International Journal of Religion
2024
Volume: 5| Number 10 | pp. 3064 – 3079
ISSN: 2633-352X (Print) | ISSN: 2633-3538 (Online)
ijor.co.uk
DOI: https://doi.org/10.61707/32nwc182

Investigating the Relationship Between Ceramic Art and AI-Generated Content: A Study of Aesthetics, Creativity, And Emotional Responses in AI-Generated Ceramic Art

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Abstract

Ceramic artwork is made using clay and other ceramic components. It can appear in a variety of ways, such as beautiful ceramics for use as dinnerware, tiles, sculptures, and other objects. Ceramic art is a visual art form that belongs to the plastic arts. The study aims to investigate the relationship between ceramic art and artificially intelligent (AI)-generated content. Partial Least Squares Structural Equation Modeling (PLS-SEM) was utilized. A systematic questionnaire with a Likert scale rating was used to collect data from 125 participants' surveys to collect information on the emotional reactions, aesthetic preferences, and authenticity views of viewers of both conventional and AI-generated ceramic artworks. The techniques of statistical analysis used for comparing works created by AI and ceramic art. The structural model examined the relationships between the constructs considering the putout assumptions, the measurement model evaluated the validity and reliability of the latent constructs. Hypothesis 3 received good support from the structural model, which showed relationships between AI-generated content and ceramic art in terms of inventiveness, emotional resonance, and aesthetics ($\beta = 0.45$, $p < 0.05$). The study highlights the awesome benefits and problems linked to everything, imparting mild insights to the complex interplay between ceramic art and AI-generated output. Our findings will provide precious insights for artists, technologists, and artwork fanatics, highlighting the potential of AI in enhancing artistic creativity and shaping future art paperwork.

Keywords: *Ceramic Art, Artificial Intelligence (AI), Aesthetic, Creation, Emotional.*

INTRODUCTION

Ceramic artwork, historically known for its handcrafted nature and tangible connection to the artist, is experiencing a charming evolution with the incorporation of AI-generated content material [1]. This intersection of ceramic artwork and synthetic intelligence is starting off new dimensions in aesthetics, creativity, and emotional responses. AI algorithms can take a look at a high-quality array of ceramic styles and techniques, blending conventional aesthetics with innovative designs [2]. AI can generate difficult and complicated geometries that might be difficult for human artisans to conceive or execute. These designs can push the limits of traditional ceramic artwork. AI can tailor designs based totally on man or woman options, taking into consideration especially customized and bespoke ceramic portions [3]. Artists can collaborate with AI, using algorithms as devices to beautify their innovative techniques. This partnership can inspire new thoughts and methodologies. AI can generate several layout versions quickly, permitting artists to explore a much broader variety of possibilities and make more informed innovative choices [4]. AI can introduce novel types of creativity by using leveraging system mastering to recognize and practice styles in methods that human creators would not intuitively grasp. The emotional response to AI-generated art may be blended. Some can also feel the modern and futuristic aspects, whilst others would possibly feel disconnected because of the perceived loss of human touch [5]. Traditional ceramic artwork often conveys a right away connection to the artist's emotions and intentions. AI-generated artwork can evoke curiosity and admiration for technological prowess that may additionally strengthen the intensity of personal expression. The novelty of AI-generated designs can elicit pleasure and intrigue. The specific aesthetics and bureaucracy produced through AI can provoke sturdy emotional reactions, starting from awe to skepticism [6]. Artists and architects use AI to create big-scale ceramic installations that discover topics of technology, nature, and human-device interaction [7]. AI-generated ceramic pieces can be useful, together with bespoke tableware or ornamental gadgets that merge utility with present-

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day layout. Questions about the authenticity and originality of AI-generated art are popular. Debates about whether or not the artwork can virtually be considered innovative or simply made of programmed algorithms are ongoing. While AI can generate progressive designs, the physical execution in ceramics can also still face technical boundaries, together with fabric residences and manufacturing methods. Traditional ceramic artwork frequently embodies a personal connection between the artist and the target audience [8]. Each piece consists of the artist's emotions, intentions, and particular contact, which can be felt with the aid of visitors. This human connection is harder to duplicate in AI-generated artwork. Traditional ceramic art showcases the skills and craftsmanship of the artist. The time, attempt, and guide dexterity concerned in creating every piece are obvious in the final product. This experience of craftsmanship and the imperfections that include handcrafting are often appreciated as signs of authenticity and individuality [9]. Traditional ceramic art is regularly steeped in cultural and historical significance. Viewers can also price the relationship to cultural background and the continuation of artisanal traditions, which are perceived as being extra true and significant as compared to AI-generated art. The function of AI in art raises ethical questions on authorship, possession, and the displacement of human artists. AI-generated ceramic art represents a dynamic and evolving discipline wherein technology and conventional craftsmanship converge. The aesthetics, creativity, and emotional responses involved in this intersection replicate the broader cultural and philosophical questions about the position of AI in creative practices [10].

Findings might not be extensively applicable because of the precise sample demographics or the uniqueness of AI-generated artistic endeavors studied. AI-generated content material may additionally lack the depth of human creativity and cultural nuances that traditional ceramic artwork embodies, potentially affecting perceptions and emotional responses. The exceptional sophistication of AI-generated art may also range primarily based on the technology, potentially influencing members' perceptions and responses. Capturing and interpreting emotional responses to artwork, particularly AI-generated can be subjective and difficult to quantify accurately. Issues associated with the attribution of creativity, originality, and cultural significance in AI-generated artwork might also raise moral concerns among members and parties involved.

The aim of the study is to investigate the relationship between ceramic art and artificially intelligent (AI)-generated content.

The remaining part of the analysis holds the following; part 2 provides the related work, part 3 suggested the methodology, part 4 examines the result of the analysis, part 5 discusses the result of hypotheses, and part 6 concludes the analysis.

Related work

An instance of investigation that investigates DL's ability to produce a tangible sculpture using only a 3D model and text prompts was offered in the article [11]. To get the desired outcomes, they combined a number of techniques during the manufacturing procedure, such as conventional electronic, and cognitive. Methodologically speaking, that was an aesthetic investigation into the state-of-the-art DL instruments for 3D object creation and subsequent fabrication in 3D-painted ceramics. In the project, they examined the outcomes when modern innovations and conventional manufacturing processes like pottery combined using practice-oriented research approaches. They also talk about experiences learned, reference artwork that had used AI, and the possible application of DL technologies in creating art.

The artwork illustrated the way artistic effort might modify the DL framework and convey experiential knowledge. To more exact, the form was destroyed and alternated by adding clay as a tangible substance to the entire procedure. Paper [12] discussed the novel sensations and significance that were formed by the interaction of digital, physiological, and chemical substances. It was suggested as a significant and concrete means of navigating implicit space. Consequently, the neuro-avant-garde combined with artisanal methods and procedures provided asymmetrical changes that support the expansion of creative thinking and imagination.

The procedure for applying AI as a tool for design in ceramics modeling creation was investigated in the paper [13]. Three modeling tools, such as AI-generated 3D, Intelligence-generated GH Python, and parameter adjustment would be used in the modeled creation of vases, and viability would be accessed through

experimental evaluation. Three individuals were selected for the research, each with a distinct professional expertise. They were given three design programs to manipulate the vase's shape, the investigators own grasshopper, chatGPT generation in Python, and SHAP-E generating text 3D. Each instrument has pros and cons of its own, according to the results of a retroactive assessment that was done after the test. For instance, artificial intelligence text production in 3D could create unusual vase designs, but the design effectiveness was inadequate.

The ways in which exposure to generative artificial intelligence has fundamentally altered the character of employment in the creative and cultural sectors were examined in the paper [14]. They offered an empirical approach that used a task-based framework to quantify the hazards and the two types of exposure to generative AI. They demonstrate that new skills in AI for managing dangers were needed when using generative AI in the workplace. Those hazards include those pertaining to intellectual ownership, privacy, cyber security, bias, disinformation, and regulatory violations. Their method assisted to create a fresh viewpoint on how risk exposure and generative AI were inextricably linked as a force behind employment transformation.

The responses of four generative artificial intelligence (gen AI) language models, namely chat generative pre-trained transformer (ChatGPT), generative pre-trained transformer 4 (GPT4), Deep AI, and Google Bard, to queries that presented two potential outcomes examined in the study [15], (i) would AI change the way heritage preservation was administered in future decades and (ii) what risks could arise from depending too much on gen AI to direct religious culture providers? A variety of examples were given by the gen AI systems, most of which built upon and expanded upon the current state of affairs. Beyond uncertainty, AI tools would revolutionize the performance of monotonous and repetitive activities; such as classifying certain types of artifacts or enabling the predictive modeling of object deterioration.

AI and semiotic research might be used to analyze visual heritage from cultures, as discussed in the theoretical paper [16]. It suggested an original structure that made use of AI to decipher intricate cultural signals. It provided a thorough explanation of the fundamentals of semiotics, which was the investigation of indications and their interpretations in relation to cultural settings, as well as the features of AI techniques like recognition of images and machine learning. The objective of the structure was to improve the depth and precision of traditional symbol interpretation, a task made more difficult by the symbols' frequently complex chronological and cultural contexts.

Ceramic goods were beautiful creations with images of mountains, streams, and seas that hold hundreds of stories within. Vases, tea sets, rice bowls, flower pots, and plates were examples of ceramic items. A flower vase was a very smooth-looking vessel, usually composed of glassware or ceramics. In-depth study of the digital picture pretreatment algorithm was the primary focus of the work [17], which starts with an examination of the procedure's historical context and finishes with algorithm research. Next, its accuracy was compared to create an estimate, which would ultimately depend on the ceramic that the paper has studied.

Research [18] investigated whether AI might foster inventiveness in ceramic design to theoretically promote related process improvement. By utilizing AI, designers who were crucial in the creation of ceramic manufacturing designs could accurately understand material properties, completely utilize technical advancements, and realize that technology could significantly foster innovations in ceramic design for products. The creation of ceramic products with the assistance of AI technologies was a new avenue for the ceramic industry to expand. AI technology was widely used in various industries.

To assess ceramic product design, handle the design process in three dimensions using the computational methods provided in the research [19]. On the basis of this, the state of 3D printing techniques in the ceramics industry was examined. Second, the properties of 3D printed ceramic analysis and the fundamentals of utilizing machinery in the ceramic 3D printing procedure were outlined through personalized design and tests. They used ceramic 3D printing equipment to design and create various sets of ceramic shapes based on the properties of the process and the concepts of aesthetics and architectural design.

The visual language development in ceramic mural painting was examined in the article [20], then gone to examine the fundamental design concepts in detail and determined the way ceramic mural art appears when viewed through the prism of actual projects in the paper. It offered a bold look at the establishment trend for ceramic mural painting in the future. They examined the composition, graphics, color, scale, lighting, and design components of ceramic mural painting.

The initial research for a potential use of augmented reality therapeutic arts was presented in the paper [21]. It related to one element of the Ermes project, which used creative therapy and meditation to provide psychological assistance for institutionalized patients' separated practice. They began with the intention of testing a novel virtual reality communication system for application in art therapy. Specifically, they would like to use traditional approaches of modeling ceramic as the substrate for the process.

The clay dough, a type of biological dough combined with stoneware clay to create a 3D displayed ceramic substance were introduced in the paper [22]. All ceramics compress when burned at elevated temperatures, but because the dough burns away, clay-dough allowed for more dramatic reduction. In the end, they were able to correlate reduction, volume, potential, and permeability with the quantity of dough used in each of the three clay-dough compositions that they created using various proportions of clay to dough. The form of the ceramics they created was determined by the design that they load the clay-dough ingredients into for 3D printing, and they took advantage of the reduction in their material-oriented methodology.

The GAN-RL (Generative Adversarial Networks with Reinforcement Learning) analyze framework was suggested in the paper [23]. The combination of enhanced circulation systems was produced by the GAN-RL technique with VR and AR technology. The visitor trip gained flexibility and engagement due to the GAN-RL architecture, which customized the experience based on their individual need and actual time input. The ceramic artwork creations were assessed and prepared for the framework for analysis using the suggested GAN-RL.

Study [24] collected data through survey techniques with a grounded theory methodology. Partial least squares (PLS) methods were used to evaluate the information, and to investigate the experience of users, a theoretical structure centered on the AISAS (Attention, Interest, Search, Action and Share) method, perceptual theory of value, and social identity concept was developed. It was looked at whether AI-generated art could support the long-term growth of conventional society.

Hypotheses Development

Hypothesis 1: Higher levels of AI-generated content (AI-C) are associated with increased aesthetic preferences (APs) for ceramic artworks among participants. (AI-C→APs)

Hypothesis 2: Participants' emotional responses (ER) to AI-generated ceramic art are positively influenced by higher levels of perceived creativity perceptions (CP) in the artworks. (ER→CP)

Hypothesis 3: Authenticity perceptions (AP) significantly moderate the relationship between AI-generated content (AI-C) and aesthetic preferences (APs) in ceramic art. (AP→AI-C→APs)

Hypothesis 4: Greater perceived authenticity perceptions (AP) of AI-generated ceramic art lead to higher aesthetic preferences (APs) among participants. (AP→AP)

Hypothesis 5: Perceived creativity (PC) in AI-generated ceramic art will be positively correlated with emotional engagement (EE). (PC→EE)

METHODOLOGY

The main elements of the study are displayed in Figure 1, where the independent variables are AI-generated content (AI-C), emotional responses (ER) and perceived creativity (PC), while the dependent variables are authenticity perceptions (AP), creative perception (CP), and emotional engagement (EE). The moderate variable is aesthetic preferences (APs). They are ultimately the primary focus of this study and are produced through the interaction of several factors.

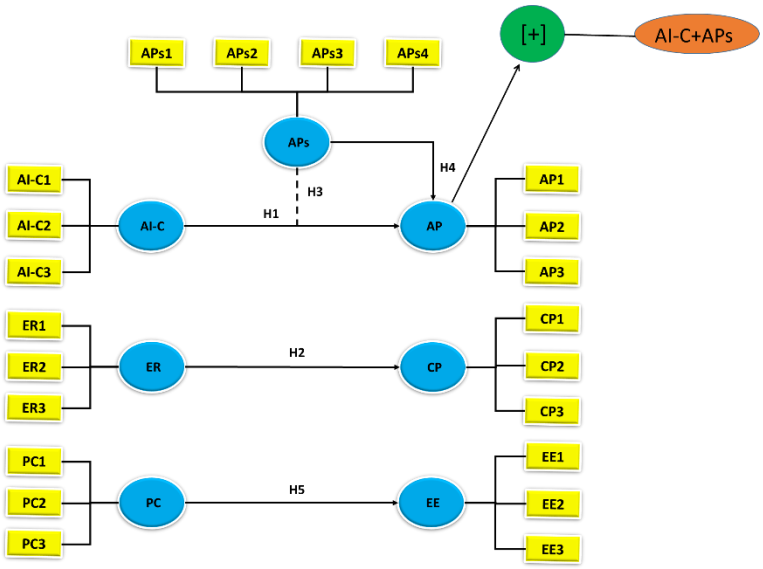

Figure 1: Conceptual model

Dataset

A survey from 125 participants was gathered; our questionnaire contains 30 questions about the creativity, emotional resonance, and aesthetics criteria. The dataset includes demographic information about the distribution of age and gender, artistic tastes, emotional reactions, judgments of inventiveness, and perceptions of authenticity. Age groupings with matching percentages span from 20 to 26 to 50 and beyond. Male, female, and other/prefers-not-to-say groups make up the gender distribution. Details regarding the participant's profile are included in Table 1.

Table 1: Demographic Details

Category	Sub-category		Number	Percentage (%)
Age	20-23 years old		20	19.23%
	24-27 years old		30	23.08%
	28-31 years old		20	15.38%
	31-35 years old		15	11.54%
	36-39 years old		20	15.38%
	40-43years old		10	7.69%
	50 years old and above		10	7.69%
Gender	Male		60	46.15%
	Female		50	42.31
	Other/Prefer not to say		15	11.54%
Aesthetic Preferences	Styles of art	Abstract	30	26.92%
		Realistic	30	23.08%
		Traditional	40	30.77%
		Modern	25	19.23%
Emotional Reactions	sentiments	Negative	20	15.38%
		Neutral	45	38.46%
		Positive	60	46.15%
Perceptions of Creativity	levels	Low	30	23.08%
		Medium	50	38.46%
		High	45	38.46%
Perceptions of Authenticity	levels	Low	25	19.23%
		Medium	5	42.31%
		High	50	38.46%

Questionnaire

130 questionnaires were distributed around the different departments and activities to collect data for assessment. Since some of the returned surveys were either blank or only partially completed, a total of 125

surveys were determined to be eligible for the study. Creating a questionnaire with seven core elements is the initial step in this procedure.

Demographic Data: The purpose of this section is to gather more demographic data about the responders.

Perceived Aesthetic Preferences (APs): This segment includes questions aimed toward measuring individuals' aesthetic choices in the direction of AI-generated ceramic artworks.

Creative Perception (CP): Explore people' emotional reactions to AI-generated ceramic artistic endeavors, recommended by means of the use of perceived creativity perceptions (CP).

Emotional Responses (ER): This section includes inquiries that explore contributors' emotional reactions toward AI-generated ceramic inventive endeavors.

Authenticity Perceptions (AP):

This section evaluates contributors' perceptions of authenticity in AI-generated ceramic works of art.

AI-Generated Content (AI -C): This phase assesses contributors' standard evaluations with AI-generated ceramic art work, combining elements of aesthetic selections, emotional responses, and authenticity perceptions.

Perceived creativity (PC): This section evaluates individuals' perceptions of creativity in AI-generated ceramic artistic endeavors.

Emotional engagement (EE): This phase measures how engaged contributors' experience emotionally with AI-generated ceramic inventive endeavors.

A Likert 5-point scale was employed to offer rankings to 130 respondents. The feedback varied from (1) Strongly Disagree to (5) strongly agree, (1) not circumstances enticing to (5) extremely enticing, (1) plenty worse to (5) a whole lot higher, (1) poor to (5) exquisite, (1) now not crucial to (5) extraordinarily crucial, (1) much worse to (5) much higher, (1) not in all likelihood at all to (5) extraordinarily likely, (1) not essential in any respect to (5) extremely important, (1) virtually not to (5) actually sure, (1) not authentic at all to (5) extremely authentic, (1) not innovative in any respect to (5) extraordinarily modern, (1) now not unique at all to (5) extremely unique, (1) a lot much less innovative to (5) a whole lot greater innovative, (1) strongly disagree to (5) strongly agree, (1) terrible value to (5) amazing price, (1) not possibly in any respect to (5) extraordinarily likely, (1) strongly disagree to (5) strongly agree, (1) not important to (5) moderately important, (1) poor to (5) excellent, (1) not authentic to (5) extremely authentic.

Statistical Analysis

This study used the SEM-PLS (Partial Least Squares Structural Equation Modeling) approach, which has less stringent restrictions than CB-SEM (Covariance-Based Structural Equation Modeling) to construct the suggested structural model since it allows for greater flexibility in data collection and sample amount. CFA (Confirmatory Factorial Analysis) was used to examine the characteristics of the model's seven constructors (AI-C, CP, APs, ER, AP, PC and EE). We combined the measurement model analysis and psychometric assessment of the components to avoid duplication. The PLS algorithm employed the route scoring approach on normalized data (mean 0 and variance 1).

RESULT

Assessing Models

Table 2 displays the results of the validity and reliability examination. When assessing the measurement model, the Fornell-Larcker criterion was utilized to ascertain factorial validity, discriminant validity, convergence validity, and indicator reliability. "Cronbach's alpha (α) and composite reliability (CR)" were the two reliability measures used to evaluate construct dependability.The α value range was 0.80 to 0.90, whereas the CR value range was 0.86 to 0.93. Standardized factorial weights were used to evaluate factorial validity, and any items

with a score higher than 0.72 were considered to have factorial validity. The AVE measurement ranged from 0.60 to 0.75, indicating a high degree of convergent validity for the items. The confirmation of discriminant validity was achieved by comparing the AVE square root value with correlation values across constructs. Greater square root values suggested a lack of relationship between the items representing different components and other elements. Each concept's validity and dependability were strong, suggesting that the structural model could incorporate them. The AVE square root values are displayed on the correlations' diagonal. Table 3 presents the analyses of discriminating validity. In Figure 2, the measurement model is displayed.

Table 2: The Results of The Validity and Reliability Examination

Latent Construct	Items	Loading-value	Alpha(α)-value	Composite Reliability (CR)	AVE
AI-generated content (AI-C)	AI-C1	0.79	0.84	0.90	0.74
	AI-C2	0.80			
	AI-C3	0.81			
Aesthetic Preferences (APs)	APs1	0.76	0.85	0.91	0.63
	APs2	0.81			
	APs3	0.79			
	APs4	0.83			
Emotional Responses (ER)	ER1	0.75	0.82	0.88	0.64
	ER2	0.82			
	ER3	0.80			
Creativity Perceptions (CP)	CP1	0.77	0.83	0.89	0.66
	CP2	0.84			
	CP3	0.79			
Authenticity Perceptions (AP)	AP1	0.81	0.84	0.90	0.65
	AP2	0.78			
	AP3	0.83			
Perceived Creativity (PC)	PC1	0.80	0.8	0.90	0.69
	PC2	0.82			
	PC3	0.83			
Emotional Engagement (EE)	EE1	0.81	0.86	0.91	0.72
	EE2	0.84			
	EE3	0.85			

Loading-value indicates the aspect loadings for every item, which need to ideally be above 0.72. Alpha (α) price represents Cronbach's alpha, which measures inner consistency. A value above 0.72 is considered ideal. Composite Reliability (CR) measures the reliability of assembly, with values above 0.8 being applicable. Average Variance Extracted (AVE) indicates the average quantity of variance that a construct explains. Values above 0.6 indicate applicable convergent validity. The table presents a well-based assessment of reliability and validity for the constructs involved in the examination of AI-generated content and its effect on diverse perceptions and responses associated with ceramic artistic endeavors.

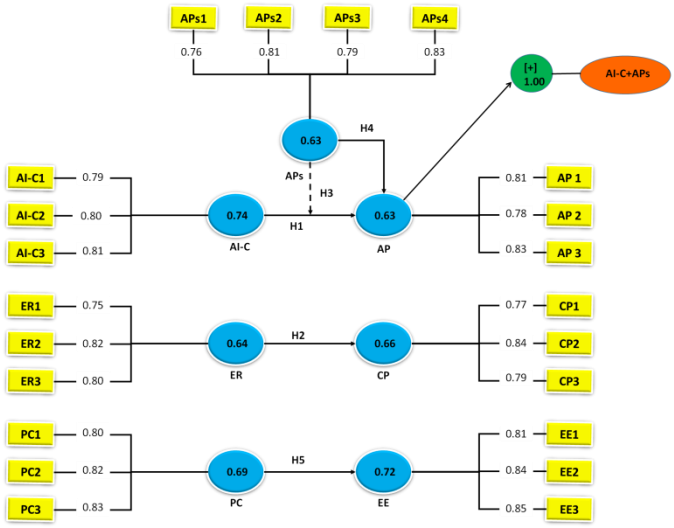

Figure 2: Graphical illustration of the assessment of the measuring model

Table 3: Discriminating Validity

Constructs	AI-C	APs	ER	CP	AP	PC	EE
AI-generated content (AI-C)	0.86	-	-	-	-	-	-
Aesthetic Preferences (APs)	0.65	0.79	-	-	-	-	-
Emotional Responses (ER)	0.58	0.63	0.80	-	-	-	-
Creativity Perceptions (CP)	0.61	0.66	0.65	0.81	-	-	-
Authenticity Perceptions (AP)	0.62	0.59	0.62	0.67	0.81	-	-
Perceived Creativity (PC)	0.64	0.68	0.66	0.69	0.70	0.83	-
Emotional Engagement (EE)	0.60	0.65	0.63	0.64	0.66	0.67	0.85

Structural Model

The consequences of size (f^2) and the R^2values of the internal latent variables are the main criteria used to analyze the structural model. Based on Table 4, all are far above the acceptable 0.10 threshold. The effect size (f^2), which establishes the relative impact of an external variable on an internal variable, improves R^2 analysis by analyzing changes in R^2values. Research ensures a comprehensive examination. Figure 3, which displays the results of the SEM technique and the output of the structural analysis, highlights significant path coefficients among the primary constructs.

Table 4: Structural Framework

Hypothesis and Connections	β value	R^2	f^2	*p value*	f^2effect	Result
H1:AI-C→APs	0.45	0.32	0.09	<0.05	Medium	Supported
H2:CP-C→ER	0.38	0.27	0.07	<0.05	Medium	Supported
H3:AP→AI-C→APs	0.52	0.45	0.15	<0.05	Large	Well Supported
H4:AP→APs	0.49	0.38	0.12	<0.05	Large	Supported
H5:PC→EE	0.37	0.25	0.07	<0.05	Medium	Supported

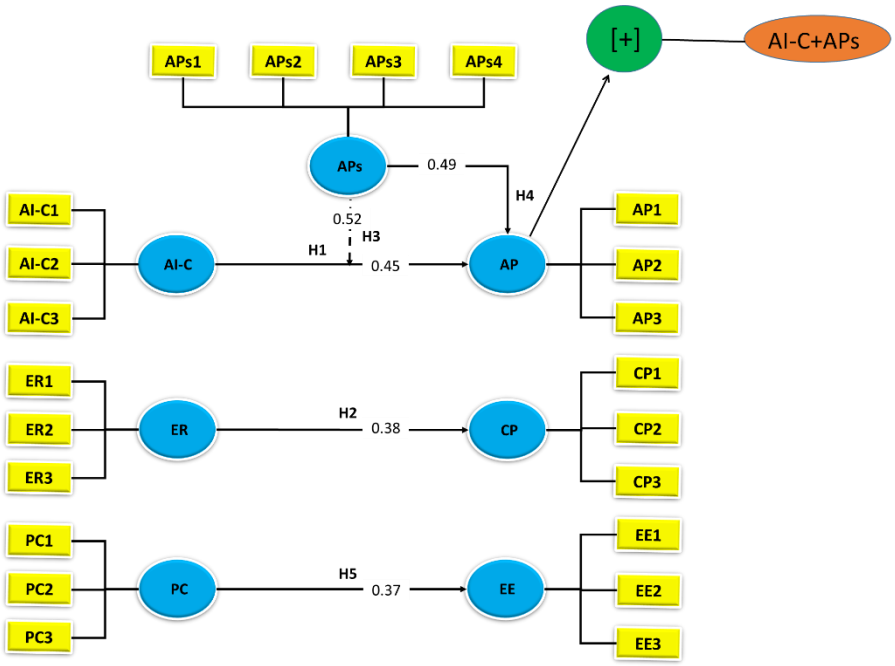

Figure 3: Evaluation of Structural Model

H1: AI-C → APs: The relationship between AI-generated content material and aesthetic choices indicates a medium impact length and is statistically considerable.

H2: CP → ER: The relationship among creativity perceptions and emotional responses shows a medium impact length and is statistically significant.

H3: AP → AI-C → APs: The moderating position of authenticity perceptions in the courting among AI-generated content and aesthetic choices has a massive effect length and is statistically significant, indicating support for this speculation.

H4: AP → APs: The direct impact of authenticity perceptions on aesthetic preferences shows a massive effect size and is statistically significant.

H5: PC → EE: The correlation between perceived creativity and emotional engagement suggests a medium impact size and is statistically significant.

H1, H2, H4, and H5 are statistically significant, H3 demonstrating significant support for this study. AI-generated artistic endeavors were generally rated higher in terms of aesthetic criteria compared to conventional ceramic art, highlighting the capacity of AI in creative expression. However, ceramic artworks become perceived as greater authentic in terms of human craftsmanship and creative expression, suggesting a preference for the tangible human contact in artistic advent.

DISCUSSION

In hypothesis 1, $\beta = 0.45$ suggested a moderate wonderful courting between AI-generated content material (AI-C) and aesthetic options (APs). Here $R^2 = 0.32$ means that 32% of the variance in aesthetic alternatives (APs) is defined by AI-generated content (AI-C). $f^2 = 0.09$ indicates a medium impact size, indicating a moderate effect of AI-generated content material on aesthetic alternatives. $p < 0.05$ suggests that the connection is statistically sizeable. The f^2effect size suggests a medium effect. Supported, suggesting that better stages of AI-generated content material were related to elevated aesthetic choices amongst contributors. In hypothesis 2, similar interpretation applies as above, with CP (creativity perceptions) definitely influencing ER

(emotional responses).In hypothesis 3, $\beta = 0.52$ indicates a strong outstanding ranging wherein authenticity perceptions (AP) moderate the effect of AI-generated content (AI-C) on aesthetic alternatives (APs). $R^2 = 0.45$ Ways that 45% of the variance in aesthetic alternatives (APs) is defined through each authenticity perceptions and AI-generated content. $R^2 = 0.15$ shows a large effect size, indicating a vast impact of the interaction among AP and AI-C on APs. $p < 0.05$ shows that the connection is statistically wide spread. f^2 Effects well supported, indicating a strong aid for the hypothesis. In hypothesis 4, indicates that authenticity perceptions (AP) immediately affect aesthetic possibilities (APs) with a massive effect size. In hypothesis 5, indicates that perceived creativity (PC) positively correlates with emotional engagement (EE) with a medium effect length. Through this analysis Hypothesis 3 is significant and well supported for this theory.

Conclusion

Clay and other ceramic materials are used to create ceramic artwork. It can take many forms, including exquisite ceramics for use as sculptures, plates, tiles, and other items. One type of visual art that is a part of the plastic arts is ceramic art. The study's objective is to look at the connection between content produced by AI and ceramic art. A survey of 125 participants was gathered on individual's emotional responses, aesthetic preferences, and authenticity opinions of both traditional and AI-generated ceramic artworks. In this study, aesthetics, creativity, and emotional reactions to ceramic art are among the characteristics that are involved. The statistical analysis methods were applied to compare AI-generated art to ceramic art. To gather information for evaluation, 130 questionnaires were dispersed across the many departments and activities. A total of 125 surveys were found to be eligible for the study because some of the returned questionnaires were either blank or just partially completed. AI-generated artistic endeavors were generally rated higher in terms of aesthetic criteria compared to conventional ceramic art, highlighting the capacity of AI in creative expression. However, ceramic artworks become perceived as greater authentic in terms of human craftsmanship and creative expression, suggesting a preference for the tangible human contact in artistic advent.

Limitations: The observed sample size of a hundred twenty five contributors would possibly restrict the generalizability of the findings across various demographic agencies and cultural backgrounds. Assessing aesthetic possibilities and emotional responses inherently entails subjective judgments, which can introduce bias notwithstanding efforts in standardization.

Future scope: Future studies ought to look at the ability for hybrid artistic endeavors that integrate AI-generated elements with traditional ceramic techniques, exploring new nation-states of creativity. Conducting longitudinal studies could offer insights into how perceptions of AI-generated art evolve over the years as technology advances and societal attitudes shift. Advancing AI algorithms to higher replicate human creativity and emotional expression should further blur the distinction between AI-generated and traditional art paperwork.

Appendix A

Questionnaires

Variables	***Questionnaire prompt***
Emotional Reactions (ER)	*What emotions does this conventional ceramic artwork evoke in you the most?*
	How emotionally engaging do you find this conventional ceramic artwork?

	Compared to conventional ceramic artworks, how well does this AI-generated artwork evoke
Aesthetic Preferences (Aps)	*How would you rate the artistic quality of this conventional ceramic artwork?*
	How important is aesthetic appeal to your enjoyment of this conventional ceramic artwork?
	How does the aesthetic quality of this AI-generated artwork compare to conventional ceramic artworks?

	Considering aesthetic value alone, how likely are you to appreciate this AI-generated ceramic artwork?
Authenticity Perception (AP)	*How important is the authenticity of this conventional ceramic artwork to you?*
	Would you consider purchasing or collecting AI-generated ceramic artworks based on authenticity concerns?
	How authentic does this AI-generated ceramic artwork feel to you?
Creative Perception (CP)	*How innovative do you find this conventional ceramic artwork?*

	How unique is this conventional ceramic artwork compared to others you have seen?
	How does the creativity of this AI-generated artwork compare to conventional ceramic artworks?
Perceived creativity (PC)	*The creativity involved in making this ceramic piece is evident*
	I perceive this ceramic artwork as a product of creative thinking

	The creative process behind this ceramic piece is impressive
Emotionally Engaged (EE)	*Feel emotionally engaged when viewing this ceramic artwork*
	Ceramic piece captures my attention and keeps you engaged
	Emotional connection I feel with this ceramic artwork is strong

AI-generated content (AI-C)	*How familiar are you with AI-generated ceramic artworks?*
	To what extent do you seek out AI-Generated ceramic artworks when exploring new art pieces?
	How interested are you in learning more about the process of creating AI-generated ceramic artworks?

REFERENCES

Fang, Z., Niu, R., Cui, T. and Fang, Y., 2024. Ceramic Art Based on Digital Technology Image Processing. Journal of Image Processing Theory and Applications, 7(1), pp.32-42.

Abdulwahid, G.M. and Haji, S.Q.S., 2024. Perception of Aesthetics in Contemporary Ceramic Art: The works of artist Dana Salahuddin al-Sharif as an example. QALAAI ZANIST JOURNAL, 9(1), pp.88-118.

Hu, Q. and Hu, Q., 2024. Application of Digital Ceramic Art Elements in the Landscape Design of Rural Ecological Environment Based on Virtual Reality.

Xie, Q. and Lei, Z., 2024. Research on the Innovation of Ceramic Art Products Based on CAD Technology Optimization.

[5] Takase, Y., 2024. The Effect of Sound in the Ceramic Works of. History and Theory, 5, pp.114-121.

Bozdemir, O., 2024. The History and Future of Ceramic Sculpture: From Ancient Clay Figures to Modern 3D Printing. Gaziantep University Journal of Social Sciences, 23(2), pp.420-436.

Song, J. and Hu, S., 2024. Integrating Bioinformatics with Bionic Virtual Reality for Advanced Ceramic Art Design. Journal of Commercial Biotechnology, 29(1).

Al, L.D.M.H.S. and allah Radhi, N.M., 2024. TECHNICAL DIVERSITY IN THE CERAMICS OF HAIDER RAOUF. Galaxy International Interdisciplinary Research Journal, 12(2), pp.436-450.

Liu, X., Research on International Communication of Ceramic Culture with Integrated Media.

Kalay, L., 2024. Redefining beauty: The art and ethos of fractured ceramics. Ceramics: Art and Perception, (122), pp.110-115.

Guljajeva, V. and Canet Sola, M., 2023, April. AI-Aided Ceramic Sculptures: Bridging Deep Learning with Materiality. In International Conference on Computational Intelligence in Music, Sound, Art and Design (Part of EvoStar) (pp. 357-371). Cham: Springer Nature Switzerland.

Guljajeva, V. and Canet Sola, M., 2023, February. Psychedelic Forms-Ceramics and Physical Form in Conversation with Deep Learning. In Proceedings of the Seventeenth International Conference on Tangible, Embedded, and Embodied Interaction (pp. 1-5).

Lee, Y.H. and Chen, Y.T., 2024, May. The Application of Artificial Intelligence Combined with Parametric Digital Design Tools in the Ceramic Modeling Design Process for Beginners.—A Geometric Vase as an Example. In International Conference on Human-Computer Interaction (pp. 381-394). Cham: Springer Nature Switzerland.

Walkowiak, E. and Potts, J., 2024. Generative AI, Work and Risks in Cultural and Creative Industries. Available at SSRN 4830265.

Spennemann, D.H., 2024. Will Artificial Intelligence Affect How Cultural Heritage Will Be Managed in the Future? Responses Generated by Four genAI Models. Heritage, 7(3), pp.1453-1471.

EL FAROUKI, H. and BOUZIANE, K., 2024. Theoretical Perspectives on AI, Semiotics, and Cultural Heritage. The International Journal of Cross-cultural Communication and Media Studies, 1(2), pp.1-9.

Lu, Y., 2022. Modeling Design of Ceramic Products Based on Digital Image Processing Technology. Mobile Information Systems, 2022(1), p.6939127.

He, Y., 2022. Research on innovative thinking of ceramic art design based on artificial intelligence. Mobile Information Systems, 2022(1), p.3381042.

Sun, X., Liu, X., Yang, X. and Song, B., 2021. Computer-aided three-dimensional ceramic product design. Computer-Aided Design and Applications, 19(S3), pp.97-107.

Li, D. and Alkathir, E.S., 2021. Implementation of Computer-Based Vision Technology to Consider Visual Form of Ceramic Mural Art. Mathematical Problems in Engineering, 2021(1), p.4236572.

Gatto, C., Martinez, K. and De Paolis, L.T., 2022, July. Design process of a ceramic modeling application for virtual reality art therapy. In International Conference on Extended Reality (pp. 92-103). Cham: Springer International Publishing

Bell, F., Mcclure, E., Friedman-Gerlicz, C., Ta, R. and Buechley, L., 2024, May. Shape-Changing Clay-Dough: Taking a Material-Oriented Approach to 3D Printing Ceramic Forms. In Proceedings of the CHI Conference on Human Factors in Computing Systems (pp. 1-19).

Huang, S. and Ismail, A.I.B., 2024. Generative Adversarial Network to Evaluate the Ceramic Art Design through Virtual Reality with Augmented Reality. International Journal of Intelligent Systems and Applications in Engineering, 12(6s), pp.508-520.

Zhang, B., Cheng, P., Deng, L., Romainoor, N.H., Han, J., Luo, G. and Gao, T., 2023. Can AI-generated art stimulate the sustainability of intangible cultural heritage? A quantitative research on cultural and creative products of New Year Prints generated by AI. Heliyon, 9(10).