



Design and Development of Innovative Cat Products Inspired by Yunnan Wamao Culture

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Abstract

Background and Aim: The Chinese pet industry, valued at 598.2 billion yuan in 2023, is witnessing unprecedented growth, particularly in the cat segment. However, the demand for innovative pet products that are culturally rich is still significantly unmet. This study aims to address this gap by integrating Yunnan Wamao, a traditional decorative item symbolizing protection and prosperity, into modern cat product design. In addition, by adhering to principles such as culturally sensitive design, which emphasizes respecting and integrating cultural elements in the design process, this study seeks to enhance the cultural value and market appeal of the products. This study explores how to endow products with deeper meanings through cultural storytelling, with the objective of creating products with unique cultural charm and establishing a distinctive brand identity in the pet product market.

Materials and Methods: Qualitative research methods were employed, including field research and in-depth interviews with two creators of Wamao and one collector to extract cultural insights. Additionally, a survey of 100 cat owners collected feedback on Wamao-inspired product prototypes in terms of aesthetics, functionality, and cultural value, and the products were refined based on this feedback.

Results: Findings indicate that the incorporation of Yunnan Wamao elements in product design significantly enhances consumer appeal, especially among younger consumers aged 20-35, who prefer unique and culturally symbolic designs. Notably, key challenges identified include the need to balance traditional aesthetics with modern functionality. Consumer feedback indicates a preference for interactive features and cultural value in products. These findings align with the theory that consumers use product choices to express their identity. Balancing aesthetics and functionality is a classic product development challenge, and this study offers new solutions by blending traditional and modern elements.

Conclusion: This study demonstrates that integrating intangible cultural heritage into pet product design not only preserves traditional elements but also satisfies contemporary consumer needs. It offers a model for designing products that balance cultural and practical elements, helping the pet product industry innovate and achieve cultural and commercial success.

Keywords: Yunnan Wamao; Cultural Integration; Cat Products; Product Design; Pet Industry

Introduction

As of 2023, China's pet industry has reached a market size of 598.2 billion yuan, projected to grow to 701.3 billion yuan in 2024 (iiMedia Research, 2024). This growth reflects increasing consumer attention to pets and evolving attitudes towards pet ownership. With rising living standards, an increasing number of families are choosing to adopt cats, subsequently driving demand for related products. Modern consumers are willing to pay premium prices for high-quality pet products, and by 2024, the market for pet supplies is expected to reach 44.37 billion yuan, with cat products occupying a significant share (China Report Hall, 2024).

Changing social structures, including the rise of single-person households and an aging population, have made cats increasingly popular as sources of emotional support, especially in urban environments (iiMedia Research, 2024). The diversification of the pet cat product market in China now encompasses food, toys, care products, and furniture, responding to consumer preferences that increasingly prioritize pet health and quality of life. Growing demand for high-meat-content functional foods, interactive toys, and smart care devices is indicative of this trend (Digitaling, 2022; Birdsong and Flowers, 2024). Furthermore, rising environmental awareness has led to an increased audience for eco-friendly and





sustainable pet products, with aesthetics reflecting personalization and high-quality living (Economic Daily, 2024).

Amid this burgeoning market, Yunnan Province stands out for its rich ethnic cultures and the Yunnan Wamao—a traditional clay figurine historically used as a protective symbol on rooftops. These iconic decorations, characterized by wide-open mouths and fierce expressions, symbolize protection against evil spirits and prosperity (Zhang Naiming, 2024). However, with modern urbanization, Yunnan Wamao has largely faded from common use, now recognized as a precious intangible cultural heritage (Yunnan Provincial Museum, 2023).

Today, Yunnan Wamao has found new life in modern products, including ornaments and themed teacups, reflecting a shift towards cute, intricate designs (Yunnan Provincial Museum, 2023). Despite its cultural significance, Yunnan Wamao has yet to be applied to cat product design, presenting a market gap. This study investigates the integration of Yunnan Wamao elements into cat product designs, aiming to fill this gap while enhancing cultural heritage and satisfying modern consumer demands for distinctiveness and quality.

Objectives

1. To study and analyze the aesthetic qualities and cultural significance of existing Wamao designs.
2. To research trends and consumer preferences within the Chinese online cat product market.
3. To design and develop innovative Yunnan Wamao-inspired products tailored for cat lovers.

Literature review

1. Yunnan Wamao: Cultural Origins and Contemporary Application

Wamao, a distinctive architectural decoration from Yunnan, is deeply rooted in ancient folktales as a protective mascot meant to ward off evil spirits. Originally inspired by images of tigers—symbols of protection—Wamao has evolved into a unique artistic style encapsulating local beliefs and culture. Modern adaptations of Wamao, such as jewelry and home décor, retain traditional meanings while blending with contemporary lifestyles, reflecting a fusion of cultural heritage with modern aesthetics (Zhao Jiaqi, 2019; Wang Xinyuan & Tian Ye, 2023). For instance, modern Jianchuan Wamao designs utilize eco-friendly materials and intricate pottery techniques, aiming to enhance both cultural significance and market appeal.

The integration of Wamao's cultural origins into contemporary design highlights the importance of preserving traditional meanings while appealing to modern aesthetics. This connection significantly enhances consumer value and product identity within the pet industry, particularly in the realm of cat products. Understanding the cultural origins and contemporary applications of Wamao provides a solid foundation for design innovation. By leveraging Wamao's symbolic meanings, this study explores how this cultural element can increase product appeal among cat owners, especially those interested in unique and culturally resonant items. This integration not only contributes to cultural heritage preservation but also enriches the consumer experience, thereby achieving the dual goals of functionality and cultural representation.

2. Product and Pet Design Theories

The evolution of pet product design embodies a shift towards a synergy of functionality, ecological considerations, and user experience. Designers now create products that serve practical uses while appealing aesthetically to modern consumers. This evolution highlights the necessity of multifunctionality—products that fulfill pets' basic needs while seamlessly integrating into home décor (Wainwright, 2018). Furthermore, emotional design resonates with consumers, as the bond between pets and owners informs demand for products that enhance these connections (Runze Cao, Dongming Ma, & Hao Qian, 2023). As sustainability gains traction, the use of eco-friendly materials like bamboo and recycled plastics has become more prevalent, meeting both consumer expectations and environmental standards (Wainwright, 2018). Notably, integrating traditional cultural elements, such as Wamao's





iconography, into pet product design emerges as a key trend, allowing for the creation of items that encapsulate local characteristics and cultural authenticity (Runze Cao, Dongming Ma & Hao Qian, 2023; Wainwright, 2018).

Insights from product and pet design theories indicate that successful product development requires a careful balance between functionality, aesthetics, and emotional appeal. This theoretical framework serves as a guide for incorporating Wamao iconography into cat products, ensuring they align with modern consumer expectations while preserving cultural significance. Observations on the evolution of pet product design further underscore the importance of merging functionality with aesthetics, a principle that directly informs the development of Wamao-inspired cat products. By emphasizing multifunctionality and emotional design, the new products will not only fulfill practical needs but also foster deeper connections between pets and their owners. This aligns to create products that resonate with modern consumer lifestyles while incorporating traditional design elements.

3. Market Overview of Wamao and Cat Products

Originally a talisman for warding off evil in Yunnan's architectural tradition, Wamao has transformed into a cultural icon prevalent in home décor, souvenirs, and more. Driven primarily by tourism, this evolution underscores Wamao's potential for innovative design and commercialization. Despite this potential, the current market for Wamao products predominantly features traditional ornaments, leaving the opportunity for modern interpretations, particularly in the pet product sector, largely untapped (Wang Xinyuan & Tian Ye, 2023). This presents a pivotal moment to capitalize on the rising trends in the pet economy, particularly as attitudes towards pets are more akin to family members in regions such as China, where there is a significant tilt towards premium, smart, and aesthetically appealing pet products (Wainwright, 2018).

The market analysis reveals a significant gap for modernized applications of Wamao within the pet product sector. This overview suggests that innovation within this cultural framework can effectively meet consumer demands for unique, high-quality items, thereby opening new avenues for market growth. Insights into current market trends and the rising consumer demand for premium pet products can guide the positioning and marketing strategies for proposed Wamao-inspired cat items. By recognizing the gap for culturally significant pet products, you can tailor your designs to attract young consumers who increasingly regard their pets as family members, thereby enhancing their willingness to invest in meaningful, high-quality products.

4. Consumer Behavior

The consumer purchase decision process consists of five stages: problem recognition, information search, evaluation of alternatives, purchase decision, and post-purchase behavior (Isaree Karnreungsiri & Nattaya Praditsuwan, 2017). A comprehensive understanding of these stages equips businesses to design and market Wamao-related pet products effectively. Furthermore, Maslow's hierarchy of needs sheds light on the motivations behind consumer behavior, particularly on belongingness and esteem needs (Simply Psychology, 2024). Cat owners are often drawn to products that not only strengthen emotional bonds with their pets but also enhance their social status through unique and high-quality items. By applying Maslow's theory, businesses can better tailor product designs and marketing strategies for Wamao-inspired offerings, appealing directly to the consumers' emotional and social motives.

Understanding consumer behavior through the purchase decision process and Maslow's hierarchy of needs offers essential insights for developing effective marketing strategies. This framework guides how to engage the target audience—cat owners—by tapping into their emotional bonds with pets and their desire for products that signify social status. By comprehensively analyzing the stages of the consumer purchase decision process alongside Maslow's hierarchy, you can significantly enhance your marketing approach for Wamao-inspired products. Emphasizing emotional and social factors in your marketing strategies will allow you to effectively target younger consumers who seek to strengthen their emotional ties with their pets and enhance their social standing through unique purchases. Tailoring product features



and promotional messages to align with these motivations will be vital in driving sales and fostering brand loyalty.

By leveraging the interconnection of Wamao's cultural significance, design theory, market trends, and consumer behavior, this study aims to innovate the pet product industry and promote Yunnan's Wamao cultural heritage.

Conceptual Framework

This illustrates that the conceptual framework of the research is designed to explore how the integration of WaMao iconography into pet cat products can appeal to young consumers in China while preserving cultural heritage. The framework is structured around several key components:

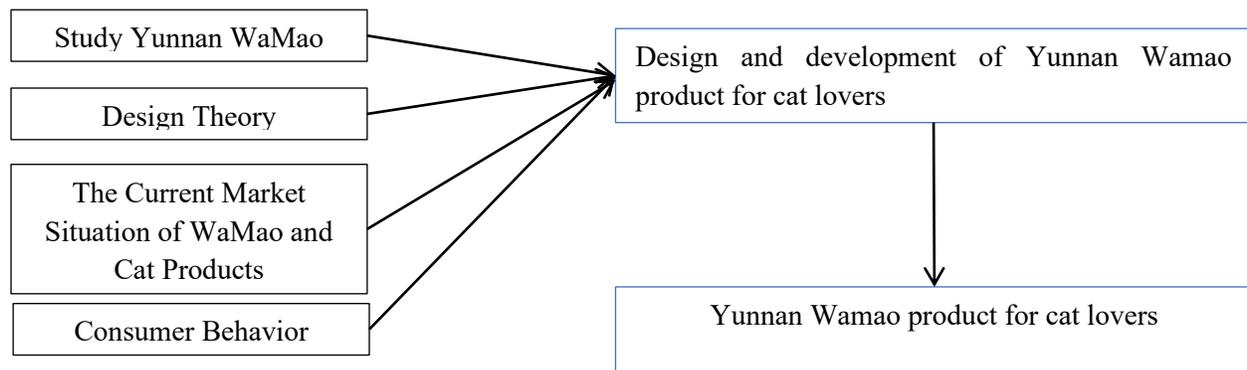
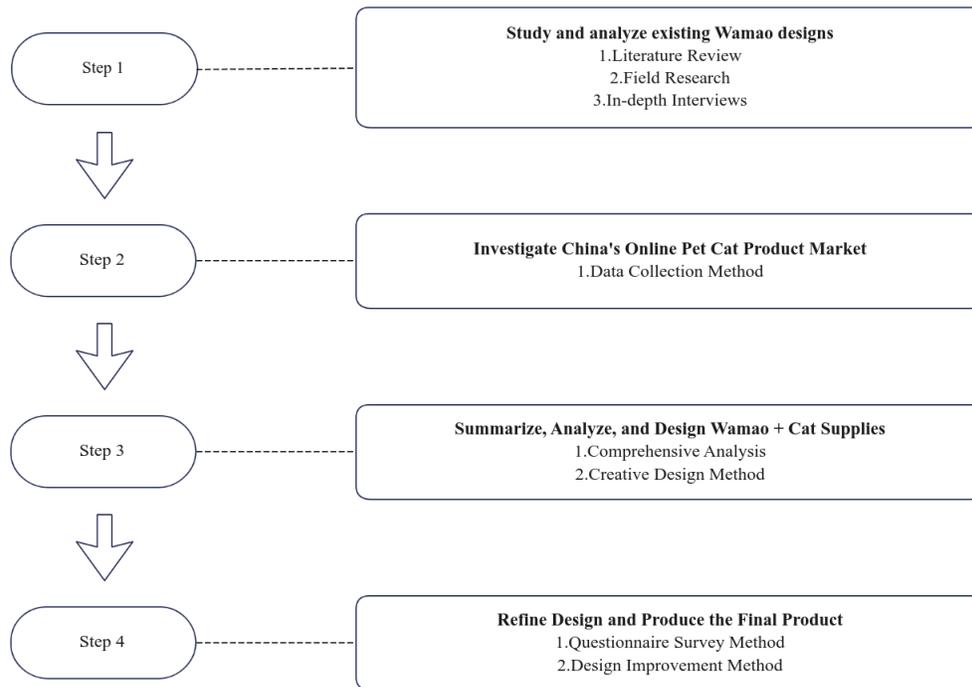


Figure 1 Conceptual Framework

Methodology

This section outlines the research methodology employed to integrate Yunnan Wamao cultural elements with modern pet cat products, employing a mixed-methods approach to effectively address the research objectives of cultural integration and market viability.

This study outlines the research methodology employed to integrate Yunnan Wamao cultural elements with modern pet cat products, employing a mixed-methods approach to effectively address the research objectives of cultural integration and market viability. The research process is structured in four sequential phases: (1) Study and Analysis of Existing Wamao Designs, (2) Investigate China's Online Pet Cat Product Market, (3) Summarize, Analyze, and Design Wamao + Cat Supplies, and (4) Refine Design and Produce the Final Product.



Step 1: Study and Analysis of Existing Wamao Designs

The first phase employed multiple qualitative methods to develop a comprehensive understanding of Wamao's cultural, historical, and artistic significance, which is crucial for integrating these elements into modern designs. Following Lincoln and Guba's (1985) naturalistic inquiry approach, this phase began with a systematic review of academic literature using Cooper's (2018) taxonomy. Search terms included “Yunnan Wamao,” “Chinese roof guardians,” and “cultural preservation in design” across databases including CNKI, Scopus, and Design Studies, ensuring relevance and quality with twenty-three peer-reviewed sources published between 2000-2023 analyzed to establish theoretical foundations regarding Wamao's evolution, symbolism, and contemporary relevance.

The literature review was complemented by extensive field research conducted at three sites in Yunnan Province—Dali, Kunming, and Chuxiong—where Wamao traditions remain active. Using ethnographic techniques (Spradley, 2016), this research documented the 12 distinct stages of production processes, material selection and preparation techniques, tool utilization methods, and regional variations in form, color, and symbolic elements. Throughout this field observation, 140 photographs were taken, 6 hours of video were recorded, and detailed field notes were compiled following Emerson et al.'s (2011) guidelines for ethnographic documentation.

To gain deeper insights from practitioners, semi-structured interviews were conducted with three Wamao masters selected through purposive expert sampling: Master Zhang Cai (61 years old, with over 40 years of experience, from Kunming), Master Zhang Hang (30 years old, a design school graduate and inheritor of the Wamao craft, from Kunming), and Professor Li (62 years old, a professor at Yunnan University of the Arts and a Wamao collector, from Dali). Each interview lasted 60–90 minutes and covered four key dimensions: historical context and evolution, technical aspects and regional distinctions, symbolic meanings, and attitudes toward contemporary adaptations. All interviews were audio-recorded with informed consent, transcribed verbatim, and analyzed using thematic analysis (Braun & Clarke, 2006). Data from these three approaches—literature review, field research, and interviews—was triangulated to ensure validity and develop a multidimensional understanding of Wamao traditions that directly informed subsequent design decisions.



Step 2: Investigate China's Online Pet Cat Product Market

This research aims to explore the variety, design characteristics, and consumer demands for pet cat products on e-commerce platforms like Taobao, thereby providing essential insights for the development of culturally relevant Wamao-inspired products. This involves identifying the top 10 Taobao stores specializing in cat products and collecting the top three products based on comprehensive rankings. In cases of duplicates, the focus will be on the unique top three products. These products will then be analyzed for design, functionality, pricing, and user reviews using qualitative analysis methods to summarize their market advantages and uncover design trends favored by consumers.

The research population consists of online consumers of pet cat products. By analyzing consumer purchasing behaviors and review data on platforms like Taobao, the study seeks to understand consumer preferences, needs, and motivations when selecting pet cat products. This data will offer valuable insights for the market positioning and design of Wamao products. In the user review analysis, content and sentiment analysis techniques will be employed to systematically extract consumer preferences, needs, and pain points. This approach will not only help identify market trends and factors behind successful products but also directly inform the design standards for subsequent Wamao-inspired cat products. By doing so, the study ensures that the designed products meet consumer demands while featuring unique cultural charm.

Step 3: Summarize, Analyze, and Design Wamao + Cat Supplies

In this phase, the research integrates insights and data from the first two steps to identify convergence points between Wamao elements and cat product design through comparative analysis, focusing on the thematic connections between consumer preferences and cultural significances. The aim is to develop innovative products that incorporate Yunnan Wamao cultural characteristics while meeting the demands of the modern pet product market.

To achieve this, a comprehensive analysis of the data from the first two steps is conducted to find the intersection between Wamao culture and cat product design. The design should maintain the traditional cultural features of Wamao while satisfying the functional and aesthetic requirements of modern consumers. Creative design techniques are employed to integrate Wamao elements into cat products, creating culturally distinctive items (Cheng Hui, Qiu Xiao, Liu Bingjian, et al. 2022).

The research focuses on cat owners as the target demographic. By analyzing their needs and preferences, the study combines Wamao culture with modern cat product design. This approach aims to fulfill cat owners' dual needs for functional pet supplies and cultural identity.

Step 4: Refine Design and Produce the Final Product

Once the initial design of the Wamao and cat supplies fusion was completed, feedback was systematically collected from both cat owners and Wamao artisans. This iterative feedback process was crucial for optimizing the design to better align with user expectations and cultural authenticity.

A questionnaire was designed to collect opinions and suggestions from 100 cat owners regarding the initial product design, ranking several product styles, and assessing satisfaction. Based on the feedback from the questionnaire and interviews, the product design was modified and refined. Adjustments were made to the product's design details, such as appearance, materials, and functionality, to further enhance the Wamao + cat supplies design, ensuring that the product not only met the practical needs of cat owners but also embodied the cultural characteristics of Wamao.

The focus of this section was on cat owners. By gathering their feedback on the product's functionality and usability, the final product was ensured to satisfy the demands of the modern pet market. This approach not only achieved innovation in product design but also contributed to the preservation of cultural heritage.

This part centers on cat owners. By collecting their feedback on the product's functionality and usability, it ensures the final product meets modern pet market needs. This approach not only innovates product design but also preserves cultural heritage. During the design improvement process, material



safety and facility ergonomics were explicitly made design standards. This ensures the product is both culturally rich and provides a safe and comfortable experience for cats.

Results

This study presents the findings from each phase of research, illustrating how the integration of Yunnan Wamao cultural elements into contemporary pet cat products meets both cultural and market demands. The results follow the four-step methodology outlined previously, showing the progression from cultural analysis to market research, design development, and product refinement. Researchers conducted field investigations, interviews, surveys, and data analysis to study Wamao designs and their development.

Step 1: Study and Analyze Existing Wamao Designs

1. Analysis of Existing Wamao Designs

This study systematically categorizes both traditional and modern Wamao according to type, design, and cultural context, revealing six distinct regional variants: Kunming, Dali, Chenggong, Lijiang, Chuxiong, and Qujing.

Table 1 Classification of Yunnan Wamao by Type and Region

Types of Wamao	Region	Picture	Main features
Kunming Wamao	Kunming		The head has the Chinese "king" character, fangs, beard, and other tiger characteristics, sitting on the tile, holding the gossip card, a big mouth, teeth vertical, round head and long ears.
Dali Wamao	Dali		The outstanding feature is a "one-piece", surprisingly large mouth, and the head is more like a two-dimensional, slightly sunken circle in the middle.
Cheng gong Wamao	Cheng gong		The appearance is close to the real cat, the small mud ball made of the eyes are big and round eyes, two pointed ears, the image is naive, lovely, and honest.
Lijiang Yong sheng Wamao	Lijiang		Also known as "ridge tiger", "mountain tiger" and "four unlike", the appearance is similar to the size of a real cat, the cat's mouth is wide, eyes shape and posture are different, a word engraved on the forehead, the tail curved, for plain gray pottery.

Types of Wamao	Region	Picture	Main features
Chuxiong Yi Wamao	Chuxiong		The head is engraved with the word "king", the body is coated with fish feet, and the back has a dragon tail like a protrusion.
Qujing Wamao	Qujing		A unique feature of Yunnan Wamao culture is mainly reflected in the shape. A prominent feature is the clip of gossip in the front leg, which reflects the unique understanding of Wamao in the Qujing area, and also integrates the gossip elements in traditional Chinese culture.

In terms of function, Wamao have traditionally been used as symbols of protection for homes, believed to ward off evil spirits. They are predominantly crafted from clay, ensuring durability and aesthetic appeal. Wamao typically take the form of cats or tigers, often depicted with wide-open mouths and positioned standing on tiles.

2. The Transformation of Wamao in Modern Design

Originally utilized as spiritual guardians atop rooftops, traditional Wamao are declining in use due to architectural changes and shifting aesthetics, prompting a need for their adaptation into modern design as cultural artifacts.

Table 2 Interviews with two creators and one collector provided insight into the cultural and design values of Wamao

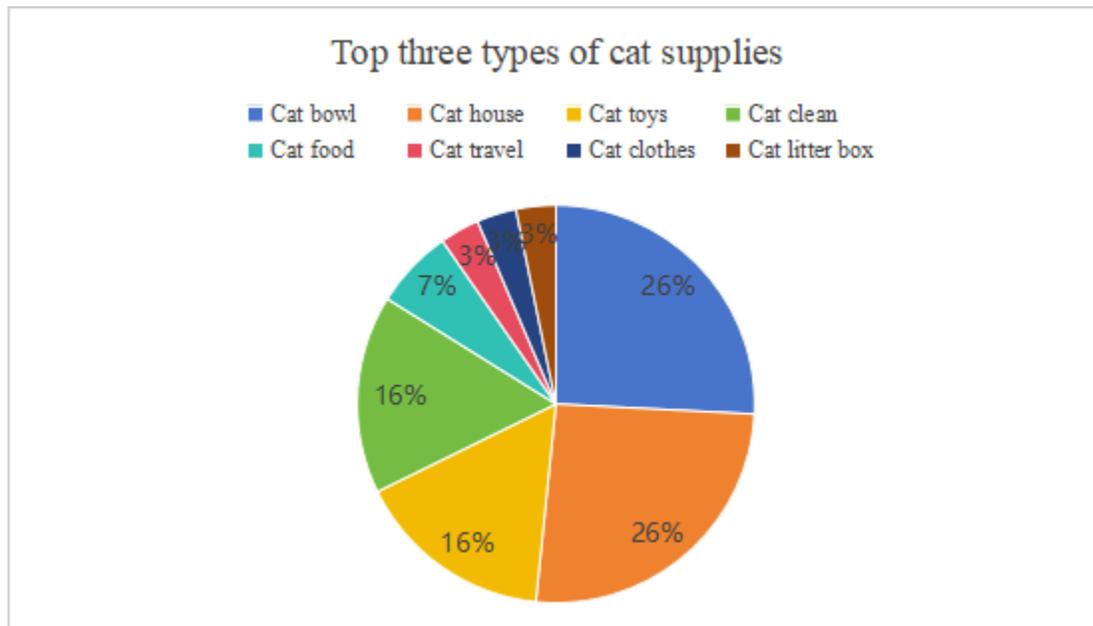
Name	Role	Concept & Design Approach	Cultural Value Perspective
Zhang Cai	Traditional Wamao artisan	Preserves traditional styles while adjusting size for modern display needs.	Values Wamao as a symbol of ancestral beliefs and wisdom.
Zhang Hang	Young designer	Simplifies traditional elements with modern materials and abstract design.	Sees Wamao as a blend of cultural symbolism and artistic expression.
Li Haihua	Professor & Wamao collector	Collect Wamao, but do not participate in its design and production.	Views Wamao as valuable collectibles and symbols of cultural heritage.

While Wamao carries rich cultural significance, interviewees emphasized challenges such as low market visibility, limited practicality, and reliance on outdated production methods. They noted that the future of Wamao in modern design hinges on preserving their cultural essence while simultaneously enhancing their functionality and relevance to today's consumers.

Step 2: Investigation of China's Online Pet Cat Product Market

This investigation focuses on the pet cat supplies market on the Chinese e-commerce platform Taobao, aiming to identify product types, design features, and consumer demands that can inform the development of Wamao-inspired products. Researchers collected data from the top 10 stores on Taobao noted for their sales volume and relevance, as well as the top three types of pet cat supplies offered in these stores.

Table 3 Top Three Pet Cat Products by Store on Taobao



Shop name	The top three types of pet products
Guzhou Mu Official Store	cat beds, cat toys, cat bowl
Pet Supplies Specialty Store "Qi Oh"	Cat toys, cat bowls, and cat health care products
Maison Pet Supplies Exclusive Store	Cat cleaning, cat toys, cat food
Helloleiboo Pet Supplies Official Store	Cat bowl, cat cleaning, cat beds
Yali Song Official Store	Cat nest, cat bowl, cat travel
Capture Flagship Store	Cat cleaning, cat clothes, cat food
Hua Yuan Pet Supplies Specialty Store	Cat cleaning, cat bowl, cat beds
Golden Joy Official Store	cat beds, cat bowl, cat beds box
Meadow Pet Supplies Official Store	Cat bowl, cat toys, cat beds
VOA Pet Supplies Flagship Store	cat beds, cat cleaning, cat toys
Lele Cat Pet Supplies Official Store	cat beds, cat cleaning, cat bowl

Through this investigation, researchers analyzed the characteristics that contribute to the popularity of various categories. An overarching view of design, functionality, pricing, and user reviews provides critical insights:

Table 4 Analysis of Popular Cat Product Categories

Category	Design features	Function	Price	User review
Cat bowl	Humanized and scientific design, anti-slip, easy to clean, and protects the cervical spine.	Basic feeding function, intelligent automatic feeder	Wide price range, from basic models to high-end smart models.	Material safety, easy to clean, durability
cat beds	Comfort and aesthetics, semi-enclosed or fully enclosed design.	Provide rest areas with heating and entertainment features.	Prices vary due to differences in material and functionality, from cotton to electric heated cat nests.	Comfort, durability, and aesthetic design.
Cat toys	Diverse design, simulate prey, puzzle toys	Entertainment and physical and mental exercise, such as jumping, chasing, and biting.	Affordable prices, from cardboard to electric toys.	Durability, safety, and interactivity.

Market Concerns Identified:

1. Product Quality and Safety Issues: A significant proportion of consumers express concerns regarding the safety and durability of materials used in pet supplies, indicating that many products do not meet basic expectations.

2. Severe Product Homogeneity: The market is markedly characterized by product uniformity, with many stores offering similar inventory, diminishing product uniqueness.

3. Insufficient Product Innovation: Respondents indicate a growing demand for high-quality, uniquely designed products to meet diverse consumer needs, showing that current offerings fall short in innovation.

These types of products are designed to fulfill essential living needs for pet cats while enhancing the overall quality of life for pets and their owners. The trend towards greater intelligence, personalization, and humanized design aligns with modern life demands and pet owners' aspirations for high-quality lifestyles. Researchers found that cat bowls, cat beds, cat toys, and cat cleaning supplies are currently the most popular categories in the market, reflecting a significant demand for intelligent, personalized, and user-friendly designs, while consumers maintain strong concerns regarding quality, safety, and innovation possibilities.

The market is awash with homogeneous pet products. As consumers' desire for personalized and quality items grows, Wamao-themed cat products, rich in cultural heritage, have immense potential to stand out and deliver unique value. This differentiation not only caters to the demand for uniqueness but also introduces innovation to the pet supplies market, tackling existing quality and design deficiencies.

Step 3: Summarize, Analyze, and Design Wamao + Cat Supplies

Based on the detailed analysis of Wamao's cultural traits and challenges, along with insights from the modern pet product market, it is clear that Wamao faces issues such as low market recognition, limited applicability, and a gap between traditional craftsmanship and contemporary production. Simultaneously, the pet cat products market expresses a strong desire for high-quality, personalized items but struggles with homogeneity and a lack of innovation.

To address these difficulties, this study aims to integrate Wamao cultural elements with modern design principles. The goal is to create innovative cat beds, bowls, and toys that reflect Yunnan's rich cultural identity while satisfying contemporary market demands.

Table 5 Wamao Morphological Characteristics

Feature Category	Feature Description
Head	Sharp teeth, whiskers, and pointed ears, reflecting cat characteristics.
Body	Standing or crouching posture, illustrating a full or agile physique.
Mouth	A wide-open mouth symbolizes the swallowing of evil and the protection of the home.
Tail	The tail is raised or curved.
Color	Varied colors include yellow, brown, orange, and others, complementing home decor.
Decorative Elements	Many Wamao incorporate ethnic minority features, varying across different regions.
Size	Ranges from larger Wamao suitable for rooftops to smaller items intended for indoor decor.

Through this in-depth analysis of Wamao's cultural and morphological features, three core design elements emerge: the wide-open mouth, the roof tiles, and the multiplicity of cat motifs. These highly representational elements serve as rich inspiration for modern pet product design. The original protective symbolism will be reinterpreted into a warm and friendly narrative centered around pet guardianship, making the imagery more approachable, appealing, and caring.

Final Product Plans

Table 6 Plan 1: Cute Wamao IP

Stage	Description	Image/Design	Notes
Reference Images	Collected original Wamao images and sources of inspiration		Original Wamao images and inspirational sources collected provide a basis for the design. This includes traditional Chinese clothing, Wamao figures, and character poses.
Sketches	Initial design sketches and conceptual ideas		Initial sketches feature a chibi (Q-version) style with exaggerated features to enhance cuteness and approachability.

Stage	Description	Image/Design	Notes
Color Palette	Selected color scheme		Selected color schemes include #FFC107 (a cheerful tone), #FF7043 (vibrant contrast), and #FFEBEE (a soft, clean background).
Final Design	Completed design		The completed design features a cute, chibi-style Wamao with oversized eyes and attractive bright colors, harmonizing traditional aspects like the “king” mark and pointed ears with modern artistic simplicity.

Table 7 Plan 2: Wamao Combined with Tibetan Culture

Stage	Description	Image/Design	Notes
Reference Images	Collected original Wamao images and sources of inspiration		Original Wamao images and sources of inspiration include Tibetan clothing and motifs.
Sketches	Initial design sketches and conceptual ideas		Initial design sketches incorporate Tibetan elements alongside Wamao features, presenting the character with traditional garb and headdresses to establish a distinct cultural identity.
Color Palette	Selected color scheme		Inspired by traditional Tibetan aesthetics, chosen colors include #49aca5 and #4e869c for softness, with #fb5a58 adding vibrancy and #413c3b providing depth.

Stage	Description	Image/Design	Notes
Final Design	Completed design		Incorporates cultural features like Tibetan attire paired with Wamao characteristics, creating a unique and engaging look.

Plan 3: Integrated Wamao IP Image

Concept: Combines strengths from Plan 1 (Cute Wamao) and Plan 2 (Tibetan-Inspired Wamao), resulting in a unique, culturally rich Wamao IP image.

Design Highlights:

- 1) Traditional Features:** Retains core Wamao elements like the “king” symbol and pointed ears.
- 2) Simplified & Modern Design:** Utilizes clean lines and bright colors for accessibility.
- 3) Cultural Depth:** Effectively integrates key Tibetan patterns into clothing and accessories to enhance cultural richness.
- 4) Balanced Appeal:** Merges elements of cuteness with ethnicity to attract both younger consumers and culturally conscious buyers.

Table 8 Plan 3: Integrated Wamao IP Image

Stage	Description	Image/Design	Notes
Reference Images	Collected original Wamao images, sources of inspiration, and the IP characters from Plan 1 and Plan 2.		The references include images of Tibetan clothing, Wamao, and the IP integration of Plans 1 and 2.
Sketches	Initial design sketches and conceptual ideas		The sketches incorporate Tibetan and Wamao elements, maintaining the cuteness from Plan 1 and the ethnic features from Plan 2.
Color Palette	Selected color scheme		The color palette combines soft and vibrant hues. Light pink and yellow add a cute feel, while brown and blue add depth. Orange and red tones boost energy and cultural richness,

Stage	Description	Image/Design	Notes
			making the overall scheme balanced and visually appealing.
Final Design	Completed design		The final design blends a cute style with traditional elements, creating a visually appealing and culturally rich IP image.

Wamao Character Design:

Name: Wamiaomiao

Personality: Wamaomiao is brave and loyal, always eager to protect their home and friends. Lively and curious, it often embarks on playful adventures, showing a mischievous side when it playfully hides toys from its owner, but is ultimately kind and loving.

Backstory: Wamaomiao, originally a guardian Wamao from Yunnan, now lives as a cherished pet in a Tibetan family in Shangri-La. While it maintains its dutiful role of safeguarding the home, it enjoys playful interactions with other pets and villagers. Adventurous and ever-ready to lend a paw, Wamaomiao is loved for its courage and playful spirit. As a pet cat, it enjoys sunbathing, chasing butterflies, and quietly keeping its owner company. Yet, its cultural heritage and guardian role set it apart from ordinary cats.

Appearance: Wamaomiao dons bright, traditional Tibetan clothing—a vibrant woolen robe adorned with colorful patterns, complemented by a woven belt and distinctive Tibetan boots. These elements not only reflect the cultural heritage of its household but also allow for playful variations during its adventures.

Design a series of animated actions reflecting Wamaomiao's personality traits, such as:

- 1) **Brave:** Standing guard in front of the door, ready to protect its home.
- 2) **Curious:** Playfully investigating new surroundings or exploring hidden spots around the house.
- 3) **Lively:** Chasing butterflies in the garden, illustrating its adventurous spirit.

Table 9 Pet Product Design Description

Design Content	Character Design	Product Design	Design Description
Wamao Cat Bed	 <p>Wamaomiao lies on tiles, sleeping, setting the cat bed theme.</p>	 <p>It offers a comfy rest space for pet cats, with a stable, easy - to - clean design.</p>	The Q-style cat bed combines Yunnan Wamao culture with modern pet aesthetics. Its bright colors and clean lines provide a refined, artistic look, mimicking the cozy corners of Yunnan's traditional homes.

Design Content	Character Design	Product Design	Design Description
Wamao Toy			<p>The toy design merges Yunnan Wamao culture with modern cat toy elements, including grass balls and tunnels that double as scratching posts for interactive fun. This encourages healthy play and engages the cat's instincts.</p>
Wamao Cat Bowl			<p>The cat bowl design integrates Yunnan Wamao culture with modern pet product trends. Featuring an ergonomic curve for stability and style, it is crafted from safe, eco-friendly ceramic that is easy to clean, making mealtime enjoyable for both pet and owner.</p>

In summary, this study successfully creates a series of Wamao-inspired pet products that integrate Yunnan's traditional culture with modern pet-product aesthetics. The designs not only highlight the cultural significance and unique charm of Wamao but also meet the functional needs of contemporary pet products. By infusing products with cultural depth and artistic appeal, these creations offer consumers a fresh choice in the pet-product market while promoting the preservation and innovation of intangible cultural heritage.

Step 4: Refine Design and Produce the Final Product

This survey analyzes feedback from cat owners on Wamao product designs. By examining responses segmented by various age demographics and cat age groups, along with satisfaction ratings and improvement suggestions, the insights gathered reveal crucial information about market performance and potential enhancements.

Most respondents are aged 20-40, with a significant number of cats being under one year or within the 1-3 year age range, indicating a considerable interest among young cat owners whose pets are at formative growth stages.

Feedback Analysis:

1) **Wamao Cat Bed:** 36% of respondents are very satisfied, 13% are dissatisfied, with appearance attractiveness being a key factor.

2) **Wamao Cat Toy:** 31% are very satisfied, 11% are dissatisfied, and attractiveness to cats is the main consideration.

3) **Wamao Cat Bowl:** 45% are very satisfied, 16% are dissatisfied, with functionality as the primary focus.

The overall design satisfaction was 43% very satisfied and 15% very dissatisfied, indicating diverse opinions on the design. 25% of respondents wanted more color options, 15% hoped for designs that better matched home decor, and 13% suggested using greener materials. Regarding recommendations, 38% were very willing to recommend the products, compared to 15% who were unwilling, showing varied levels of recommendation intent.

Improvement Suggestions:

Respondents recommended considering the diversity of cat sizes, introducing multiple color options, and incorporating more interactive features. Some users expressed the desire for designs that align better with their home aesthetics and are made from eco-friendly materials. While a majority indicated they would recommend these products, a subset remained hesitant, suggesting that there is room for enhancement to broaden appeal.

Overall, there is significant potential to enhance product appeal and functionality. Users appreciate the aesthetic design but seek optimizations to better meet the diverse needs of their pets.

Table 10 Product Design Description

Product Name	Design Description	Before Modification	After Modification
Wamao Cat Bed	The Wamao Cat Bed has been redesigned with interactive elements to enhance its appeal and usability.		 Introduced features that include removable toys attached to the bed for fun.
Wamao Cat Toy	The redesigned Wamao Cat Toy includes interactive elements and appealing animal figures such as foxes and ducks. Soft materials are used to enhance comfort and attractiveness. The revised version focuses on details that better meet cats' curiosity and playfulness needs.		 Added features like sound elements to attract and engage pets further.

Product Name	Design Description	Before Modification	After Modification
Wamao Cat Bowl	The new Wamao Cat Bowl features an increased height for better eating comfort for cats while also introducing new color options for greater personalization.		 The bowl design incorporates a weighted base to prevent tipping, enhancing stability.

Researchers successfully integrated Yunnan Wamao culture with modern pet product design through a detailed analysis of traditional elements and contemporary market needs. This yielded innovative designs for cat beds, bowls, and toys that balance cultural heritage with modern aesthetics and functionality. User feedback contributed to improvements in interactivity, functionality, and personalization for each product. This effort highlights how traditional culture can be reimaged to enrich the modern pet market, offering valuable insights for future design endeavors.

Discussion

This study successfully merges cultural heritage and market insights to design innovative pet products embedded with Yunnan cultural symbols, significantly contributing to cross-cultural exchange between Yunnan's rich traditions and the contemporary pet-product industry. From a technical standpoint, the research adopts user-centered design principles by prioritizing user experience, operability, and product functionality. For instance, feedback from pet owners indicated a preference for ergonomic designs, which directly influenced the development of the Wamao cat bed, ensuring usability and comfort for both pets and their owners.

By integrating traditional Wamao elements, such as the 'king' symbol and distinctive color palettes, with modern pet-product design, the study underscores the vital role that cultural symbolism plays in contemporary product development, enhancing both market appeal and consumer engagement.

While this study effectively highlights the importance of cultural design, it also identifies opportunities for enhancement in the recognition algorithms employed in product development, which could optimize the assessment of consumer preferences and improve the accuracy of product functionalities. Based on the analysis, future research should focus on optimizing the database of consumer preferences, expanding the product range to include versatile designs, and enhancing product functionalities, such as incorporating smart features that cater to specific owner needs, thereby significantly boosting market appeal.

Furthermore, the study illustrates the complexities involved in harmonizing traditional aesthetics with consumer-driven functional needs. Achieving a balance between the visual appeal of traditional Wamao designs and the practical demands of modern pet owners poses challenges that require ongoing dialogue between designers, cultural custodians, and consumers.



The research underscores the necessity for continuous improvement and iterative updates in the design process. Establishing structured feedback loops from consumers post-launch could allow for timely adaptations, ensuring that products remain relevant and meet evolving consumer expectations.

Conclusion

This study explores the integration of Yunnan's Wamao culture into modern pet cat products, employing a four-step methodology encompassing cultural analysis, market research, design development, and iterative refinement. This innovative approach not only bridges cultural heritage with contemporary consumer needs but also sets a precedent for similar integrations in various product categories.

The findings from this study are significant as they identify key recognizable features of traditional Wamao culture, such as the open mouth, tiles, and feline traits, which provide a rich source of design inspiration. By maintaining these cultural connections, the research underscores the value of integrating cultural authenticity into modern product design.

Moreover, Wamao culture presents considerable potential within the pet product design sphere. By harnessing its distinct elements, designers can create products that resonate with consumers while simultaneously promoting the preservation of Yunnan's cultural heritage. However, it was observed that some traditional Wamao styles do not align with contemporary aesthetics, resulting in a scarcity of culturally themed pet products. This conflict often leads to cultural elements being overshadowed by functional considerations, supporting Norman's (2013) design-needs hierarchy theory. This dynamic reflects the ongoing challenge designers face in balancing cultural expression with consumer expectations for practicality.

The analysis further reveals that the Chinese market increasingly seeks pet products characterized by uniqueness, functionality, and aesthetic appeal, particularly among consumers of cat products, as evidenced by survey feedback indicating a preference for innovative designs.

The study focused specifically on Yunnan Wamao culture and Chinese urban consumers, which may limit the generalizability of the findings. The consumer sample, although sizable ($n=100$ for the final evaluation), was predominantly concentrated in urban areas, with 65% of participants aged between 25 and 40. This demographic focus may not fully represent the broader population of pet owners in rural areas or other age groups. Additionally, long-term product engagement could not be comprehensively assessed within the study timeframe, highlighting the necessity for future longitudinal follow-up research to better understand the ongoing interactions between consumers and the products over time.

Future research should pursue several promising avenues:

1) Adaptability Testing: Investigate the adaptability of the outlined methodological approach to other cultural traditions to broaden the scope of cultural integration in product design.

2) Digital Technologies: Explore how digital technologies can enhance the cultural product experience through storytelling, potentially increasing consumer engagement.

3) Comparative Studies: Conduct comparative studies on consumer responses across diverse cultural and geographic markets to assess the generalizability of findings.

In summary, this research demonstrates that with a robust methodology, traditional cultural elements can be effectively integrated into modern commerce, ultimately bridging the gap between heritage and contemporary consumerism. The transformation of Wamao from endangered architectural elements to appealing, functional pet products illustrates both the challenges and opportunities in cultural design adaptation. By creating products valued for their cultural distinctiveness and practical utility, this approach offers a sustainable path to preserve traditional cultures while meeting the needs of today's consumers. The success of these designs, as measured through quantitative consumer feedback and prototype testing, validates the methodology for cultural-functional integration in product design.

Recommendation





Based on the study's conclusions and discussion, the following recommendations are proposed to enhance the functionality, market adaptability, and cultural impact of Wamao cat products:

1) Diversify Product Design: While current Wamao cat products are culturally distinctive, there is a need for more personalized design elements. Designers should conduct user research to identify variations in cats' body types and behavioral habits, allowing for the creation of products tailored to these specific needs. For instance, adjusting the layout of cat beds to accommodate various feline sizes or designing interactive toys that encourage natural play behaviors.

2) Enhance Cultural Elements: To strengthen the uniqueness and market recognition of Wamao culture, it is vital to incorporate additional local cultural symbols and traditional elements from Yunnan. Designers could explore integrating motifs from traditional pottery or distinctive patterns found in Yunnan embroidery into product designs. This approach will ensure that products not only fulfill modern functional needs but also convey deeper cultural meanings, enhancing consumer engagement.

3) Eco-Friendly Design: Given the increasing global emphasis on environmental sustainability, future Wamao cat products should prioritize eco-friendly design. This can be achieved by utilizing sustainable materials, non-toxic coatings, and recyclable packaging. Research indicates that a growing number of consumers prefer brands demonstrating environmental responsibility, which can enhance market competitiveness and foster brand loyalty.

4) Functional Innovation: To enhance the functionality of existing products, it is recommended to integrate intelligent and interactive features. For instance, incorporating temperature control and self-cleaning functions in cat beds, as well as smart sensors in cat toys that capture the pet's movements, can significantly enhance interaction and enjoyment between cats and their owners. Such innovations are particularly appealing to younger consumers, who increasingly seek smart pet products that combine convenience and interactivity.

5) Increase Color Options: To accommodate the diverse range of home decor styles, future Wamao cat products should offer a broader selection of color choices. Conducting market research to identify current color trends in home design will enable designers to create products that seamlessly integrate into various home aesthetics, thereby improving market acceptance and consumer appeal.

6) Establish Feedback Mechanisms: To facilitate continuous improvement in product design quality and user experience, it is essential to establish ongoing user feedback mechanisms. Implementing surveys, focus groups, and online review platforms can provide valuable insights into consumer preferences. Regularly collecting and analyzing this feedback will enable timely enhancements in product functions and aesthetics, ultimately boosting user satisfaction and fostering brand loyalty.

Through these enhancements, Wamao cat products can better meet modern consumers' dual demands for functionality, aesthetics, and cultural significance. They can also aid in the modern transformation of traditional culture and stand out in the competitive pet-product market. This research contributes to the ongoing dialogue of culture, design, and market innovation in the pet industry, positioning Wamao-related products as potential market leaders.

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