental health including excessive use and social comparison. The study was guided with the following research questions: What are the potential drawbacks of digital photography on mental health including excessive use and social comparison? What is the impact of digital photography on self-esteem? What is the influence of engaging digital photography on stress reduction? One hypothesis was tested to examine the correlation between digital photography engagement and pro-environmental behaviour.

Methodology

Research Design: A descriptive survey design was adopted for the study. Nigeria has a unique cultural and environmental context. This provides an opportunity to explore the relationship between digital photography, pro-environmental behaviour and stress levels in a developing country like Nigeria.

Study Area: Osun State is one of the rural states in Nigeria. The state is located in the southwestern region of Nigeria and boast a vibrant educational landscape with several reputable universities and other tertiary institutions. These institutions comprise private state and federal owned institutions. The institutions offer a wide range of academic programmes, cutting-edge research opportunities, and innovative learning experiences.

Notable universities in the state include the federal owned university, Obafemi Awolowo University, and the state-owned university, Osun State University, popularly known as UNIOSUN. Also, there is Bowen University, a private university owned by the Nigerian Baptist Convention in Iwo area of the state. Other universities in the state include Federal University of Health Science in Ila-Orangun, the University of Ilesa, Adeleke University, Fountain University and Joseph Ayodele Babalola University (JABU). It is important to state that these universities in Osun State have made significant contributions to the development of human capital, innovation and economic growth in Osun State. The universities offer various programmes in Agriculture, Arts, Engineering, Law, Sciences, Social sciences and Medicine.

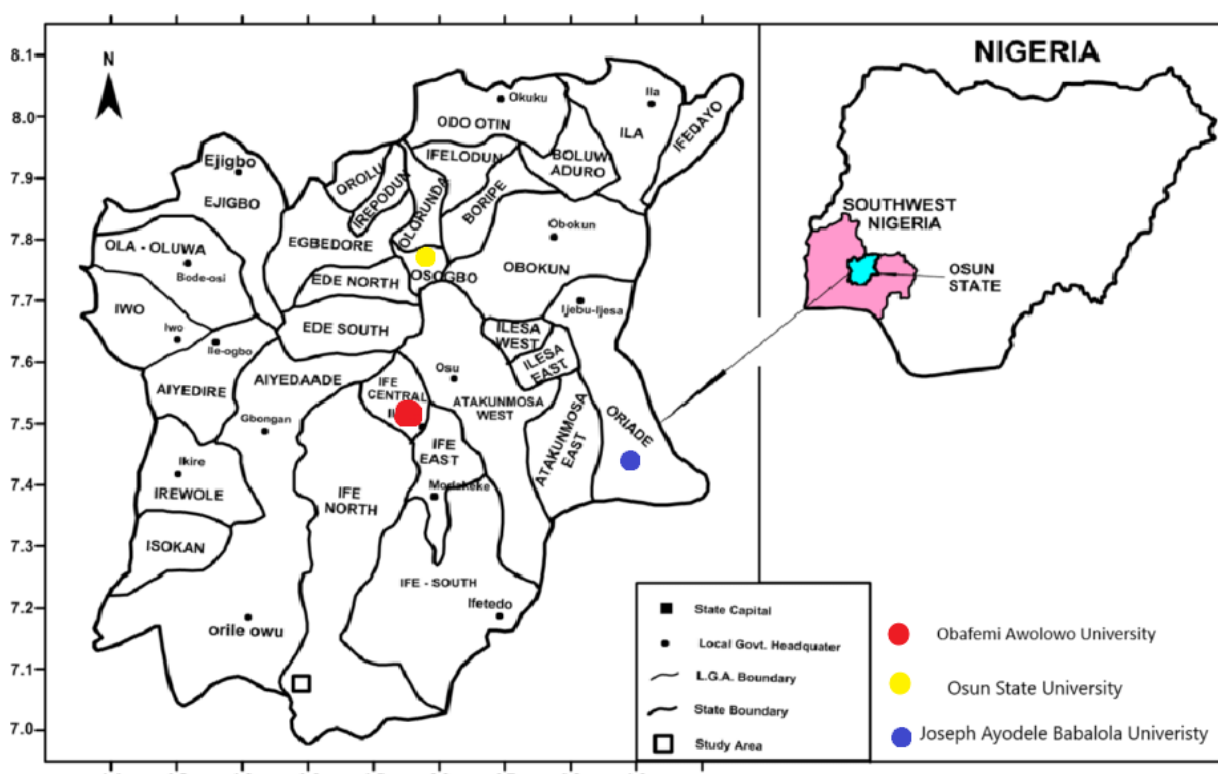


Figure1: Map showing the locations of universities under this study

The population of the study consisted of undergraduate students aged 16-25 enrolled in private and public universities across Osun State Nigeria. The population include students from various disciplines with basic to advanced digital photography experience and ownership of digital devices. This study adopted a simple random sampling technique. Three Universities (Joseph Ayo Babalola University, Obafemi Awolowo University and Osun State University) were selected among the universities from Osun State. In each of the Universities, simple random sampling technique was applied to select

respondents for the study. This sampling technique was further used to select 50 students from each of the universities Altogether, 150 students constituted the sample size of the study.

The researcher designed and administered a questionnaire titled: “The Effects of Digital Photography on Pro-environmental Behaviour and Mental Health (DIPM). This questionnaire was used to collect data from the selected respondents. The questionnaire was divided into four sections. Section A was based on the demographic data of the respondents while section B contained items on the impact of digital photography on pro-environmental behaviour of the respondents. Section C contained items on the impact of digital photography on self-esteem and self-perception. Section D had items on the potential drawbacks of digital photography on mental health.

Efforts were made during the development and construction process to ensure the instrument measured accurately what was designed to assess. The questionnaires were checked by experts in the field to Educational Technology, Psychology and Environmental Science.

The test re-test method was employed to determine the reliability of 25 questionnaires administered for pilot test. The instrument was administered twice to a set of respondents who will not be part of the respondents within a two-week interval and the data collected were analysed using Cronbach Alpha with a 0.79 value

The study was carried out in universities in Osun state. One hundred and fifty of the questionnaires was administered to the respondents and efforts were made to see that the respondents understood the contents of the materials. Assistance was given where necessary for compliance, and completed questionnaires will be retrieved immediately. Questionnaire administered was analyzed using frequency count with percentages, means, standard deviation and regression analysis was done to test the hypothesis.

Results

Demographic characteristics of the respondents

The data presented in Table 1 shows the demographic characteristics of the respondents using percentages. The Table reveals that out of the 150 undergraduates that participated in the study, the Table shows the age distribution of the respondents, it was revealed that 78.7% of the respondents are between ages 18-25, 18.7% of them are between ages 26-30 and 0.7% of them are between ages of 31-35, while 36 and above were 2.73 representing (48.7%) of the students are male, while 77 representing (51.3%) of the students are female. This shows that both male and female respondents were sampled equally. Finally, the Table furthermore revealed that 14% of the respondents were in 100 level, 31.3% were in 200 level, 21.3% of them were in 300 level students and 33.3% were in 400 level.

Table 1: Distribution of the respondents by gender, campus, level of education and age

Variables	Frequency	Percentage (%)
Age (Years)		
18 – 25	118	78.7
26 – 30	28	18.7
31 – 35	1	0.7
36 and above	3	2

Total	150	100
Gender		
Male	73	48.7
Female	77	51.3
Total	150	100
Level of study		
100	21	14
200	47	31.3
300	32	21.3
400	50	33.3
Total	150	100

Impact of digital photography on pro-environmental behaviour among undergraduates

Table 2 shows the result of the survey on the impact of digital photography engagement on pro-environmental behaviour among Nigerian undergraduates. The results show that there was a positive relationship between digital photography engagement and pro-environmental behaviour among Nigerian youths. The result shows a significant majority (85.7%) of the respondents reported being inspired to engage in pro-environmental behaviour through sharing photographs of natural environment on social media (Table2).

More than 76% of the respondents reviewed photographs of environmental damage. Similarly, taking photographs of environmental issues motivated not less than 78% of the respondents to adopt sustainable environmental practices (Table 2). In addition, the mean scores for each item under Table 2 range from 2.57 to 3.32, indicating a moderate to high level of agreement. The standard deviation (SD) values were relatively low, indicating consistency in respondents' opinions. Items that had the highest mean scores as shown in Table 2 were sharing of natural environments photographs and appreciating nature's beauty through digital photographs. These were the strong motivators for pro-environmental behaviour.

Table 2: Impact of digital photography on pro-environmental behaviour among undergraduates

S/N	Items	SA	A	D	SD	Mean	S/D
1	Sharing photographs of natural environments on social media inspires me to engage in pro-environmental behaviours.	68(45.3%)	61(40.4%)	0(0)	21(14%)	3.32	±0.69
2	Taking photographs of environmental issues (e.g., pollution, climate change) motivates me to adopt sustainable practices.	28(18.7%)	89(59.3%)	33(22%)	0(0)	3.30	±0.56
3	Digital photography helps me appreciate the beauty of nature and encourages me to protect it.	75(50%)	55(36.7%)	1(0.7)	19(12.7%)	3.22	±0.86
4	Posting photographs of eco-friendly actions (e.g., recycling, conservation) on social media encourages others to adopt similar behaviours.	28(18.7%)	77(51.3%)	43(28.7%)	2(1.3%)	3.08	±0.67

5	Reviewing photographs of environmental damage prompts me to reflect on my own environmental impact.	66(44%)	49(32.7)	32(21.3%)	7(4.7%)	2.94	±0.75
6	Sharing photographs of environmental successes (e.g., renewable energy, sustainable agriculture) inspires me to support environmental causes.	71(47%)	40(26.7%)	34(22%)	7(4%)	2.57	±0.09

Impact of digital photography on undergraduate mental health and well-being

The result in Table 3 indicates that a significant majority (86%) of respondents agreed that digital photography positively impacted their mental health and well-being as undergraduates in Nigeria. The mean score of 3.26 with SD ± 0.7 suggested a generally positive perception. Most respondents (81.3%) viewed digital photography as a therapeutic way of managing stress and anxiety with 22% strongly agree and 59.3% agree to the survey question. The mean score was 3.03 with a SD ± 0.63 , indicating moderate agreement. Moreover, a significant majority of the respondents 86.7% feel mindful when engaging in digital photography and sharing it online with 86.7% of the respondents agreeing (Table 3). The mean score as shown in the Table is 3.22 while the SD is ± 0.6 , which indicates a consistent positive affirmation.

Moreover, 80% of respondents agreed that digital photography can aid emotional expression and processing, with 28.7% strongly agreeing and 51.3% agreeing. The mean score of 3.07 and a SD of ± 0.72 indicated a positive view. Opinions were more divided here, with 21.3% strongly agree and 44% agree (65.3% in total) that comparing their digital photograph work to others negatively impacts mental health (Table 3). A significant minority, 32.7%, disagreed as shown in Table 3. The mean score is 2.84 with SD of ± 0.82 , indicating variability in responses. Similarly, 69% of respondents felt that digital photography can heighten pressure or perfectionism. The mean score of 2.87 and SD ± 0.79 also suggest mixed feelings (Table 3).

Table 3.3: Impact of digital photography on undergraduate mental health and well-being

S/N	Items	SA	A	D	SD	Mean	S/D
1	Engaging in digital photography positively impacts your mental health and well-being	61(40.7%)	68(45.3%)	21(14%)	0(0)	3.26	±0.7
2	Digital photography serves as a therapeutic outlet for managing stress and anxiety	33(22%)	89(59.3%)	28(18.7%)	0(0)	3.03	±0.63
3	You feel a sense of mindfulness when you take digital photograph and share it online.	55(36.7%)	75(50%)	19(12.7%)	1(0.7)	3.22	±0.68
4	Digital photography helps you express and process your emotions in a healthy way	43(28.7%)	77(51.3%)	28(18.7%)	2(1.3%)	3.07	±0.72
5	Comparing your digital photography work to others' affects your mental health	32(21.3%)	66(44%)	49(32.7)	7(4.7%)	2.84	±0.82
6	Digital photography can sometimes exacerbate feelings of pressure or	33(22%)	71(47%)	40(26.7%)	6(4%)	2.87	±0.79

perfectionism, negatively impacting
mental health

Impact of Digital Photography on Self-Esteem

Table 4 presents the analysis of the impact of digital photography on undergraduates' self-esteem. A majority of respondents (61.3%) felt moderately to extremely confident about their digital photography skills. The mean score of 3.12 indicated a general sense of confidence, while the SD of 0.96 suggested moderate variability in the responses. Most respondents (64.7%) believed that their digital photography skills had a moderate to significant impact on their self-esteem. The mean score of 3.08 reflects this moderate impact, and the higher SD of 1.21 indicates greater variability in perception. The responses show that 61.3% of respondents were moderately to extremely satisfied with the quality of their digital photographs. The mean score of 2.98 suggested an overall moderate satisfaction, and the SD of 1.09 indicated a fair amount of variability in satisfaction levels.

A significant portion of respondents (69.3%) report that receiving positive feedback moderately to extremely affects their self-esteem. The mean score of 2.84 reflects this impact, while the SD of 1.44 indicated a high level of variability in the respondents' perception of positive feedback effects on their self-esteem. The responses indicated that 73.3% of participants felt that digital photography contributed moderately to extremely to their sense of creativity and self-expression. The mean score of 2.70 suggested a moderate contribution, and the SD of 1.15 indicated some variability in the responses (Table 4).

Table 4: Statistical Analysis of the Impact of Digital Photography on Self Esteem

S/N	ITEMS	Not at all	Slightly	Moderately	Significantly	Extremely	Mean	SD
1	How confident do you feel about your digital photography skills?	11(7.3)	36(24)	74(49.3)	18(12)	11(7.3)	3.12	±0.96
2	To what extent do you believe your digital photography skills impact your self-esteem?	23(15.3)	30(20)	53(35.3)	25(16.7)	19(12.7)	3.08	±1.21
3	How satisfied are you with the quality of your digital photographs?	10(6.7)	48(32)	44(29.3)	25(16.7)	23(15.3)	2.98	±1.09
4	How much does receiving positive feedback on your digital photographs affect your self-esteem?	18(12)	28(18.7)	48(32)	24(16)	32(21.3)	2.84	±1.44
5	How much does digital photography contribute to your overall sense of creativity and self-expression?	9(6)	31(20.7)	43(28.7)	41(27.3)	26(17.3)	2.70	±1.15

Impact of digital photography on stress reduction

A significant majority of respondents (80%) agreed that engaging in digital photography helped them in stress reduction. The mean score of 3.19 suggested a strong positive impact on stress reduction (Table 5). The SD of 0.77 indicated relatively consistent responses. Most respondents (76%) felt more relaxed after a photography session with their digital camera. The mean score of 2.96 and SD of 0.68 indicated moderate variability in relaxation levels after photography sessions. Responses were mixed regarding the use of digital photography as a coping mechanism during stressful situations, with 55.3% agreed and 44.7% disagreed with the statement (Table 5).

The mean score of 2.78 suggested a moderate impact, with SD of 0.96 indicating some variability in responses. A majority of respondents (64.7%) agreed that certain features of digital photography, such as post-processing or exploring new locations, contributed more to stress reduction. The mean score of 2.88 supported this positive view, and the SD of 0.81 indicated a moderate level of consistency in the responses (Table 5). A notable portion of respondents (70.7%) agreed that digital photography provided a therapeutic outlet for stress relief compared to other activities. The mean score of 2.92 suggested a moderate positive impact, and the SD of 0.73 indicated relatively consistent responses. A majority of respondents (70%) agreed that the process of capturing and editing digital photographs helped them focus on the present moment and alleviated stress. The mean score of 2.92 reflected a positive impact (Table 5).

Table 5: Analysis of the impact of digital photography on stress reduction

S/N	ITEMS	SA	A	D	SD	Mean	S/D
1	engaging in digital photography helps reduce stress in your daily life?	61(40.7%)	59(39.3%)	28(18.7%)	2(1.4%)	3.19	±0.77
2	you feel more relaxed after a photography session with your digital camera?	32(21.3%)	82(54.7%)	35(23.3%)	1(0.7%)	2.96	±0.68
3	when you encounter stressful situations, do you turn to digital photography as a means of coping or distraction?	33(22%)	59(33.3%)	61(40%)	7(4.7%)	2.78	±0.96
4	certain features of digital photography, such as post-processing or exploring new locations, contribute more to stress reduction?	39(26%)	58(38.7%)	50(33.3%)	3(2%)	2.88	±0.81
5	digital photograph provides a therapeutic outlet for stress relief compared to other activities?	34(22.7%)	72(48%)	43(28.7%)	1(0.7%)	2.92	±0.73
6	the process of capturing and editing digital photographs helps you focus on the present moment and alleviate stress?	41(27.3%)	64(42.7%)	38(25.3%)	7(4.7%)	2.92	±0.84

Hypothesis: Ho1. Engagement in digital photography has significant effect on undergraduate pro-environmental behaviour in Nigeria. To determine the predictive effects of the independent variables of the study (engagement in digital photography) on the dependent variable (pro-environmental

behaviour), a linear regression analysis was carried out. The finding as indicated in Tables 6 – 10 revealed that the engagement in digital photography has a significant effect on pro-environmental behaviour among undergraduates in Nigeria. The total variance explained by the model was $R^2 = 56\%$, $F(1, 148) = 75.334$, $p < 0.001$. The predictors nature digital photography account for a significant amount of the pro-environmental behaviour of the respondents ($\beta = 0.75$, $p < 0.001$) (Table 8). This result implies that engaging in nature photography has statistically significant effects on pro-environmental behaviour of undergraduates in Osun State Nigeria.

Table 6: Mean and Standard Deviation Values

	Mean	Std. Deviation	N
Pro-environmental behaviour	3.1033	.94548	150
Frequency of use of digital cameral	2.5333	1.00780	150

Table 7: Correlations

		Pro-environmental behaviour	Frequency of use of digital cameral
Pearson Correlation	Pro-environmental behaviour	1.000	.752
	Frequency of use of digital cameral	.752	1.000
Sig. (1-tailed)	Pro-environmental behaviour	.	.000
	Frequency of use of digital cameral	.000	.
N	Pro-environmental behaviour	150	150
	Frequency of use of digital cameral	150	150

Table 8: Coefficients ^a

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error				Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	1.316	0.14		9.5	.000	1.06	1.59		
Frequency of use of digital cameral	0.706	0.05	0.75	13.9	.000	.60	.806	1.000	1.000

a. Dependent Variable: Pro-environmental behaviour

Table 9: Model Summary ^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
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1	.752 ^a	.566	.563	.62526	.907
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a. Predictors: (Constant), Frequency of use of digital cameral

b. Dependent Variable: Pro-environmental behaviour

Table 10: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.334	1	75.334	192.695	.000 ^b
	Residual	57.861	148	.391		
	Total	133.195	149			

Discussion of Findings

The study investigated the impact of digital photography on pro-environmental behaviour and mental health, focusing on aspects such as stress reduction, mindfulness, emotional expression, social comparison, and the potential for exacerbating feelings of pressure or perfectionism. The results revealed a multifaceted relationship between digital photography pro-environmental behaviour and mental health, highlighting both positive and negative influences.

Exposure to natural photography increased undergraduates' environmental concerns and willingness to engage in pro-environmental behaviour (Zhang et al., 2023). Visual images have the potential to influence individuals' environmental attitudes and behaviour. Good visual images of nature can promote positive behaviour like caring for the environment and prevention of environmental pollution (Kaltenborn & Bjerke 2002). Social media platforms can effectively promote environmental awareness among youths. It can inspire action through visual storytelling. The result also supports Environmental Identity Theory which posits that individuals' emotional connections to nature influence their environmental behaviours (Clayton 2003). However, the result of this investigation contrasts with research suggesting visual media can also perpetuate environmental apathy and disengagement as found by Smith & Joffe (2012). This discrepancy may be attributed to the specific context and design of the previous study.

Engaging in digital photography positively impacts their mental health and well-being. This aligns with existing studies that suggest creative activities such as photography can enhance mental health by providing a sense of achievement and a means for self-expression (Elsayyad, 2017). Engagement in digital photography was found to serve as a therapeutic outlet for managing stress and anxiety as engaging in creative hobbies can be a form of stress relief. It allows individuals to focus on a task and temporarily escape from stressors (Stroebe 1999). There is a feeling of mindfulness when taking and sharing digital photographs. Mindfulness characterized by being present in the moment is known to reduce stress and enhance mental clarity. Focusing one's camera to capture images can bring individuals into a state of mindfulness which is beneficial to health (Newhall, 1985).

Digital photography aid emotional expression it allows individual to express and reflect on their feelings through visual art. Positive feedback by viewers on photographs significantly affected self-esteem for more than half of the participants suggesting that digital photographs can significantly boost self-esteem through external validation and self-affirmation. However, it should be noted that the study also identified some potential drawbacks which include feelings of pressure and perfectionism due to

desires to create perfect images and the pressure to receive positive feedback can lead to stress and anxiety, counteracting the potential therapeutic benefits of digital photography.

Furthermore, the regression model used in the study shows that engagement in digital nature photography is a significant factor for pro-environmental behaviour of the respondent in the study area (Barrable, & Booth, 2020). The importance of this predictor in promoting pro-environmental behaviour was highlighted by the statistical significance, which implies that interventions aimed at encouraging nature photography in schools and around homes may have a particularly strong effect on increasing pro-environmental and sustainable behaviour of students in Osun State. This outcome is in line with the findings of (Kawas et al., 2019).

Conclusion

This study explored that digital photography and the impact of digital photography on pro-environmental behaviour and mental health among undergraduates in Nigeria. The findings of this study revealed a complex relationship highlighting both positive and negative influences. On the positive side, digital photography promotes environmental awareness, concern and behaviour supporting Environmental identity theory. It has a positive impact on mental health and well-being among undergraduate students. It serves as a therapeutic outlet for stress management, enhances mindfulness and aids emotional expression and self-esteem among youths.

However, the study also identified potential drawbacks including feelings of pressure and perfectionism steaming from the desire for perfect images and positive feedback which can lead to anxiety and stress, counteracting digital photography and therapeutic benefits. Despite this, the overall findings suggest digital photography can be a valuable tool for promoting positive environmental behaviour among undergraduates.

Respondents see digital photography as essential for promoting good environmental behaviour and sustainability. This result supports the addition of technology in sustainability learning and call for curriculum reform to include digital photography for nature conservation. The regression model as presented indicated that engagement in digital photography predicts positive environmental behaviour among the students $R^2 = 56\%$, $F(1, 148) = 75.334$, $p < 0.001$ with beta value of 0.75, $p < 0.001$. This has implication for Federal and State Ministries of Education, curriculum planners, National University Commission (NUC) and other stakeholders in education in Osun State and Nigeria as a whole to incorporate nature photography in the curriculum for promotion of pro-environmental behaviour among undergraduates and graduates of Nigerian Universities.

Recommendations

- 1) Federal and State Ministries of Education, National University Commission (NUC) and other stakeholders in education should incorporate nature photography in the curriculum for promotion of pro-environmental behaviour among undergraduates of Nigerian Universities.
- 2) Environmentalist activities should leverage social media for an environmental awareness campaign.
- 3) Social media platforms can be used to amplify the environmental and mental health benefits of digital photography by providing a platform for visual storytelling and inspiring pro-environmental action and reduction of stress level.
- 4) Schools should offer workshops and classes on digital photography to encourage environmental behaviour and boost students' confidence and self-esteem.

- 5) Schools should educate individuals about the potential negative impacts of social comparison and perfectionism in digital photography.

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