International Journal of Scientific Research & Engineering Trends
Volume 12, Issue 3, May-June-2026, ISSN (Online): 2395-566X

Emotional Resonance in Visual Art: A Blind Comparative Study of AI-Generated and Human-Created Artworks

Deepa Barethiya, Pratik Gajbhiye, Siddhi Lokhande
3Department of Master in Computer Applications G H Raisoni
College of Engineering and Management, Nagpur, Maharashtra, India

Abstract — This paper explores the extent to which artificial intelligence (AI) systems, increasingly capable of creating visual artworks indistinguishable from human-created ones, are part of the broader conversation about creativity and the role of AI in the creative process. Expanding on existing research that considers AI creativity as a whole construct, this paper focuses on a component-based approach to creativity, examining it as a series of discrete components. An empirical analysis is also presented to compare AI-created and human-created artworks with respect to the most important factors traditionally associated with human creativity: emotional depth, intentionality, originality, awareness of context, and experiential authenticity. A quantitative approach was taken using a survey-based methodology, in which a series of artworks were evaluated using a structured Likert-scale survey. The results were analyzed using comparative statistics to determine performance differences between AI-created and human-created artworks across each creativity component. The results show that AI-created artworks exhibit uneven creative performance, with higher visual originality and significant shortcomings in emotional depth and intentionality compared to human-created artworks. These results suggest that creativity is a multidimensional construct and that current AI systems have difficulties in recreating several core components of human creativity. This paper contributes to the existing literature on AI and creativity by providing a structured approach to evaluating AI-created artworks beyond superficial visual aesthetics and highlighting implications for the role of AI as a creative tool versus an autonomous artist.

Keywords— artificial intelligence, creativity, AI-generated art, human creativity, empirical analysis, visual art

I. INTRODUCTION

Artificial Intelligence (AI) has rapidly advanced in recent years, especially in generating visual art through technologies like deep learning, generative adversarial networks (GANs), and diffusion models. AI-generated images are now widely used in industries such as digital art, advertising, entertainment, and game development, raising debates about creativity and whether AI can truly be considered creative.

Human creativity involves more than producing visually appealing work; it includes emotion, intention, personal experience, and meaning. Human artists create art as a form of expression and communication, while AI generates images by learning and reproducing patterns from large datasets. Although AI can imitate styles and complexity, it lacks consciousness, emotions, and personal experiences, which questions the authenticity of its creativity.

Previous studies have explored public perception, originality, and biases related to AI-generated and human-created art. However, creativity is often treated as a single concept, making it difficult to identify the specific areas where AI may excel or fall short. AI may perform well in aspects like novelty or complexity but may struggle with emotional depth and intentionality. This creates a research gap in evaluating creativity through separate dimensions rather than as a whole.

This study addresses that gap by analyzing creativity in visual art through key dimensions such as emotional depth, intentionality, originality, context awareness, and authenticity. It compares AI-generated and human-created artworks to identify similarities and differences in these creative aspects.

The research uses a quantitative survey method where participants rate AI-generated and human-created artworks using a Likert scale. This approach provides measurable insights into how people perceive creativity in both forms of art and offers practical value for industries like digital art and game development by identifying areas where human creativity remains stronger than AI.

Research Objectives

- Identify key components of human creativity in visual art.
- Compare AI-generated and human-created art across these creativity components.

- Measure how effectively AI demonstrates each creativity dimension.
- Determine which creativity components show the greatest differences between AI and human art.

Research Questions

- To what extent do people emotionally connect with AI-generated and human-created art when the origin is hidden?
- Which creative factors most influence emotional and aesthetic responses to visual art?
- Can AI-generated art create emotional responses comparable to human-created art across different subjects?

II. LITERATURE REVIEW

Generative Artificial Intelligence (AI) has significantly transformed creative industries and sparked debate about whether AI-generated works can be considered creative in a human-like way. Early research in computational creativity focused on proving that computers could genserate novel and aesthetically complex outputs. As AI systems became more advanced, research increasingly shifted toward understanding how people perceive AI-generated art and how AI creativity differs from human creativity. This literature review combines findings from psychology, creativity studies, and human-computer interaction to examine the current understanding of AI creativity and identify existing research gaps.

Computational Views of Creativity

Researchers argue that AI can demonstrate creativity, but differently from humans [1]. Margaret Boden explained creativity as the recombination of existing ideas, a principle followed by modern AI systems that generate images using deep learning and large datasets [1]. Although AI can create visually appealing and novel artworks, its outputs are based on statistical patterns rather than emotions, intentions, or personal experiences [2].

Studies show that generative AI can improve human creativity and productivity, especially in human-AI collaboration [3]. However, AI alone does not consistently outperform humans in producing meaningful and diverse creative ideas [4]. Research also suggests that overdependence on AI may reduce originality and idea diversity [5]. These findings indicate that AI supports creativity but still lacks the depth and flexibility of human creative thinking [3,4].

Perception and Evaluation of AI-Generated Art

Many studies examine how people evaluate AI-generated art compared to human-created art [6]. Research consistently shows that artworks believed to be human-made receive higher ratings in creativity, emotional depth, and artistic value, even when the artworks are visually identical [6,7].

Studies involving advanced AI systems such as DALL·E 2 reveal that people often struggle to distinguish AI-generated art from human-created art [8]. Despite this, viewers still perceive human-created artworks as more meaningful and emotionally authentic [7,8]. Psychological studies further show that cognitive bias strongly influences creativity judgments, as people tend to value art more positively when they believe it was created by humans [7].

Creativity Components in Human vs. AI Art

Research comparing specific creativity components between AI and human art focuses on emotional connection, intentionality, originality, and contextual meaning [9]. Studies suggest that AI-generated art can evoke emotional responses, but viewers often perceive lower emotional authenticity and intention compared to human-created art [9,10].

Other research shows that AI performs less effectively in divergent and abstract thinking tasks, which are important aspects of human creativity [11]. In addition, AI-generated art is often described as lacking emotional presence and experiential depth [10]. However, most existing studies examine only individual aspects of creativity instead of evaluating multiple creativity dimensions together [9,11].

Comparative and Mixed Results

Some studies challenge the belief that AI is entirely inferior in creative tasks [12]. Blind comparison tests have shown that AI-generated art is sometimes preferred over human-created art, indicating growing acceptance of AI creativity [12]. Research outside visual art also suggests that AI can generate ideas preferred by humans in certain tasks [13].

However, concerns remain about the long-term impact of excessive dependence on AI and its possible effects on human creativity and originality [5].

Research Gap

The literature identifies several important limitations in current research:

- Holistic Assessment Limitation: Most studies treat creativity as a single concept rather than analyzing separate creativity components [9,11].

- Perception Bias Emphasis: Many studies focus mainly on authorship bias instead of identifying where AI is creatively strong or weak [6,7].
- Lack of Component-Level Comparison: Limited research compares AI-generated and human-created art across multiple dimensions such as emotional depth, intentionality, originality, and contextual meaning simultaneously [9,10].

III. METHODOLOGY

This research set out to explore emotional resonance in visual art by comparing how people respond to human-made versus AI-generated artworks, without revealing which was which. We wanted to see how participants formed emotional connections with visual art when they had no idea who—or what—created it.

To do this, we used a blind pairwise comparison. Each participant looked at pairs of artworks rooted in the same theme. For each pair, one piece came from a human artist, and the other from an AI. But we kept the origins hidden. We did this to cut out attribution bias, so people would rely on what they actually felt and saw, not what they assumed about the creator.

We used a cross-sectional design and collected our data through an online survey.

We focused on four themes: Nostalgia, Night, Classic, and Traditional. For each, we selected one human-made and one AI-created artwork, making eight artworks in total. For the human side, we pulled from established artists like Raja Ravi Varma, Danny Singh, and a mix of both traditional and contemporary painters. The AI works came from the Gemini AI image generation model ("Nano Banana"). Our prompts for the AI aimed for close thematic and stylistic matches, but still allowed some unique interpretation from the AI. Most of the artworks leaned toward semi-realistic, oil painting-inspired styles to ensure visual consistency across the pairs. To keep things anonymous, we simply labelled artworks as Art A through Art H.

Forty-eight people volunteered for the study, recruited through WhatsApp, classmates, and academic peer groups. Artistic or AI expertise? Not required.

We used Google Forms for the survey. First, we asked participants about their age range and how familiar they were with AI art. Then, for each theme, they saw a pair of artworks. For each pair, participants picked the one they felt more emotionally connected to and explained their choice. We offered several reasons to select from, including emotional expression, relatability, originality, meaning, visual appeal, and artistic style. To keep engagement high and fatigue low, we kept the survey short—most people were done in five to seven minutes.

We sent out the survey link via online academic and social channels. Everyone saw the artworks in the same order. Google Forms gathered the responses, and we exported the data for analysis.

We did collect names and email addresses, but only for administrative reasons. We kept all data anonymous during analysis.

For the analysis, we used descriptive statistics. We looked at how often each type of artwork was preferred under each theme, and calculated frequency distributions and percentages for comparison. We also grouped and analysed the reasons people gave for their choices, looking for recurring patterns in their responses. We summarised the findings in tables, pie charts, and grouped bar charts.

Throughout, we held to ethical standards. Participation was voluntary. We told everyone upfront that the survey was for academic research. While we collected some contact information, we stripped all identifying details from the analytical dataset, so no personal info appeared in our research results.

IV. RESULTS

1. Participant Demographic

A total of 48 participants completed the survey. Most respondents belonged to the 19–25 age group (62.5%), followed by participants aged 26–30 (22.92%). Smaller proportions of participants were observed within the 30–35 and the 35 age categories. The demographic distribution suggests that the survey primarily reflected the responses of younger participants who were comparatively more familiar with digital media and online visual culture.

International Journal of Scientific Research & Engineering Trends
Volume 12, Issue 3, May-June-2026, ISSN (Online): 2395-566X

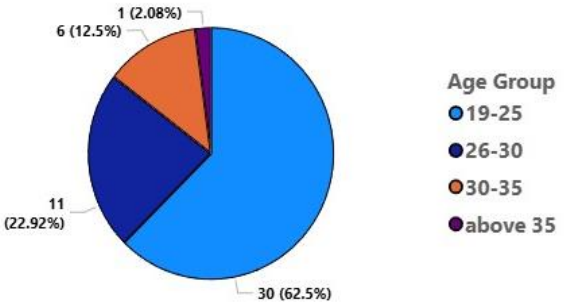

Figure no.1

2. Theme-Wise Emotional Connection Preferences

Participants were asked to compare paired artworks across four themes — Nostalgia, Night, Classic, and Traditional — and select the artwork they felt more emotionally connected to.

The findings revealed noticeable variations in emotional preference across the selected themes. Within the Night and Classic categories, one artwork in each pair received a higher proportion of participant selections (35.42%) compared to the corresponding opposing artwork (25%). A more significant difference emerged within the Traditional theme, where one artwork received 43.75% of participant responses while the opposing artwork received 14.58%.

In contrast, the Nostalgia theme demonstrated a relatively balanced response pattern. Both artworks within this category received equal participant preference rates of 27.08%, suggesting that emotional connection within nostalgic visual themes was not strongly differentiated by participants.

Theme	AI Art	Human Art	Both	Neither
Nostalgia Theme	27.08%	27.08%	33.33%	12.50%
Night Theme	25.00%	35.42%	27.08%	12.50%
Classic Theme	25.00%	35.42%	27.08%	10.42%
Traditional Theme	14.58%	43.75%	31.25%	10.42%

Figure no. 2

3. Neutral and Shared Emotional Responses

Across all four themes, a considerable number of participants selected the "Both" option, indicating that emotional connection was sometimes perceived similarly between paired artworks. The highest proportion of "Both" responses was observed within the Nostalgia theme (39.58%), where participants frequently reported comparable emotional engagement with both artworks presented.

A smaller proportion of participants selected the "Neither" option across themes, suggesting that certain artwork pairs did not establish a strong emotional response for some viewers. These observations indicate that emotional resonance in visual art may not always exist as a strictly binary preference and can vary depending on individual interpretation and thematic context.

4. Overall Preference Trends

When the responses were examined collectively, certain artworks consistently received stronger emotional preference across multiple themes. At the same time, the overall response distribution demonstrated that AI-generated artworks were capable of achieving emotional engagement levels comparable to human-created artworks within specific thematic settings.

The findings also suggest that emotional connection toward visual art was influenced not only by visual appearance, but also by how participants interpreted emotional atmosphere, familiarity, and expressive qualities within the artworks.

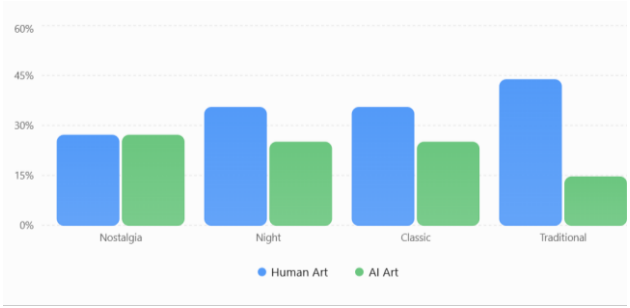

Figure no. 3

5. Factors Influencing Emotional Connection

Participants identified several factors that influenced their emotional connection to the artworks. Among the most frequently selected factors were emotional expression, relatable experience, and visual appeal. Factors such as originality and meaning were also identified by participants, although they appeared less frequently in comparison to emotionally interpretive qualities.

These findings suggest that participants primarily responded to artworks based on perceived emotional atmosphere and personal relatability rather than technical or stylistic considerations alone.

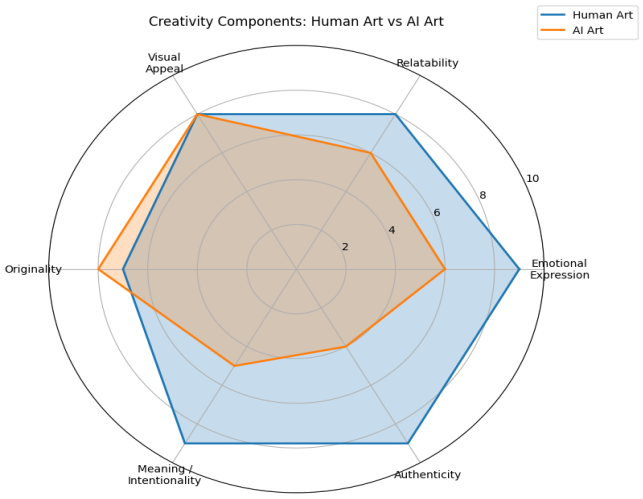

Figure no.4

V. DISCUSSION

This study set out to measure how people connect emotionally with visual art, comparing reactions to pieces made by humans and those created by AI. To keep things fair, participants had no idea where the art came from—they had to respond to the images themselves, not any preconceptions about AI or human creativity.

The results were telling. People tended to feel a stronger emotional pull toward works humans had made, especially when looking at art in the Night, Classic, and Traditional categories. This pattern points to something interesting: viewers seemed tuned in to an emotional presence and lived experience behind these pieces, something that went deeper than just surface-level skill or visual quality. Even without knowing who made them, folks seemed to pick up on some trace of real human feeling woven into the composition.

Still, AI-made art didn't just fall flat. When it came to the Nostalgia theme, people liked AI and human pieces about equally. AI can tap into certain moods—those connected to memory, comfort, and familiar feelings—with surprising effectiveness. But when themes demanded more cultural depth or personal touch, especially in the Traditional category, human-created art came out ahead by a noticeable margin.

Why does this gap exist? It likely comes down to experience and intention. Human artists draw from their own lives, their cultures, their emotions—an intent and a perspective are shaping their work. AI, on the other hand, relies on the patterns it's learned. It recreates, it imitates, but it doesn't bring lived experience to the table. Viewers seemed especially drawn to work where they sensed emotional expression, relatability, or aesthetic appeal—the things that feel, in some sense, human.
At the same time, a significant number of people couldn't pick a favourite—they chose "Both" for several themes. This points to how much generative AI is progressing. Sometimes, the emotional impact from AI and human work was on par, showing that AI can sometimes hold its own in these expressive territories.

In the end, the study makes one thing clear: emotional resonance in art isn't just about copying styles or nailing technical details. Real connection grows out of atmosphere, symbolism, cultural recognition, and a sense that a real person stands behind the work. AI art is moving fast, getting better all the time. Still, for now, human-made art continues to offer a deeper sense of authenticity and emotional richness.

VI. CONCLUSION

This study looked at how people react emotionally to visual art when they don't know if a human or artificial intelligence created it. Instead of focusing on common assumptions about AI art, the research zeroed in on the viewer's genuine feelings, using a blind comparative survey.

Participants tended to connect more deeply with artworks created by humans, especially in categories like Traditional, Classic, and Night. These themes drew clearly stronger preferences for human-made pieces. But the story doesn't end there—AI-generated art also stirred real emotional engagement. When it came to the Nostalgia theme, people showed nearly equal preference for works from both humans and AI. This points to something remarkable: AI systems are getting better at capturing emotional tone, familiarity, and even that sentimental vibe we typically associate with human experience.

A major takeaway from this study is that the power of visual art goes beyond technical skill or surface beauty. People linked their sense of connection to elements like relatability, emotion, atmosphere, and meaning. Even without knowing who made the art, participants sensed a lived experience and intention in human-created pieces. It's as if, on some level, viewers pick up on subtle marks of humanity—things like tiny imperfections, familiar cultural cues, or emotional depth.

None of this means AI-generated art can't move people or express something meaningful. In fact, AI tools are finding their place in the emotional and aesthetic spaces once thought

to belong only to humans. Still, even as AI imitates artistic styles with surprising accuracy, human-made art seems to offer a stronger sense of authenticity and real-life depth.

In the end, emotional connection to visual art isn't just about technical imitation or how similar things look. It's a richer process, shaped by atmosphere, symbols, cultural touchstones, and the viewer's sense that there's a real human story behind the work. As generative AI keeps evolving, the dynamic between machine-made imagery and human feelings will remain a fascinating field—one that will only become more important to both artists and researchers.

Future and Limitation

Limitations

This study was conducted using a relatively small participant group of 48 respondents, which may limit the broader generalisation of the findings. The research also focused only on four visual themes and compared a limited number of artworks under controlled survey conditions. Since emotional resonance in art is deeply subjective, participant responses were naturally influenced by personal interpretation, cultural familiarity, and individual emotional experience. Additionally, the study examined only static visual artworks and did not include other creative forms such as animation, music, or interactive media, where emotional engagement may differ significantly.

Future Scope

Future research can expand this study by involving larger and more culturally diverse participant groups to better understand how emotional perception toward AI-generated art varies across different audiences. Additional artistic themes, styles, and creative mediums such as animation, film, music, and game environments may provide deeper insight into emotional resonance beyond static imagery. Further studies may also explore how viewers emotionally respond to AI-generated art over longer periods of engagement, as well as how advancements in generative AI models influence perceptions of authenticity, intention, and emotional depth in creative expression

REFERENCES

1. Bellaiche, L., Chamberlain, R., et al. (2023). Whether and why we prefer human-created compared to AI-created artwork. Cognitive Research: Principles and Implications, 8(1). https://doi.org/10.1186/s41235-023-00499-6
2. Boden, M. A. (1998). Creativity and artificial intelligence. Artificial Intelligence, 103(1–2), 347–356.
3. Cunningham, C. V., & others. (2025). Human creativity versus artificial intelligence: Source attribution, observer attitudes, and visual perception while viewing art. Frontiers in Psychology.
4. Elgammal, A., Liu, B., Elhoseiny, M., & Mazzone, M. (2017). CAN: Creative adversarial networks: Generating art by learning about styles and deviating from style norms. Proceedings of the International Conference on Computational Creativity, 96–103.
5. Hall, J., & Schofield, D. (2025). The Value of Creativity: Human Produced Art vs. AI-Generated Art. Art and Design Review, 13, 65–88. https://doi.org/10.4236/adr.2025.131005
6. Hertzmann, A. (2018). Can computers create art? Arts, 7(2), 18. https://doi.org/10.3390/arts7020018
7. Lee, Y. K., Park, Y.-H., & Hahn, S. (2023). A Portrait of Emotion: Empowering Self-Expression through AI-Generated Art. arXiv. https://arxiv.org/abs/2304.13324
8. McCormack, J., Gifford, T., & Hutchings, P. (2019). Autonomy, authenticity, authorship and intention in computer generated art. arXiv. https://arxiv.org/abs/1903.02166
9. Messer, U., et al. (2024). Co-creating art with generative artificial intelligence. Computers in Human Behavior: Artificial Humans, 2. https://doi.org/10.1016/j.chbah.2024.100061
10. Runco, M. A., & Jaeger, G. J. (2012). The standard definition of creativity. Creativity Research Journal, 24(1), 92–96.
11. van Hees, J., et al. (2025). Human perception of art in the age of artificial intelligence. Empirical Studies of the Arts.
12. Zhou, E., et al. (2024). Generative artificial intelligence, human creativity, and art. PNAS Nexus, 3(3). https://doi.org/10.1093/pnasnexus/pgae052