

Creating Sustainable Designs: How the Arts can Encourage Environmental Responsibilities in Material Selections

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ABSTRACT

This paper investigates how creative arts could influence environmentally conscious material selection choices in design processes using sustainability as a key mediating component. More especially, the study emphasises on how the creative arts could inspire these decisions. The global spread of environmental problems has coupled with the importance of incorporating sustainable ideas into creative and design procedures. Creative arts provide fresh perspectives on environmental challenges as well as help to build cultural values by means of visual storytelling, experimentation, and audience participation. By using eco-friendly techniques in their job, creative experts have chances to help to lessen their impact on the surroundings. This will enable them to use goods that have less of an impact on the environment, including those that are recyclable, biodegradable, or obtained from a real source. This research aims to look at how the arts may raise awareness, encourage analysis, and show how ecologically conscious choices might be carried out. The main goal of this study is to change people's conduct around the consumption of tangible items. Simultaneously with sustainability serves as a link between innovative ideas and responsible outputs, it also guarantees that beauty does not come at the price of the planet. The research shows that the arts have great power to inspire environmentally conscious behaviour by assessing case studies of sustainable design, artistic projects, and instructional programs. These results lead one to appreciate the premise that more deliberate material choice and environmental stewardship are results of creative expression impacted by sustainable concepts more highly. This abstract aims to propose that, when the creative arts are deliberately in line with sustainability, environmental responsibility in the choices of materials and design may be promoted via those arts. Activists may find a venue for expression in the arts.

Keywords: Sustainability, Creative Arts, Environmental Stewardship, Biodegradable, Eco-Friendly Technique.

1. INTRODUCTION

Attitudes, behaviours, and responses to important global concerns like environmental harm and abuse of non-renewable resources are always evolving thanks to the creative arts. To meet the growing demand from customers for environmentally friendly goods and services, the creative industries have stepped up to spearhead the charge in increasing environmental awareness and promoting ecologically responsible consumption practices. Including sustainable topics into their visual expressions, performances, and product designs has enabled artists, designers, and innovators from different backgrounds emphasise the environmental effects of material consumption. This has been done to increase understanding of how material use affects the surrounds. These instances demonstrate the ability of the arts to influence social and environmental change, therefore beyond simple criticism of society. Acting as a middleman helps sustainability streamline the process of transforming innovative ideas into really sensible and environmentally acceptable products. Among the ideals and rules provided to direct the choice and use of resources are the idea that materials might be recycled first priority, thus reducing the amount of toxicity present, and so promoting ethical procurement. From this point of view, sustainability is shown to be a process wherein creative decisions become means of achieving environmental goals (Yahia & Shahjalal, 2024). At last, this strategy results in the usage of environmentally friendly materials, including those generated with natural fibres, recycled components, non-toxic coatings, and low energy demand manufacturing processes. The decisions chosen demonstrate a concern for the surroundings and a want to reduce the damage done to the earth. One may deepen the connection between artistic activities and environmental responsibility by actively leading and teaching artistic activity with sustainability

in mind. This introduction offers the framework for investigating how material decisions are influenced by creative arts. Sustainability links innovation and environmental responsibility, hence this introduction offers the structure for further study. The declared aim of the research is that, should art-based disciplines embrace environmental stewardship as a basic component of their material choices and creative output, they may be the impetus for both cultural and financial change (El-Shafey et al., 2024).

2. BACKGROUND OF THE STUDY

Finding out how people in society saw issues involving the environment, society, and culture relied largely on the creative arts. This came from their aptitude for creativity, communication, and generally altering powers. Artists working in visual arts, fashion, product design, architecture, and performance have started including sustainability into their works in response to the debilitating environmental issues affecting everything around. Artists and designers sought for methods to make more environmentally friendly products using available materials. They were also using their skill to speak out against environmental problems such waste and resource depletion. The creative processes changed clearly towards more conscious solutions when it was realised that using non-sustaining materials had environmental effects. Among these choices were design ideas aimed to lower waste and energy consumption as well as the use of ethically produced renewable, sustainable, recyclable, biodegradable materials. Including ecological stories into their works has helped artists to influence not just visual standards but also behavioural norms. It became evident as sustainability become more well-known in the national and international discourse as a mediator between creative expression and environmental responsibility (Wang, 2023). Sustainability enables artists to balance their artistic objectives with wider environmental concerns by offering a structure for evaluating how materials and production processes impact the surroundings. Stressing circularity, resource economy, and long-term impact assisted one to connect environmentally responsible activity with artistic goal. The concept of sustainability in the arts movement ushered in a new era when creative genius and environmental ethics became unavoidably entwined. This has made environmentally responsible material choices more desirable as such. These choices have been formed by the ideas supported by the arts as well as the pragmatic application of sustainable practices in the actual world. Setting an example for others, artists and designers start a movement that eventually spreads across many other industries and generates more ecologically friendly goods and services. By means of exhibits, installations, wearable art, and practical design, they demonstrated the capacity of creative activity to increase public awareness and motivate individuals to engage in environmentally responsible conduct. As wannabe professionals were advised to give environmental preservation top priority right from the beginning of their careers, several universities and programs included sustainability into their coursework (Sun et al., 2023). Moreover, some initiatives now under progress centre sustainability as a fundamental element. Thus, the arts provided a means for ethereal sustainability objectives to be transformed into concrete activities, thereby encouraging environmental care. The major reason for doing this study was to understand how much the arts influenced the choice of environmentally friendly materials, given sustainability as the guiding factor. Examining the way sustainability was incorporated into material decisions and the resulting consequences on actual environmental practices, this research aimed to address the question, "How did artistic disciplines react to the demand for ecological awareness?" Through an analysis of the interactions among the creative arts, sustainability, and material responsibility, the work reveals the role artistic output helps to support the global movement for environmental preservation. The background of the research underscored the growing role that creative industries are playing in bringing about ecological transition and demonstrated how ethical and well-informed material choices may help to bring about long-term transformation (Alayar et al., 2025).

3. THE PURPOSE OF THE RESEARCH

The purpose of this research was to provide an answer to the question, "How can people be influenced by the creative arts to be more environmentally responsible in their material choices?" Consider the role that sustainability plays as a mitigating factor in the link between the two. The researcher made the decision to investigate this matter because the researcher considered that it was essential to have an understanding of the extent to which creative processes influenced environmentally aware conduct, particularly with regard to selecting and making use of materials that were not harmful to the environment. The creative arts, which encompass disciplines such as architecture, fashion, visual design, and product innovation, contribute to environmental challenges in ways that assist one acquire a better understanding of them. This is accomplished by relying on their extensive history of social commentary and cultural

effect. One of the most essential aspects of sustainability was directing creatives towards more ethical sources of resources, digesting those resources, and using them in the appropriate contexts. The purpose of this research was to determine whether or not incorporating sustainable concepts into people's creative processes has an effect on their ability to make more moral choices and improve their material judgements. The purpose of this study was to demonstrate that the creative sector has the potential to be a driving force behind positive environmental change by concentrating on the intersection of environmentally aware behaviours, artistic expression, and sustainable practices. In addition to the fabrication of a framework for the investigation of the ways in which sustainability impacts creative arts and material responsibility, the production of patterns and methods that creative professionals use in order to demonstrate their commitment to environmental responsibility was also carried out. It was essential to accomplish this goal in order to assess the contribution that imagination has made to the advancement of environmental protection.

4. LITERATURE REVIEW

The set of studies on the relationship between artistic expression and environmental responsibility exposed growing curiosity in the ways in which creative expression influenced sustainable material practices. The literature on the connection between artistic expression and environmental responsibility mirrored this interest. Among the creative disciplines of design, architecture, the visual arts, and fashion that have started to centre environmental themes were those ones involving environmental challenges. Moreover, academics began to regard the arts as a means of facilitating good change in this particular subject. Studies reveal that in reaction to environmental issues, artists have been employing non-traditional and ecologically friendly materials, therefore deviating from conventional aesthetics as well as increasing environmental consciousness. By using recyclable, biodegradable, and renewable materials into their works, artists and designers have sought to minimise the negative effects they have on the environment without compromising their vision (Abidin et al., 2024).

Research findings imply that reinterpretation of ecological concepts by creative arts redefines the role of the artist as environmental advocate. Through their platforms, artists were able to spread awareness of critical topics, motivate others to engage in conversation, and urge them to lead more deliberately. Public art projects, creative installations, events addressing pollution, too much consumerism, and climate change informed the general population. Taken together, these works highlighted the societal trend towards sustainability by pushing individuals to take responsibility for their local surroundings. Studies on sustainable ideas and methods show that they operate as a middleman between environmental responsibility and creative vision. In many design-oriented sectors, sustainability influences acquisition, use, and disposal of materials. Scholarly findings reveal that creative processes are increasingly including more ecologically sensitive behaviours. Among the methods coming under this category are circular manufacturing, cradle-to--cradle design, and life-cycle thinking. Educational institutes in the arts have started adding ideas of sustainability into their courses and everyday activities in order to generate environmentally sensitive artists and designers. Using sustainable models changed the materials artists and designers choose. These individuals thought about the materials' impact on the surroundings as well as their utilitarian and aesthetic qualities (Smriti et al., 2022).

Moreover, the research revealed that the arts might help individuals to see their natural environment from different angles. Artists are major participants in the process of shifting people's cognitive processes on consumerism, resource consumption, and material waste. Their works sometimes pushed the boundaries of what is often seen as the dividing line between art and activism. Researchers referred to this gathering place as "eco-art," or "sustainable design," as it demonstrated inventive and creative thinking as well as the need of appreciating the environment. Those artists who embraced sustainability contributed to create a civilisation of environmental responsibility by demonstrating that ethical and ecological knowledge could coexist with beauty and usefulness (Sun et al., 2023).

5. RESEARCH QUESTION

How does sustainability influence environmental responsibility in material choices?

6. METHODOLOGY

6.1 Research Design

The quantitative data analysis was conducted using SPSS version 25. The odds ratio and 95% confidence interval were used to ascertain the strength and direction of the statistical link. The researchers developed a statistically significant criterion at $p < 0.05$. A descriptive analysis was performed to determine the key characteristics of the data. Quantitative approaches are often used to evaluate data obtained from surveys, polls, and questionnaires, as well as data modified by computational tools for statistical analysis.

6.2 Sampling

Research participants filled out questionnaires to provide information for the research. Using the Rao-software programme, researchers determined that there were 480 people in the research population, so researchers sent out 600 questionnaires. The researchers got 650 back, and they excluded 40 due to incompleteness, so researchers ended up with a sample size of 510.

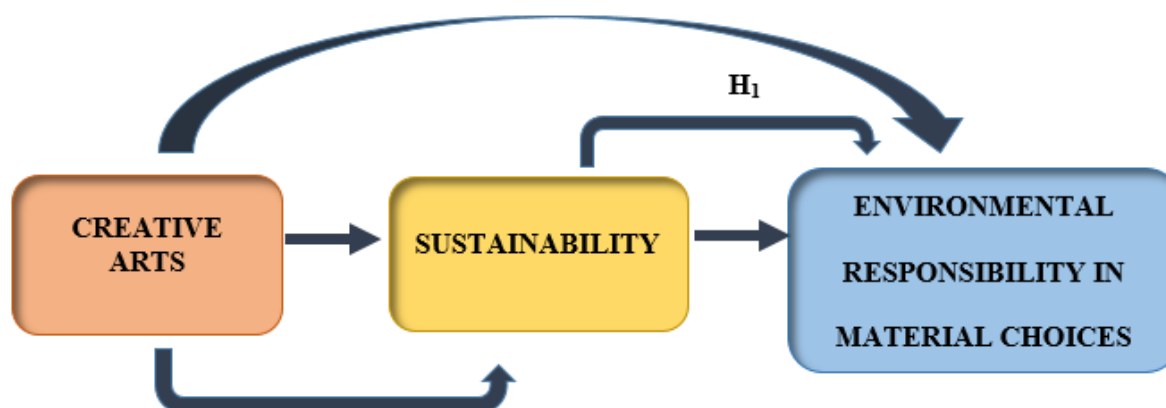
6.3 Data and Measurement:

A questionnaire survey served as the principal tool for data gathering in the study. The survey had two sections: (A) General demographic information and (B) Responses on online and offline channel variables assessed using a 5-point Likert scale. Secondary data was obtained from many sources, mostly on internet databases.

6.4 Statistical Software: The statistical analysis was conducted using SPSS 25 and MS-Excel.

6.5 Statistical Tools: To grasp the fundamental character of the data, descriptive analysis was used. The researcher is required to analyse the data using ANOVA.

7. CONCEPTUAL FRAMEWORK



8. RESULT

• Factor Analysis

The process of verifying the underlying component structure of a set of measurement items is a widely used application of Factor Analysis (FA). The observed variables' scores are believed to be influenced by hidden factors that are not directly visible. The FA technique is a model-based approach. The primary emphasis of this study is in the construction of causal pathways that connect observable occurrences, latent causes, and measurement inaccuracies.

The appropriateness of the data for factor analysis may be assessed by using the Kaiser-Meyer-Olkin (KMO) Method. The adequacy of the sampling for each individual model variable as well as the overall model is assessed. The statistics

quantify the extent of possible common variation across many variables. Typically, data with lower percentages tends to be more suited for factor analysis.

KMO returns integers between zero and one. Sampling is deemed adequate if the KMO value falls within the range of 0.8 to 1.

It is necessary to take remedial action if the KMO is less than 0.6, which indicates that the sampling is inadequate. Use the best discretion; some authors use 0.5 as this, therefore the range is 0.5 to 0.6.

If the KMO is close to 0, it means that the partial correlations are large compared to the overall correlations. Component analysis is severely hindered by large correlations, to restate.

Kaiser's cut offs for acceptability are as follows:

A dismal 0.050 to 0.059.

0.60 - 0.69 below-average

Typical range for a middle grade: 0.70–0.79.

Having a quality point value between 0.80 and 0.89.

The range from 0.90 to 1.00 is really stunning.

Table 1: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.812
Bartlett's Test of Sphericity	Approx. Chi-Square	3252.968
	df	190
	Sig.	.000

This confirms that claims on the execution of a sample are genuine. Researchers used Bartlett's Test of Sphericity to assess the significance of the correlation matrices. The KMO measure considers the sample adequate when the value reaches 0.812. The p-value derived from Bartlett's sphericity test is 0.00. Bartlett's sphericity test yields statistically significant results, demonstrating that the correlation matrix deviates from an identity matrix.

❖ INDEPENDENT VARIABLE

• Creative Arts:

The vast and continually shifting field of creative arts comprises of a huge spectrum of artistic activities. Through original and artistic creations, these initiatives all serve to transmit ideas, emotions, and cultural values. From painting and sketching to sculpture and photography, visual arts include everything. Among performing arts include music, dance, and theatre. Literary works include among other things poetry and storytelling. Applied arts include among others design, fashion, and architecture. Spoken or written language would make transmission of ideas and social messages difficult or maybe impossible; so, the creative arts are vital as they allow individuals to express themselves creatively and spread messages about society. Works that challenge stereotypes, stir strong emotions, or inspire people to act frequently arise from this mix; essential components of the creative process include intellectual thinking, emotional involvement, and technical understanding (De Witte et al., 2021). Programs stressing creative arts in many cultures tremendously benefit education, community development, and the building of identities as well as other spheres. Through these activities, students are expected to practise critical thinking, group projects, and creative expression. Apart from being a basic component of public awareness and cultural dialogue, they are also efficient tools for addressing issues concerning the politics, society, and the surroundings. Among the ways the creative arts have evolved with technological advancement are digital media, interactive installations, and

multimedia storytelling. These developments have created new avenues of artistic expression and audience involvement. All creative professions are dedicated to uniqueness and expression even if their approaches to their work varies and they rely on diverse sources of expression. Through public art, literature, exhibitions, and performances, the creative arts span decades and civilisations. They also contribute to produce surroundings suited for the development of the many points of view and experiences individuals bring about. Not just about designing beautiful objects or entertaining spectacles once all is said and done, the creative arts are about inspiring people to think deeply, feel compassion, and build a society in which individuals are more eager to voice their opinions (López-Escribano & Orío-Aparicio, 2024).

❖ **MEDIATING VARIABLE**

● **Sustainability:**

Sustainability is the practice of satisfying present wants without compromising the potential of later generations to satisfy their own needs. One balances social well-being, economic viability, and environmental health to achieve this. This concept consists on the encouragement of behaviours assuring ecological balance over the long term, the decrease of environmental harm, and the responsible use of natural resources. Among sustainable environmental practices are those related to protection of biological variety, decrease of pollution and carbon emissions, and use of renewable energy sources. These provide the primary bases of environmental sustainability. The effective use of resources, ethical production of goods, and creative support of environmentally sensitive companies and communities promote the economically advantageous aspects. From a societal standpoint, elements of the concept of sustainability include access to health care, education, and community empowerment to have a voice in decisions influencing their surroundings and way of life (Demastus & Landrum, 2024). Thanks to the Sustainable Development objectives of the United Nations, people all over first began to know the notion. These objectives provide a framework for achieving sustainability in various fields, including energy, agriculture, infrastructure, and urban planning, thereby helping to bring the concept to the attention of people all around. Recycling, organic farming, green construction, ethical consumerism, and corporate social responsibility are among the considered sustainable activities. Apart from this, one has to adjust their viewpoint to show a shared responsibility for the globe and all its occupants as well as for future generations. Regarding resilience, regeneration, and effective resource use, sustainability has evolved into a basic basis directing choices in public management, business enterprises, and academic institutions. Building long-lasting systems in response to rising global issues like climate change, the depletion of global resources, and social inequality demands for governments, companies, and individuals aiming at the purpose of sustainability a primary guiding principle. More than merely a collection of activities, the guiding concepts of sustainability describe living in balance with environment, advocate fairness, and ensure that development benefits people as well as the earth throughout time. Sustainability goes beyond a list of chores (Hariram et al., 2023).

❖ **DEPENDENT VARIABLE**

● **Environmental Responsibility in Material Choices:**

Starting with their extraction and manufacturing processes and moving through their use and disposal, one could choose materials that have lowest negative consequences on the environment over their whole life cycle, therefore exhibiting environmental responsibility in the choice of materials. This idea underlines the need of studying how materials impact ecosystems, the availability of resources, the degrees of pollution, and general sustainability. More important than the choice of products that damage the environment, help to create waste over a long period of time, or deplete natural resources is the selection of non-toxic, recyclable, biodegradable, renewable materials. Part of it is figuring out how much water, energy, and carbon dioxide is used obtaining and processing resources (Yassıbaş & Bölükbaşı, 2023). For the creative disciplines—design, fashion, architecture, and the visual arts—there are plenty of sustainable alternatives. Among them are low-impact colours, upcycling fabrics, locating sustainable timber, and shopping for certified as ecologically friendly products. Reducing the influence on the environment and advancing the ideas of a circular economy—that which consists in the reuse, repurposing, or reintegration of resources into the production cycle—by means of which the impact is lessened is the aim here. Choosing ecologically friendly materials calls for knowledge of the social consequences of material production and disposal, awareness of the openness of supply chain activities, and support of ethical work standards in many different spheres. More important than ever

given the increasing number of issues such climate change, deforestation, ocean pollution, and resource depletion is making wise and moral judgements on the products the scientists utilise. Governments, businesses, consumers, and governments are modifying their conduct realising the necessity of sustainable material consumption to lower the impact people have on the environment and guarantee that ecosystems continue in good health. Professional groups and academic institutions are including these ideas into design standards and training courses to help the acceptance of environmentally friendly solutions. Regarding material decisions, environmental responsibility finally helps to promote the more general sustainability goal. This is reached by making sure that every choice made throughout the manufacturing or creative process improves the welfare of next generations worldwide (Yang et al., 2022).

• **Relationship Between Sustainability and Environmental Responsibility in Material Choices:**

Knowing the connection between sustainability and environmental responsibility in material choices enables one to work on a future more resource-efficient and sensitive to the surroundings. Choosing the materials to be utilised is done in line with sustainability, which seeks to meet current demands without endangering the capability of future generations to do so. Regarding environmentally aware buying, the products to be selected should be ones that assist to conserve natural resources, have less effect on ecosystems, and have lower carbon footprints by means of their chosen components. The two concepts are inextricably linked in view of the fact that sustainability inspires a commitment to environmental responsibility by the broad use of renewable, recyclable, biodegradable, and low-impact in a variety of industries, including but not limited to the design, architecture, fashion, and manufacturing industries. Starting with its creation and working through disposal, using environmentally friendly materials indicates a conscious endeavour to minimise the influence a product has on the environment over its complete existence. Among the products in this category are bamboo, recycled metal, organic textiles, and bio-based polymers. Given more crucial concerns such pollution, limited resources, and climate change, this relationship not only makes moral sense but also is pragmatic (Waqar et al., 2023). While environmental aware projects seek to protect natural systems and biodiversity by means of sustainable material choices, sustainable material choices emphasise efficiency, lifetime, and cyclical usage. Every person engaged in the manufacturing and consumption of commodities has a responsibility to strengthen this link by contemplating the extent of their decisions would influence the surrounds. Governments and companies might fulfil their responsibilities in areas of policy advocacy supporting sustainable operations, standard creation, and certificate distribution. Through awareness-raising campaigns and education, individuals and communities may grow to have a more thorough understanding of the importance of sustainable materials and the way in which they might adopt sustainable thinking into their everyday choices. Moreover, this relationship fosters innovation, which leads to the development of environmentally friendly materials fulfilling both pragmatic and ecological needs as well as creative technology. Moreover, the shift in material choice towards more consciousness helps to reach the more general sustainability objectives stated in international frameworks including the United Nations Sustainable Development Goals (SDGs), especially those related to climate action, the protection of ecosystems, and responsible consumption and production. The vision and framework of sustainability must constantly be in continual feedback loop with the actual actions people do, as demonstrated by their material choices, therefore promoting environmental stewardship at all societal levels (Oyiborhoro et al., 2024).

On the basis of the above discussion, the researcher formulated the following hypothesis, which was analyse the relationship between Sustainability and Environmental Responsibility in Material Choices.

- ***“H_{0i}: There is no significant relationship between Sustainability and Environmental Responsibility in Material Choices.”***
- ***“H₁: There is a significant relationship between Sustainability and Environmental Responsibility in Material Choices.”***

Table 2: H₁ ANOVA Test

ANOVA					
Sum					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	39588.620	134	5542.518	962.911	.000
Within Groups	492.770	375	5.756		
Total	40081.390	509			

This investigation yields remarkable results. The F value is 962.911, attaining significance with a p-value of .000, which is below the .05 alpha threshold. This signifies the “**H₁: There is a significant relationship between Sustainability and Environmental Responsibility in Material Choices**” is accepted and the null hypothesis is rejected.

9. DISCUSSION

With an eye towards environmental responsibility, this study aimed especially in the context of the creative industries to show how sustainability affected material decisions. The researchers sought data from a large sample of creatives, designers, and users of materials using a quantitative method and simple random sampling. This research aimed to find the relationship between material responsibility and environmental conscience. The results showed that the inclination to use ecologically friendly materials directly corresponds with a dedication to sustainability. The different material choices the participants selected for their art and design projects reflected the degree of awareness the participants had regarding sustainable ideals, such as lowering ecological footprints, preserving resources, and making use of materials either renewable or recyclable. The concept of sustainability was very important as it helped to balance the evaluation of materials depending on their effect on the environment in addition to their aesthetic and useful properties. Artists and designers who used sustainable methods were shown to have a better awareness of the materials, production practices, and effects on end-of-life issues of their work. For many people, sustainability was more than just a concept; it was a useful criteria that drove them to pick low-impact solutions such biodegradable materials, commodities that were reused, or locally sourced components. Furthermore, participants said that using visual storytelling or sustainable themes, their work typically aimed to push people towards ecological awareness. This is a perfect example of how creative arts used as a vehicle for showcasing environmental values. By including sustainability into artistic expression, fresh ideas on waste, reuse, and longevity were produced, therefore fostering ecological responsibility and creative creativity to a more general degree. The strong correlation between the values of the participants and the materials they choose to utilise points to the major effect of education and environmental principles. Those who have trained in environmental art or sustainability felt this relationship. Consensus was that the participants' creativity helped them to overcome these challenges. While some members did bring up issues such the expense and lack of readily available sustainable materials, most of them felt. From this vantage point, the notion that sustainability encouraged significant new ideas rather than limited artistic expression came to front. At the end of the day, the conversation showed that choosing materials that would be environmentally friendly depended much on sustainability. It challenged artists to see the whole picture and make decisions in line with ecological ideas. The findings made it clear that the arts might help to raise environmental consciousness and action related to material consumption. Moreover, the results underlined the importance of integrating environmental education within artistic fields.

10. CONCLUSION

Based on the results of this research, the choice of materials used in the creative arts determines environmental responsibility in great influence from sustainability. The results of the research show that those who followed sustainable practices were more likely to pick materials in an ecologically sensitive manner and felt more of responsibility for the surroundings. Sustainable practices acted as a crucial middle ground, guiding creatives towards materials that are renewable, biodegradable, or recyclable, therefore lessening the negative effects that creative

activities have on the environment. The study also underlined the great opportunity the creative arts provide for combining and advancing sustainable principles as well as for encouraging creative approaches of choosing materials compatible with artistic expression and environmental issues. The instruction the participants got and the extra knowledge they acquired about sustainability helped to highlight their dedication to the sensible use of resources. The idea of sustainability inspired innovation and adaptability in the choice of materials rather than stifling creativity in the face of constraints like cost and availability. When taken holistically, the findings of the studies highlight the need of sustainability in terms of its capability to influence ecologically conscious material choice practices as well as the power of the arts to support and promote sustainable design and manufacturing concepts.

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