Bridging Cultural Perspectives: Developing a Sustainable Framework for the Comparative Aesthetic Evaluation of Eastern and Western Art

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Abstract: Sustainability in art is crucial for fostering intercultural understanding and preserving cultural heritage, which is essential to promoting the Sustainable Development Goals (SDGs). In previous research on Western and Chinese art, studies typically focused on individual artists and summarized their aesthetic values, often suffering from a lack of comparative analysis, a unidimensional sensory perspective, and a deficiency in comprehensive aesthetic evaluation standards. Consequently, this study selected representative watercolor works from five master artists in Western and Chinese art history as an example, constructing a comprehensive aesthetic evaluation system focusing on composition, color, themes, and techniques. Beginning with the influence of aesthetic and non-aesthetic perspectives by natural experimental method, the research employs correlation analysis and structural equation modeling to analyze the functional relationships between evaluative factors, perspective forces, and the overall aesthetic appeal of the paintings. Furthermore, the study reveals the distinctions between Eastern and Western paintings through multi-group analysis. Key findings include the following: Evaluation factors have varying effects on the influence of aesthetic and non-aesthetic perspectives. All factors, except conceptual expression (X12), brushwork expressiveness (X14), and watercolor language (X16), positively impact the overall aesthetic appeal. In mediation effects, X16 positively mediates between the influence of aesthetic perspectives and the overall aesthetic appeal. Factors such as warm–cool relationship (X8), X12, emotional atmosphere (X11), X14, and X16 positively or negatively affect the relationship between non-aesthetic perspectives and the overall aesthetic appeal. Multi-group analysis reveals significant differences in the evaluation factors and mediation effects that influence the overall aesthetic appeal. This study demonstrates the relationship between evaluation factors from different perspectives and aesthetics, providing valuable insights into evaluating Eastern and Western art. This evaluation system is applicable to academic research and practice in cultural heritage preservation and evaluation and art education, facilitating a deeper understanding of artistic values and promoting cross-cultural exchanges.

Keywords: watercolor art; aesthetic evaluation; East–West comparison; structural equation modeling; multi-group analysis

1. Introduction

Sustainable Development Goals (SDGs) underscore the importance of cultural preservation and innovation in fostering inclusive and resilient societies. As part of this global initiative, understanding and appreciating diverse artistic traditions contribute to cultural sustainability, which is vital for maintaining the social fabric and promoting intercultural dialogue [1,2]. Recently, researchers realized that the reception and differences in aesthetic evaluation between Eastern and Western cultures significantly impact several SDG areas,
including cultural heritage preservation and evaluation (SDG 11: Sustainable Cities and Communities) and art education (SDG 4: Quality Education) [3,4]. For example, varied criteria for evaluating cultural heritage sites can lead to different conservation priorities, influencing which aspects of heritage are preserved and celebrated. In art education, differing aesthetic values affect curriculum development and the emphasis placed on various artistic techniques and styles, fostering a more inclusive and diverse understanding of global art traditions.

Recent advances in artistic aesthetics have enriched artistic theory and appreciation. However, diverging cultural preferences between East and West challenge consistent evaluation, impacting how viewers assess composition, color, subject matter, and technique [5–7]. Certain viewpoints highlight compositional and color factors that may overshadow the intricacies of subject and technique [8–12], while others may accentuate subject and technique, lessening the emphasis on composition and color [13–16]. This disparity in aesthetic perspectives necessitates a unified theoretical approach to evaluation. Addressing these aesthetic receptions and differences is crucial for achieving the SDGs, as it promotes a comprehensive approach to cultural sustainability that respects and integrates diverse artistic traditions, ultimately fostering greater mutual understanding and cooperation between different cultural backgrounds.

Watercolor art, in particular, has historically embodied the distinct aesthetic qualities of the periods it represents [17–21]. Incomparable historical epochs, the cultural and social development of different regions subtly shapes the trajectory of artistic evolution [22–26], resulting in distinct traits in Eastern and Western watercolor art. In the West, since the Renaissance, watercolor has evolved into a mature genre characterized by intricate perspectives, meticulous compositions, and a romantic approach to color enriched by philosophical and scholarly traditions [14,27–30]. Conversely, Chinese watercolor, rooted deeply in the country’s rich philosophical and cultural heritage, focuses on atmosphere and symbolism, utilizing unique techniques such as “dry, wet, dense, light” and “dot, line, surface”. Here, color transcends mere representation to become a medium for emotional expression and ambiance creation [31–34].

The distinct cultural backgrounds of Eastern and Western watercolor traditions during the 19th and 20th centuries shaped their respective artistic trajectories, leading to divergent aesthetic principles [34–38]. Western watercolors, emphasizing realism and detailed composition, contrast with Chinese watercolors, which reinterpret Western aesthetic principles through an indigenous lens, prioritizing atmosphere and symbolism. This study aims to bridge these divergent traditions by establishing a comparative theoretical framework that enhances cross-cultural dialogue, innovation, and creativity.

Taking watercolor paintings as an example, this research adopts a systematic approach to evaluating aesthetics by selecting iconic works from ten master painters who represent both Eastern and Western traditions. Through expert selection, 20 paintings were chosen to represent a spectrum of aesthetic traits. Participants were then asked to view these paintings on high-resolution digital displays, rating their overall aesthetic appeal and providing detailed assessments of various artistic indicators. An expert panel further evaluated the aesthetic traits, isolating areas that exemplify contrasting viewpoints. The interplay between these evaluative factors and aesthetic perspectives was analyzed, focusing on understanding the direct and mediating effects. The core research of this study revolves around the following critical questions: 1. Can a sustainable framework for the comparative aesthetic evaluation of Eastern and Western art be constructed? 2. Which evaluative factors influence the overall aesthetic appeal of paintings? 3. Among these evaluative factors and the overall aesthetic appeal of the paintings, which mediating effects might be operational? 4. What are the primary differences in aesthetic evaluation between Eastern and Western paintings?

By exploring these questions, this study aims to fill gaps in the scholarly literature, particularly in comparative research and the mediating roles in aesthetic evaluation. Firstly, there is a need for comparative studies that consider both Eastern and Western artworks
from the 19th and 20th centuries, providing a broader context for theoretical insights. Secondly, previous research has often overlooked the mediating role of aesthetic perspectives in evaluating art. This study addresses these gaps by examining how different aesthetic viewpoints influence the relationship between evaluative factors and overall aesthetic appeal. Lastly, the lack of a unified evaluation framework that accommodates both traditions suggests an opportunity to develop a comprehensive system that reflects the diverse characteristics of Eastern and Western art.

By establishing a comprehensive evaluation framework and exploring the mediating role of aesthetic perspectives, this study contributes significantly to the theoretical and practical understanding of art aesthetics and reception. It promotes intercultural dialogue and fosters innovation within the global artistic community, emphasizing the importance of integrating diverse cultural viewpoints into evaluating art. This framework bridges theoretical gaps and enhances art appreciation across different cultural contexts. In addition, this study promotes a deeper appreciation of cultural diversity in art, advocating for the integration of diverse cultural viewpoints in many aspects, including heritage evaluation and prevention and art education. It emphasizes the importance of cross-cultural understanding and dialogue in fostering a sustainable and inclusive approach to global art reception and appreciation.

2. Literature Review

2.1. Research on Comparative Analysis of Eastern and Western Watercolors

The comparative study of Eastern and Western watercolors is a focal point for modern art scholars. Turner, M. (2009) uses classical Chinese painting resources to examine Western attitudes toward natural subjects, highlighting significant natural elements [39]. Liang (2014) examines the intercultural artistic exchanges between China and the West during the 19th century, focusing on the European reception of Chinese imagery and art and the evolution of Chinese export art, reflecting the changing diplomatic, commercial, and cultural ties [40]. Bao et al. (2016) analyzed the influence of Western era-specific culture and aesthetics on Chinese paintings. This study contrasts iconic paintings from both traditions, delving into the unique aesthetic expression in paintings and their future trajectory [35]. Capistrano-Baker (2017) scrutinizes pre-19th-century Western watercolor theories and practices through a multidisciplinary lens, addressing the spiritual and aesthetic aspirations and providing theoretical backing for the scientific enhancement and growth of Chinese watercolor [41]. Yang et al. (2019) explore the varied European and North American perspectives on artistic authenticity and their differing approaches to appreciating Chinese art [37]. Wen et al. (2020) present an overview of the historical evolution of landscape watercolors in the East and West. They dissect the divergences and parallels in their developmental changes, stylistic language, and individual characteristics, identifying critical aspects of Eastern and Western watercolor landscapes and discussing four pivotal development directions for Chinese watercolors [42,43]. These studies underscore the distinct stylistic and thematic differences in Eastern and Western watercolor techniques.

In Western watercolors, the artistic reproduction of reality mirrors cultural ideologies, while Chinese artists infuse their watercolors with philosophical reflections, emphasizing aesthetics in form and color rather than literal depiction. Nonetheless, contemporary Eastern and Western watercolor aesthetics lack comprehensive evaluative criteria, with limited scholarly discussion in this field.

2.2. Research on Core Ideologies in East–West Watercolor Creation

The study of core ideologies in Chinese and Western watercolor artistry forms the theoretical bedrock of watercolor creation. Yu et al. (2003) took a broader perspective in discussing the essence of artistic creation in China, emphasizing the importance of artistic practice. He embarked on a series of experimental paintings, focusing on the intertwined concepts of watercolor and landscape. His research encompassed a broad theoretical framework and ventured into new avenues in watercolor aesthetics, starting from the
tactile sensory experiences of landscapes [44]. Garratt (2009) took artist Thomas Moran’s work as a case study, investigating the transition of his watercolor art from landscape to historical painting. The study evaluated the roots of these watercolors within British and American traditions and their impact on the American Ruskinian art scene. The majority of these works depicted Western natural landscapes, fulfilling both educational purposes and the Eastern viewers’ desire to perceive the Western world [45]. Carrier (2012) positioned Chinese watercolor within the historical nexus of East–West artistic exchange and integration, conducting a case study. He melded the art language that emerged from the indigenization of watercolor in China with Western watercolor aesthetics, comparing their unique characteristics [36]. Roberts (2015) steered the discourse toward the challenges in the evolution of contemporary Chinese watercolor. He championed a focus on contemporary life and underscored the significance of cultural heritage in enriching the overall prowess of watercolor art. He also advocated for collaborations with curators whose diverse viewpoints can offer many interpretations and insights, positioning them as a vital conduit for the recognition and appreciation of watercolor art [46]. Additionally, dissecting case studies of emblematic artists from the East and West is pivotal in deducing artistic norms and benchmarks for aesthetic evaluation. Yang et al. (2016) scrutinized the artistic nuances of merging Eastern and Western painting techniques through literature and image analysis. He illustrated that the artist’s creative sensibility harbors modernist traits, with paintings reflecting the elegance of Chinese calligraphy and the expressive depth of Chinese freehand brushwork. Amid societal shifts and realist currents, the artist progressively sought to anchor his works in realist ideology, employing Western techniques to craft a fusion of Eastern and Western artistic philosophies in his realist paintings [47]. Zhang et al. (2021) followed the tradition of Chinese watercolor paintings exported to Western clients in 19th-century Guangzhou, accentuating their historical and anthropological significance from a ‘Chinese identity’ standpoint. These unique artworks were perceived as windows into Chinese customs, portraying the evolution of diplomatic, commercial, and cultural ties between China and the West through watercolor artistry [48]. Additionally, studies have focused on the creativity and contemporary relevance of Eastern art. These studies have examined the evolution and influence of creativity in Western art, drawing parallels in Eastern art. The conclusion was that creativity in Eastern art signifies development and transcendence, whereas in Western art, it implies a challenge and resistance to the existing order [49].

To an extent, this analysis validates the divergent development philosophies between Western and Chinese watercolor paintings, thus highlighting the need to establish an appropriate evaluative system for aesthetic judgment. Such a perspective on cultural inheritance and advancement offers significant insights into the evolution of contemporary Chinese watercolor painting.

2.3. Research on Aesthetic Evaluation in Watercolor Painting

A thorough investigation into the aesthetic evaluation of watercolor paintings is crucial for deepening the understanding of their theoretical aspects, examining unique aesthetic qualities, encouraging cross-cultural aesthetic conversations, and providing a scientific framework for watercolor painting appreciation. Presently, database searches with keywords like ‘aesthetic evaluation in Chinese and Western watercolor’ yield limited relevant literature. The research closely associated with this area primarily focuses on approaches such as spectral analysis, style transfer algorithms, and visual perception studies. From these topics, we have extracted significant theoretical insights, which contribute a scientific foundation to the aesthetic evaluation of both Chinese and Western watercolor paintings.

From the perspective of the chromatic aspects of the watercolors displayed in digital media, research in computable image aesthetics simulates human visual and aesthetic cognition to judge images aesthetically. This field is applicable to image aesthetic assessment and artistic style analysis. Deng et al. (2016) review recent computer vision techniques used to assess image aesthetic quality. They summarize these approaches based on visual feature
types (hand-crafted features and deep features) and evaluation criteria (data set characteristics and evaluation metrics). In addition, following the emergence of deep-learning techniques, they systematically evaluate recent deep-learning settings that are useful for developing a robust deep model for aesthetic scoring [50]. This research enhances our understanding of the theories associated with computable imagery. Delaney et al. (2016) summarize findings on the application of imaging spectroscopy to works of art to identify and map artists’ pigments, improve the visualization of preparatory sketches, and identify non-original material. The resulting false-color images obtained from the SWIR imaging system are shown to give improved visualization of changes from paintings with large and complex reworkings, e.g., Pablo Picasso’s The Tragedy (1903). Also highlighted is the utility of reflectance imaging spectroscopy in the SWIR region to better reveal specific paint changes, including changes in the drawings and markings made by the original artist or changes made by a subsequent conservator, such as a fill [51]. Wang, Qin, and Gao (2016) built a system called artistic coloring that realizes automatic color transfer from famous paintings. It properly extracts the wonderful color characteristics of famous paintings and applies them to color transfer. They quantify the processing of human painting to find the main colors in the color palette and propose an artistically balanced color theme extraction algorithm aimed especially at paintings. They have successfully tested the artistic coloring system on many images with different painting styles. The results are natural and have color characteristics similar to their corresponding reference paintings [52]. These publications apply computational aesthetics to the specific area of still-life watercolor art. While they offer detailed categorization in terms of color and imagery within the scope of watercolor paintings’ computable aesthetics, they primarily concentrate on still-life and digital photographic works, thus not providing a comprehensive framework for evaluating the aesthetics of watercolor paintings.

Studies on aesthetic evaluation specific to painting genres carry significant reference value. Wang and Alamusi. (2022) discussed the extensively used style transfer algorithms in art. The author amalgamated features like color, brushwork, composition, and texture with samples, thereby computationally generating new watercolor samples that obtain high satisfaction from experts and users, which meet the aesthetic changes [21]. Li Y and Fan Z (2023) amassed a collection of 3000 abstract, oil, and Chinese ink-wash painting samples. They conducted digital calculations on global and local color harmony, color statistical attributes, and spatial domain color features, validating the effectiveness of these measurements. Their findings suggest that Chinese ink-wash paintings distinctly differ in color usage compared to abstract and oil paintings, offering more accurate data for categorizing digital paintings based on color distribution [53]. Recently, models for the aesthetic evaluation of ink-wash paintings have been infrequent. Zhang J, Miao Y, and Zhang J (2020) concentrated on Chinese ink-wash paintings due to their notable disparities in visual features and aesthetic principles. They developed a Deep Multi-view Parallel Convolutional Neural Network (DMVCNN) to learn aesthetic features, thereby constructing a comprehensive model for aesthetic evaluation. This model serves as a deep learning-based reference for computational aesthetic evaluation of Chinese ink wash paintings [54]. Similarly, Lyu, Rosin, and Lai. (2023) propose WCGAN, a generative adversarial network (GAN) architecture dedicated to the watercolorization of portraits. In addition, the application of WCGAN is expanded to video style transfer, where a novel kind of video training data based on random crops is developed to capture temporal consistency efficiently. Extensive experimental results from qualitative and quantitative analyses demonstrate that WCGAN generates state-of-the-art, high-quality watercolors from portraits [55]. These studies offer methodological guidance for evaluating watercolor paintings, enabling objective, quantitative analysis of components such as color and spatial domain. While the range of evaluation elements covered is not broad, these studies lay foundational research for aesthetic indicators, integrating art with computational science, thus enhancing interdisciplinary cooperation and providing theoretical and research support for this study.
In summary, while research on the development of an aesthetic index system is documented, there is a lack of studies delving into specific general knowledge indicators that influence the aesthetics of Chinese and Western drawing, as well as their distinct differences. The research exploring the intermediary effects of the positive and negative aspects of aesthetic perception as a critical evaluative mechanism is also not adequately represented. Consequently, there is a need to further establish widely accepted aesthetic evaluation criteria focusing on composition and color, subject selection, and technique. This approach is essential for a more refined appreciation and evaluation of classical Chinese and Western watercolor paintings from the 19th and 20th centuries.

3. Methods

3.1. Research Subjects

The foundation of this study involves selecting ten representative painters from China and the West during the 19th and 20th centuries. They are Gu Yuan, Guan Guangzhi, Li Jianchen, Lin Fengmian, Pan Sitong, William Russell Flint, Andrew Wyeth, Winslow Homer, John Singer Sargen, and Anders Zorn. The research has set forth a series of aesthetic criteria: 1. Watercolor works from both the East and West should emphasize their respective cultural characteristics; 2. The composition of colors should be grounded in aesthetic principles; 3. The subjects portrayed should encompass landscapes, still lifes, and human figures.

In the subsequent phase of the study, we engaged six experts to evaluate the representative works of the ten selected painters. From this assessment, we chose 20 watercolor paintings that exhibited the most pronounced feature differences for use as empirical research samples. To ensure the selected photos adequately captured the spectrum of aesthetic positivity and negativity, great consideration was given to this aspect during the experts’ selection process. The pre-formulated aesthetic evaluation criteria were also referenced to guarantee that the chosen watercolor samples reflected the range of each criterion to the fullest extent. Efforts were made to meticulously select samples showcasing the aesthetic characteristics of both Chinese and Western watercolor paintings while also striving to minimize the evaluators’ testing time.

Furthermore, to facilitate a comprehensive understanding of the study’s objectives among the experts, we collected 128 images from the websites of various major museums and art galleries. These materials vividly illustrated different evaluative elements and provided additional contextual information. Through these methods, a high-quality collection of artistic materials was assembled (Figure 1).

3.2. Participants

The 150 participants were selected to balance professional insight and broader public perception of art appreciation. Studies have shown that evaluators from varied academic and cultural backgrounds exhibit significant statistical differences in their aesthetic assessments [56]. Art majors, particularly university students, possess a more professional approach toward appreciating watercolor paintings and exhibit superior perceptual abilities compared to the general populace [57]. Particularly as urban youths, university students form a major audience for artistic works [58]. Moreover, art majors possess a foundational understanding of art principles; their education and training equip them with the skills to discern subtle nuances in art that might be overlooked by those without such a background, which ensures aesthetic sensitivity and technical understanding [59]. Therefore, aligned with the previous studies [58,60], the participants are mainly students majoring in art, particularly those with a focus on watercolor painting, including undergraduate students from the Fine Arts and Art Studies departments at Zhengzhou University; Graduate students from the Fine Arts and Art Studies departments at Central South University’s School of Architecture and Art. For effective experimental execution, ensuring that the ratings genuinely reflect participants’ perceptions, this research involved organizing experiments in school computer labs with student participation to collect their evaluation data (Figure 2).
Organizing student participation in experimental evaluation.

Figure 2. Organizing student participation in experimental evaluation.

Figure 1. Selected panoramic photo contents.
The six experts were invited to select the representative works mentioned in Section 3.1 and evaluate the art appreciation. The experts were chosen based on their extensive experience and recognized expertise in watercolor art. This included academic qualifications, professional experience, and contributions to art criticism. Each expert had a substantial background in either Chinese or Western watercolor traditions, ensuring a balanced and comprehensive evaluation of the paintings.

3.3. Overview of Experimental Design

3.3.1. Development of the Evaluation System

Following a review of existing studies in the area of aesthetic evaluation of watercolor paintings [40–49], a comprehensive evaluation system was developed for both Chinese and Western watercolor paintings. This system was subsequently fine-tuned based on the characteristics of the samples used in this study and the outcomes of small-scale preliminary experiments. The aim was to ensure that each criterion was adequately represented in each panoramic image and to eliminate any potential confusion by participants during the scoring process. The categorization and extraction of image features are as follows: in composition, categories included balance, formal beauty, proportion accuracy, visual tension, and harmony; in color, they included saturation, brightness, temperature relationship, and color aesthetics; subject matter was categorized into creative perspective, emotional atmosphere, and content expression; techniques were divided into gradation and layering, expressiveness of brushstrokes, texture and tactile quality, and comprehensive use of watercolor techniques, resulting in a total of 16 feature values. For the period between the 19th and 20th centuries, five master artists, each from Western and Chinese art history, were selected, with two classic watercolor paintings chosen for each artist. By extracting two images from the same watercolor painting, one embodying the most aesthetic features and the other the least, a total of 40 watercolor painting images were compiled for data analysis and aesthetic scoring. The elements were divided into four main categories: composition, color, subject matter, and technique, with 16 indicators. All the indicators for the perception evaluation index of Chinese and Western watercolor paintings are evaluated in the 5-level Likert scale (see Table 1).

Among the 16 indicators, seven indicators were evaluated (X1, X3, X5, X6, X7, X13, X14) by the public and nine indicators by the experts (X2, X4, X8, X9, X10, X11, X12, X15, X16). Some indicators, such as technical execution and composition, require a deep understanding of artistic techniques and historical context, which experts are uniquely qualified to judge. On the other hand, indicators related to immediate visual appeal and emotional impact are better suited to evaluation by the public, who represent the typical audience for these works. By dividing the indicators between experts and the public, the study leverages the strengths of both groups, ensuring a comprehensive and balanced assessment of the artworks. This approach prevents the dilution of expert insights while capturing the public evaluators’ broader, more relatable perspectives.
Table 1. Measurement scales for the evaluation index system of Chinese and Western watercolor paintings.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Abbreviation</th>
<th>Scoring</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition</td>
<td>B1</td>
<td>Composition</td>
<td>Very chaotic</td>
<td>Somewhat chaotic</td>
<td>Moderately balanced</td>
<td>Fairly harmonious</td>
<td>Highly harmonious</td>
</tr>
<tr>
<td>Balance</td>
<td>X1</td>
<td>Balance</td>
<td>Very chaotic</td>
<td>Moderately balanced</td>
<td>Fairly harmonious</td>
<td>Highly harmonious</td>
<td></td>
</tr>
<tr>
<td>Formal Beauty</td>
<td>X2</td>
<td>Formal Beauty</td>
<td>Completely lacks aesthetic form</td>
<td>Initial sense of form</td>
<td>Moderate sense of form</td>
<td>Fairly aesthetically pleasing form</td>
<td>Highly aesthetically pleasing form</td>
</tr>
<tr>
<td>Proportional Accuracy</td>
<td>X3</td>
<td>Proportional Accuracy</td>
<td>Completely inaccurate</td>
<td>Somewhat inaccurate</td>
<td>Moderately accurate</td>
<td>Fairly accurate</td>
<td>Very accurate</td>
</tr>
<tr>
<td>Visual Tension</td>
<td>X4</td>
<td>Visual Tension</td>
<td>Completely lacks impact</td>
<td>Lacks impact</td>
<td>Moderately organized</td>
<td>Fairly impactful</td>
<td>Highly orderly and harmonious</td>
</tr>
<tr>
<td>Unity and Harmony</td>
<td>X5</td>
<td>Unity and Harmony</td>
<td>Completely disordered</td>
<td>Somewhat chaotic</td>
<td>Moderately organized</td>
<td>Fairly orderly</td>
<td>Highly orderly and harmonious</td>
</tr>
<tr>
<td>Color</td>
<td>B2</td>
<td>Color</td>
<td>Overly saturated, causing distortion</td>
<td>Under-saturated, causing dullness</td>
<td>Moderately saturated</td>
<td>Fairly harmonious saturation</td>
<td>Highly harmonious saturation</td>
</tr>
<tr>
<td>Saturation Harmony</td>
<td>X6</td>
<td>Saturation Harmony</td>
<td>Excessively bright</td>
<td>Too dim</td>
<td>Moderately bright</td>
<td>Fairly harmonious</td>
<td>Highly harmonious</td>
</tr>
<tr>
<td>Brightness Harmony</td>
<td>X7</td>
<td>Brightness Harmony</td>
<td>Completely violates perspective rules and feels uncomfortable</td>
<td>Somewhat conforms to perspective rules</td>
<td>Basically conforms to perspective rules</td>
<td>Fairly harmonious warm–cool relationship</td>
<td>Highly harmonious warm–cool relationship</td>
</tr>
<tr>
<td>Warm–Cool Relationship</td>
<td>X8</td>
<td>Warm–Cool Relationship</td>
<td>Completely lacking expressiveness</td>
<td>Somewhat lacking in expressiveness</td>
<td>Moderately expressive</td>
<td>Fairly expressive</td>
<td>Highly expressive with excellent aesthetic use of color</td>
</tr>
<tr>
<td>Color Aesthetics</td>
<td>X9</td>
<td>Color Aesthetics</td>
<td>Creative Perspective</td>
<td>Exceedingly monotonous and uninteresting</td>
<td>Standard and conventional</td>
<td>Fairly novel</td>
<td>Highly novel</td>
</tr>
<tr>
<td>Subject</td>
<td>B3</td>
<td>Subject</td>
<td>Emotional Atmosphere</td>
<td>Completely devoid of emotion</td>
<td>Forced emotional atmosphere</td>
<td>Fairly emotional atmosphere</td>
<td>Highly emotional and complementary to the theme</td>
</tr>
<tr>
<td>Creative Perspective</td>
<td>X10</td>
<td>Creative Perspective</td>
<td>Content Expression</td>
<td>Completely lacks meaning</td>
<td>Superficial meaning</td>
<td>Fairly expressive of content and story</td>
<td>Rich in content and vivid in storytelling</td>
</tr>
<tr>
<td>Emotional Atmosphere</td>
<td>X11</td>
<td>Emotional Atmosphere</td>
<td>Technique</td>
<td>Very stiff transitions in watercolor gradation and layers</td>
<td>Somewhat stiff transitions</td>
<td>Moderate transitions</td>
<td>Fairly natural transitions</td>
</tr>
<tr>
<td>Content Expression</td>
<td>X12</td>
<td>Content Expression</td>
<td>Gradation and Layering</td>
<td>Extremely uncomfortable use of brushwork</td>
<td>Somewhat uncomfortable brushwork</td>
<td>Moderately suitable brushwork</td>
<td>Fairly skillful and expressive brushwork</td>
</tr>
<tr>
<td>Technique</td>
<td>B4</td>
<td>Technique</td>
<td>Brushwork</td>
<td>Highly inappropriate use of texture, lacking material feel</td>
<td>Basic awareness of texture but poorly controlled</td>
<td>Average in texture use and material expression</td>
<td>Fairly good at expressing texture and material feel</td>
</tr>
<tr>
<td>Watercolor Language</td>
<td>X16</td>
<td>Watercolor Language</td>
<td>Highly inappropriate use of texture, lacking material feel</td>
<td>Clumsy in combining wet and dry techniques, color smudging lacks appeal</td>
<td>Somewhat clumsy in technique, poor control over color smudging</td>
<td>Moderate control of wet–dry technique and smudging, overall fresh and vibrant</td>
<td>Highly skilled in wet–dry technique and smudging, excellently presenting the watercolor ambiance</td>
</tr>
<tr>
<td></td>
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</table>
3.3.2. Research Questions and Hypothesized Models

The core questions of this study are as follows: 1. Can a sustainable framework for the comparative aesthetic evaluation of eastern and western watercolor art be constructed? 2. Which evaluative factors influence the overall aesthetic appeal of watercolor paintings? 3. Among these evaluative factors and the overall aesthetic appeal of the paintings, which mediating effects might be operational? 4. What are the primary differences in aesthetic evaluation between Eastern and Western watercolor paintings? This study utilized SmartPLS 3.0 as the statistical modeling tool, and the study considered the impact of perspectives from both professional aesthetic and non-aesthetic viewpoints as intermediary variables. The overall aesthetic appeal of watercolor paintings was defined as the dependent variable, and various factors evaluating watercolor paintings were identified as independent variables. This approach was used to construct and analyze a structural model (Figure 3). The study proposed the following research hypotheses:

![Hypothesis Model](image)

**Figure 3.** Hypothesis model.

**Hypothesis 1:** The relationship between watercolor painting evaluative factors and their overall aesthetic appeal (H1).

**Hypothesis 2:** The direct influence of aesthetic perspective on the overall aesthetic perception of watercolor paintings (H2).

**Hypothesis 3:** The mediating role of aesthetic perspective in the relationship between evaluative indicators of watercolor paintings and their overall aesthetic perception (H3).

**Hypothesis 4:** The results of watercolor painting evaluation factors and mediating effects will be significantly different due to the differences between Chinese and Western watercolor paintings.

3.3.3. Experimental Procedure

In this experiment, participants viewed watercolor artworks using a combination of “computer screen and indoor 4K high-definition large screen projection”. This setup was chosen to enable a more intuitive perception of aesthetic elements and to display clearer images, facilitating accurate scoring and analysis. Initially, the 20 watercolor painting samples were shuffled and renumbered. Before starting the evaluation, organizers spent approximately 30 min explaining the test’s purpose, procedure, and requirements to the participants, deliberately avoiding standardized explanations about the details of the evaluative subjects.

First Phase of the Experiment: Participants viewed 20 watercolor paintings individually and rated each one’s overall aesthetic appeal based on their general impression.
A 5-point rating scale was used, ranging from “very unaesthetic” to “very aesthetic”, corresponding to scores of 1 to 5, respectively.

Second Phase of the Experiment: The research team mainly focused on prominent features of the watercolor paintings, such as composition and color, while also considering academic attributes like subject matter and technique. This approach led to the development of a perception evaluation index system for classic Chinese and Western watercolor paintings from the 19th and early 20th centuries. Upon viewing the 20 paintings, participants were asked to rate each based on these established indicators, according to their personal perceptions. To ensure the authenticity of the participants’ ratings, they were instructed to avoid any discussion or referencing among themselves during the process. Excluding the preliminary experiment samples, the experiment finally included 140 evaluation samples, comprising 2800 individual data points.

Third Phase of the Experiment: Building upon SmartPLS 3.0 statistical modeling and the experimental goals, this phase included the evaluation of aesthetic positivity and negativity. An essential aspect was identifying representative areas within the paintings for accurate data extraction. Typically, when observers appreciate a watercolor painting, they focus on specific areas, either due to the subject matter or the color ambiance. These attention-grabbing areas are termed ‘representative areas’. The expert group pre-selected 20 images representing positive (labels 1A–20A) and negative (labels 1B–20B) viewpoints (as shown in Figure 4). Participants were asked to overlook their prior overall impressions and rate these 40 segmented artwork images based on their immediate perception of beauty.

Figure 4. Cont.
Figure 4. Screenshots of 20 watercolor paintings in an aesthetically positive and negative view. Note: 1A–20A are 20 screenshots from the positive viewpoint of the watercolor paintings; 1B–20B are 20 screenshots from the negative viewpoint of the watercolor.

Fourth Phase of the Experiment: The expert group convened in an online meeting, where the group leader displayed each of the 20 artworks in 10 rounds to solicit opinions on scores for target indicators in Section 3.3.1 for experts. Each indicator was rated 20 times per round by all six experts using the evaluation scale in Section 3.3.1. This procedure ensured objective and fair scores for each scene through comparative analysis.

3.3.4. Analysis Methods

In this section, the methods and procedures used for data analysis in the study are described in detail. To ensure the reliability and validity of the research outcomes, the study initially carries out tests for reliability and validity. This is followed by analyzing the correlations between variables and examining the issue of multicollinearity. Then, structural equation modeling is applied to test the research hypotheses. Lastly, multi-group analysis is conducted to investigate cross-group differences in the model. The specific methodologies include the following:

1. Reliability and Validity Testing: To affirm the reliability and validity of the questionnaire scales, this study utilized factor analysis and reliability analysis through SPSS 26.0 software. Reliability was assessed using Cronbach’s alpha to ensure the internal consistency of the scales. A Cronbach’s alpha value of 0.7 or higher was generally considered acceptable. Validity was examined through both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The Kaiser–Meyer–Olkin
(KMO) measure of sampling adequacy and Bartlett’s test of sphericity were used to determine the suitability of the data for factor analysis. A KMO value greater than 0.6 and a significant Bartlett’s test \((p < 0.05)\) indicates that the data are appropriate for factor analysis.

2. Correlation and Multicollinearity Testing: Prior to the main hypothesis testing, a correlation analysis of the study variables was performed to understand their interrelations. Pearson’s correlation coefficient measures the linear correlation strength and direction between variables in SPSS 26.0. Further, the study calculated the Tolerance and the Variance Inflation Factor (VIF) in SPSS 26.0 to assess multicollinearity. Typically, a Tolerance above 0.1 or a VIF below 10 indicates the absence of multicollinearity issues [61]. All the variables in this study had Tolerance and VIF values within acceptable limits.

3. Mediation Effect Model: This study utilized SmartPLS 3.0 software to analyze direct and mediating effects, verifying relationships between key variables in the research model. For direct effects, the study examined the path coefficients between variables, estimated using SmartPLS 3.0. This assisted in defining the direct interrelations between variables, providing clarity to the theoretical model. In the mediation effect analysis, specific mediating variables were chosen, and their mediation effect paths were estimated using SmartPLS 3.0. This analysis deepens the understanding of how direct effects are influenced by the role of mediating variables, offering a more profound and comprehensive interpretation of the research. Moreover, the study provides detailed explanations of the path coefficients estimated through SmartPLS 3.0. Each path was analyzed for direction, magnitude, and significance level, better comprehending the direct and mediating effects between variables and enhancing the understanding of the research model’s structure and mechanisms. A significance level \((p\text{-value})\) of less than 0.05 indicates a statistically significant effect. Positive path coefficients represent a positive influence, while negative path coefficients indicate a negative influence. The model is formulated as follows [62–64]:

\[
M = aX + e_1 \tag{1}
\]
\[
Y = cX + bM + e_2 \tag{2}
\]

Note: In Equation (1), coefficient \(a\) represents the direct effect of the independent variable ‘watercolor painting evaluation factors’ on the mediating variable ‘aesthetic perspective influence’. In Equation (2), coefficient \(b\) denotes the effect of the mediating variable ‘aesthetic perspective influence’ on the dependent variable ‘overall aesthetic perception of watercolor paintings’ after controlling for the influence of the independent variable. Coefficient \(c\) indicates the direct effect of ‘watercolor painting evaluation factors’ on ‘overall aesthetic perception of watercolor paintings’ after accounting for the impact of the mediating variable. \(e_1\) and \(e_2\) are regression residuals.

4. Multi-Group Analysis: To examine whether the model is applicable across different groups, SmartPLS 3.0 software was used for multi-group analysis. This approach allows for comparing path coefficients within the model across different sub-samples to identify significant differences. By locking and unlocking the respective path coefficients between groups and conducting chi-square difference tests, the study determines the heterogeneity between groups in the model.

4. Results

4.1. Reliability and Validity Testing

To ensure the questionnaire survey data accurately reflects the intended objectives, a reliability test was conducted. The results indicated a Cronbach’s Alpha coefficient of 0.826, signifying satisfactory reliability of the sample data. Furthermore, with a KMO value
of 0.891 and \( p < 0.001 \), the validity of the sample data was excellent, suggesting that the indicator system is comprehensive and scientifically sound for further research analysis.

4.2. Correlation, Multicollinearity, and Significance Testing

As depicted in Figure 5 and Table 2, the study successfully underwent correlation and multicollinearity testing. All indicators showed a low correlation with the dependent variable, and the mean VIF of the indicators was 1.158, indicating the absence of multicollinearity issues within the model. Additionally, the model exhibited an \( R^2 \) value of 0.497 with \( p < 0.001 \), demonstrating its good predictive accuracy and suitability for subsequent mediation model research.

* * * p<=0.1 ** p<=0.01 *** p<=0.001

Figure 5. Correlation results. Note: The indicators represented by the code are shown in Table 2.
Table 2. Results of collinearity test.

<table>
<thead>
<tr>
<th></th>
<th>Beta</th>
<th>t</th>
<th>p</th>
<th>Tolerances</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>0.072</td>
<td>4.064</td>
<td>&lt;0.001</td>
<td>0.906</td>
<td>1.104</td>
</tr>
<tr>
<td>X2</td>
<td>0.083</td>
<td>4.47</td>
<td>&lt;0.001</td>
<td>0.813</td>
<td>1.23</td>
</tr>
<tr>
<td>X3</td>
<td>0.037</td>
<td>2.141</td>
<td>0.032</td>
<td>0.947</td>
<td>1.056</td>
</tr>
<tr>
<td>X4</td>
<td>0.094</td>
<td>5.265</td>
<td>&lt;0.001</td>
<td>0.877</td>
<td>1.14</td>
</tr>
<tr>
<td>X5</td>
<td>0.071</td>
<td>4.076</td>
<td>&lt;0.001</td>
<td>0.913</td>
<td>1.095</td>
</tr>
<tr>
<td>X6</td>
<td>0.076</td>
<td>4.3</td>
<td>&lt;0.001</td>
<td>0.908</td>
<td>1.102</td>
</tr>
<tr>
<td>X7</td>
<td>0.084</td>
<td>4.737</td>
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<td>0.895</td>
<td>1.117</td>
</tr>
<tr>
<td>X8</td>
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<td>3.696</td>
<td>&lt;0.001</td>
<td>0.813</td>
<td>1.229</td>
</tr>
<tr>
<td>X9</td>
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<td>0.871</td>
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<tr>
<td>X10</td>
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<tr>
<td>X11</td>
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<td>0.003</td>
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<td>X12</td>
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<td>0.248</td>
<td>0.804</td>
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<tr>
<td>X13</td>
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<td>X14</td>
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<td>X16</td>
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<td></td>
<td></td>
<td></td>
<td>&lt;0.001</td>
<td></td>
</tr>
</tbody>
</table>

Note: The indicators represented by the code are shown in Table 1.

4.3. Factors Affecting the Overall Aesthetic Appeal of Watercolor Paintings and Their Pathways

This paper utilizes structural equation modeling software, smartPLS 3, to verify the proposed model’s hypotheses regarding the causal relationships among variables. The relationships among structural variables are refined based on causal relationship tests, leading to the final selection of these variables. Specifically, the path parameters of the model are initially estimated using smartPLS, followed by bootstrapping calculations with smartPLS on the original data, selecting a resampling size of 3500 to examine the significance of the path coefficients.

4.3.1. Results of Direct Impact Pathways

As indicated in Table S1, the results highlight similarities and differences in the direct impacts of specific variables on aesthetic and non-aesthetic perspectives. Generally, variables X5, X9, X13, and X16 positively influence both aesthetic and non-aesthetic perspectives. This means that an increase in these variables strengthens both aesthetic and non-aesthetic impacts. Regarding differences, (1) X1, X7, and X11 solely produce a positive direct influence on the aesthetic perspective; (2) X6, X8, and X14 solely yield a negative direct influence on the aesthetic perspective; (3) X10, X12, and X15 solely contribute a positive direct influence on the non-aesthetic perspective; (4) X2, X3, X4, and X14 solely generate a negative direct influence on the non-aesthetic perspective. These findings validate Hypothesis H1. Although there is a degree of overlap in factors influencing both aesthetic and non-aesthetic forces (e.g., X5, X9, X13, and X16), distinct differences exist in certain variables, reflecting divergences in the formation and influential factors of aesthetic and non-aesthetic perspectives.

Moreover, the aesthetic perspective directly contributes positively to the overall aesthetic appeal of watercolor paintings. This indicates that focusing on the aesthetic aspect in the composition of watercolor paintings significantly enhances their overall aesthetic quality. Conversely, the non-aesthetic perspective negatively impacts the overall aesthetic appeal, suggesting that non-aesthetic factors may have adverse effects on the composition of watercolor paintings, thus reducing their overall aesthetic value. This confirms
Hypothesis H2. In conclusion, the compositional elements of watercolor paintings vary in their influence on overall aesthetic appeal. Variables X12 and X16 may indirectly affect the overall aesthetic appeal through intermediary variables, whereas other factors impact it directly. These outcomes offer valuable insights and interpretations of the relationship between the compositional elements of watercolor paintings and their aesthetic value.

4.3.2. Results on Mediating Effect Pathways

This research utilizes the Variance Accounted For (VAF) metric to ascertain the extent to which mediating variables absorb direct relationships. This approach quantifies how much of the variance in the overall aesthetic appeal of watercolor paintings is elucidated by the indirect effects of aesthetic and non-aesthetic perspectives. As depicted in Supplementary Materials Table S2, variables X1, X5, X7, X9, X11, and X16 indirectly and positively affect the overall aesthetic appeal of watercolor paintings via the aesthetic perspective. In contrast, X6, X8, and X14 exert an indirect negative effect through this perspective. Additionally, X2, 3, 4, 7, 11, 13, 14, and 16 positively influence the overall aesthetic appeal indirectly through the non-aesthetic perspective, whereas X5, X8, X9, X10, X12, and X15 negatively impact it via the non-aesthetic perspective.

However, the VAF calculations reveal that only X16 indirectly positively affects the overall aesthetic appeal via the aesthetic perspective, with a VAF of 31.03%, classified as a “partial mediation” effect. Similarly, only X11, X14, and X16 exert an indirect positive influence through the non-aesthetic perspective, with respective VAFs of 20.00%, 28.57%, and 29.31%, all representing “partial mediation” effects. Likewise, only X8 and X12 manifest an indirect negative impact through the non-aesthetic perspective, with VAFs of 25.47% and 42.22%, respectively, also considered as “partial mediation” effects. These findings corroborate Hypothesis H4.

In essence, each compositional element impacts the overall aesthetic appeal of watercolor paintings via intermediary variables, yet notable differences are observed in the VAF values and the extent of their explanation for the variance in overall aesthetic appeal. These outcomes offer critical insights for comprehending the influences of compositional elements, as well as aesthetic and non-aesthetic perspective forces, on the overall aesthetic appeal of watercolor paintings, underscoring the significance of intermediary variables.

4.3.3. Group Differences Analysis

The multi-group analysis is utilized to investigate if significant differences exist among different types of sample groups, focusing on Eastern and Western watercolor painting styles. Distinct multi-group analysis models were formulated based on these styles.

According to Supplementary Materials Table S3, which outlines the group analysis outcomes for both Chinese and Western watercolor paintings, several observations can be made. In terms of commonalities, X9 (color aesthetics) exerts a direct and positive effect on the aesthetic perspective in both styles. Similarly, X8 (warm–cool contrast) and X10 (creative perspective) positively influence the non-aesthetic perspective in both Eastern and Western styles. Beyond a few specific metrics, most compositional factors of watercolor paintings positively contribute to the overall aesthetic appeal of both painting traditions.

From a perspective of differences, in Chinese watercolor paintings, X2, X3, X7, X12, and X16 positively affect the aesthetic perspective, while X6, X8, X10, and X14 have a negative impact. Conversely, in Western watercolor paintings, X1, X5, X6, X8, X10, X11, X13, and X14 are positively correlated with the aesthetic perspective, whereas X2 and X3 demonstrate a negative correlation.

Regarding the non-aesthetic perspective, in Chinese watercolor paintings, X5, X6, X8, X9, X10, X12, and X15 are positively associated, whereas X1, X2, X3, X11, and X16 negatively influence this perspective. In Western watercolor paintings, X1, X8, X9, X10, and X12 are positively linked to the non-aesthetic perspective, while X2, X4, X6, X7, X14, and X15 exhibit a negative influence.
In the final analysis, in the context of Chinese watercolor paintings, X2, X3, X7, X9, X11, and X16 indirectly and positively influence the overall aesthetic appeal through the aesthetic perspective. In contrast, X6, X8, X10, and X14 indirectly and negatively influence it. In Western watercolor paintings, X2, X4, X6, X7, X14, and X15 have an indirect positive effect on the overall aesthetic appeal through the non-aesthetic perspective, while X1, X8, X9, X10, and X12 have an indirect negative effect.

To conclude, although there are similarities in certain aspects between Eastern and Western watercolor paintings, substantial differences are observed in the magnitude and direction of the influence exerted by many evaluative factors. This confirms Hypothesis H4.

5. Discussion
5.1. Interpretation of Findings and Theoretical Implications

This research unearthed significant patterns in the aesthetic appreciation of 19th–20th-century classical watercolor paintings from both Eastern and Western traditions, offering substantial contributions to the theoretical and practical understanding of watercolor art, as depicted in Figures 6 and 7.

Initially, the findings revealed that evaluative factors such as unity and harmony, color aesthetics, gradation and layering, and watercolor language (X5, X9, X13, and X16, respectively) significantly influence both aesthetic and non-aesthetic perspectives. This supports Freedberg and Gallese’s (2007) theory that perception and sensation during art appreciation are synchronously active, reflecting the artistic creation’s intent [65]. The study extends this theory by demonstrating that specific elements like composition, color, and material properties are pivotal in conveying the intrinsic beauty of watercolors, highlighting the need for a nuanced appreciation of these elements.

Moreover, the distinction between the effects of various evaluative factors on aesthetic versus non-aesthetic appreciation aligns with Pelowski et al. (2017), who noted differing contributions to art understanding [66]. This study furthers this discourse by identifying that certain factors primarily influence aesthetic appreciation, which is crucial for intrinsic artistic value, while others might detract from it when considered from a non-aesthetic perspective. For example, while color aesthetics may enhance a viewer’s emotional response, focusing excessively on technical aspects (non-aesthetic) might reduce the overall aesthetic experience, as suggested by Mastandrea, Fagioli, and Biasi (2019) [67].
Figure 7. Comparison of influence factors of East–West watercolor painting. Note: ***, ** and * indicate 1%, 5%, and 10% significance levels, respectively.

The positive impact of aesthetic perspectives and the contrasting negative influence of non-aesthetic perspectives on overall appeal highlight the complex interplay between different viewing angles. This finding underscores the importance of promoting an aesthetic-focused approach in art education and appreciation, emphasizing the primary elements that enhance the enjoyment and understanding of art.

Moreover, the study illustrates the mediating role of context and imagery in art perception, as discussed by Estrada-González et al. (2020) [68]. This research contributes to this area by showing how watercolor’s inherent language can bridge aesthetic perceptions to overall appeal, offering insights into how art can be more effectively presented and interpreted across different cultural contexts. Additionally, the distinct differences in evaluative criteria between Eastern and Western traditions explored in the multi-group analysis provide empirical support to the influence of cultural background on art creation and appreciation, as previously discussed by Hitsuwari and Nomura (2014) [69].

In conclusion, this study fills research gaps in the existing literature by explicitly linking evaluative criteria with aesthetic and non-aesthetic perspectives, which have been less thoroughly explored in previous research. While prior studies have often focused on either aesthetic or functional aspects of art separately, this research integrates these dimensions, providing a comprehensive framework for understanding how different evaluative factors influence the perception and appreciation of art. It uniquely demonstrates how specific
elements, such as the language of watercolors and their gradation techniques, play a crucial role in shaping both aesthetic judgment and emotional responses. The nuanced understanding of these dynamics, especially the dual roles of aesthetic and non-aesthetic perspectives, also addresses the gap in the literature concerning the comprehensive evaluation of art that incorporates both intrinsic artistic qualities and their practical implications in art education and presentation. This bridging of theoretical perspectives enriches our understanding of how art is perceived and appreciated across different cultural and educational contexts, suggesting more effective ways to educate about and present art that respects diverse aesthetic sensibilities.

5.2. Limitations

In summarizing this study, several limitations have been identified: (1) The research focused solely on 19th–20th century classical Eastern and Western watercolor paintings, potentially limiting the understanding of a wider array of artistic forms and periods. Future studies could broaden the scope to include a more extensive time frame and diverse art forms, offering more comprehensive insights. (2) The evaluative criteria employed in this study are grounded in existing aesthetic theories and research, which may not fully encapsulate all factors influencing the aesthetic appeal of artworks. Different art forms or cultural contexts might require distinct evaluative criteria. (3) The observed significant differences in the impact of evaluative indicators between Eastern and Western watercolor paintings are intriguing. However, this finding also suggests that the study may not have fully considered the impact of cultural factors. Limited by the research scope, a detailed exploration of the reasons behind these cultural differences was not conducted. (4) While objective criteria were utilized as much as possible, the evaluation of artistic beauty inherently involves a degree of subjectivity. Future research could consider incorporating more individual variations, such as personal artistic education and aesthetic preferences. These limitations indicate areas for further development and enhancement in subsequent research. For future studies, it is recommended to further explore the impact of various aesthetic perspectives on different art forms and to examine additional potential pathways for mediating variables in aesthetic evaluations. Additionally, expanding the scope of cross-cultural art research is encouraged to uncover unique artistic aesthetic concepts and culturally insightful differences. Increasing the sample size and including participants from diverse profiles and cultural backgrounds will help to obtain more representative results.

6. Conclusions

The Sustainable Development Goals by the United Nations emphasize the importance of cultural preservation and innovation in fostering inclusive and resilient societies. Understanding and appreciating diverse artistic traditions contribute to cultural sustainability, which is vital for maintaining social fabric and promoting intercultural dialogue. Art reflects and shapes cultural identities, making it an essential component of sustainable development. Taking watercolor paintings from the 19th and 20th centuries as an example, this study embarked on a thorough examination of classical Eastern and Western arts, aiming to address the following four critical research questions that delve into the comparative aesthetics of these artistic traditions:

1. Construction of a Sustainable Framework: Our findings confirm that a sustainable framework for the comparative aesthetic evaluation of Eastern and Western art can indeed be constructed. The framework developed, utilizing 16 evaluative indicators, has proven effective in bridging cultural perspectives and providing a consistent approach to assessing aesthetic appeal across diverse artistic traditions.

2. Influential Evaluative Factors: The study identified several key factors that significantly influence the overall aesthetic appeal of watercolor paintings. Factors such as composition, color harmony, and thematic expression were found to have varying
impacts, with all but three indicators (X12, X14, and X16) enhancing the aesthetic appeal significantly.

3. Operational Mediating Effects: Among the evaluative factors, certain mediating effects were notably impactful. For example, X16 (the intrinsic language of watercolor) positively mediated between aesthetic perspectives and overall aesthetic appeal, demonstrating the nuanced ways in which specific characteristics of watercolor art influence viewer perception.

4. Differences in Aesthetic Evaluation: Significant differences in aesthetic evaluation between Eastern and Western watercolor paintings were highlighted through the multi-group analysis. These differences stem primarily from the varied cultural approaches to the elements of style and technique, with Western paintings often emphasizing detail and realism and Eastern paintings focusing on symbolic expression and atmospheric depth.

In conclusion, this research not only provides a systematic framework for evaluating the aesthetic appeal of classical paintings but also enhances our understanding of how cultural influences shape artistic evaluation. The findings highlight the distinctiveness of Eastern and Western arts, offering valuable insights into both the creation and appreciation of these artworks. Furthermore, by promoting a systematic approach to the evaluation of cultural artworks, this framework supports the sustainable development of global art education and appreciation. It encourages the integration of diverse cultural viewpoints, enhancing mutual understanding and cooperation between different cultural backgrounds. This is essential for fostering a more inclusive global art community and preserving cultural heritage, aligning closely with the goals of sustainability in cultural practices. The ability to appreciate and critically evaluate art from multiple cultural perspectives contributes to the ongoing dialogue about cultural sustainability, advocating for an approach that respects and incorporates diverse artistic traditions and values. By bridging cultural gaps and enhancing the appreciation of diverse artistic expressions, this study aligns with the broader objectives of sustainability, emphasizing the importance of cultural understanding and dialogue in achieving a sustainable future.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/su16135674/s1, Table S1: Results of direct effects; Table S2: Results of indirect effects; Table S3: Results of multi-group analysis.

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