

# Application of Traditional Rhinoceros Skin Lacquer Craftsmanship in Lamp Design

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## Abstract

The purpose of this paper is to explore the application of traditional rhinoceros skin lacquer craft in modern lamp design, aiming at inheriting and promoting this traditional craft, while giving modern lamps more cultural connotation and aesthetic value. The article is based on the questionnaire method, collecting and analyzing 545 valid responses. This data provides a theoretical basis for creating lacquer wall lamps.

The research findings can be summarized as follows:

1. The results showed that most respondents believed rhinoceros skin lacquer represents exquisite craftsmanship, features unique textures and colors, and embodies rich cultural significance. Many appreciated its aesthetic appeal, with the natural texture sparking imagination. A majority expressed a strong willingness to integrate rhinoceros skin lacquer into modern lighting design, being open to both natural and synthetic materials. Most respondents valued the price of lighting, considering RMB 200–500 to be an ideal price range.
2. Create a group of rhinoceros skin lacquer lamps. Through the innovative design of rhinoceros skin lacquer lamps and lanterns, we can not only inherit and carry forward this ancient craft, but also inject new inspiration and vitality into modern lamps and lanterns design, promote the innovation and development of lamps and lanterns design, and provide new ideas and methods for the inheritance and development of rhinoceros skin lacquer craft.

Keywords: rhinoceros skin lacquer craft, Chinese traditional craft, lamp design, modern design, innovative design

## 1. Introduction

In recent years, China has paid more and more attention to the inheritance and development of traditional crafts. According to the Opinions on the Implementation of the Project of Inheriting and Developing Chinese Excellent Traditional Culture issued by the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council, ‘the implementation of the Project of Inheriting and Developing Chinese Excellent Traditional Culture is a major strategic task in building a strong socialist cultural power, which is of great significance for the inheritance of the Chinese cultural lineage, comprehensively enhancing the cultural literacy of the masses of the people, safeguarding the cultural security of the country, strengthening the cultural soft power of the country, and promoting the modernisation of the national governance system and cultural soft power, and promote the modernisation of the national governance system and governance capacity, is of great significance.’<sup>[1]</sup> Lacquer artist Liu Sainan combines rhinoceros-skin lacquer art with household items, jewellery and furniture, and has carried out many cross-border fusion design practices<sup>[2]</sup>. Guo Lei, through market research, put forward reasonable suggestions on the current situation of rhinoceros skin lacquer and how to develop and inherit the traditional rhinoceros skin lacquer culture.

The purpose of this paper is to explore the application of traditional rhinoceros skin lacquer craft in the design of lamps and lanterns, to study the attitude of the public rhinoceros skin lacquer craft integrated into the design of lamps and lanterns through a questionnaire survey, and to explore how to combine the traditional craft with modern design, to create lamps and lanterns with a unique aesthetic value and cultural connotations of the product. Through the design practice, to produce rhinoceros skin lacquer lamps.

This research will not only promote the inheritance of traditional culture, but also have a positive impact on the economy, society and culture.

1. Economic impact: the application of traditional rhinoceros skin lacquer technology in the design of lamps and lanterns is a bold innovation, which brings new development to the lamp

industry. Rhinoceros skin lacquer has a unique artistic charm and cultural connotation, which enhances the market competitiveness of lamps and lanterns products. At the same time, it also provides new ideas for the inheritance and development of rhinoceros skin lacquer craft, promotes the integration of traditional crafts and modern industry, and promotes the development of related industrial chain.

2. Social impact: through the promotion and application of rhinoceros skin lacquer lamps and lanterns, it can enhance the public's cognition and recognition of traditional culture, and improve the overall cultural literacy and aesthetic level of society. In addition, the design and production of rhinoceros skin lacquer lamps and lanterns requires the input of relevant labour, which can help solve the employment problem and promote social harmony and stability.

3. Cultural impact: traditional rhinoceros skin lacquer craft has a deep historical heritage and cultural connotation. Its application in the design of lamps can not only inherit and promote traditional culture, but also provide a wealth of inspiration and materials for modern design, which can help promote the inheritance and development of traditional culture and enhance national pride and cultural self-confidence.

### **Research Objectives**

1. Explore people's acceptance and aesthetic tendency of traditional lacquer ware art applied in modern lamp design.
2. To create a set of works by combining traditional lacquer ware art and modern lamps.

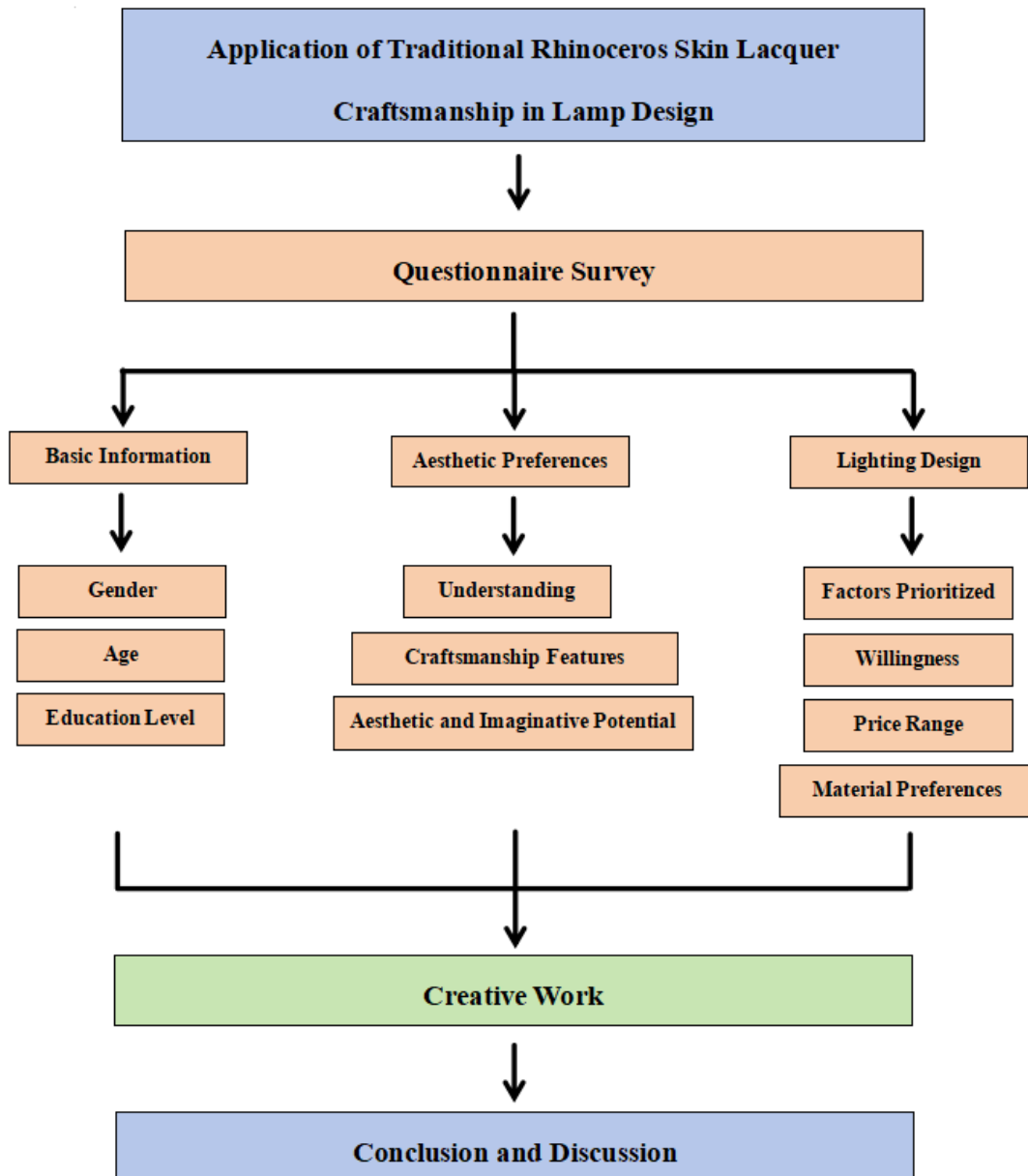
## **2. Research Methods**

This study adopts a comprehensive research approach, including questionnaire surveys and practical application.

Questionnaire survey: Conduct surveys to investigate people's acceptance, aesthetic preferences, and willingness to invest in the application of rhinoceros skin craft in traditional lacquerware art in modern lamp design. This provides design and cost references for subsequent practice.

Practical application: Based on the results of the questionnaire surveys, incorporating modern aesthetics, and applying rhinoceros skin craft in lacquerware art to modern lamp design, creating a series of lamps.

The main conceptual framework of this study using mind mapping is as follows:



### Target Audience and Collection of Questionnaire Responses

The online survey was conducted via WeChat groups from July 30 to August 30, 2024. Since the majority of WeChat group members are young and well-educated, they reflect the

genuine thoughts of different societal levels. Therefore, the target audience for this survey was selected from WeChat groups.

A total of 545 valid questionnaires were received. The questionnaire covered respondents' gender, age, education level, understanding of Rhinoceros skin lacquer, its craftsmanship features, and their willingness to incorporate rhinoceros skin lacquer into lighting design.

### **Descriptive Analysis of Respondents' Basic Information**

The basic information of respondents, such as gender, age, and education level, was surveyed in this study.

#### **1. Gender**

Among the respondents, 279 were male, accounting for 51.19%, and 266 were female, accounting for 48.81%. The gender ratio was relatively balanced.

#### **2. Age**

In terms of age, 39 respondents were under 18, making up 7.16% of the sample. Young adults aged 18-30 made up the largest group, with 223 respondents (40.92%). This demographic is highly representative of contemporary youth, who, through the internet and social media, can access trends and art-related content quickly, broadening their horizons and embracing new cultural and consumer concepts.

Middle-aged individuals (31-45 years) comprised 145 respondents (26.79%). With their life experiences and stable financial backgrounds, this group tends to appreciate cultural and artistic products and prioritize spiritual fulfillment.

The 45-60 age group consisted of 107 respondents (19.63%), while respondents over 60 accounted for 30 people (5.5%).

#### **3. Education Level**

Regarding education, 63 respondents (11.56%) had high school or vocational education. A total of 195 respondents (35.78%) had completed higher vocational education or an associate degree. The majority, 210 respondents (38.53%), had a bachelor's degree, while 77 respondents (14.13%) had a master's degree or higher.

## **Aesthetic Preferences for Rhinoceros Skin Lacquer**

### **1. Understanding of Rhinoceros skin lacquer**

Among the respondents, 391 (71.74%) were familiar with lacquer painting or Rhinoceros skin lacquer, while 153 (28.26%) were unfamiliar. This indicates that the majority had some awareness of lacquer art or Rhinoceros skin lacquer.

### **2. Craftsmanship Features of Rhinoceros skin lacquer**

A total of 440 respondents (80.73%) recognized the unique texture and color of Rhinoceros skin lacquer, while 402 respondents (73.76%) acknowledged its representation of fine craftsmanship. Additionally, 276 respondents (50.64%) believed it holds rich cultural significance. It means that the texture and colour of rhinoceros skin lacquer is indeed the most striking feature. The texture of rhinoceros skin lacquer is complex and varied, and the surface of each piece of rhinoceros skin lacquer presents unique patterns and lines, and this unique visual effect is breathtaking. At the same time, the colour of rhinoceros skin lacquer is also extremely rich, with a variety of colours intertwined to create a brilliant and colourful visual effect.

### **3. Aesthetic and Imaginative Potential of Rhinoceros skin lacquer's Natural Texture**

The majority of respondents (408 people, 74.86%) felt that the natural texture of rhinoceros skin lacquer is aesthetically pleasing and sparks imagination, while 137 respondents (25.14%) did not share this view.

## **Survey on Integrating Rhinoceros Skin Lacquer into Lighting Design**

### **1. Factors Prioritized in Selecting Lighting**

Out of 545 respondents, 412 (75.6%) considered price the most important factor, highlighting the need to control costs and keep pricing at the forefront of design considerations.

318 respondents (58.35%) valued functionality, while 278 (51.02%) focused on aesthetics, reflecting the growing demand for products that combine both beauty and practicality.

266 respondents (48.81%) prioritized brand reputation, and 265 (48.62%) paid attention to material and craftsmanship.

## 2. Willingness to Incorporate rhinoceros skin lacquer Craftsmanship into Modern Lighting Design

A total of 385 respondents (70.64%) were highly willing to incorporate rhinoceros skin lacquer into modern lighting designs, while 78 (14.31%) were open to considering it. Only 46 respondents (8.44%) showed little interest, and 36 (6.61%) were not interested at all. These results indicate a high level of acceptance for integrating rhinoceros skin lacquer into modern design.

## 3. Price Range for rhinoceros skin lacquer Lighting

Most respondents (230 people, 42.2%) believed that RMB 200–500 was a reasonable price range for rhinoceros skin lacquer lighting. Another 193 respondents (34.41%) felt that RMB 500–1000 was appropriate. The findings suggest that keeping prices within the range of RMB 200–500 would be optimal for future design and production.

## 4. Material Preferences for Artistic Creations

Among the respondents, 413 (75.78%) were open to both natural and synthetic materials, 79 (14.5%) preferred synthetic materials, and 53 (9.72%) favored natural materials. Based on this data, future designs will incorporate a blend of natural and synthetic materials to balance aesthetic appeal, cost, and user safety.

# 3. Results

## Results of the Questionnaire Survey

The results of such a questionnaire are as follows:

### 1. Cultural value and aesthetic recognition of rhinoceros-skin lacquer craftsmanship

This is a good indication that rhinoceros skin lacquer craftsmanship has a high cultural value and aesthetic recognition in the hearts of contemporary people. People appreciate the exquisite skills and unique beauty of rhinoceros skin lacquer, and value the cultural significance and historical heritage behind it.

### 2. The application potential of rhinoceros skin lacquer in modern design

People's willingness to integrate rhinoceros-skin lacquer craft into modern lamp design is very high, which indicates that rhinoceros-skin lacquer craft has great potential for application in modern design. People are looking forward to seeing the perfect combination of traditional craftsmanship and modern design, creating products that have both traditional flavour and modern aesthetic needs.

People's choice of production materials is open and inclusive, and is not bound to pure natural materials, synthetic materials can also be accepted, for the rhinoceros skin lacquer craft in modern design provides more possibilities.

### 3. Price sensitivity and market demand

People are highly concerned about the price, which indicates that the price is one of the important factors affecting consumers' purchasing decisions. When designing rhinoceros skin lacquer lamps and lanterns, it is necessary to fully consider the cost and market acceptance, and develop a reasonable price strategy. The ideal price range is clearly in the 200-500 yuan. This provides an important reference for the market positioning of rhinoceros skin lacquer lamps and lanterns, and helps to achieve the marketability and commercialisation of the product.

### **Design and Production**

In the design and production, from the perspective of combining rhinoceros-skin lacquer with modern design, the artisan Li Zhiwei, puts forward the concept of 'Craftsmanship for Use', suggesting that craftspeople can use mechanisation and technology in the production of rhinoceros-skin lacquerware, while preserving craftsmanship in key techniques, so as to better pass on the traditional craftsmanship<sup>[4]</sup>.

The author taking into account multiple factors such as thermal conductivity, waterproof property, cost, weight, and fragility degree, the author meticulously selects EVA material can thus serve as the matrix substrate for the design of this rhino hide lacquer wall lamp.

The author meticulously undertakes the cutting of EVA boards with a thickness of 8 millimeters, fashioning one plate measuring 30 by 30 centimeters and one plate measuring 20 by 30 centimeters respectively. These serve as the fundamental matrix for the wall lamp. The author applies raw lacquer to the EVA matrix for the purpose of matrix reinforcement (Figure



1). Four tiers are meticulously applied on both the frontal and dorsal surfaces. Following the completion of each tier's application, it is placed within a drying chamber of high specification and left to repose for one day. Only when the paint surface is thoroughly desiccated can the succeeding tier be applied. For the lateral aspects, raw lacquer and tile ash are artfully amalgamated to form lacquer plaster for plastering (Figure 2), which is employed for the purposes of waterproof fortification and the mending of remnants left by cutting.

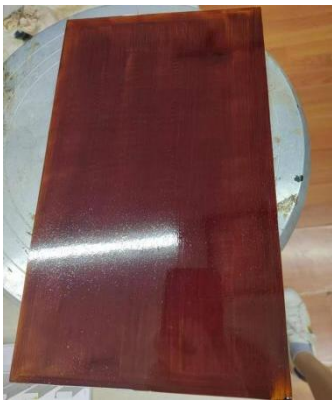


Figure 1: Matrix Stabilization through the Application of Raw Lacquer.

Picture Source: Captured by the author.



Figure 2: Matrix Stabilization via the Application of Lacquer Putty on the Flank Surfaces.

Picture Source: Captured by the author.

Upon the exhaustive desiccation of the EVA matrix substrate, a meticulous sanding procedure is initiated by employing sandpapers of 800-grit, 1500-grit, and 2500-grit (Figure 3). This sanding operation is sustained meticulously until a subdued matte finish is achieved, the surface is precisely planarized, and the underlying primer coating remains unexposed. At this juncture, the preliminary preparatory stage is consummated.

The twisting operation is the most prominent step in the entire creative process and serves as the crucial pivot for the formation of the texture of rhinoceros skin lacquerwork. In this twisting protocol, the pigmented lacquer needs to be adjusted into a thickened lacquer with a consistency that is easily aggregable in order to generate the texture. The craftsman selects egg white as the prime material for initiating the twisting process and combines it with the pigmented lacquer to fabricate the thickened lacquer (Figure 4). This choice is based on the fact

that egg white, upon desiccation, exhibits exceptional hardness and is highly resistant to collapse. Moreover, egg white also plays a role in augmenting moisture content and regulating viscosity, thereby exerting a more favorable impact on the drying process of natural lacquer.

Upon the culmination of blending the thickened lacquer, it is irregularly piled up and undergoes the twisting procedure on the EVA substrate to attain a definite thickness (Figure 5). Subsequent to the completion of the twisting operation, it is placed on a table for air-drying. Once the surface has achieved desiccation, it is then transferred to a humidity-controlled chamber for dehydration for 7 to 10 days to ensure comprehensive drying of the interior. This approach is employed because the humidity-controlled chamber has a high humidity quotient and is liable to cause wrinkling of the “twist”, which would have a negative impact on the final outcome. As a consequence, it should be placed in the humidity-controlled chamber only after the surface has reached a state of dryness.



Figure 3: Sophisticated Abrasion of the EVA Matrix Substrate.  
Picture Source: Captured by the author.



Figure 4: The creation of thickened lacquer via the amalgamation of pigmented lacquer and egg white.  
Picture Source: Captured by the author.



Figure 5: The operation of twisting.  
Picture Source: Captured by the author.

Upon the complete desiccation of the “twist,” it shall be coated with pigmented lacquer. Following each application of a lacquer layer, it must be placed in the humidity-controlled chamber for a day-long drying process. Only when it is thoroughly dried can the subsequent layer be applied.

For rhinoceros hide lacquerware with green as the predominant color tone, the lacquering sequence is as follows: black lacquer, gold lacquer, light green lacquer, green lacquer, black lacquer, gold lacquer, pea green lacquer, transparent lacquer, gold lacquer, light green lacquer, gold lacquer, green lacquer, gold lacquer, black lacquer, gold lacquer, black lacquer, pea green lacquer, gold lacquer. (Figure 6)

Figure 6: Application of gold lacquer. Image source: Photographed by the author.

For rhinoceros hide lacquerware where blue constitutes the predominant coloristic tone, the lacquering sequence is as follows: black lacquer, gold lacquer, pastel blue lacquer, blue lacquer, black lacquer, gold lacquer, light bluish-gray lacquer, transparent lacquer, gold lacquer, pastel blue lacquer, gold lacquer, blue lacquer, gold lacquer, black lacquer, gold lacquer, black lacquer, light bluish-gray lacquer, gold lacquer. (Figure 7)



Figure 6: Application of gold lacquer.  
Picture Source: Captured by the author.



Figure 7: The process of coating with pastel blue lacquer.  
Picture Source: Captured by the author.

## Polishing

Upon the completion of colored lacquer application, sandpapers of 800, 1500, 2000, 3000, 4000, and 5000 grit are employed in successive batches for polishing, thereby revealing the

underlying patterns on the uneven surface and rendering it smooth and flat. (Figures 8 and 9).

As for the sides, sandpapers of 800, 1500, and 2000 grit are utilized for polishing.



Figure 8: Pre-polishing.

Picture Source: Captured by the author.



Figure 9: During the stage of polishing.

Picture Source: Captured by the author.

Upon the consummation of the polishing stage, dip cotton into raw lacquer and delicately apply a thin veneer to the surface of the object. Thereafter, place it in a shaded chamber for a day-long desiccation procedure. Once the raw lacquer is thoroughly dehydrated, take a minute quantity of vegetable oil on cotton and apply it to the object's surface. Sprinkle a moderate amount of burnishing powder and engage in repeated frictional actions with hands. Repeat this sequence of steps a total of four times. As a consequence, the object's surface will assume a resplendent aspect.

The EVA base is cut in accordance with dimensions of 15 by 25 centimeters and 25 by 25 centimeters. A gap is carved out in the lower right corner, conforming to the size of the battery box, to facilitate subsequent installation of the battery box.

Affix the cut base to the back of the rhino hide lacquer painting. Wind a light strip around the side of the base and trim it to the appropriate length. Subsequently, install the battery box and traceless sticker (Figures 10 and 11).



Figures 10:Results presentation (lights on)  
Picture Source: Captured by the author.



Figures 11:Results presentation (lights off)  
Picture Source: Captured by the author.

#### 4. Conclusion and Discussion

Wang Weibao, Li Mengcheng, Mei Ruizhe, proposed that rhinoceros skin lacquer craft, as a part of regional culture, should retain the characteristics of traditional craft, give rhinoceros skin lacquer craft suitable for the appearance of modern life modelling and aesthetics, and integrate the traditional craft into modern life<sup>[5]</sup>. In this study, the author through the questionnaire survey and practice, the traditional rhinoceros skin lacquer craft is applied in the design of lamps, which not only shows the combination of traditional craft and modern design, but also gives the lamps deeper cultural connotation and artistic value. Rhinoceros skin lacquer, with its unique colour and visual effect, adds a different sense of beauty to the lamps and lanterns, and also has a high ornamental and collection value while satisfying the practical function.

##### Suggestions

1. In the future, the author will accumulate experience and better combine the traditional rhinoceros-skin lacquer craft with modern design, so that the rhinoceros-skin lacquer craft can be integrated into modern design in a way that is more in line with the needs of modern people.
2. It is suggested to make use of the Internet and other new media platforms to increase

the popularity and influence of rhinoceros-skin lacquer craftsmanship, to promote and sell the products online, to broaden the market channels and to increase the market share.

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