

EMPOWERING ETHNIC FOOTWEAR ARTISANS THROUGH CO-DESIGN: A CASE STUDY ON TRADITIONAL QIANG FOOTWEAR

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ABSTRACT. Co-design is one of the effective ways to support the innovation of ethnic footwear artisans. Taking the design of traditional shoes and boots of Qiang ethnic group as an example, this study collected field data through observation method and semi-structured interview method, explored the innovation dilemma of ethnic artisans by thematic analysis method. The research reveals a triple dilemma in the innovation of ethnic footwear artisans characterized by suppressed aesthetic self-determination, frozen cultural consciousness, and constrained technological autonomy. To address these challenges, three co-design principles are proposed in this study with ethnic footwear artisans—“Aesthetic Equity”, “Cultural Liberation”, “Technological Replenishment” and six related action steps to guide designers, ethnic footwear artisans, and other stakeholders towards a clear direction in co-design.

KEY WORDS: ethnic footwear artisans; co-design innovation dilemmas; co-design principles; traditional Qiang footwear

ÎMPUTERNICIREA MEȘTEȘUGARILOR ETNICI DE ÎNCĂLȚĂMINTE PRIN CO-DESIGN: UN STUDIU DE CAZ DESPRE ÎNCĂLȚĂMINTEA TRADIȚIONALĂ QIANG

REZUMAT. Co-designul este una dintre modalitățile eficiente de a sprijini inovația meșteșugarilor etnici de încălțăminte. Luând ca exemplu designul pantofilor și cizmelor tradiționale ale grupului etnic Qiang, acest studiu a colectat date prin metoda de observare și metoda interviului semistructurat, a explorat dilema inovației a meșteșugarilor etnici prin metoda analizei tematice. Cercetarea dezvăluie o triplă dilemă în ceea ce privește inovarea în cazul meșteșugarilor etnici de încălțăminte, caracterizată prin autodeterminare estetică suprimată, conștiință culturală blocată și autonomie tehnologică restrânsă. Pentru a aborda aceste provocări, în acest studiu sunt propuse trei principii de co-design în cazul meșteșugarilor etnici de încălțăminte — „Echitate estetică”, „Eliberare culturală”, „Reaprovizionare tehnologică” și șase etape de acțiune aferente pentru a ghida designerii, meșteșugarii etnici de încălțăminte și alte părți interesate spre o direcție clară în co-design.

CUVINTE CHEIE: meșteșugari etnici de încălțăminte; dileme de inovare în co-design; principii de co-design; încălțăminte tradițională Qiang

RENFORCER LES ARTISANS DE CHAUSSURES ETHNIQUES PAR LA CO-CONCEPTION : UNE ÉTUDE DE CAS SUR LES CHAUSSURES TRADITIONNELLES QIANG

RÉSUMÉ. La co-conception est l'un des moyens efficaces de soutenir l'innovation des artisans de chaussures ethniques. Prenant comme exemple la conception de chaussures et de bottes traditionnelles du groupe ethnique Qiang, cette étude a recueilli des données par la méthode d'observation et la méthode d'entretien semi-structuré, et a exploré le dilemme d'innovation des artisans ethniques par la méthode d'analyse thématique. La recherche révèle un triple dilemme dans l'innovation des artisans de chaussures ethniques caractérisé par une autodétermination esthétique supprimée, une conscience culturelle bloquée et une autonomie technologique limitée. Pour relever ces défis, trois principes de co-conception sont proposés dans cette étude avec des artisans de chaussures ethniques : « Équité esthétique », « Libération culturelle », « Réapprovisionnement technologique » et six étapes d'action connexes pour guider les concepteurs, les artisans de chaussures ethniques et d'autres parties prenantes vers une direction claire dans la co-conception.

MOTS CLÉS : artisans de chaussures ethniques ; dilemmes d'innovation en co-conception ; principes de co-conception ; chaussures traditionnelles Qiang

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INTRODUCTION

The development of ethnic attire owes much to the key role of ethnic artisans and their innovative practices. An increasing number of ethnic artisans are collaborating with external partners, such as designers, fashion companies and cultural institutions, to modernize ethnic clothing. The collaboration between tradition and modernity has revitalized ethnic clothing and empowered artisans by providing them with new platforms and opportunities to display their work. In the relevant practice and theoretical research, the co-design of ethnic artisans and designers has achieved rapid development. For example, Tung [1] investigated the co-design process between designers and artisan groups, suggesting that their collaboration facilitates the mutual acquisition of new knowledge. Liao, Liu and Li [2] analysed the collaborative behaviors and practices between ethnic artisans and fashion designers, elucidating the mechanisms underlying their co-design. Wang and Zhang [3] focused on the co-design processes and outcomes, exploring the empowerment and disempowerment dynamics of ethnic artisans in co-design. All the above research studies emphasize the observation and exploration of the existing co-design process. However, before entering into collaboration, it is unclear how the two sides will define the direction of co-design.

While co-design holds great promise, the process of building a shared vision and mutual understanding is often fraught with challenges. Research shows that in many collaborative projects, the direction of co-design is usually determined by the more authoritative designer. These designers often have greater resources and influence and can mask the voices of minority artisans, leading to the challenges and needs of these artisans being ignored. Input and demand from ethnic artisans were marginalized, preferring to meet the needs of mainstream designers to produce more commercially viable products. However, co-design emphasizes meeting the needs of all stakeholders [4], but this process can lead to the dilution of cultural authenticity

and the exploitation of traditional knowledge without proper recognition. The contributions and expectations of all parties may not be fully reflected in the final product. While such collaborations may succeed in the market, they often fail to truly represent the rich heritage and intricate craftsmanship of indigenous communities.

To address these issues, it is essential to implement co-design theories that ensure equitable participation. This includes establishing clear communication channels, setting shared goals, and creating feedback mechanisms throughout the project. By fostering an inclusive and respectful design environment, collaboration can genuinely honor tradition while driving innovation.

This paper uses the traditional footwear design of the Qiang ethnic group in Maoxian, Sichuan, as a case study. By understanding the challenges and needs faced by Qiang footwear artisans, it proposes co-design principles centered on the artisan community. These principles provide practical guidelines for designers, helping all stakeholders clearly define the direction of co-design.

THEORY

The definition of co-design emphasizes the active involvement of all stakeholders in the design process. To achieve this, co-design methodologies have evolved from participatory design to generative design, developing various theories. At their core, these theories focus on collaboration to meet the needs of different projects [5, 6], thereby improving the quality of design outcomes [7]. Additionally, these theories align with social innovation frameworks, highlighting design as a tool for social change, particularly in using innovative approaches to improve the conditions of marginalized groups [8]. As a result, contemporary design not only explores the development of methods and tools but also addresses issues of social equity, cultural preservation, and innovation, with greater emphasis on supporting disadvantaged communities through design [9].

In the context of globalization, people are more concerned than ever about the

preservation and dissemination of cultural heritage and how to adapt it to the needs of modern society [10]. Ethnic artisans, though often in a weak position in history, played a crucial role in this process. They are the inheritors of traditional culture and the promoters of cultural innovation [11]. Recognizing this, governments and non-governmental organizations are increasingly providing policy support and funding, including community engagement, rural revitalization and design intervention, to promote the development of jointly designed projects aimed at preserving and enhancing ethnic cultures [12].

Under the framework of co-design, what designers should do is support the innovative needs of ethnic artisans and ensure that the creative process is truly collaborative and inclusive. This shift requires designers to have not only technical expertise, but also cultural sensitivity and the ability to harness and respect the rich cultural context of artisan work. Correspondingly, the active involvement of ethnic artisans fosters a deeper sense of belonging and pride in the final product, which in turn helps to preserve and develop traditional craftsmanship.

Therefore, co-design has great potential to support innovative design practices of disadvantaged groups, especially for ethnic artisans. As both theory and practice continue to develop, co-design methods are becoming vital tools for promoting social equity and cultural preservation. Moving forward, with further research and practical application, co-design is poised to play a unique role in a broader range of fields.

METHODS

Case Study

Due to the widespread distribution and large number of ethnic artisan communities, obtaining a comprehensive overview presents challenges. Therefore, this study conducted in-depth case studies [13] focusing on the ethnic footwear artisan community in Qiang ethnic regions. Between May 2023 and November 2023, our research team

conducted three field surveys in the Qiang ethnic region of Maoxian County, Sichuan Province. First-hand data were collected through observational methods (with observation periods totaling over 15 hours) and semi-structured interviews (with over 20 participants and recordings exceeding 650 minutes) [13]. Thematic analysis [14] was employed to identify concepts beneficial to the research. Analysis of the interview texts revealed six codes and three categories, serving as evidence to understand the innovation dilemmas faced by ethnic footwear artisans.

Case Description

Case studies emphasize the typicality of cases and their relevance to the research questions. Following this principle, this study selected four sources of interviewees (Figure 1): (a) the Qiang footwear market on Qiangxing Avenue. This is the only place in Maoxian County where Qiang footwear are sold in bulk, catering to surrounding towns and villages. Respondents P1 to P5, P19, and P20 were sourced from this scene; (b) the Ancient Qiang City on Wutai Road. Hundreds of Qiang villagers work here wearing Qiang footwear, gathering in rest areas during breaks to embroider and make traditional Qiang clothing. It serves as a dynamic display of Qiang clothing culture and craftsmanship. Respondents P6 to P14 were sourced from this scene; (c) the West Qiang Embroidery Workshop in Qingtawan. Hundreds of Qiang embroiderers are employed here, with a personal collection and exhibition room of Qiang footwear and boots. Respondent P15 was sourced from this scene; (d) the Qiang Embroidery Training Center on Wutai Road. This center, part of the Maoxian Intangible Cultural Heritage Training Center, has respondents P16 to P18. Among the respondents, P5 is a provincial-level inheritor of intangible cultural heritage, while P15 and P18 are national-level inheritors. These three respondents have a high demand for innovative ethnic footwear products and several years of co-design creative experience. In summary, the aforementioned research

scenes possess the following advantages: they are closely related to the research subject, exhibiting strong typicality; they provide a large number of observable research samples closely related to the research topic; and by

sampling interviews within a limited space and scope, the research can be streamlined while still providing a relatively comprehensive reflection of the challenges faced by Qiang artisans within these scenes.



Figure 1. (a) Qiang footwear market; (b) The Ancient Qiang City of China; (c) Xiqiang Embroidery Workshop; (d) Qiang Embroidery Transmission Centre. Photo credit: The author.

In this study, we consulted several provincial and national intangible cultural heritage inheritors from China, who are highly respected in traditional embroidery and handmade footwear, with decades of exceptional experience. These experts participated as consultants, providing unique cultural insights that informed the development of the co-design principles. Their involvement ensured the cultural authenticity and continuity of craftsmanship throughout the research process. By combining interviews, collaborative workshops, and feedback sessions, we gathered expert opinions that added significant depth to our findings, ensuring that the proposed solutions were well-grounded in both theory and practice, and tailored to the specific needs of ethnic footwear artisans.

Case Analysis

The specific steps undertaken in this study are as follows: (1) Referring to relevant domestic and international research,

designing interview outlines, conducting pre-interviews, and refining semi-structured interview outlines; (2) Drawing research maps to determine sources of interviewees and research scenes; (3) Engaging in extensive conversations with individuals of different age groups within the research scenes, selecting suitable interviewees for subsequent research; (4) Conducting semi-structured interviews with 20 selected interviewees, collecting data with their consent through recordings, videos, photographs, and notes, and supplementing the required information through targeted group interviews (two group interviews were conducted separately for interviewees P1 to P2 and P6 to P9); (5) Employing a three-tier coding system to analyze it, as illustrated in Figure 2; (6) Assessing the saturation of the coding scheme, followed by conducting semi-structured interviews with three randomly selected interviewees, which did not reveal any new codes, categories, or relationships.

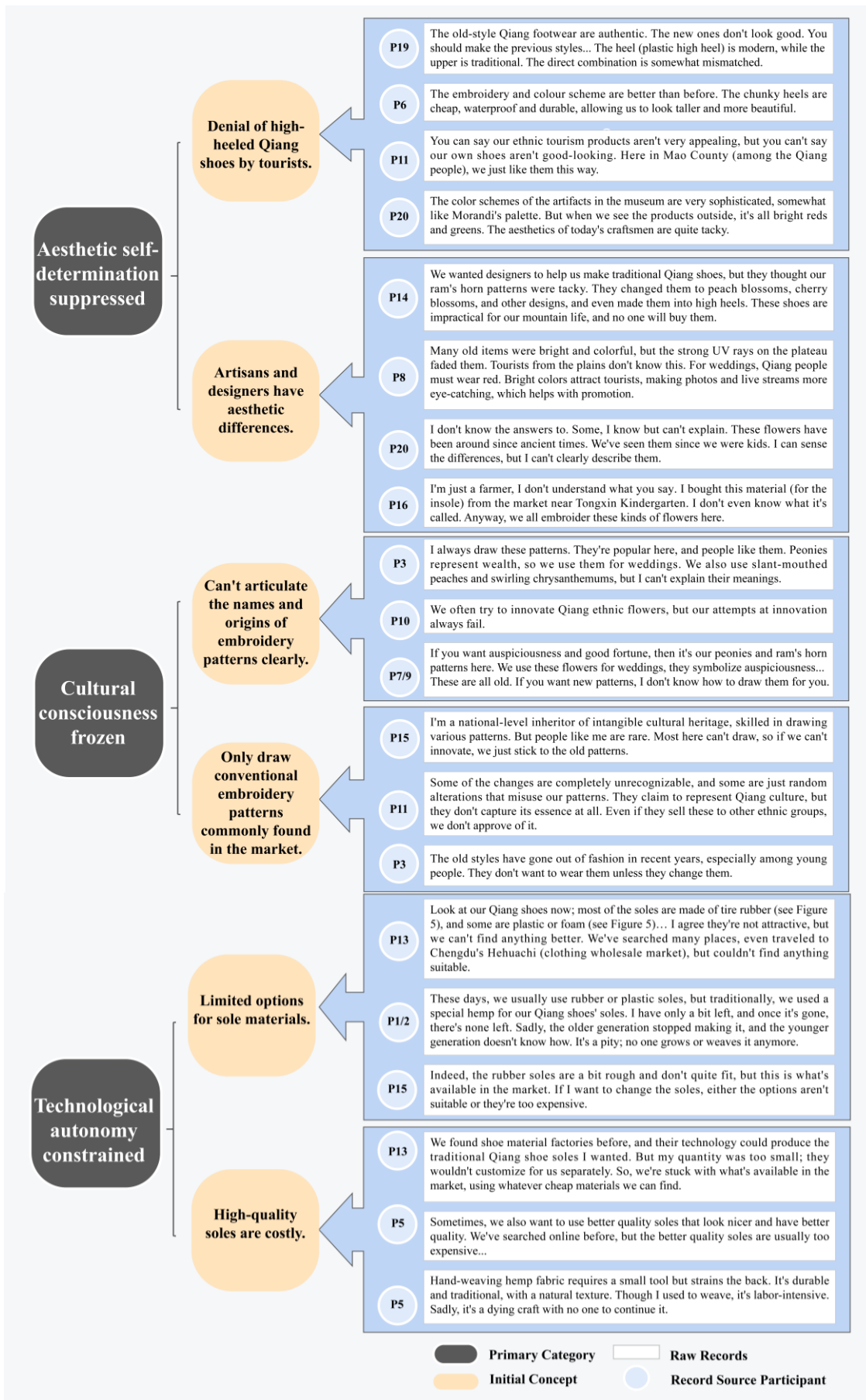


Figure 2. Coding process

FINDINGS

Dilemma 1: Aesthetic Self-Determination Suppressed

The thematic analysis results reveal that one of the innovation dilemmas faced by ethnic footwear artisans is the “aesthetic self-determination suppressed”. This refers to the situation where ethnic footwear artisans, in innovating their traditional ethnic attire, are subject to aesthetic judgments from external ethnic groups, thereby diminishing their autonomy in aesthetic decision-making regarding their own ethnic attire. In this study, this dilemma is primarily manifested through two codes: denial of high-heeled Qiang footwear by tourists and aesthetic disagreements between artisans and designers.

With the development of tourism and improvement in living standards in Qiang ethnic regions, Qiang people have increasingly been exposed to foreign cultures and information, leading to shifts in their demands and aesthetics concerning traditional attire [15]. To address these changes, ethnic footwear artisans in Maoxian County have modified traditional Qiang footwear, such as replacing the traditional hemp soles with plastic high heels. However, these changes have faced rejection from outsiders, with some even suggesting a return to the old styles. For instance, in the Ancient Qiang City, when a Qiang footwear artisan (P4) showcased high-heeled Qiang wedding footwear made for her daughter, a tourist (P19) raised doubts, stating, “The old-style Qiang footwear are authentic. The new ones don’t look good. You should make the previous styles... The heel (plastic high heel) is modern, while the upper is traditional. The direct combination is somewhat mismatched.”

The Qiang footwear artisan (P4) later remarked, “The old styles are outdated here, especially among the younger generation who resist them. They are unwilling to wear them.” Additionally, a footwear artisan (P6) mentioned, “The embroidery and color matching of the new high-heeled footwear are more refined than before. These thick high heels are cheap and durable, waterproof, and can make us look tall and beautiful.” Similar situations occur frequently. The subjective aesthetic judgments of foreign tourists towards Qiang ethnic attire often leave Qiang artisans feeling helpless. An artisan (P11) stated, “You can say that our tourist products are not beautiful, but you cannot say that the footwear we wear are not beautiful. We (Qiang people in Maoxian County) just like them this way.”

Moreover, there exist aesthetic disagreements between artisans and designers regarding the innovation of traditional Qiang attire. Some designers insist that ethnic attire should maintain the traditional forms they envision. For example, a designer (P20) told the research team, “The color schemes of the artifacts in the museum are very sophisticated, somewhat like Morandi’s palette. But when we see the products outside, it’s all bright reds and greens. The aesthetics of today’s craftsmen are quite tacky.” In contrast, an artisan (P8) voiced opposition, stating, “Many old items were bright at that time. The strong ultraviolet rays on the plateau fade colors, but tourists living on the plains don’t know that. Now, considering wedding ceremonies, we Qiang people must wear red, and bright colors can also attract tourists. Wearing them makes it easier for them to take photos and live broadcasts, attracting more attention for publicity.”



Figure 3. Traditional Qiang footwear and modern Qiang footwear (high-heeled). Photo credit: The author

The aforementioned situation is pervasive in ethnic regions, where external individuals often presumptuously assert that ethnic attire should adhere to traditional paradigms and remain unaffected by external cultures or contemporary trends. Indeed, the value of ethnic attire largely stems from its preservation of the cultural heritage and distinctive aesthetic symbols of the ethnic group accumulated over a long period. However, aesthetics is dynamic, and current traditional ethnic attire has undergone extensive evolution and innovation. Attire carrying historical and cultural significance can be preserved and displayed in museums, while the aesthetic autonomy of ethnic attire reflecting contemporary life needs should be entrusted to the people living in ethnic regions today. The external “aesthetic gaze” described above effectively excludes ethnic footwear artisans from the realm of aesthetic freedom and diversity, leaving them feeling powerless in the process of innovation.

Dilemma 2: Cultural Consciousness Frozen

The second innovation dilemma faced by ethnic footwear artisans is the “cultural consciousness frozen”. This term refers to the situation where many ethnic footwear artisans, in their innovative practices of ethnic attire, are unable to accurately discern and utilize the cultural context of the inherited skills. This dilemma is evident from the coding of inability to clarify the names and origins of embroidery patterns and only drawing conventional embroidery patterns for market circulation.

In this study, several ethnic embroidery footwear artisans were interviewed at the square of the Ancient Qiang City in China, revealing that most of them were unable to clearly identify the names of the embroidered patterns they were working on, let alone explain the significance of these patterns in Qiang culture. When asked about these issues, one respondent (P7) stated, “I bought this (shoe pad) material from the market near Tongxin Kindergarten. I don’t know what it’s called. Anyway, we embroider these kinds of flowers here.” Similar responses were observed in multiple interviews. Inspired by this, the research team visited the Qiang footwear market near Tongxin Kindergarten, observing and interviewing several artisans specialized in drawing and selling embroidery patterns. Through observation and comparison, it was found that the embroidered patterns sold at the booths of these pattern artisans were essentially similar to those embroidered by artisans in the Ancient Qiang City. However, when asked about the origin and names of the embroidered patterns, few pattern artisans could provide clear answers. For instance, when faced with this question, one respondent (P3) stated, “I have always been drawing these (embroidery patterns). Anyway, these are popular here, and the customers also like them... Peonies symbolize prosperity, and we use peonies for weddings here... Crooked-mouthed peaches (peach patterns with one side pointing upwards) and rotating chrysanthemums (abstract chrysanthemum patterns with rotating petals) are also frequently used. If you ask about the meanings, I can’t explain.”

Furthermore, when the research team assigned the task of creating a Qiang embroidery representing auspicious wishes to a friend moving into a new home and invited a pattern artisan (P3) to combine traditional Qiang embroidery patterns to create a new embroidery pattern, the artisan (P3)

responded, "If you want auspicious wishes, then it's our peonies and horns of the sheep. We use these flowers for weddings here, and they symbolize auspiciousness... These are all old patterns. I don't know how to draw new ones for you."



Figure 4. Ethnic footwear artisan with painted insole. Photo credit: The author

The main reason for the aforementioned dilemma is the self-identification of ethnic footwear artisans as "half-farmers and half-workers." Several respondents (P12, P13, P18) stated that they were merely farmers earning a living with their skills. During busy farming seasons, they need to harvest economic crops such as peppercorns and fruits in the fields and hillsides, and only set up stalls or take on work during agricultural downtime. In their view, making Qiang footwear is only for livelihood purposes; they do not see themselves as Qiang ethnic footwear artisans and lack a conscious cultural interpretation of Qiang ethnic attire. Indeed, in recent years, the government and some civil organizations have invested considerable funds in establishing learning classes to promote the inheritance and development of ethnic attire skills and culture among ethnic artisans. However, research has found that the participants in these classes are mainly teachers, designers, and individuals recognized by the government as inheritors of intangible cultural heritage, with limited participation from a larger base of ordinary ethnic artisans. Even if they participate, their most immediate demand is to learn a skill that can support their families,

thus showing little interest in the cultural theory courses offered by these classes. In conclusion, the cultural consciousness of ethnic footwear artisans is frozen in their self-identification as "half-farmers and half-workers".

Dilemma 3: Technological Autonomy Constrained

In addition to the aforementioned two dilemmas, the research results indicate that the "technological autonomy constrained" is also a significant challenge faced by ethnic footwear artisans in innovation. The term "Technological autonomy constrained" refers to the passive abandonment of ethnic footwear artisans' desire to enrich their creations with modern technology due to various limiting conditions. In this case, this dilemma is primarily analyzed from the coding of limited choice of sole materials and high cost of quality sole materials.

The commonly used materials for making traditional Qiang footwear soles, such as red hemp and yellow hemp woven fabrics, possess excellent breathability and unique texture due to their natural properties. However, influenced by

economic factors, the cultivation area of these crops has sharply decreased, and the manual production costs far exceed those of industrial materials, leading to the gradual decline of related traditional weaving techniques. During the interviews, respondents P14 and P15 showed the researchers their collected hand-woven hemp fabrics, stating, “I only have this bit of fabric left now. Once it’s used up, there won’t be any more. Nowadays, the elderly no longer make this kind of fabric, and the younger generation doesn’t know how to make it.” Faced with this situation, the Qiang footwear artisans have turned to seek alternative footwear materials. Respondents (P1, P2) stated, “Look at most of our Qiang footwear now; the majority of the soles are made of tire soles (made from discarded car rubber tires, see Figure 5 left), and some are made of plastic (Figure 5 center) and foam (Figure 5 right)... I also think they don’t look good, but we can’t find anything better. We’ve searched many places before, and

even went to Chengdu Hehuachi (a clothing wholesale market), but we couldn’t find anything suitable.” In addition to limited choices of materials, the cost of sole materials is also a factor considered by ethnic footwear artisans. A Qiang footwear artisan (P5) mentioned, “Sometimes we want to use better-quality soles, which look nicer and have better quality. We searched online before, but the better-quality sole prices were too high. Here, even if footwear are ten yuan more expensive, no one buys them... We found a shoe material factory before, and their technology could completely produce what I wanted (soles), but my quantity was too small, and they wouldn’t customize for us separately, so we could only do this; whatever is available (cheap materials) on the market, we use.” It can be said that due to the niche market demand, ethnic footwear artisans have very limited technological elements to autonomously choose from in the innovation process of ethnic attire.



Figure 5. Qiang footwear with three different soles (left: tire sole; middle: plastic sole; right: foam sole).

Photo credit: The author

DISCUSSION

In delving deeper into the academic discourse surrounding the challenges faced by ethnic footwear artisans, particularly in the context of traditional Qiang footwear design, it is imperative to engage with theoretical frameworks that can provide insight into the complexities of cultural preservation and innovation. The aforementioned dilemmas faced by these artisans are not merely practical but are deeply rooted in the interplay of cultural identity, creative expression, and

technological adaptation. Addressing the aforementioned challenges faced by ethnic footwear artisans in innovation—namely, the “aesthetic self-determination suppressed”, “cultural consciousness frozen”, and “technological autonomy constrained”—this paper proposes a co-design principle comprising three aspects: Aesthetic equity (A), Cultural liberation (C), and Technical replenishment (T). This article hereby names this co-design principle as ACT (Figure 6). Based on the ACT co-design principle, expert opinions (Chinese intangible cultural heritage inheritors, scholars, craftsmen) were

gathered through a combination of interviews, collaborative workshops, and feedback sessions. This study proposes six actions—namely, aesthetic listening, aesthetic coordination, cultural bridging, cultural catalysis, technical matching, and technical integration—to assist designers in clarifying the direction of co-design. This

study also validated the effectiveness of the ACT co-design principles through practical application, with part of the process illustrated in Figure 7. It demonstrates how craft specialists, cultural experts, and students collaborated in practice to apply the ACT co-design principles.

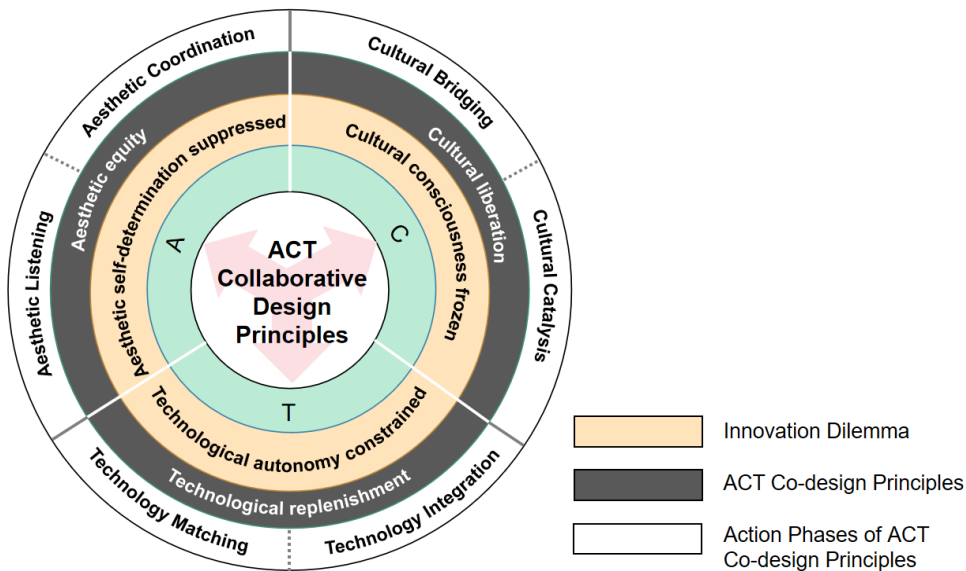


Figure 6. ACT Co-design Principles



Figure 7. ACT Co-design Principles Practice (Craft specialists, cultural experts, and students collaborated in applying the ACT principles in practice). Photo credit: The author

Aesthetic Equity

Addressing the dilemma of aesthetic self-determination suppressed faced by ethnic footwear artisans, this paper proposes the co-design principle of “Aesthetic Equity”. This principle emphasizes the shift in the role of designers in co-design processes. In traditional design paradigms, designers often lead design directions based on their

individual aesthetic preferences. However, the designer’s ‘parachuting’ into projects do not grow or develop [16]. This approach has led to numerous controversies involving major fashion brands, which have faced accusations of appropriation, and other practices that unfairly target marginalized communities [17]. To address this, in co-design based on ethnic cultures, this study

suggests a role transformation for designers—from past aesthetic leaders to aesthetic listeners and mediators—to create a free, fair co-design environment, offering ethnic footwear artisans diverse possibilities and gradually returning the aesthetic decision-making power in traditional ethnic costume design to them. By prioritizing cultural sensitivity and inclusivity, this approach aligns with a broader push for ethical practices within the fashion industry, as exemplified by the recent responsible design and sustainable production movements.

The principle of Aesthetic equity comprises two actions: aesthetic listening and aesthetic coordination. When collaborating with external designers, ethnic footwear artisans often habitually assume that designers' aesthetic experiences outweigh their own local experiences, thus feeling reluctant to share their true opinions and thoughts. Therefore, this study proposes the action of aesthetic listening, urging designers to empathize during collaboration, pay attention to the language, past experiences, aesthetic preferences, and other factors of ethnic footwear artisans, use familiar terminology to bridge the gap, create a relaxed atmosphere, and encourage them to boldly express aesthetic viewpoints and voice authentic opinions. Furthermore, to resolve the contradiction between ethnic footwear artisans' aesthetic experiences and external aesthetic experiences, this study proposes the action of aesthetic coordination. Aesthetic coordination entails designers acting as mediators, focusing on finding inclusive solutions, providing ethnic footwear artisans with diversified options, and enriching their autonomy in choices. Taking the co-design of traditional Qiang footwear as an example, designers can conduct pattern design workshops with artisans who draw Qiang footwear embroidery patterns, jointly explore recombination schemes for traditional Qiang embroidery patterns (such as lupine flowers, ram horns, etc.), or fusion schemes of commonly used Sino-Tibetan patterns in Qiang areas (such as phoenixes

with peonies, fish playing with lotuses, etc.), and produce economically feasible finished embroidery patterns, available for local ethnic footwear artisans to freely choose. Through the actions of aesthetic listening and aesthetic coordination, designers can assist ethnic footwear artisans in integrating their local aesthetic experiences into co-design processes, achieving aesthetic equity.

Cultural Liberation

To address the dilemma of cultural consciousness frozen, this paper proposes the co-design principle of "Cultural liberation". The concept of Cultural liberation refers to the process through which the cultural self-awareness of ethnic footwear artisans is awakened by designers through co-design. In the traditional concept, designers are accused of cultural appropriation, and other kinds of lack of concern for others' feelings towards powerless and vulnerable groups [18], ethnic footwear artisans are often regarded as "backward small producers" and "processing workers", resulting in their inherent ethnic cultural vitality is often ignored. In addition, scholars suggest that artisans should be empowered from a cultural perspective (heritage, know-how) and be equipped with the ability to independently develop future projects. The collaboration between designers and artisans should not result in the latter becoming subordinate to the former, in order to achieve true artisans' empowerment [19]. This view fits well with the principle of cultural liberation. Therefore, in the co-design principles, this study suggests that designers play the role of intermediary and catalyst to activate ethnic footwear artisans' understanding and interpretation of their own national culture.

The principle of Cultural liberation covers two actions: cultural bridging and cultural catalysis. First, cultural bridge requires designers to step out of the traditional designer identity and play the role of cross-border intermediary. This role requires the designer to have a wealth of design experience and the ability to integrate

and manage multicultural resources [20]. For example, designers can coordinate and connect the human resources of ethnic culture Xianda for Qiang footwear artisans, including Qiang research scholars, Qiang museum staff, Qiang Shibi (A highly respected member of the ethnic group) and other roles, plan and implement a series of interactive activities to promote knowledge exchange between them and ethnic craftsmen, and arouse the cultural vitality of ethnic artisans. An illustrative example of cultural bridging in design practice can be observed in the collaborative project between designers and local communities, such as the “Qi2He” cultural product innovation project in China [21]. In this project, the design process emerged from a vibrant co-creation between cultures, where the craftspeople took the lead in influencing the patterns, showcasing a true fusion of creative inputs.

Secondly, cultural catalysis involves designers acting as “catalysts” to trigger a cultural catalytic effect [22] during the co-design process, thereby stimulating ethnic footwear artisans’ cultural self-awareness. For example, after the co-design process, designers can organize a series of reflective activities with ethnic footwear artisans to jointly analyze and reflect on the cultural dynamics and shifts during co-design, assisting ethnic footwear artisans in recognizing and understanding the role of their own culture in co-design, thereby enhancing their flexibility and accuracy in cultural application. The theory of cultural protection and innovation emphasizes the balance between cultural inheritance and modernization, and focuses on how to innovate while protecting culture, which is consistent with the concept of cultural liberation in co-design theory.

Technical Replenishment

To address the dilemma of technological autonomy constrained, this study proposes the co-design principle of “Technical Replenishment”. This principle emphasizes the role of designers in

augmenting the technological innovation resources of ethnic footwear artisans during co-design, thereby expanding their range of technical choices. In traditional design models, designers often perceive ethnic footwear artisans solely as sources of traditional techniques to complement their own design strategies [23]. However, in co-design tasks aimed at innovating traditional ethnic attire, this study suggests that designers adopt the role of technology brokers, prioritizing the technological needs of ethnic footwear artisans and assisting them in identifying and integrating relevant technological resources to achieve technological upgrades and innovations.

The principle of Technical Replenishment comprises two actions: technology matching and technology integration. Firstly, technology matching involves designers searching for feasible technological resources that align with the characteristics of ethnic attire techniques and the needs of ethnic footwear artisans, based on assessments of traditional ethnic attire techniques and the technological requirements of ethnic footwear artisans. In regions where technological and informational resources are relatively scarce, this action serves as the foundation for technological innovation among ethnic footwear artisans. Field surveys indicate that users of traditional Qiang footwear are highly sensitive to prices, with affordability being one of the significant factors influencing artisans' choice of footwear sole materials. For example, by upskilling and elevating the expertise of artisan communities, designers introduced contemporary techniques to produce jewelry that meet the demands of today’s international market [24]. This approach aligns with the ACT co-design principles, as it emphasizes the vital role that artisans play in guiding and shaping the design process, reinforcing the importance of enhancing their skills and contributions in co-design projects.

In light of this, designers can collaborate with ethnic footwear artisans,

footwear sole material manufacturers, research institutions, etc., to develop new sole material technologies that not only meet economic needs but also convey aesthetic and cultural requirements of ethnic attire. If technology matching serves as the foundational action, then technology integration represents the progressive action in addressing technological innovation among ethnic footwear artisans. Technology integration entails designers assisting ethnic footwear artisans in reorganizing and integrating matched new and old technologies to generate executable technological implementation plans. For instance, in co-design tasks for traditional Qiang footwear, designers can organize footwear sole stitching workshops with ethnic footwear artisans to explore the assembly techniques of new sole materials with traditional uppers, documenting the process in both text and visuals, and making it accessible to local footwear artisans, thus facilitating their technological upgrades.

Summary

The significant barriers to innovation faced by ethnic footwear artisans in the traditional Qiang footwear co-design are multifaceted and deeply entrenched in cultural, economic, and technological factors. Previous research has shown that top-down, one-size-fits-all services and strategies often fail to meet the diverse needs of local communities effectively [16]. In this context, the 'designers' transition theory highlights the limitations in designers' mindsets, suggesting that a shift in perspective could lead to better collaboration and design outcomes [25]. Additionally, Qiang culture in western China faces threats due to assimilation with the dominant ethnic cultures, leading to a decline in participation in traditional rituals and the gradual loss of cultural skills and knowledge transmission [26]. Therefore, it is crucial to establish a platform for dialogue between Qiang artisans and the design community to promote cultural diversity and enhance understanding and

appreciation of the unique aspects of Qiang culture. In conclusion, the barriers to innovation for Qiang shoemaking artisans in traditional design stem from deep-rooted cultural, economic, and technological factors. By engaging with theories that emphasize the importance of aesthetic autonomy, cultural consciousness, and technological autonomy, and by promoting a designers mindset transition, it is possible to create an environment that nurtures innovation while preserving the cultural essence of the Qiang and similar ethnic communities. This approach not only honors the past but also ensures the vibrancy and relevance of their cultural practices in the contemporary world.

CONCLUSION AND IMPLICATIONS

Through the detailed case analysis of the traditional footwear design of Qiang, it highlights the three difficulties faced by Qiang footwear artisans in the process of innovation: aesthetic self-determination suppressed, cultural consciousness frozen and technological autonomy constrained. These dilemmas underscore the significant barriers to innovation that artisans encounter when their creative freedoms and cultural expressions are constrained.

In response to these dilemmas, this study proposes that designers adopt ACT co-design principles, including Aesthetic equity, Cultural liberation, and Technological replenishment. These principles aim to assist ethnic footwear artisans in overcoming the aforementioned challenges and achieving genuine innovation. Unlike mass-oriented ethnic cultural product design, the co-design principles discussed in this paper are tailored to the innovation practices of traditional ethnic attire and are specifically targeted towards internal minority groups. Consequently, these principles emphasize ethnic footwear artisans as the primary actors, with designers serving as facilitators who supplement the various resources needed for ethnic artisan innovation.

By implementing these principles, designers ensure that aesthetic strategies in co-design reflect the true perspective of ethnic artisans and that the cultural narrative is vivid, helping it to promote technological development. This practice will return the innovation right of ethnic clothing to the national artisans themselves, and empower the ethnic footwear artisans to speak in co-design. While respecting the cultural heritage and creativity of ethnic artisans, it also promotes a more equitable and collaborative environment for innovation.

Theoretical and Practical Implications

In summary, the ACT Co-design Principles redefine the role of ethnic footwear artisans and designers in the collaborative process, and the adoption of the ACT co-design principles promotes a more balanced and dynamic partnership. Compared with traditional co-design practices, both parties have undergone a significant identity shift. Designers no longer play the role of decision makers, but flexibly adjust their roles according to the needs of ethnic footwear artisans, acting as promoters and assistants, mobilizing various resources, providing more choice space and participation opportunities, and supporting the innovation needs of ethnic footwear artisans. The ethnic footwear artisans are no longer just the executor of the plan, but has become the leader of the creative process.

By adopting the ACT co-design principle, designers and craftsmen learn from each other, exchange their own knowledge in the collaborative process, and produce new skills, such as new aesthetic experience, cultural application ability and technical integration ability, which are the necessary conditions for the innovation of national costumes in the new era. With the deeper participation of artisans in co-design, ethnic footwear artisans, with the assistance of designers, reinterpret traditional aesthetics, accumulate co-design experience, enrich the individual works of artisans, and enhance the modernity and connotation of ethnic clothing. This produces results that resonate with

different groups of people. This collaborative process could ultimately lead to a sustainable model of innovation that respects and revitalizes cultural heritage while embracing contemporary progress, ensuring that national costumes remain alive and relevant.

Limitations and Future Research

Due to limitations in research samples and sampling space, this study focuses on the single case of traditional Qiang footwear design in Mao County, Sichuan Province. Future research could expand to include more ethnic groups and types of attire, employing multi-case studies to further enrich the theory of co-design between ethnic artisans and designers. Additionally, this study primarily proposed the co-design principles and related actions, and conducted preliminary practical tests to validate and refine the effectiveness and applicability of these principles. However, due to space limitations, this study does not elaborate on these practical cases in detail. Future research can further validate and refine these principles through more in-depth and extensive co-design cases, thereby exploring their potential application in various cultural and technological contexts more comprehensively.

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REFERENCES

1. Tung, F.W., Weaving with Rush: Exploring Craft-Design Collaborations in Revitalizing a Local Craft, *Int J Des*, **2012**, 6, 3.
2. Liao, Y., Liu, Y., Li, Q., Bringing Innovation to Traditional Craftsmanship-Research on the

- Collaboration Mechanism Between Traditional Artisans and Fashion Designers from the Perspective of Co-creation (in Chinese), *Decoration*, **2021**, 120-123, <https://doi.org/10.16272/j.cnki.cn11-1392/j.2021.03.033>.
3. Wang, T., Zhang, W., The Change of Social Identity and Skill Inheritance of Folk Artisans in the Cooperative Period (1949-1957): A Case Study of Pan Bingheng, a Jade Carver in Beijing (in Chinese), *New Arts*, **2018**, 39, 58-62.
 4. Prahalad, C.K., Ramaswamy, V., Co-creation Experiences: The Next Practice in Value Creation, *J Interact Mark*, **2004**, 18, 5-14, <https://doi.org/10.1002/dir.20015>.
 5. Huybrechts, L., Benesch, H., Geib, J., Institutioning: Participatory Design, Co-Design and the Public Realm, *CODESIGN*, **2017**, 13, 148-159, <https://doi.org/10.1080/15710882.2017.1355006>.
 6. Saadi, J.I., Yang, M.C., Generative Design: Reframing the Role of the Designer in Early-Stage Design Process, *J Mech Design*, **2023**, 145, <https://doi.org/10.1115/1.4056799>.
 7. Sanders, E.B., Stappers, P.J., Co-creation and the New Landscapes of Design, *CODESIGN*, **2008**, 4, 5-18, <https://doi.org/10.1080/15710880701875068>.
 8. Murray, R., Caulier-Grice, J., Mulgan, G., *The Open Book of Social Innovation*, **2010**, The Young Foundation, 233, available from: <https://youngfoundation.org/wp-content/uploads/2012/10/The-Open-Book-of-Social-Innovation.pdf>.
 9. Mcquinn, S., Belton, S., Staines, A., Sweeney, M.R., Co-design of a School-based Physical Activity Intervention for Adolescent Females in a Disadvantaged Community: Insights from the Girls Active Project (GAP), *BMC Public Health*, **2022**, 22, <https://doi.org/10.1186/s12889-022-12635-w>.
 10. Güzel, O.G., Kurnaz, H.A., Pomaks Protecting Their Cultural Heritage in Anatolia: A Research on Their Socio-Cultural Experiences, *Millî Folklor*, **2023**, 199-213, <https://doi.org/10.58242/millifolklor.1058925>.
 11. Ratten, V., Costa, C., Bogers, M., Artisan, Cultural and Tourism Entrepreneurship, *Int J Entrep Behav Res*, **2019**, 25, 582-591, <https://doi.org/10.1108/IJEBR-05-2018-0319>.
 12. Pilay, L., Custoja-Ripoll, M., Weaving Huancavilca Memory. Co-design Experience for the Conservation of Ancestral Textile Practices, *B Mus Chil Arte Prec*, **2023**, 28, 22, <https://doi.org/10.56522/BMCHAP.0020020280003>.
 13. Johansson, R., On Case Study Methodology, *Open House Int*, **2007**, 32, 48-54, <https://doi.org/10.1108/OHI-03-2007-B0006>.
 14. Liu, W., The Cognitive Basis of Thematic Analysis, *Int J Educ Res*, **2024**, 47, 277-287, <https://doi.org/10.1080/1743727X.2023.2274337>.
 15. Zhou, Y., Ma, L., The Application Analysis of Qiang Patterns Creative Design in Leather Footwear (in Chinese), *Leather Science and Engineering*, **2014**, 24, 48-53.
 16. Mazzarella, F., Mitchell, V., Escobar-Tello, C., Crafting Sustainable Futures. The Value of the Service Designer in Activating Meaningful Social Innovation from within Textile Artisan Communities, *The Design Journal*, **2017**, 20, S2935-S2950, <https://doi.org/10.1080/14606925.2017.1352803>.
 17. Vänskä, A., Gurova, O., The Fashion Scandal: Social Media, Identity and the Globalization of Fashion in the Twenty-First Century, *Int J Fashion Stud*, **2022**, 9, Issue Special Section: Fashion, https://doi.org/10.1386/infs_00045_1.
 18. Piancazzo, F., Developments of Cultural Appropriation in Fashion: An In-Progress Research, *Fashion Communication in the Digital Age*, **2023**, FACTUM 2023, https://doi.org/10.1007/978-3-031-38541-4_13.
 19. Berger, E., Empowering Artisans through Design: A Case Study on the Dynamics of Collaborative Projects, *Synergy - DRS International Conference 2020*, **2020**, 11-14 August, <https://doi.org/10.21606/drs.2020.113>.
 20. Edmondson, A.C., Harvey, J., Cross-boundary Teaming for Innovation: Integrating Research on Teams and Knowledge in Organizations, *Hum Resour Manag Rev*, **2018**, 28, 3, 347-360, <https://doi.org/10.1016/j.hrmr.2017.03.002>.
 21. Bryan-Kinns, N., Wang, W., Ji, T., Qi2He: A Co-design Framework Inspired by Eastern Epistemology, *Int J Hum Comput Stud*, **2022**, 160, 102773, <https://doi.org/10.1016/j.ijhcs.2022.102773>.
 22. Rodriguez, J.M.R., Indigenous Radio Stations in Mexico: A Catalyst for Social Cohesion and Cultural Strength, *Radio Journal: International Studies in Broadcast & Audio Media*, **2005**, 3, 155-169, https://doi.org/10.1386/rajo.3.3.155_1.
 23. Sun, Y., Li, X., Ding, W., Yao, Y., Exploration of Shoes Element of the Qiang's Yunyun Used in Modern Design (in Chinese), *J Leather Sci Eng*, **2019**, 29, 5, 55-59, <https://doi.org/10.19677/j.issn.1004-7964.2019.05.010>.
 24. Becky, B., Kimberly, C., Reflections on the Impact of Informal Sector Tourism on Indigenous Namibian Craft Processes, *Art*

- Market*, **2022**, 12, 1, 1-16, <https://doi.org/10.1080/15575330.2020.1772333>.
25. Valencia, A., Lievesley, M., Vaugh, T., Four Mindsets of Designer-Entrepreneurs, *The Design Journal*, **2021**, 24, 5, 705-726, <https://doi.org/10.1080/14606925.2021.1958601>.
26. Wang, Y.X., Prott, L.V., Cultural Revitalisation after Catastrophe: The Qiang Culture in A'er, *Int J Herit Stud*, **2016**, 22, 1, 26-42, <https://doi.org/10.1080/13527258.2015.1074933>.

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