

# Sustainable Production Strategies: Incorporating Internet Celebrity Aspects into Yingjing Black Sand Craft Design

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## ABSTRACT

The study aims to explore the intersection of traditional Yingjing black sand products with modern digital age adaptations, focusing on sustainability, cultural symbolism, and the evolving consumer landscape influenced by network platforms. The research employs a tripartite design framework. The first phase involves analysing 'Internet Celebrity' characteristics and their associated poetic imagery to understand their impact on consumer behaviour. In the second phase, the study extracts shape semantics from these elements, translating them into actionable design information. The final phase introduces a four-step design process, utilising 3D modelling to create a Yingjing black sand product inspired by 'Internet Celebrity' elements. This phase highlights the integration of digital tools in refining traditional craft designs. The research demonstrates that adapting traditional Yingjing black sand crafts to modern consumer trends through digital tools and sustainable production strategies can enhance their relevance in the digital age. The study underscores the importance of preserving historical significance while promoting environmentally conscious design and production. This research provides innovative insights into the adaptation of traditional crafts within the context of the digital age. It offers a structured approach to integrating modern consumer trends with historical craftsmanship, presenting a compelling model for sustainable craft production. The study contributes to broader discussions on sustainability, cultural adaptation, and the evolution of traditional crafts, making it relevant for both academic and practical applications.

**Keywords:** 3D modelling, Cultural symbolism, Digital tools, Internet Celebrity, Sustainable production.

## INTRODUCTION

Yingjing County in Sichuan, located in the western part of the province, has recently adopted the "Black Sand City, Two Mountain Demonstration Areas" planning model. This region, which marks the boundary of the ancient Shu civilisation, is famous for its rich black sand resources, often referred to as "aesthetically pleasing black stones." In 2008, Yingjing and its ware were recognised as part of China's second group of intangible cultural heritage, underscoring their cultural and research significance (Zhang & Li, 2023; Wang & Chen, 2022). This study aims to utilise the unique features of the Yingjing region, especially its symbolic mineral "black sand," as the basis for product design. By employing contemporary design methods, this study examines how products can align with the black sand design model and how its distinctive qualities can be harnessed to create innovative items. The study aspires to promote Yingjing black sand globally and revitalise traditional handicraft industries (Liu et al., 2023).

The research integrates design theory and methodology with a thorough analysis of Yingjing black sand, including a literature review, fieldwork, creative practice, and collaboration with academic institutions.

Additionally, it incorporates elements of internet celebrity culture into the product design process, establishing a model and procedures for future research and production. From a modern perspective of quality of life, the study scientifically analyses, transforms, and refines black sand products. It critically examines the historical and sociological significance of Yingjing sand products, using observation, interviews, and research to understand custo and enhance the development strategy for these products. The final stage involves applying the developed design model to produce a series of Yingjing black sand products. This paper introduces the innovative use of internet celebrity elements in the design process, with the goal of enabling Yingjing black sand to enter the global market for cultural goods and rejuvenate traditional crafts within an online context.

## RELATED LITERATURE REVIEW

### Yingjing Black Sand Products

Numerous studies in China confirm that sand ware production in Yingjing Province began over two millennia ago, profoundly influencing the region's cultural heritage (Wang et al., 2021). This legacy is closely associated with the Yingjing black sand era, spanning the Spring and Autumn Periods, the Warring States Period, and the Qin and Han Dynasties. Yingjing black sand crafts hold a significant place in the region's history. The primary production centre is Ancient City Village in Liuhe Township, Yingjing Province, Ya'an City, Sichuan Province, which also houses the Yandao Ancient City Site, a provincially protected cultural relic (Dai, 2021). The Yingjing black sand ware, as shown in Figure 1, is unique to this region and is the sole product entitled to the name "Yingjing sand ware." The area is renowned for its distinctive "steamed bun kiln" firing technique, underscoring its historical importance. Earlier, the term "Yingjing casserole" became synonymous with the region due to limited product diversity, shaping its external identity. The introduction of diversified manufacturing processes after 1981 led to new terms like "Yingjing sand" and "Yingjing black sand." This ancient tradition, a cornerstone of the region's culture, has been revitalised since 2013.



**Fig. 1.** Yingjing black sand ware.

Aside from casseroles, the Ying Kiln Sandware manifests as tea mats, flower ware, wind stoves, and other products that seamlessly integrate culture, art, nature, and lifestyle. Figure 1 illustrates the developmental trajectory of Yingjing black sand (Vandiver et al., 2017) and the manufacturing process of Yingjing black sand products. Adheres to a specific sequence of processes, including mud preparation, moulding, drying, decoration, grinding, polishing, firing, glazing, finishing, and quality assessment (Reedy et al., 2017). A combination of white clay and two charcoals are utilised to create Yingjing black sand products. These are fired at temperatures exceeding 1200 degrees to form distinctive black sand vessels and crafts. In addition to displaying properties like high-temperature resistance, corrosion resistance, non-oxidation, and non-discolouration, these products exhibit no chemical reaction with acid, alkali, and salt in food.

Moreover, they possess excellent preservation characteristics for heat and freshness. Given their non-toxicity and durability, these natural, green utensils are ideal for cooking and drinking, and they find widespread use

due to their longevity. By 2021, approximately 50 workshops, 20 online stores, and over 1000 employees were engaged in the Yingjing black sand industry, contributing to an annual output value of around \$100 million. The industry also employed about 100 college students. However, challenges such as workforce reduction, outdated production methods and technologies, a shortage of design talent, monotonous product designs, and weak online promotion have contributed to industrial decline, hindering the industry's growth. Yingjing black sand and its products are deeply rooted in the region's rich cultural heritage. Despite these challenges, the industry's significant economic impact and increasing recognition of its environmental benefits suggest a promising future. Nonetheless, addressing issues like modernising production techniques, acquiring talent, and strengthening online presence will be essential for sustaining growth and preserving this ancient craft's legacy.

### **Internet Celebrity Elements**

In the era of rapid digital transformation, the rise of Internet celebrities has become a significant phenomenon, driven by the continuous advancement of the Internet. This trend has been further amplified by the global impact of COVID-19, which has accelerated the shift from traditional brick-and-mortar sales channels to online platforms. Internet celebrities, or influencers, have leveraged their vast online followings to monetise their influence through various channels, resulting in substantial profits for corporations and individuals. This shift has given rise to the "online celebrity economy," a rapidly growing sector of the digital marketplace (Zhang, 2022). In China, these influencers, commonly referred to as "Wang Hong," have achieved widespread online fame, often through events or behaviours that capture public attention and attract large social media followers. The evolution of Internet information technology has transformed social media content in China from simple text-based posts to rich media formats such as photos, videos, and live streams (Yan, 2022). These celebrities have innovated communication methods through live video broadcasts, enhancing their ability to promote symbolic and relational consumption, drive sustainable commercial value, and inspire social responsibility among their audiences (Fu, 2022; Xuemin et al., 2024).

As Andy Warhol famously predicted, "In the future, everyone will be famous for 15 minutes." In today's highly developed social media landscape, this prediction has manifested as the potential for anyone to become an Internet celebrity, even if only briefly. These social media influencers gain their fame primarily through the creation and dissemination of popular content, which can range from reaction images and videos to GIFs and textual posts that resonate emotionally with audiences, encouraging online sharing (Mándli et al., 2022).

Several key factors contribute to the effectiveness and influence of an Internet celebrity, including their aesthetic appeal, credibility, attractiveness, and expertise. These influencers play a crucial role in shaping the perspectives and behaviours of younger generations through various social media platforms. In modern China, the primary sources of information have shifted from traditional media to social platforms and new media. The concept of "Internet celebrity" in China has expanded beyond individuals to encompass scenic spots, events, food, stories, and even catchphrases. These "Internet celebrity elements" share characteristics of popularity, iconicity, and social significance. They refer to widespread online events, distinctive traits of protagonists (whether individuals or objects), or particular lifestyles or behaviours that are quickly adopted and emulated by the public (Zhang, 2022). These elements, rooted in everyday life, capture attention through their connection to social life, influencing societal values and behaviours.

Defining these influencer elements can be challenging due to their multifaceted nature. They include aspects such as hair, clothing, patterns, colours, slogans, iconic visual elements, movements, behaviours, gestures, music, videos, paintings, and ideas. These elements often serve as graphic depictions of unique lifestyles that are widely imitated (Mándli et al., 2022). The phenomenon of Internet celebrities and their associated elements has significantly impacted society, particularly in shaping sustainable production strategies. They have the power to drive commercial value, prompt innovative shifts in traditional business models, and influence societal values and behaviours. However, while their reach and influence are undeniable, it is essential to consider the ethical implications of their influence on consumer behaviour and its impact on sustainable production and consumption patterns.

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## Elements for Cultural Product Design

The objective of designing cultural products is to convert intangible cultural components into a sophisticated and lucrative sector. By rooting itself in cultural characteristics, this method incorporates cultural peculiarities and uniqueness into freshly created products, endowing them with cultural significance that creates economic worth through innovative design. The genesis of the "cultural and creative industry" can be traced back to Western countries in the 1990s. Nevertheless, because to the swift progress of globalisation, this concept has transformed into a thriving sector in the 21st century. Specifically, the cultural and creative industry in China has become a rapidly expanding sector (Xuemin et al., 2023). In the current era of digitalisation, propelled by the rapid expansion of network technology and electronic commerce, online influencers have emerged as a dominant and influential phenomenon. The emergence of phenomenal best-selling items, such as "blind boxes" and "internet influencer cultural products," can be attributed to the significant impact of these online celebrities. Consequently, the integration of internet influencer features has had a substantial influence on the cultural product markets in China and worldwide, leading to market expansion and fostering wider recognition of cultural product design.

The unique cultural and historical background of China offers a means to strengthen the competitiveness of its cultural sector through the creation of products that possess distinctive Chinese attributes. Cultural products, which have significant cultural meanings, are highly esteemed, surpassing the value of mono-functional items. When contrasted with Western systems, traditional Chinese elements possess even more profound cultural significance. The Industrial Revolution, characterised by the shift from conventional artisanal processes to industrial mass manufacturing, profoundly transformed human way of life. The cultural implications of consumer goods generally dictate their worth, and their source is usually associated with the media from which they originate. Innovative ideas can be transformed into physical goods, and identifiable symbols can promote recognition. Nevertheless, contemporary cultural product design frequently suffers from an abundance of formality, a dearth of variety, and inadequate depth of content design. Far too frequently, cultural history is only taken into account after the design phase, and the practicality is not sufficiently addressed during the design process. Furthermore, the duplication of groundbreaking concepts gives rise to apprehensions regarding the safeguarding of designers' lawful rights and interests (Shunmei & Zahari, 2022).

Consumers choose things based on a range of criteria, such as functional usefulness, cultural importance, visual attractiveness, and emotional worth. The emotional characteristics of a product have the potential to generate considerable consumer interest, particularly when they elicit a powerful emotional reaction. Cultural connotations are of utmost importance in this regard. Every nation possesses distinct characteristics and a profound cultural heritage, which can function as a tremendous reservoir of creative inspiration and innovation. The integration of these creative components into cultural product design can be achieved with great effectiveness. Implementing internet influencer features into the design of Yingjing black sand items, for instance, has the potential to enhance the success of product development. Utilising the vast communication reach of the internet could more effectively increase awareness of Yingjing black sand, therefore attracting more attention and promoting market expansion. The implementation of this strategy would facilitate the holistic advancement of the conventional handicraft sector. In the contemporary global internet culture, characterised by limitless network effects, designers should take into account the internet influencer phenomena in order to augment their goods. Thus, to adhere to the design concept, the work should deliberately include these elements in its creative approach and environmental sustainability.

## Environmental Sustainability

Environmental sustainability, a multidimensional concept of profound significance across diverse disciplines, endeavours to guarantee judicious resource utilisation, ecosystem conservation, and decrease of adverse environmental consequences. A construct suggesting a safe operating milieu for humanity proposes planetary limits within which human societies can achieve sustainable progression. Eminent scholars such as Rockström, J., and numerous others underscored the imperative of defining these constraints in 2009 to avert surpassing critical thresholds leading to irrecoverable ecological alterations (Brand & Wissen, 2018). Adger et al. (2013) stated clearly that through its 2030 Agenda for Sustainable Development, the United Nations had delineated 17 Sustainable Development Goals (SDGs), issuing a worldwide request for action. It necessitates the symbiotic

integration of environmental sustainability with social and economic dimensions to secure a future of increased sustainability. The study accentuates the criticality of incorporating indigenous knowledge and cultural viewpoints into climate change adaptation strategies. The current scholarship primarily explores the longitudinal and causal influences of financial evolution and renewable energy consumption on environmental sustainability. This exploration occurs whilst maintaining control over technological innovation and economic growth within an international framework (Kirikkaleli & Adebayo, 2021). Technologically efficient production of goods is the fundamental tenet of the German industry's Industry 4.0 paradigm. However, environmental sustainability encounters threat due to air contamination, improper waste management, and excessive utilisation of raw materials, information, and energy in contemporary businesses.

Consequently, Industry 4.0 and its related technologies, including the Internet of Things (IoT) and cyber-physical systems, negatively affect the environmental sustainability (Oláh et al., 2020). Globally, sustainable development targets the mitigation of greenhouse gas emissions. Tackling climate change necessitates international cooperation, resulting in 196 nations pledging to champion climate change and greenhouse gas emissions reduction efforts at COP21 in Paris in December 2015. The central objective of the Paris Agreement is to constrain the temperature rise to below two °C above pre-industrial levels while endeavouring to limit it to 1.5°C (UNFCCC, 2016). China, the world's second-largest economy, reconciles environmental concerns with economic growth. As per World Bank statistics, China has been responsible for a 60% increase in global carbon emissions since 2000. Predictions for China's GDP in 2020 and 2030 are thrice and quintuple the figures of 2005, respectively (OECD, 2014). In its commitment to COP21 in 2016, China agreed to a reduction in CO<sub>2</sub> emissions by 60%-65% per GDP unit. For China to accomplish this objective, a comprehensive understanding of the sources of CO<sub>2</sub> emissions is indispensable. This situation demands the implementation of green chemistry and engineering principles into product design, raw materials, and manufacturing processes under an environmental sustainability-focused performance standard. This transformative process mandates superior scientific innovation, a novel system-thinking approach, and system design that originates at the molecular level and exerts a positive global impact (Zimmerman et al., 2020).

Furthermore, China's cultural product design can significantly influence environmental sustainability, particularly within sustainable production in a green economy. Traditional Chinese design principles, which emphasise harmony with nature, minimalism, and respect for materials, are inherently aligned with sustainable production goals. By integrating these cultural design perspectives into global sustainability efforts, there is potential to foster innovative and practical approaches that contribute to the green economy. This alignment promotes environmentally responsible production practices and enhances the cultural richness and sustainability of the products, making them valuable contributors to a more sustainable and ecologically balanced global economy.

### **Sustainable Production in a Green Economy**

The critical texts on sustainable production, such as Schaltegger and Sturm (2020), Ehrenfeld (2007), and Frosch and Gallopoulos (1989), explore the effective use of resources, the transformative potential of challenging consumerism, and the incorporation of ecological principles in industrial processes, respectively. The green economy literature, including seminal work by Pearce, Markandya, and Barbier (1989), the UNEP report (2011), and Edenhofer et al.'s report for the IPCC (2014), stresses the importance of integrating sustainability in economic planning, achieving social equity while reducing environmental risk, and the role of carbon pricing and renewable energy. The confluence of sustainable production and the green economy is discussed by Flammer (2019), Borel-Saladin and Turok (2013), and Geels et al. (2017), emphasising the potential of green bonds, the need for holistic transformation and the roadmap for decarbonising high-carbon industries. These works collectively advocate for a strategic shift from ecologically detrimental practices towards sustainable development and climate change mitigation through a comprehensive transformation of production systems and economies.

In conclusion, historically, the creation and production of Yingjing black sand products have been integral to the region's cultural identity (Ying. W et al., 2020; Yang. G et al., 2004). Despite challenges the industry faces, including outdated production methods and the need for a more substantial online presence, these products' unique manufacturing processes and environmental benefits underscore their potential for sustainable

production strategies. The rise of the Internet has led to a surge in online celebrity or 'Wang Hong' influence, especially in China (Zhang, 2022; Yang, X. 2022). These Internet celebrities or influencers have demonstrated the capacity to drive sustainable commercial value and prompt innovative shifts in traditional business models (Wenjun & Lu, 2021; Alexander P. S et al., 2004). Their ability to create content that resonates with audiences and effectively reflects emotions has been crucial to their widespread impact (Ágnes Z et al., 2018). Internet celebrities have thus become essential in the shift from traditional media to social platforms and new media for information consumption. The concept of 'Internet Celebrity Elements' has been identified as an aspect that can enhance the effectiveness and influence of these influencers. These elements, including aesthetics, credibility, attractiveness, expertise, and unique lifestyle representation, can be incorporated into the design and promotion of Yingjing black sand crafts. However, it is crucial to consider the ethical implications of these influencers' sway over consumers and the subsequent effects on sustainable production and consumption patterns.

Overall, integrating Internet Celebrity aspects into the design and marketing of traditional crafts like Yingjing black sand could provide a promising strategy for sustainable production. However, future research must explore practical ways to incorporate these aspects while considering the impacts on consumers and the environment. This would involve striking a balance between capitalising on the influential power of Internet celebrities and maintaining the ethical integrity of sustainable production practices.

## METHOD

This research employs a practice-based methodology rooted in design research principles. The method comprises three primary stages: preliminary research, practice-based exploration, and product design evaluation, which are further broken down into a series of steps as outlined below:

### Preparatory Research

The initial stage involves extensive qualitative research focusing on two main areas:

- 1) **Product Analysis:** In-depth examination of Yingjing black sand products, investigating their manufacturing processes, historical significance, cultural connotations, and aesthetic properties. This also includes reviewing previous academic research, books, documents, local government agencies records, newspapers, and other reliable online resources.
- 2) **Audience Analysis:** Comprehensive evaluation of potential audiences, especially those aged between 20 and 35. This includes conducting interviews and surveys to understand their preferences, buying behaviours, and susceptibility to the influence of internet celebrity elements.

### Practice-based Exploration

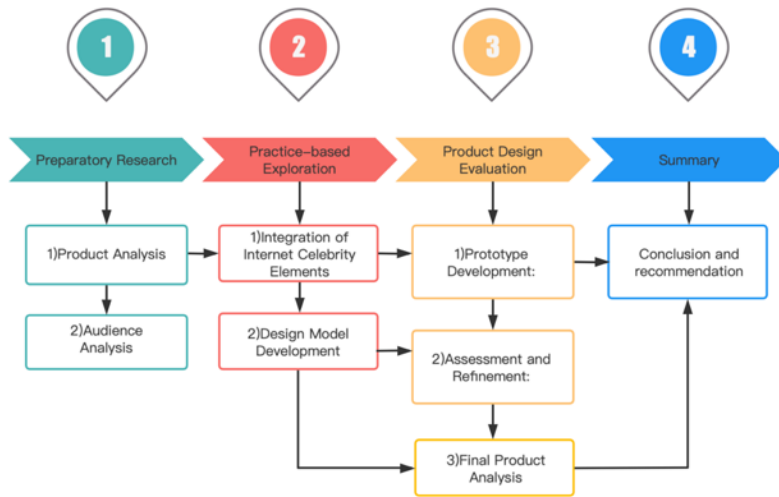
- 1) **Integration of Internet Celebrity Elements:** Based on the insights obtained from preliminary research, Internet celebrity elements are incorporated into the design of contemporary Yingjing black sand products. The aim is to create a bridge between traditional craft and modern culture, capturing the interest of the targeted consumer base.
- 2) **Design Model Development:** Utilizing the information and insights from the first step, a novel design model is developed with Yingjing black sand pots serving as the primary object of design practice and exploration. The model combines traditional craftsmanship with contemporary aesthetics informed by Internet celebrity culture.

### Product Design Evaluation

- 1) **Prototype Development:** Initial design ideas are transformed into physical prototypes, allowing for tangible evaluation and testing. These prototypes aim to demonstrate the feasibility and potential success of integrating Internet celebrity elements into Yingjing black sand craft designs.
- 2) **Assessment and Refinement:** Through a series of evaluations involving direct observation, interviews, and case studies, the effectiveness of the design model is gauged. Feedback is used to refine the design model and the resulting product.

3) Final Product Analysis: The final stage involves critically analysing the completed product design resulting from this design practice. This analysis focuses on the practicality of the design model, its significance for the future of Yingjing black sand crafts, and its potential impact on sustainable production strategies.

The research methodology presented here aims to achieve a delicate balance between cultural preservation and contemporary relevance. It prioritises integrating internet celebrity elements into Yingjing black sand craft design, fostering an innovative and sustainable production strategy. Moreover, the research method process is illustrated in Figure 2.



**Fig. 2.** The research method process.

## FINDINGS

### Research Design Model

This research is partitioned into a tripartite model, which aims to incorporate the elements of ‘Internet Celebrity’ into the design of Yingjing black sand crafts sustainably. Each of the three segments forms a sequential, process-oriented framework comprising unique steps that are closely linked and intertwined. The details of these parts are delineated below:

**Part I: Extraction of Internet Celebrity Characteristics and Semantic Analysis:** The inaugural phase of this research delves into the identification and abstraction of Internet celebrity's distinguishing features. This part includes two steps:

- a) **Characteristic Analysis of Target Internet Celebrity:** The inaugural step in the research process requires a comprehensive evaluation of the traits and attributes distinguishing a target Internet celebrity. These unique characteristics are converted into semantic elements or words that epitomise these features.
- b) **Analysis and Synthesis of Poetic Image Elements:** The subsequent step requires a meticulous study of the elements constituting the poetic expressions derived from the celebrity characteristics. The intrinsic features of these words are then extracted and represented visually.

**Part II: Shape Semantics Extraction of Internet Celebrity Elements:** The second phase of the research design focuses on extracting and analysing shape semantics from the elements associated with the Internet celebrity. This part comprises three steps:

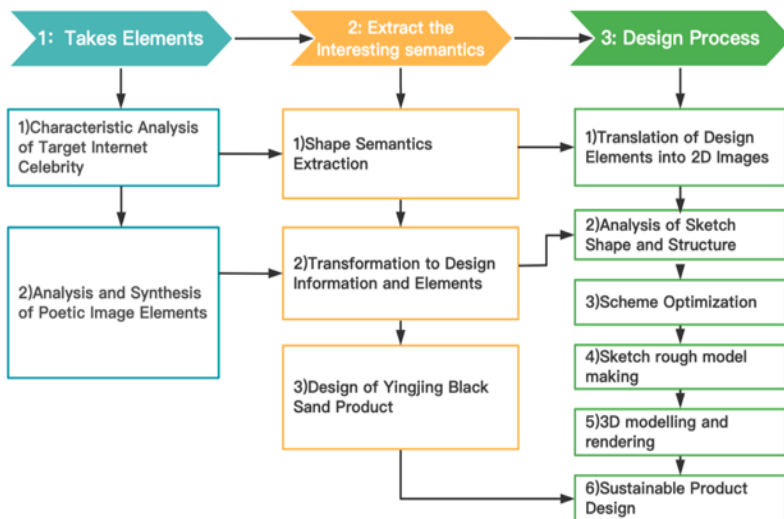
- a) **Shape Semantics Extraction:** The shape semantics or visual representations are extracted from words that epitomise the Internet celebrity's traits.
- b) **Transformation to Design Information and Elements:** These semantics are then translated into design information and elements, providing the groundwork for the design process.

c) Design of Yingjing Black Sand Product: Finally, a design for a Yingjing black sand craft is produced, taking inspiration from the analysed Internet celebrity elements.

Part III: Sustainable Design Process: The final phase of this research is dedicated to applying the sustainable design process. This involves five steps:

- a) Translation of Design Elements into 2D Images: The design elements identified in the previous phase are translated into 2D images, providing a blueprint for the design.
- b) Analysis of Sketch Shape and Structure: This step involves critically analysing the shape and structural integrity of the sketches derived from the 2D images.
- c) Scheme Optimization: Based on the analysis, the design scheme optimises, ensuring its alignment with sustainability practices.
- d) Sketch rough model making: Conduct research on form design by creating and modifying rough models.
- e) 3D modelling and rendering: Once the sketch has been revised, draw the approximate shape of the casserole from the illustration. Then, provide details and adjust the casserole’s exact shape and size. Give the casserole a black sand texture and the handles on the lid a wooden texture. At last, render the colour of the casserole and create the effect.
- f) Sustainable Product Design: Finally, a sustainable Yingjing black sand craft is designed. This product, inspired by the Internet celebrity aspects and optimised through sustainable practices, represents a novel fusion of contemporary culture and traditional craft.

This work design model, thus, embodies a comprehensive and systematic approach to incorporating the elements of ‘Internet Celebrity’ into the sustainable production of Yingjing black sand crafts. This work ensures the sustainability of Yingjing’s traditional crafts while adapting to contemporary cultural trends. The following design model of Yingjing black sand product, which is based on the internet celebrity elements, will assist to understand the relevant design process previously proposed in this paper, as shown in Figure 3:



**Fig. 3.** Internet Celebrity Elements Infused Design Model for Yingjing Black Sand Products.

### Practice of the Design Model

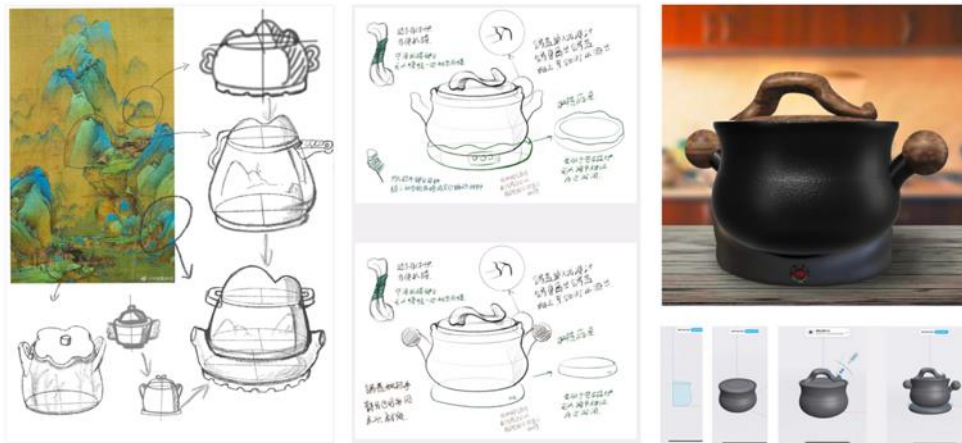
This research project explores integrating internet celebrity characteristics into the design process of Yingjing black sand products. Utilising the existing design model framework, an experimental design practice was conducted to assess the model’s practicality. Engaging a group of 13 students from the Department of Industrial Design, this design experiment spanned more than 48 class hours over 30 days. All the professors are affiliated with the Chengdu Academy of Fine Arts, situated in Chengdu City, Sichuan Province, China, and the students are divided into seven academic cohorts (see Figure 4).





**Fig. 4.** Students working for this practice.

As a result of the design practice, there is a design work called “Green Rivers and Hills Pot”, as shown in Figure 5, which was inspired by the 2022 internet celebrity painting “Thousands of Rivers and Mountains” in China’s social platform, the casserole takes its cue from the rolling hills and the turquoise colours of the mountains and rivers in the picture. The casserole lid comprises two mountains, with a concave shape in the middle to hold the spoon and chopsticks: soft curves and a user-friendly design.



**Fig. 5.** Green Rivers and Hills Pot.

This Design inspiration for the Yingjing black sand pot draws from the depiction of mountains and the graceful forms of dancing women in the internet celebrity painting “Thousands of Rivers and Mountains”. This seminal artwork offered crucial elements for envisaging the shape of the proposed sand pot design. After extensive study and deliberation, a preliminary sketch was selected to refine the design further. The artful lines in the “Thousands of Rivers and Mountains” painting were extracted to sculpt the form of the pot lid and body. A critical improvement included adding or changing material for the handle and the pot lid to prevent burns. This design evolution was crucial in achieving an aesthetic resonance between form and functionality. The final Yingjing black sand pot design, derived from the combination of the Thousands of Rivers and Mountains Dance’s maiden’s hair bun and the depiction of landscapes in the painting, exhibits an elegant curvature. Incorporating the image onto the pot’s body, combined with a pot lid handle design inspired by the hair bun, adds a harmonious touch to the overall design. The black sand pot lid adopted the undulating feel of the green mountains, while the handle underwent modifications for better grip and ergonomics. The optimisation process ensured the handle was aligned with the natural form of a hand grip and made the overall body of the pot rounder. The heating base was designed with undulations, mimicking the shape of a mountain. Following the completion of the sketch modification, a 3D modelling process was implemented:

- 1) The general shape of the sand pot was first delineated based on the refined sketch.
- 2) This shape was then adjusted to fine-tune the sand pot’s specific form, size, and intricate details.
- 3) The sand pot was created with the distinctive texture of black sand, and the lid handle was given a wooden surface.

4) Finally, colour rendering was applied to the sand pot, and a final visualisation was produced.

For the final rendering process:

- 1) The sand pot's form was established based on the modified sketch.
- 2) The sand pot's specific shape, size, and details were adjusted accordingly.

The material for the sand pot was carefully selected, ensuring harmony between the product and the environmental light source. The handle and pot lid section were made of wood, effectively providing insulation against heat. The overall design aesthetic stayed true to the depiction of the green mountains and the nameless 'Green Thousand Years of Infinite Mountains and Rivers' theme. This design embodies the sustainable approach towards incorporating the elements of 'Internet Celebrity' into the traditional Yingjing black sand craft design. Fusing modern cultural elements with traditional craft practices ensures sustainability while embracing contemporary trends.

This research explored the innovative concept of integrating 'Internet Celebrity' elements into the traditional design process of Yingjing black sand products. The study has successfully validated the model's viability by employing a design framework, qualitative data, and an experimental design practice. The design practice engaged students of Industrial Design at the Chengdu Academy of Fine Arts, promoting collaboration and innovation for a month. The exercise culminated in a creative piece, the "Green Rivers and Hills Pot", inspired by the internet celebrity painting "Thousands of Rivers and Mountains". The design embodies an aesthetic harmony, pairing the picturesque imagery of the painting with user-friendly elements to optimise form and functionality. The undulating form of the pot lid and the ergonomic handle design echo the painting's landscapes, enhancing the pot's cultural resonance and practicality. Furthermore, the 3D modelling process provided valuable insights into fine-tuning design elements, such as form, size, and material texture, ensuring a final product that aligns with environmental sustainability principles and consumer aesthetics. This investigation illuminates the potential of merging traditional craft practices with contemporary cultural elements. The resulting design highlights the opportunities that digital influence, embodied in the 'Internet Celebrity' aspects, can bring to revitalising and sustainably advancing traditional crafts. This exploration is a practical reference point for future endeavours to fuse sustainability, cultural richness, and digital influence in product design.

## DISCUSSIONS

The study presents a novel approach to infusing modern cultural elements into traditional crafts. By integrating characteristics derived from 'Internet Celebrity', the research design offers a potential pathway for the sustainable revitalisation of Yingjing black sand crafts. The systematic three-part framework introduced in the study is a unique method that aligns contemporary popular culture with traditional artistry, demonstrated by creating a Yingjing black sand product. In this context, the characteristics of Internet celebrities serve as a conduit for cultural influence, representing a shift from conventional design inspirations. This innovative blend has implications for the Yingjing black sand craft industry and broadly for traditional arts and crafts sectors. It suggests that sustainable production strategies can be employed to respect and preserve traditional crafts while making them adaptable and appealing to modern aesthetics. Integrating 3D modelling technology in the design process highlights the potential of digital tools in enhancing craft design, allowing for greater precision, versatility, and adaptability. As described in the research, the successful use of such technologies could encourage further innovation and adoption of digital design tools in traditional craft fields. The research's focus on sustainability underscores the need for environmentally responsible practices in craft design and production. The iterative design process and the choice of materials and manufacturing methods reflect a conscious effort to reduce the environmental impact, establishing a model that other craft industries could emulate. However, applying the 'Internet Celebrity' characteristics in traditional craft design also raises questions regarding the longevity and permanence of such a design strategy. Internet trends and celebrities are often transient, suggesting that this approach must be continually updated or adapted to remain relevant.

Further research could examine the receptiveness of various consumer groups to this fusion of modern and traditional elements. It could also investigate the application of this model to other forms of traditional crafts

and industries. In summary, the paper offers a compelling starting point for discussing the sustainable evolution of traditional crafts in the digital age.

## CONCLUSION & RECOMMENDATIONS

The present work undertakes a distinctive investigation into integrating modern cultural components with conventional industrial methods. This novel methodology revitalises the Yingjing black sand craft sector, showcasing the possibility for other conventional crafts to embrace comparable principles. The tripartite model of the research design has proven to be an efficient approach for incorporating the key attributes of 'Internet Celebrities' into conventional craft design. Furthermore, it presents a systematic practice-based approach for sustainable production that recognises and values the historical importance of the craft while enabling it to adjust and flourish in the contemporary context. Integrating contemporary 3D modelling methods into conventional craft design demonstrates the substantial influence of digital technological instruments in augmenting creativity and accuracy. The report also emphasises the need to incorporate sustainability into design and production, indicating a more ecologically aware future for the craft sector. Based on the findings derived from the study, the subsequent suggestions are put forward for future investigation and application: 1. Ongoing Adjustment: Considering the temporary character of 'Internet Celebrity' trends, it may be necessary to regularly evaluate and modify the design model to guarantee its continued relevance. 2. Wider Applicability: The model proposed in this study has the potential to be extended to other conventional crafts. Future research might investigate the model's adaptation to various crafts and environments. 3. Consumer Reception: Additional research should examine the consumer response to these products, as this will offer a valuable understanding of the market feasibility and future modifications required in the design or manufacturing process. 4. Sustainability Practices: It is essential to maintain a continuous emphasis on sustainable production technologies. The overarching objective of environmental conservation is that future studies might investigate novel methods to improve the sustainability of both design and manufacturing processes. 5. Technological Integration: The effective incorporation of 3D modelling in this study implies that additional investigation of digital design tools in conventional crafts may be advantageous. Indeed, to further enhance the sustainable revitalisation of traditional crafts, as exemplified by the design of Yingjing black sand craft in this study, these suggestions are anticipated to be executed.

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