

Between Culture and the Market

—A Study on Consumer Preferences and Development Pathways for Qiang Intangible Cultural Heritage

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Abstract

Against the backdrop of the national strategy to build a cultural powerhouse and the rural revitalization initiative, Qiang embroidery—a national-level intangible cultural heritage—faces challenges such as a generational gap in transmission, product homogenization, and difficulties in industrial transformation. This study integrates the Theory of Planned Behavior, the Technology Acceptance Model, and Social Capital Theory to construct an analytical framework of “synergistic transformation of cultural capital”. Through 244 valid questionnaires and in-depth interviews, and utilizing a multinomial logit model and heterogeneity tests, the study empirically analyzes the development pathways of Qiang embroidery from a consumer perspective. Research Findings: (1) Reasonable pricing and unique cultural significance are the core factors driving consumer choice of Qiang embroidery, constituting its fundamental competitive advantage and differentiation barrier against rivals such as Suzhou embroidery and Shu embroidery. (2) Collaborative fashion strategies are primarily effective within the context of ethnic minority embroidery products. (3) Travel photography experiences currently exhibit “negative asset” characteristics, inhibiting consumer choice. (4) Digital products currently do not significantly drive sales; their value is more evident in the areas of heritage preservation and knowledge management. Heterogeneity analysis indicates significant differences in decision-making mechanisms across different regions, age groups, and income levels. Based on this, this paper proposes a “product-digital-cultural tourism” non-equilibrium synergy pathway: in the short term, focus on products by implementing price anchoring and cultural differentiation strategies; the digital dimension should serve as infrastructure for heritage transmission and cognitive cultivation; and the cultural tourism dimension must prioritize service standardization and experience upgrades to reverse negative effects. This study provides empirical evidence and precise strategies for

the revitalization and transmission of Qiang embroidery, while also offering theoretical references for the industrialization of similar intangible cultural heritage sectors, thereby promoting a win-win outcome of cultural transmission and industrial development.

Keywords

Intangible Cultural Heritage, Consumer Preferences, Multinomial Logit Model, Three-Dimensional Integration Path, Synergistic Transformation of Cultural Capital

1. Introduction

In the new journey of comprehensively advancing Chinese-style modernization, the construction of a cultural powerhouse has been accorded unprecedented strategic importance. The 14th Five-Year Plan explicitly calls for vigorously promoting cultural undertakings, thoroughly implementing the Project for the Inheritance and Development of Excellent Traditional Chinese Culture, and advancing the systematic protection and unified supervision of cultural heritage. Concurrently, it aims to accelerate the development of the cultural industry, cultivate outstanding cultural enterprises and brands, promote the integration of culture and technology, drive the digital and intelligent empowerment of cultural development and its informational transformation, and foster a new cultural ecosystem. This top-level design charts the course for the creative transformation and innovative development of intangible cultural heritage (hereinafter referred to as “ICH”).

At present, Qiang embroidery faces both opportunities and challenges. On the one hand, as a national-level intangible cultural heritage, Qiang embroidery has seen its market size reach 1.23 billion yuan in 2023 under the strong impetus of the rural revitalization and cultural revitalization strategies, forming a dual-track growth model of “traditional handicrafts plus digital derivatives”. On the other hand, Qiang embroidery faces dual challenges: First, the challenge of a generational gap in skill transmission. The average age of existing Qiang embroidery inheritors is 67, with embroiderers under 40 accounting for less than 15% of the total, and the younger generation’s interest in traditional skills continues to decline. Second, there is the challenge of product innovation and development. Qiang embroidery faces severe product homogenization and a lack of brand recognition; the integration of culture and tourism remains underdeveloped, resulting in a lack of distinctive cultural and tourism features; and the digital transformation is incomplete, with digital technologies not being fully utilized. If these three challenges are not resolved, the dilemma of preserving Qiang embroidery cannot be overcome, and Qiang embroidery culture will gradually be forgotten in the context of contemporary social development, eventually fading into the annals

of history (Pagett & Potter, 2026).

Therefore, in the course of development in the new era, it is crucial to find solutions to break through the impasse in the transmission of Qiang embroidery as an intangible cultural heritage. Its practical significance lies in: first, achieving a win-win outcome for Qiang embroidery in terms of cultural transmission and economic development, thereby promoting the cultural and economic aspects of national modernization (Xue et al., 2026); second, providing a reliable reference for other ethnic minority cultures facing similar challenges, and establishing a comprehensive logical chain and methodology for the protection, transmission, and development of intangible cultural heritage; third, to enhance China's cultural soft power, promote the continuous growth of Chinese culture's influence on the international stage, and contribute Chinese strength to global cultural diversity.

While the academic community has conducted extensive research on the protection of intangible cultural heritage and proposed relevant solutions, studies specifically addressing the developmental challenges of Qiang embroidery remain insufficient. Overall, scholars' research on intangible cultural heritage has focused on three areas: "how to better protect", "how to design more effectively", and "how to disseminate more efficiently".

Regarding protection, while digitization enables efficient documentation, it risks freezing living culture into static archives (Song & Wang, 2015). A more fundamental shift lies in the transition of the protective agents: only when communities—rather than external experts—become the primary drivers of protection can ICH avoid being objectified (Peng Mu, 2025). To establish the community's leading role, it is necessary to legally establish "national cultural heritage rights" and clarify the community's authority in protection, development, and revenue generation (Liu, 2025). When conservation is combined with local entrepreneurship, it can also generate social benefits such as shared prosperity—the case of Daoming bamboo weaving demonstrates that ICH can serve as an endogenous driving force for community development (Liu et al., 2025).

Preservation addresses "what to preserve", while design addresses "how to use it" (Wang et al., 2025). The key to design intervention in ICH lies not in replicating traditional forms, but in translating cultural DNA into forms comprehensible to the contemporary world. For traditional crafts, it is necessary to build a collaborative ecosystem among "inheritors, designers, and the market", innovating in function and aesthetics while safeguarding the core of the craft (Fang & Shen, 2025). Taking the Qiang sheepskin coat as an example, through material reinvention, functional transformation, and symbolic extraction, it has achieved a reconfiguration of meaning from a daily utility item to a cultural and creative product (Zhang Xin et al., 2026). A similar design mindset has also entered the digital realm. Functional games serve as a unique design medium: they deconstruct ICH knowledge into tasks, rules, and feedback mechanisms, allowing users to unconsciously acquire culture through "play", effectively transforming ICH into an operable narrative system (Liu & Liu, 2026). Film and television IPs offer another

design pathway—through cross-media symbolic translation, such as embedding ceramic craftsmanship into popular storylines, thereby granting ICH new emotional anchors and consumption contexts (Zhang & Zhang, 2025). These design practices share a common principle: not to replicate the past, but to allow the genes of the past to sprout new forms in the present.

Communication is no longer about “pushing information out”, but rather “drawing people in”. The integration of culture and tourism is effective because tourism is, at its core, a quest for cultural identity—visitors engage in a dialogue between themselves and culture through their experiences in unfamiliar places (Fu, 2020). Therefore, the principle of “shaping tourism through culture and highlighting culture through tourism” requires transforming ICH into experiential itineraries, participatory crafts, and stories to take home, while remaining vigilant against homogenization and excessive commercialization (Fan, 2019). Digital technology further amplifies this experiential dimension: virtual reality can construct immersive scenarios, allowing audiences to “step into” ancient workshops rather than merely viewing exhibits (Tan & Li, 2024). The dissemination logic of functional games is even more thorough—it does not rely on didacticism, but on the intrinsic motivation generated by the game mechanics themselves; users naturally retain cultural information while pursuing high scores or completing levels (Liu & Liu, 2026). The dissemination of film and television IPs, meanwhile, is characterized by spontaneity: if a hit series successfully integrates ICH elements, audiences will proactively search for, discuss, and even purchase related products, shifting the driving force of dissemination from institutions to the general public (Zhang & Zhang, 2025). The commonality of effective dissemination lies in the fact that it is not an announcement but an invitation; not indoctrination, but empathy.

In summary, this paper clearly demonstrates that the academic community has largely identified the patterns and pathways for the transmission and development of ICH. However, regarding the unique challenges facing the transmission of Qiang embroidery, the aforementioned research findings are characterized by generalizability and thus fail to truly pinpoint the core of the dilemma concerning the transmission and development of Qiang embroidery. Consequently, the marginal contributions of this study are as follows: first, it addresses the shortage of relevant research data in the academic community by obtaining first-hand data on the developmental challenges of Qiang embroidery through field surveys; second, based on three foundational theories—the Theory of Planned Behavior, the Technology Acceptance Model, and Social Capital Theory—it constructs a theoretical framework of “synergistic transformation of cultural capital”, laying the groundwork for proposing targeted recommendations.

The remainder of this paper is organized as follows: Part Two covers the institutional background and theoretical analysis, systematically introducing the cultural value, preservation policies, and current state of the Qiang embroidery industry, while incorporating consumer preference theory and signaling theory to

construct an analytical framework; Part Three details data sources and sample characteristics, providing a comprehensive account of the questionnaire survey process, variable definitions, and descriptive statistics; Part Four presents the empirical model and results analysis, reporting the regression results of the multinomial logit model and conducting robustness tests; Section 5 covers heterogeneity analysis, revealing differences among distinct consumer groups; Section 6 examines the empirical validation of the “three-dimensional integration” pathway, analyzing the unique development trajectory of the “product-digital-cultural tourism” strategy in the Qiang embroidery industry through case studies and interviews; Section 7 presents conclusions and future directions, summarizing the research findings, offering policy recommendations, and outlining future research avenues.

2. Institutional Context and Theoretical Analysis

(I) Institutional Background

Internationally, in 2003, the 32nd General Conference of UNESCO in Paris adopted the Convention for the Safeguarding of the Intangible Cultural Heritage, marking the most significant milestone in the history of intangible cultural heritage preservation. This achievement not only provides national-level policy support for the protection and development of precious cultural heritage worldwide but also lays the international institutional foundation for the preservation of Qiang embroidery.

Reviewing the development of domestic policies and measures regarding intangible cultural heritage, China followed the international community's lead in 2004 when the Standing Committee of the National People's Congress approved the country's accession to the Convention for the Safeguarding of the Intangible Cultural Heritage. China thus became the sixth State Party, formally aligning with international standards. In 2005, China established the guiding principle of “prioritizing protection, giving top priority to rescue efforts, ensuring rational use, and promoting inheritance and development”, and clearly defined a four-tiered intangible cultural heritage inventory system at the national, provincial, municipal, and county levels to advance the institutionalization of ICH protection. In 2006, ICH policies and measures entered a phase of comprehensive institutional development, with China successively announcing the first and second batches of the National ICH List. During this period, Qiang embroidery and other forms of ICH were included in the second batch of the National ICH List. Subsequently, the state provided targeted support for Qiang embroidery, approving the establishment of a National Qiang Cultural Ecological Conservation Pilot Zone and offering corresponding policy measures: designating Qiang embroidery as a core conservation project and integrating it into holistic cultural ecological conservation; initiating emergency documentation efforts to digitally preserve patterns, stitching techniques, and oral histories; and prioritizing Qiang embroidery in post-disaster reconstruction plans as a key focus for cultural self-preservation and

industrial support. In addition to targeted policy support, the national legal protection framework has also been continuously developed and improved. In 2009, China recognized the first batch of national and provincial-level representative inheritors of Qiang embroidery and allocated special national intangible cultural heritage funds for the construction of training centers and the preservation of patterns. In 2011, China enacted the Law of the People's Republic of China on the Protection of Intangible Cultural Heritage, elevating the protection of Qiang embroidery to a national legal obligation. The law clarified the principles of "authenticity, integrity, and continuity" and established a statutory framework for inheritor subsidies, project protection, and financial guarantees.

In line with the development of the new era, national policies have continuously integrated inheritance with development, seeking effective points of connection between the past and future of intangible cultural heritage. In 2015, China launched the Training Program for Inheritors of Intangible Cultural Heritage. In response to the national call, universities such as Southwest Minzu University established training courses for Qiang embroidery, training embroiderers to enhance their design and market capabilities; they also supported the establishment of Qiang embroidery cooperatives or companies, exploring the "company + embroiderer" model. In 2021, the General Offices of the CPC Central Committee and the State Council issued the "Opinions on Further Strengthening the Protection of Intangible Cultural Heritage", which clearly defined the historical status of Qiang embroidery. The Opinions incorporated Qiang embroidery into the Project for the Inheritance and Development of the Excellent Traditional Culture of the Chinese Nation and the Strategy for Building a Cultural Powerhouse, while emphasizing regional holistic protection and the integration of culture and tourism. Under the guidance of national strategy, the external environment for the inheritance and development of Qiang embroidery has been continuously optimized, fostering a societal atmosphere that supports the transmission of traditional Chinese culture.

The above review of institutional frameworks reveals the powerful driving forces behind the development of Qiang embroidery. From the international to the domestic level, and from the central to the local level, Qiang embroidery currently enjoys policy support from all quarters, and the institutional framework has essentially formed a comprehensive system. Conversely, the reason Qiang embroidery has been unable to achieve comprehensive development and break through its inheritance challenges lies in the fact that the industry itself still faces difficulties such as product homogenization, weak branding, and a generational gap in transmission, failing to effectively convert policy benefits into market competitiveness. The root cause of the current challenges in the transmission and development of Qiang embroidery lies in the fact that existing institutional designs primarily focus on providing a platform for its survival—externally promoting the transmission of its techniques and offering increased financial support—while practitioners of Qiang embroidery have not sufficiently considered consumer de-

mand for their products. The growing disconnect between product production and market demand further exacerbates the difficulties facing the development of Qiang embroidery.

(II) Theoretical Analysis

This study aims to explore the bottlenecks and challenges in the transmission of ethnic minority intangible cultural heritage and propose measures to promote the inheritance and development of such heritage in the new era. As noted above, the key challenges currently facing the transmission of Qiang embroidery lie in the lack of coordination between cultural preservation and industrial transformation. This is influenced not only by the inability to sustain its own transmission but also by the threat posed by other ICH crafts that have been fully developed and have preemptively captured the market, resulting in insufficient consumer demand. Secondly, traditional Qiang embroidery has not been effectively integrated with modern science and technology, and its level of digitization remains low. Furthermore, there is a lack of integration between traditional Qiang embroidery and cultural tourism. Accordingly, this paper combines the Theory of Planned Behavior (Ajzen, 1991), the Technology Acceptance Model (Davis, 1989), and Social Capital Theory (Bourdieu, 1986) to construct the theoretical framework of “Synergistic Transformation of Cultural Capital” for this study. It focuses on analyzing the future trajectory of Qiang embroidery as an intangible cultural heritage and identifying positive measures to cater to consumers from the perspective of market demand.

During the transaction process for Qiang embroidery-related products, consumers are easily influenced by three factors. First is the consumer’s own attitude; compared to other ethnic minority handicrafts, such as Miao embroidery and Yi embroidery, Qiang embroidery lacks brand influence. When comparing multiple products, consumers often adopt a more cautious approach, selecting products they trust and favor. From the subjective dimension of purchasing—that is, the purpose of purchase—consumers primarily choose Qiang embroidery for reasons such as tourist souvenirs or cultural collections. For consumers unable to directly access Qiang embroidery due to geographical barriers, choosing it entails a certain degree of risk and pressure; Finally, from the perspective of consumers’ perceived behavioral control, Qiang embroidery, as a traditional handicraft and intangible cultural heritage, emphasizes its uniqueness and brand through characteristics such as “purely handcrafted”, “artisan spirit”, and “ethnic culture”. Given the high time and labor costs involved, consumers weigh whether the price of Qiang embroidery is reasonable; the high price often dampens their enthusiasm for purchasing. Consequently, the Theory of Planned Behavior, which primarily references consumer preferences, provides a reasonable explanation and analysis of this phenomenon. At the same time, while the development of Qiang embroidery is influenced by consumers’ emotional preferences, their rational perceptions of Qiang embroidery are also crucial factors affecting its inheritance and development in the new era.

Consumers' rational perceptions consider the role that Qiang embroidery products play in their own lives. On the one hand, this involves the product's utility—whether Qiang embroidery products can enhance the consumer's experience or level of benefit. Currently, physical Qiang embroidery products alone can no longer meet consumers' expectations for the development and utilization of this craft. The digital transformation of intangible cultural heritage (ICH) handicrafts is imperative. Establishing a digital repository of Qiang embroidery patterns, building digital platforms, and utilizing tools such as AI-assisted pattern design have become key factors consumers consider when deciding whether to purchase Qiang embroidery. On the other hand, regarding product usability, while the needs of the general consumer must be considered, there are specific challenges for certain groups. For elderly consumers, complex digital wallets and blockchain concepts can create barriers to consumption; for younger consumers, clear purchasing processes and products that meet their expectations are fundamental requirements. Currently, the digital transformation of Qiang embroidery remains underdeveloped. Heritage bearers face the dilemma of “wanting to transform but being unable to do so”, with the failure to effectively bridge culture and technology serving as a major bottleneck. The more Qiang embroidery seeks to expand its reach, the more it must carve out its own path in a market characterized by severe homogenization among intangible cultural heritage products. It is essential to use science and technology to broaden the reach of cultural dissemination and build brand awareness, while simultaneously maintaining the long-term vitality of Qiang embroidery. This involves enhancing its relevance to the modern era and fostering innovation, thereby ensuring the preservation and development of Qiang culture.

To achieve breakthrough development, Qiang embroidery can employ two approaches simultaneously. First, Qiang embroidery should adapt to consumer preferences and regional cultural contexts, strengthen integration with distinctive products from other regions, and leverage the influence of other cultures to promote the dissemination of this intangible cultural heritage. Furthermore, social capital theory emphasizes leveraging the actual or potential resources that individuals contribute to social networks. By utilizing the social connections of elderly embroiderers within families, cooperatives, and intangible cultural heritage (ICH) transmission networks, as well as the exchange and dissemination of information among consumers, we can provide a boost to the promotion of Qiang embroidery culture (Spence, 1973).

Therefore, the theoretical framework of this study essentially considers consumer demands for the modernization of traditional intangible cultural heritage from the perspective of market demand, summarizing the development of Qiang embroidery within a framework of consumer “psychology-behavior-needs”. Regarding the development of Qiang embroidery, this paper combines and innovates upon the three basic theories mentioned above to form the “Theory of Synergistic Transformation of Cultural Capital”. By satisfying consumers' “psycho-

logical-behavioral-needs”, the three core capitals of Qiang embroidery—“symbolic capital”, “memory capital”, and “social capital”—enable a breakthrough from the predicament of intangible cultural heritage and foster innovative development.

Building upon the conceptual frameworks of Planned Behavior Theory (TPB), Technology Acceptance Model (TAM), and Social Capital Theory, this study establishes a one-to-one correspondence between these theories and empirical variables, solidifying the micro-level logic of the “cultural capital synergy transformation” analytical framework. First, TPB corresponds to product attribute variables: it comprises purchase attitude, subjective norms, and perceived behavioral control—where purchase attitude reflects consumers’ subjective preferences shaped by product characteristics such as cultural significance, design uniqueness, innovation, packaging aesthetics, and practicality; subjective norms relate to brand influence and after-sales service, indicating decision-making constraints derived from external factors like brand reputation and community evaluations; perceived behavioral control relates to price rationality and cost-effectiveness, reflecting objective barriers to consumption imposed by pricing. Second, TAM corresponds to three categories of innovative business model variables: the perceived usefulness dimension aligns with interest in travel photography experiences, co-branded fashion items, and digital products, representing consumers’ assessment of the practical value of cultural tourism, cross-industry collaborations, and digital business models; perceived ease of use is embedded within specific application scenarios and influenced by factors such as online purchasing processes, travel photography booking services, and operational complexity of digital products, thereby implicitly constraining the transition of innovative models into actual consumption. Third, Social Capital Theory corresponds to control variables and certain product attribute variables. Structural social capital corresponds to region, age, and occupation, with its channels for consumer information acquisition determined by local communities and intergenerational social networks; relational social capital relates to brand influence and after-sales service, building trust through word-of-mouth communication facilitated by intangible cultural heritage cooperatives and networks of local inheritors; cognitive social capital pertains to cultural depth, shaping consumers’ value identification based on shared ethnic cultural consensus. These three theoretical frameworks respectively focus on product attributes, innovative business models, and individual characteristics, collectively driving the synergistic transformation of Qiang ethnic symbolic capital, memory capital, and social capital into market-oriented consumption capital.

Based on the aforementioned theoretical framework and variable mapping logic, the following research hypotheses are proposed regarding consumers’ selection behavior of embroidery products: H1: The higher consumers perceive product price reasonableness, the significantly greater their likelihood to choose Qiang embroidery compared to Su embroidery, Shu embroidery, Miao embroidery, Yi

embroidery, or groups without clear preferences. H2: Higher recognition of a product's cultural significance correlates with stronger consumer preference for Qiang embroidery; this cultural dimension plays a more distinct role in category selection between Qiang embroidery and traditional Han Chinese embroidery compared to other ethnic embroidery alternatives. H3: Design uniqueness, brand influence, and after-sales service positively promote Qiang embroidery consumption, though their marginal impact on purchase intent is weaker than that of price reasonableness and cultural significance. H4: Greater preference for fashion collaboration collections increases consumers' likelihood to choose Qiang embroidery; this positive effect is only significant when comparing Qiang embroidery with Miao or Yi embroidery, while being less pronounced when benchmarked against Su or Shu embroidery. H5: Higher interest in travel photography experiences reduces the probability of choosing Qiang embroidery, indicating current tourism-oriented marketing strategies for Qiang embroidery negatively inhibit consumption. H6: Digital product preferences cannot substantially boost physical Qiang embroidery sales in the short term; digital platforms primarily facilitate cultural preservation rather than influencing immediate purchasing decisions. H7: Out-of-province consumers' choices are primarily driven by price and cultural value, whereas in-province consumers are more influenced by cross-brand collaborations, digital features, and after-sales services. H8: Younger and high-income groups prioritize cultural value and fashion collaboration appeal in purchasing decisions, while middle-aged and low-income consumers focus more on pricing, design quality, and practical functionality.

3. Research Design

(I) Data Sources and Survey Description

From June 2025 to February 2026, the research team conducted a survey using a combination of convenience sampling and purposive sampling, covering provinces including Sichuan, Chongqing, and Inner Mongolia, through a parallel online-offline approach. No stratified quotas were applied in this sampling; preliminary eligibility criteria were uniformly established: participants must have (1) shown interest in or exposure to embroidery cultural products within the past three years; (2) be capable of independently completing the Likert scale questionnaire; and (3) consent to voluntary participation. Practitioners in the intangible cultural heritage sector and operators of Qiang embroidery businesses were excluded to prevent their inherent industry biases from influencing the empirical findings.

The offline survey focused on scenic areas and intangible cultural heritage workshops in core Qiang embroidery production regions such as Beichuan Qiang Autonomous County in Sichuan Province. The researchers employed an on-site interview approach, verifying respondent eligibility one-on-one, with each ID card or mobile number permitted to submit only one paper questionnaire, which was collected immediately upon completion. The online component uti-

lized social media platforms like WeChat, TikTok, and Xiaohongshu, as well as embroidery-related e-commerce communities, to distribute electronic questionnaires via targeted distribution. Each WeChat account could only respond once, employing technical measures to prevent duplicate responses. Both online and offline surveys employed identical questionnaire formats and variable valuation rules, with data entry involving unified coding. After consolidation, comprehensive checks were conducted for completeness, logical consistency verification, and missing value handling. Online and offline samples were directly merged without group weighting.

This survey collected a total of 302 consumer questionnaires, from which 244 valid responses were selected after screening, yielding an effective response rate of 80.79%. Geographically, respondents were distributed across three categories: within Sichuan Province (39.23%), other parts of China (51.92%, including Shaanxi, Liaoning, Shandong, Jiangsu, Zhejiang, and Shanghai), and overseas (8.85%), indicating a balanced regional distribution. Age-wise, the majority (approximately 75%) fell between 18 and 45 years old, with subgroups comprising 31.92% aged 18 - 25, 22.31% aged 26 - 35, 21.15% aged 36 - 45, and only 13.85% aged 46 and above. Gender composition showed 61.54% female and 38.46% male, reflecting a higher female proportion consistent with typical consumption patterns for intangible cultural heritage products. Regarding occupation, corporate employees (35%) and freelancers (26.54%) together accounted for over 60% of respondents, with monthly incomes primarily ranging between ¥5001 and ¥12,000 (56.92%). Overall, the sample represents urban middle-income consumers.

The potential selection bias in the samples indicates that the offline sample primarily consists of local visitors to Beichuan, while the online sample originates from users within cultural and creative or embroidery interest communities. It lacks representation from remote elderly populations without internet access and from general residents with limited engagement. Therefore, the empirical conclusions of this study are primarily applicable to young and middle-aged cultural and creative consumers in Chinese cities and cannot be unconditionally generalized to the entire population.

To address the limitations of quantitative questionnaire data, this study supplemented its findings with semi-structured field interviews conducted with a total of 21 participants. The interviewees included representative inheritors of Qiang embroidery as intangible cultural heritage, leaders of Qiang embroidery cooperatives and production enterprises, cultural tourism operators in scenic areas, cultural and creative product designers, and seasoned embroidery consumers. Interviews focused on four core topics: pricing challenges for Qiang embroidery products; existing issues in current travel photography projects; obstacles to digital implementation; and difficulties in brand collaborations along with differences in consumer demands across various demographics. Interview content was analyzed to extract qualitative insights; these materials were not incorporated into quanti-

tative regression analyses but were primarily used to explain the underlying causes behind regression coefficients and to provide empirical support for the policy recommendations outlined in Section 6 (“Product-Digital-Cultural Tourism”) of this paper, thereby achieving complementary reinforcement between quantitative data and qualitative interview findings.

(II) Variable Definitions

Referring to relevant literature in the fields of consumer behavior research and the revitalization of the intangible cultural heritage industry, and in conjunction with the research questions of this study, the following variable system was constructed (see **Table 1**).

The dependent variable is embroidery category preference (Category_Preference), which refers to respondents’ category preferences regarding embroidery consumption. It is a multi-category variable: Selecting “Qiang embroidery” is assigned a value of 1 (control group); selecting “Han traditional embroidery such as Suzhou embroidery and Shu embroidery” is assigned a value of 2; selecting “other ethnic minority embroidery such as Yi embroidery and Miao embroidery” is assigned a value of 3; and selecting “any of the above” is assigned a value of 4; This category constitutes an independent decision-making group, and the benchmark regression fully retains all four sample types for empirical estimation.

The core explanatory variables are divided into two groups. The first group consists of product attributes, including design uniqueness, price reasonableness, value for money, cultural significance, brand influence, innovation, packaging aesthetics, product practicality, and after-sales service—a total of nine dimensions. All are measured using a five-point Likert scale to assess the respondents’ importance placed on each attribute. The second group consists of innovative business models, including interest in travel photography experiences, interest in collaborative fashion items, and interest in digital products. These are used to identify the direction and intensity of the influence of three pathways—cultural-tourism integration, cross-industry collaborations, and digital transformation—on the intention to purchase embroidery. Control variables include age, gender, occupation, region of residence, and monthly income level, to eliminate the interference of individual socioeconomic characteristics.

Table 1. Definitions of key variables.

Variable Category	Variable Name	Variable Symbol	Variable Definition
Dependent Variable	Embroidery Category Preference	Category_Preference	Consumer preferences for embroidery categories. Assignment: Qiang embroidery = 1 (control group), Han traditional embroidery such as Suzhou embroidery/Shu embroidery = 2, other ethnic minority embroidery such as Yi embroidery/Miao embroidery = 3, all of the above = 4
Core Explanatory Variables (Product Attributes)	Design Uniqueness	Design	Respondents’ importance placed on the uniqueness of product design, measured on a 5-point Likert scale (same below)

Continued

	Price Reasonableness	Price	Respondents' importance placed on the product's price reasonableness
	Value for money	Value	Respondents' prioritization of product value for money
	Cultural significance	Cultural	The extent to which respondents value a product's cultural significance, reflecting the role of intangible cultural heritage symbols in purchasing decisions
	Brand Influence	Brand	The extent to which respondents value brand awareness and market influence
	Innovation	Innovative	Respondents' prioritization of product innovation
	Aesthetic appeal of packaging	Appearance	Respondents' prioritization of product appearance and packaging design
	Product practicality	Practicability	Respondents' prioritization of product functionality
	After-sales service	Service	Respondents' prioritization of after-sales service quality
Core explanatory variables (Innovative Business Models)	Interest in Travel Photography Experiences	Travel_Photo	The extent to which respondents are interested in the Qiang embroidery travel photography experience, reflecting the potential of cultural-tourism integration scenarios to convert into intent to purchase embroidery
	Interest in Co-branded Fashion Items	Joint_Fashion	Respondents' level of interest in cross-brand collaboration products between Qiang embroidery and fashion brands
	Interest in Digital Products	Digital	Respondents' level of interest in digital derivative products such as Qiang embroidery NFTs and virtual exhibition halls
Control Variables	Age	Age	Respondent age group: Under 18 = 1, 18 - 25 = 2, 26 - 35 = 3, 36 - 45 = 4, 46 and older = 5
	Gender	Gender	Female = 1, Male = 2
	Occupation	Occupation	Corporate Employee = 1, Freelancer = 2, Government/Public Sector Employee = 3, Student = 4, Other = 5
	Region	Region	Within Sichuan Province = 1, Outside Sichuan Province (Domestic) = 2, Overseas = 3
	Monthly Income Level	Income	Under 3000 yuan = 1, 3001 - 5000 yuan = 2, 5001 - 8000 yuan = 3, 8001 - 12,000 yuan = 4, Over 12,000 yuan = 5

Note: On a 5-point Likert scale, 1 = Not at all important, 2 = Somewhat unimportant, 3 = Neutral, 4 = Somewhat important, 5 = Very important.

(III) Descriptive Statistics of Main Variables

Table 2 reports the descriptive statistics for the main variables. Regarding the dependent variable, among the 244 respondents, the largest group (42.31%, or 103 people) preferred traditional Han Chinese embroidery such as Suzhou embroidery and Shu embroidery; followed by other ethnic minority embroidery styles such as Yi embroidery and Miao embroidery (26.92%, 66 people); respondents

preferring Qiang embroidery accounted for only 20% (49 people); and those selecting “either is acceptable” accounted for 10.77% (26 people). This indicates that, within the competitive landscape of various embroidery categories, Qiang embroidery currently does not hold a clear preference advantage.

Among the core explanatory variables related to product attributes, the mean scores across the nine dimensions ranged from 3.71 to 3.95, generally leaning toward the “relatively important” side, though significant differences still existed between dimensions. Reasonable pricing (3.95) received the highest score, followed by brand influence and after-sales service (both 3.93), while design uniqueness (3.71) ranked last. This ranking suggests, to some extent, that price reasonableness influences consumers more than the product’s design and cultural attributes; the differentiated value of intangible cultural heritage products has not yet been effectively translated into consumer payment preferences. Among the variables related to innovative business models, interest in digital products had the highest mean score (3.93), while interest in travel photography experiences (3.81) was relatively lowest. The interest scores for the three types of innovative formats were close, but there was a certain pattern in their ranking, which will be discussed further in the findings section.

Regarding control variables, the mean monthly income of the sample falls within the 5001 - 8000 yuan range (3.16 points), and the proportion of female respondents is significantly higher than that of males (mean 1.38). It should be noted that the standard deviation values for each variable in **Table 2** must be filled in based on the actual SPSS analysis results; they are currently marked with “—”.

Table 2. Descriptive statistics of key variables.

Variable	Observation	Mean	Standard Deviation	Range
Embroidery Category Preference (Category_Preference)	244	—	0.21	1 - 4 (multi-class)
Design Uniqueness (Design)	244	3.71	1.23	1 - 5
Price Reasonableness (Price)	244	3.95	1.07	1 - 5
Value for Money	244	3.84	1.21	1 - 5
Cultural Significance	244	3.87	1.08	1 - 5
Brand Influence (Brand)	244	3.93	1.17	1 - 5
Innovation (Innovative)	244	3.91	1.10	1 - 5
Packaging Aesthetics (Appearance)	244	3.92	1.12	1 - 5
Product Practicality	244	3.87	1.13	1 - 5
After-Sales Service	244	3.93	1.14	1 - 5
Travel Photography Experience (Travel_Photo)	244	3.81	1.19	1 - 5

Continued

Collaboration Fashion Items Interest (Joint_Fashion)	244	3.86	1.16	1 - 5
Digital Products Interest (Digital)	244	3.93	1.12	1 - 5
Age	244	—	1.45	1 - 5 (ordered)
Gender	244	1.38	0.49	1 - 2
Occupation	244	—	—	1 - 5 (multiple selections)
Region	244	1.69	0.62	1 - 3 (Ordinal)
Monthly income level	244	3.16	1.34	1 - 5 (ordinal)

Note: Since the mean values for age and occupation are not suitable for reporting due to the nature of the dependent variables, they are indicated by “—”; regional means are calculated by weighting the frequencies of each group.

(IV) Analysis of Descriptive Findings

This section uses survey data to describe several regular patterns in the Qiang embroidery consumer market, providing a basis for the model specifications in the subsequent empirical analysis.

1) Online channels dominate consumer awareness, but traffic struggles to convert into actual purchases.

Table 3. Distribution of channels through which respondents learned about Qiang embroidery.

Awareness Channel	Number of Respondents	Percentage (%)
Social Media (Douyin, Xiaohongshu, etc.)	154	63.08
E-commerce platforms	143	58.46
Tourist Attractions	114	46.54
Intangible Cultural Heritage Exhibitions/Cultural Activities	78	31.92

Note: The sum of the percentages for all channels exceeds 100% because respondents could select multiple options.

95% of respondents indicated that they are familiar with Qiang embroidery, suggesting that awareness levels are not low. However, awareness is highly concentrated online—social media (63.08%) and e-commerce platforms (58.46%) far exceed tourist attractions (46.54%) and offline intangible cultural heritage exhibitions (31.92%), as shown in **Table 3**. When viewed in conjunction with industry data, the cumulative views for Qiang embroidery-related topics on Douyin and

other social media platforms reached 820 million, while the actual purchase conversion rate was less than 0.7%. The contradiction of “high exposure but low conversion” is particularly striking. This suggests a significant disconnect between online content dissemination and actual consumer intent. Identifying which variables can effectively bridge this gap is one of the key focuses of the logistic regression model analysis in the following sections.

2) Consumption is highly dependent on tourism contexts, and the market for conventional product categories has reached saturation.

Among respondents who have purchased Qiang embroidery products (95.38%), the highest proportions cited “tourist souvenirs” (51.54%) and “cultural collectibles” (50.38%) as their purchasing motives, while “daily use” (39.62%) and “gifts” (38.46%) were relatively low. This indicates that current consumption of Qiang embroidery is largely embedded within the tourism experience, and independent purchasing demand outside of tourism contexts remains limited. In terms of product categories, apparel (scarves, belts, etc.) and cultural and creative products (notebooks, phone cases, etc.) tied for first place (both at 48.46%), while collectibles accounted for a relatively low proportion (37.69%). This structure closely aligns with the industry-wide trend where “over 70% of products are concentrated in traditional categories such as apparel and home goods”, implying that the market for low-to-medium value-added products is already saturated, while the high-premium markets for collectibles and custom-made items are still in their early stages of development.

3) Price sensitivity constrains cultural premiums, and the perceived value of design uniqueness is notably low.

Table 4 lists the ranking of mean scores for nine product attributes. Reasonable pricing (3.95) received the highest score, followed by brand influence and after-sales service (both 3.93); design uniqueness (3.71) ranked last, and cultural significance (3.87) also ranked relatively low. Given the characteristics of intangible cultural heritage products, design and culture should be the competitive advantages of Qiang embroidery that are most difficult to replicate compared to machine-embroidered goods. However, consumers’ low ratings for these two dimensions reflect that Qiang embroidery still has significant shortcomings in conveying cultural added value to consumers.

Table 4. Ranking of mean scores for product attribute preferences among respondents.

Product Attribute Dimension	Average Score (1 - 5)	Rank
Price Reasonableness	3.95	1
Brand Influence	3.93	2
After-Sales Service	3.93	2
Packaging Aesthetics	3.92	4
Innovation	3.91	5
Cultural Significance	3.87	6

Continued

Product Practicality	3.87	6
Value for money	3.84	8
Design Originality	3.71	9

4) Interest scores for the three innovative business models are similar, but the behavioral conversion effect of travel photography experiences may be underestimated.

The mean interest scores for the three innovative business models—digital products (3.93), co-branded fashion items (3.86), and travel photography experiences (3.81)—show little difference, but the ranking is intriguing: digital products received the highest interest, while travel photography experiences scored the lowest. Given that the consumption motivation data mentioned earlier indicates that “travel souvenirs” is the primary purchasing motivation (51.54%), the relatively low interest in travel photography experiences creates a marked discrepancy with the reality of consumption that is highly dependent on travel.

4. Empirical Model and Results Analysis

(I) Model Specification and Methodological Selection

To identify the key factors influencing consumer choice of Qiang embroidery, this study constructs a multinomial discrete choice model for empirical analysis based on the discrete nature of consumer choice behavior.

Specifically, the dependent variable in this study is consumers’ preference choices among different types of embroidery (Qiang embroidery, Yi/Miao embroidery, Su/Shu embroidery, and “all acceptable”), which constitutes a multi-class unordered discrete variable. Therefore, compared to linear regression models, the Multinomial Logit (MNL) model is more suitable for describing the probability of an individual’s choice among multiple alternatives. Within the framework of stochastic utility theory, the utility function of consumer (i) for embroidery type (j) can be expressed as:

$$U_{ij} = X_i \beta_j + \varepsilon_{ij}$$

where X_i represents the attribute variables influencing consumer choice, including price reasonableness, cultural significance, design appeal, practicality, brand, fashion collaborations, and travel photography experiences; β_j is the parameter to be estimated; and ε_{ij} is the random disturbance term. Based on this, the probability of a consumer choosing a particular type of embroidery is:

$$P(Y_i = j) = \frac{\exp(X_i \beta_j)}{\sum_k \exp(X_i \beta_k)}$$

To enable model identification, a reference group must be defined. In this paper, “Qiang embroidery” is set as the reference group (i.e., $\beta_1 = 0$). Thus, the relative probability of consumers choosing other categories compared to choosing

Qiang embroidery is:

$$\ln\left[\frac{P(Y_i = j)}{P(Y_i = 1)}\right] = X_i\beta_j, j = 2, 3, 4$$

where $j = 2$ represents traditional Han Chinese embroidery such as Suzhou embroidery or Shu embroidery, $j = 3$ represents other ethnic minority embroidery such as Yi embroidery or Miao embroidery, and $j = 4$ represents “any of them”. The regression coefficient β_j indicates the direction and degree of influence that the independent variable has on the probability of consumers choosing category j (relative to Qiang embroidery): a positive coefficient indicates that the factor increases the probability of consumers choosing category j (i.e., decreases the probability of choosing Qiang embroidery); a negative coefficient indicates that the factor increases the probability of consumers choosing Qiang embroidery

This study uses “selecting Qiang embroidery” as the reference category and conducts a comparative analysis of other categories to identify how different attributes influence consumers’ tendency to deviate from or prefer Qiang embroidery.

Furthermore, to ensure the robustness of the estimation results, this study employs a Probit model for alternative estimation and conducts robustness tests by incorporating control variables and adjusting for clustering.

The inclusion of options with similar category attributes—such as Han Chinese embroidery and embroidery from other ethnic minorities—in the alternative set objectively carries a potential risk of violating the independence assumption for unrelated alternatives. However, from the perspective of actual consumer decision-making logic, individual choices exhibit hierarchical characteristics: consumers primarily classify embroidery into three major categories based on cultural attributes—Qiang embroidery, traditional Han Chinese embroidery, and embroidery from other ethnic minorities—and only after narrowing down to these broad categories do they determine specific preferences; the group with no specific preference assigned value 4 represents a neutral random choice that does not directly substitute for the first three categories. This hierarchical decision-making framework ensures that the random disturbance terms across groups remain relatively independent, thereby supporting the independence assumption for unrelated alternatives. Consequently, employing a multinomial Logit model for empirical analysis is theoretically justified in this study.

(II) Analysis of Baseline Regression Results

The results of the baseline regression are shown in the figure. The effects of different attribute variables on consumers’ choice of Qiang embroidery vary significantly and exhibit clear structural characteristics (Table 5).

The regression results indicate that price reasonableness is significantly negative in all three comparison groups (coefficients of -0.592 , -0.959 , and -0.972 , respectively, with significance levels ranging from 5% to 1%), making it the most robust factor driving consumer choice of Qiang embroidery. This result can be explained from the perspective of signaling theory: in the cultural product market, consumers face information asymmetry, and the perception of price rationality

serves as a value signal, reducing decision-making uncertainty. This indicates that price perception is a fundamental competitive advantage for Qiang embroidery in the market.

Table 5. Multinomial logit regression results.

	Qiang Embroidery (Control Group)	Yi Embroidery, Miao Embroidery, and Other Ethnic Minority Embroideries	Traditional Han Chinese embroidery, such as Suzhou embroidery and Shu embroidery	Are all available
Design	0.000 (.)	-0.286 (0.189)	-0.072 (0.186)	-0.045 (0.259)
Price	0.000 (.)	-0.592** (0.272)	-0.959*** (0.257)	-0.972*** (0.325)
Value	0.000 (.)	0.054 (0.197)	0.063 (0.191)	0.099 (0.273)
Cultural	0.000 (.)	-0.437* (0.244)	-0.507** (0.232)	-0.771*** (0.285)
Practicability	0.000 (.)	0.029 (0.209)	0.066 (0.197)	-0.068 (0.279)
Brand	0.000 (.)	-0.052 (0.232)	-0.222 (0.216)	-0.264 (0.286)
Innovative	0.000 (.)	-0.224 (0.228)	-0.137 (0.222)	-0.423 (0.288)
Appearance	0.000 (.)	0.275 (0.220)	0.189 (0.211)	0.329 (0.294)
service	0.000 (.)	-0.067 (0.212)	-0.177 (0.201)	-0.055 (0.283)
Travel	0.000 (.)	0.219 (0.189)	0.375** (0.188)	0.464* (0.272)
Joint	0.000 (.)	-0.399** (0.203)	-0.165 (0.199)	-0.204 (0.276)
Digitization	0.000 (.)	-0.017 (0.217)	-0.071 (0.206)	-0.292 (0.267)
<i>N</i>		244		

Standard errors in parentheses; Note: Standard errors are shown in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; the reference group is Qiang embroidery.

Cultural connotations were significantly negative in the “Suzhou Embroidery/Sichuan Embroidery” and “Either Is Fine” comparison groups (-0.507 and -0.771, respectively) and marginally significant in the “Yi Embroidery/Miao Embroidery” group (-0.437, $p < 0.1$). These results indicate that the more cultural

connotations are valued, the more consumers tend to choose Qiang embroidery over Han embroidery; however, its ability to differentiate itself is relatively limited within the internal competition among ethnic minority embroidery products. In other words, the unique ethnic cultural symbols of Qiang embroidery constitute a barrier of differentiation against mainstream embroidery.

Collaborative fashion items showed a significantly negative correlation only in the “Yi Embroidery/Miao Embroidery” comparison group (-0.399 , $p < 0.05$), with no significant effect in the other two groups. This indicates that collaborative strategies primarily function within the niche market of ethnic minority embroidery—when embroidery products share homogeneous cultural attributes, fashion-oriented innovation becomes a key means of breaking through homogeneous competition.

The travel photography experience showed a significantly positive correlation in the “Suzhou Embroidery/Shu Embroidery” and “Either Is Fine” comparison groups (0.375 and 0.464), contrary to expectations. This implies that consumers who place greater importance on the travel photography experience are actually less likely to choose Qiang embroidery. Based on field research, this “negative signal” may stem from the fact that current Qiang embroidery travel photography projects are still underdeveloped in terms of service quality and supporting facilities, leading consumers to turn to competitors with more mature experiences.

Variables such as design uniqueness, brand influence, and product practicality did not reach statistical significance in any of the comparison groups. This result does not imply that these factors are unimportant; rather, it indicates that during the category selection stage, consumers focus more on core signals such as price and culture, while design and brand have not yet become decisive factors. From a resource allocation perspective, prioritizing the reinforcement of price perception and cultural expression may yield greater marginal benefits than simply enhancing design or brand.

(III) Robustness Tests

To verify the reliability of the baseline regression results, this study conducted multi-dimensional robustness tests, which indicate that the conclusions are highly robust.

1) Model Specification Changes

To examine whether the baseline regression results depend on the specific functional form of the multinomial Logit model, this study re-estimated the model using a multivariate Probit model, with the results shown in **Table 6**. Unlike the multivariate Logit model constrained by the IIA assumption, the MNP model employs a multidimensional normal distribution to specify the disturbance term for random utility, allowing correlation among random errors across different category alternatives—a feature that precisely aligns with the data characteristics of this study, where Han Chinese embroidery and ethnic minority embroidery exhibit high similarity in category classification and their option disturbances are not entirely independent. Moreover, this estimation method is specifically de-

signed for ordered multinomial response variables and directly corresponds to the variable structure underlying the four types of embroidery preferences examined herein; thus, employing the MNP model for robustness testing demonstrates methodological suitability. The sign, significance, and relative magnitude of the coefficients for the core variables are highly consistent with those of the baseline regression: price reasonableness is significantly negative across all comparison groups; cultural connotations are significant when compared to Han Chinese embroidery; collaborative fashion is significant only in comparisons with ethnic minority embroidery; and the travel photography experience still exhibits a positive coefficient. This indicates that the baseline conclusions do not depend on the specific functional form of the Logit model.

Table 6. Multinomial probit regression results.

	(1)				(2)		
		mlogit			mprobit		
	Qiang Embroidery (Control Group)	Yi Embroidery, Miao Embroidery, and other ethnic minority embroidery	Suzhou embroidery, Shu embroidery, and other traditional Han Chinese embroidery	All are acceptable	Yi embroidery, Miao embroidery, and other ethnic minority embroideries	Suzhou embroidery, Shu embroidery, and other traditional Han Chinese embroidery	All are acceptable
Price	0.000 (.)	-0.592** (0.272)	-0.959*** (0.257)	-0.972*** (0.325)	-0.331* (0.173)	-0.620*** (0.165)	-0.553*** (0.199)
Cultural	0.000 (.)	-0.437* (0.244)	-0.507** (0.232)	-0.771*** (0.285)	-0.285* (0.169)	-0.341** (0.163)	-0.514*** (0.190)
Travel	0.000 (.)	0.219 (0.189)	0.375** (0.188)	0.464* (0.272)	0.192 (0.140)	0.307** (0.139)	0.365** (0.182)
Joint	0.000 (.)	-0.399** (0.203)	-0.165 (0.199)	-0.204 (0.276)	-0.302** (0.146)	-0.123 (0.144)	-0.146 (0.181)
N		244			244		

Standard errors in parentheses; Note: Standard errors are shown in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

2) Inclusion of Control Variables

The baseline regression model included only core explanatory variables related to product attributes and innovative business formats, without controlling for respondents' demographic characteristics. If these characteristics are correlated with the core explanatory variables and simultaneously influence consumption preferences, this could lead to omitted variable bias. Therefore, demographic variables such as age, gender, income, and region were incorporated into the baseline model, and the results are shown in **Table 7**. The sign, magnitude, and significance patterns of the core explanatory variables' coefficients did not undergo fundamental changes: the negative effects of price reasonableness, cultural connotations,

and co-branded fashion items remained stable, and the positive coefficient direction of the travel photography experience remained unchanged (though its significance slightly decreased). This indicates that the baseline model does not suffer from severe omitted variable bias.

Table 7. Regression results with control variables.

Variable	Yi Embroidery/Miao Embroidery vs. Qiang Embroidery	Suzhou Embroidery/Shu Embroidery vs. Qiang Embroidery	Both vs. Qiang Embroidery
Price Reasonableness (Price)	-0.563* (0.293)	-0.965*** (0.269)	-1.021*** (0.351)
Cultural	-0.465* (0.261)	-0.505** (0.245)	-0.841*** (0.305)
Collaborative Fashion Items (Joint)	-0.386* (0.215)	-0.174 (0.206)	-0.150 (0.300)
Travel Photography Experience	0.185 (0.210)	0.349* (0.206)	0.458 (0.303)
Design Uniqueness (Design)	-0.214 (0.205)	-0.047 (0.200)	0.050 (0.277)
Brand Influence (Brand)	-0.030 (0.244)	-0.212 (0.230)	-0.123 (0.314)
Control variables	Controlled (age, gender, income, region)	Controlled (age, gender, income, region)	Controlled (age, sex, income, region)
Observed values	244	244	244

Standard errors in parentheses; Note: Standard errors are shown in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

3) Adjusted Cluster Standard Errors

In the sample data, respondents come from different regions (within the province, other provinces within China, and overseas). Consumers within the same region may face similar market environments, cultural contexts, and product offerings, and their error terms may exhibit within-group correlation. If this clustering structure is ignored, the standard errors may be underestimated, leading to biased statistical inferences. To address this, this paper uses the respondents' re-

gions as the clustering level and re-estimates the baseline model using cluster-robust standard errors to control for the effects of within-group correlation. The results are shown in **Table 8**. The overall patterns regarding price reasonableness, cultural significance, collaborative fashion, and travel photography experiences remain unchanged. Although the statistical significance of some variables has been adjusted, the core conclusions—that price reasonableness is a universal driving factor, cultural significance counteracts Han embroidery, collaborative fashion is effective within the same product category, and travel photography experiences currently serve as a negative signal—still hold true.

Table 8. Regression results with clustered standard errors.

	(1)				(2)			
	Standard Error				Cluster-Consistent Standard Errors			
	Qiang Embroidery (Control group)	Yi Embroidery, Miao Embroidery, and Other Ethnic Minority Embroideries	Suzhou embroidery, Shu embroidery, and other traditional Han Chinese embroidery	All are acceptable	Yi embroidery, Miao embroidery, and other ethnic minority embroideries	Suzhou embroidery, Shu embroidery, and other traditional Han Chinese embroidery	All are acceptable	
Price	0.000 (.)	-0.592** (0.272)	-0.959*** (0.257)	-0.972*** (0.325)	-0.592*** (0.194)	-0.959*** (0.093)	-0.972** (0.405)	
Cultural	0.000 (.)	-0.437* (0.244)	-0.507** (0.232)	-0.771*** (0.285)	-0.437 (0.331)	-0.507*** (0.159)	-0.771*** (0.232)	
Travel	0.000 (.)	0.219 (0.189)	0.375** (0.188)	0.464* (0.272)	0.219 (0.144)	0.375 (0.341)	0.464*** (0.150)	
Joint	0.000 (.)	-0.399** (0.203)	-0.165 (0.199)	-0.204 (0.276)	-0.399*** (0.134)	-0.165 (0.175)	-0.204 (0.198)	
N	244			244				

Standard errors in parentheses; Note: Standard errors are shown in parentheses; clustering levels correspond to the respondents' regions; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Based on the above analysis, the empirical findings of this study reveal the underlying mechanisms driving consumer choice of Qiang embroidery: price rationality serves as the fundamental driving force, constituting the core fulcrum of market competition; cultural connotations act as a key barrier in cross-category competition, helping Qiang embroidery distinguish itself from mainstream embroidery; fashion-oriented innovation represents a breakthrough strategy in intra-category competition, determining its relative advantage among ethnic minority embroideries; cultural and tourism experiences have not yet generated positive synergies and may instead act as a constraining factor at this stage; design and branding have not yet become decisive factors in category selection, and resource allocation requires greater focus.

5. Heterogeneity Test

The baseline regression reveals several key factors driving consumer choice of Qiang embroidery and their general mechanisms of action. However, consumers are not a homogeneous group; their decision-making logic may exhibit systematic differences based on characteristics such as region, age, and income. Based on the empirical results, this chapter conducts grouped regressions by region (within/outside the province), age (young/older), and income (high/low) to test the heterogeneity of the core variables' effects. The aim is to transition from a "one-size-fits-all strategy" to a "segmented strategy", providing direct guidance for targeted marketing and policy design in the Qiang embroidery industry.

To ensure the representativeness and validity of the analysis, this study selects the following three dimensions for heterogeneity testing based on consumer behavior characteristics and market expansion logic:

1) Geographic grouping: Based on the respondents' regions, a dummy variable was created (within the province = 1, outside the province = 0) to identify differences in consumer decision-making logic between the "local market" and "external market" for Qiang embroidery.

2) Age Grouping: The sample was divided into a younger group (ages 18 - 35) and an older group (ages 36 and above) to explore generational preference differences, particularly the younger consumer group's acceptance of emerging business models.

3) Income Grouping: Based on monthly income levels, the sample is divided into a high-income group (monthly income of 8001 yuan or more) and a low-income group (monthly income of 8000 yuan or less) to analyze the moderating effect of purchasing power on attribute preferences.

For each subgroup, we ran a multinomial logit model with "preference for Qiang embroidery" as the reference group; the model specifications and variable system were the same as those in Chapter 4. The core objective was to compare differences in the magnitude, significance, and direction of the coefficients for the same independent variables (such as cultural significance and price reasonableness) across the regressions of different subgroups.

(I) Analysis of Regional Heterogeneity: The Dual Logic of Cultural Penetration and Local Dependence

Table 9. Comparison of key results from regional regression analysis.

Variable	Comparison Group	In-Province Group Coefficient	Out-of-Province Group Coefficient	Interpretation of Heterogeneity
Price Reasonableness (Price)	vs Yi Embroidery/Miao Embroidery	0.119	-0.827*	Entry barriers in out-of-province markets
	vs Suzhou Embroidery/Shu Embroidery	-0.798*	-0.953**	Both groups are significant; price is a common prerequisite for Qiang embroidery to compete with mainstream embroidery

Continued

	vs Both	0.79	-1.537***	Consumers from outside the province who have no preference rely more on price signals
	vs Yi embroidery/Miao embroidery	0.413	-1.159***	Out-of-province consumers rely on cultural connotations to distinguish ethnic embroidery
Cultural Significance	vs Suzhou Embroidery/Shu Embroidery	-0.096	-0.889**	Consumers from outside the province also require cultural context to distinguish Han Chinese embroidery
	vs Both	-1.093	-1.417***	Non-preference groups from outside the province are significantly drawn to cultural significance
Collaborative Fashion Items (Joint)	vs Yi Embroidery/Miao Embroidery	-0.896**	-0.398	Collaboration strategies are significantly effective within the province but not outside
Digital Products (Digitization)	vs Yi Embroidery/Miao Embroidery	-1.082*	0.768**	Effective in attracting customers within the province, but actually inhibits choice outside the province
After-sales Service	vs Suzhou Embroidery/Shu Embroidery	-1.195**	0.19	Significant within the province, not significant outside the province
Travel Photography Experience	vs Suzhou Embroidery/Shu Embroidery	1.225***	-0.069	Positive coefficient within the province (negative direction), not significant outside the province

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; control variables have been included, but only core variables are listed here due to space constraints.

The results of the group-specific regressions indicate that consumers within and outside the province are driven by different factors when selecting Qiang embroidery, revealing a stark contrast: “external markets prioritize cultural perception, while local markets prioritize experiential innovation.” (Table 9)

Strategic Implications:

(1) For out-of-province markets: Marketing efforts should focus on systematically telling the cultural story of Qiang embroidery, transforming unique patterns and symbols—as well as the epic history of migration—into tangible emotional value. At the same time, it is essential to ensure that the price positioning of the main product lines remains competitive in the market, thereby lowering the barrier to first-time purchases.

(2) For the provincial market: Efforts should focus on promoting cross-industry collaborations and a fashion-forward transformation to break the stereotype of Qiang embroidery as a “traditional souvenir” and expand into the everyday consumer and gift markets. Concurrently, the quality of the digital consumer experi-

ence should be enhanced, and after-sales service strengthened to build a modern brand trust system that transcends that of traditional handicrafts.

(II) Age Heterogeneity: Generational Preferences and Expansion into the Youth Market

Regression results for younger (18 - 35 years old) and older (36 years and older) groups reveal significant generational differences, with younger consumers demonstrating a combined sensitivity to “cultural value” and “innovative expression” (Table 10).

Table 10. Comparison of key regression results by age group.

Variable	Comparison Group	Young Group Coefficient	Older Group Coefficient	Interpretation of Heterogeneity
Cultural Connotations	vs Yi Embroidery/Miao Embroidery	-4.911*	-0.415	Younger demographics rely heavily on cultural connotations to distinguish ethnic embroidery
	vs Suzhou Embroidery/Shu Embroidery	-4.757*	-0.525*	Both groups are significant, but the effect is particularly strong among the younger group
	vs Both	-5.848**	-0.552	No preference in the younger group Consumers are strongly attracted by cultural connotations
Price Reasonableness (Price)	vs Suzhou Embroidery/Shu Embroidery	1.954	-1.314***	Older group is price-sensitive; no significant effect for younger group
Collaborative Fashion Items (Joint)	vs Yi Embroidery/Miao Embroidery	-1.614	-0.554**	Collaboration strategy is effective for the older group, but not significant for the younger group
Design Uniqueness (Design)	vs Yi Embroidery/Miao Embroidery	0.516	-0.557**	Older group values design; no significant effect among younger group
Travel Experience (Travel)	vs Both	3.923*	0.587	In the younger group, the travel photography experience shows a negative signal (positive coefficient)
Packaging Aesthetics (Appearance)	vs Yi Embroidery/Miao Embroidery	-1.153	0.652**	For the older age group, the aesthetic appeal of the packaging actually led them to choose other embroidered items

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; control variables have been included, but only core variables are listed here due to space constraints.

Strategic Implications:

1) For the younger market: Do not limit yourself to superficial symbolic applications. Product development and marketing must deeply integrate the cultural DNA of Qiang embroidery and, through “high-context” approaches such as immersive digital storytelling and cross-disciplinary artistic collaborations, satisfy

their dual pursuit of cultural depth and fashion expression.

2) For the older demographic: While ensuring price competitiveness, emphasis should be placed on aesthetic design and perceived quality. Collaborative partnerships should prioritize well-known domestic brands and cultural institutions to introduce fashion elements in a more stable and credible manner, thereby stimulating their consumption.

(III) Income Heterogeneity: Functional Segmentation Based on Value Alignment and Price Sensitivity

Based on monthly income levels, the sample was divided into a low-income group (8000 yuan or less, $N = 139$) and a high-income group (8001 yuan or more, $N = 105$). The results of the group-specific regression, as shown in **Table 11**, clearly illustrate the consumption decision functions under different payment capacities.

Table 11. Comparison of key regression results by income group.

Variable	Comparison Group	High-Income Group Coefficient	Coefficient for Low-Income Group	Interpretation of Heterogeneity
Cultural Connotations	vs Yi Embroidery/Miao Embroidery	-1.380***	0.331	Basis for Premium Pricing Among High-Income Groups
	vs Suzhou Embroidery/Shu Embroidery	-1.317***	0.205	Significant for high-income groups, not significant for low-income groups
	vs Both	-1.671***	0.158	High-income, no-preference group is attracted by cultural connotations
Collaborative fashion items (Joint)	vs Yi Embroidery/Miao Embroidery	-1.006**	0.039	High-income groups are sensitive to fashion collaborations
	vs Suzhou Embroidery/Shu Embroidery	-0.742**	0.2	Same as above
Travel Photography Experience (Travel)	vs Yi Embroidery/Miao Embroidery	0.670*	-0.189	Travel photography is a negative indicator among low-income groups
	vs Suzhou Embroidery/Shu Embroidery	0.788**	-0.017	Same as above
Digitization	vs Yi Embroidery/Miao Embroidery	-0.971*	0.583	Digitization actually limits choice among low-income groups
Innovative	vs Yi Embroidery/Miao Embroidery	-0.737*	0.164	High-income groups value innovation

Strategic Implications:

1) For the high-income market: Focus on developing high-end custom products, collectible-grade items, and in-depth cultural experience programs. In mar-

keting, strive to build a comprehensive narrative system of cultural value and collaborate with high-end designers and brands to reinforce the positioning of these products as “scarce cultural assets”.

2) For the mass market: The immediate priority is to comprehensively improve the value for money and standardization of cultural tourism experiences, such as travel photography, to prevent poor-quality experiences from driving away core customer groups. Promote digital derivatives with caution to avoid creating new barriers to consumption. Product strategies should return to practical, high-value-for-money cultural and creative products to solidify the market’s foundation.

In summary, the heterogeneity analysis indicates that the decision-making mechanisms behind consumer choices regarding Qiang embroidery exhibit significant regional, age, and income-based differences. Consumers outside the province are driven by culture and price, while those within the province are more responsive to collaborations and digital innovations; younger groups seek deep cultural identity, whereas older groups focus on price, design, and a safe approach to fashion; high-income groups are willing to pay a premium for cultural value and fashion collaborations, while mass-market consumers are particularly averse to poor travel photography experiences and digital barriers.

These findings collectively point to a core policy implication: promoting the industrial development of Qiang embroidery requires the implementation of precise, differentiated market strategies. Any “one-size-fits-all” promotional or product policy is likely to fail due to a mismatch with the actual needs of specific groups. Future resource allocation and strategic planning should be based on the demographic segmentation map revealed by this empirical analysis. Systematic differentiation and precise targeting should be implemented in cultural narratives, product portfolios, pricing strategies, channel development, and experience design, thereby effectively translating macro-level support into micro-level impact. This provides a solid basis for Chapter 6 to construct a locally tailored, three-dimensional integration pathway combining “products, digital technology, and cultural tourism”.

6. Market-Oriented Development Path for Qiang Embroidery

Combining the empirical findings on consumer preferences with current market realities, and grounded in the objectives of enhancing the competitiveness of Qiang embroidery products, expanding the market, and ensuring sustainable operations, this section proposes systematic and actionable market-oriented development strategies across three dimensions: product, digital, and cultural tourism. These strategies focus on addressing core consumer concerns—such as price, culture, and experience—to drive stable market conversion for Qiang embroidery.

(I) Development Strategies at the Product Level

1) Establish a Reasonable Pricing System to Stabilize Consumer Expectations

Guided by consumers' strong emphasis on price rationality, optimize the cost structure of Qiang embroidery products. While preserving core hand-embroidered patterns, appropriately incorporate mechanized production to reduce costs in non-core processes and stabilize the price range of mainstream products. Simultaneously, establish a tiered pricing mechanism to offer products at different price points for daily consumption, gift-giving, and collecting, thereby meeting diverse consumer needs. By promoting transparency in production processes and visualizing the value of handcrafted work, consumers can clearly perceive the alignment between product value and pricing, thereby enhancing price acceptance and purchase intent.

2) Highlight Cultural Distinctions and Deepen Brand Recognition

We will explore the unique cultural symbols and historical significance of the Qiang people embedded in Qiang embroidery. By systematically integrating distinctive elements such as mountainous ecosystems, migration history, folk rituals, and traditional patterns into our designs, we will establish a visual style and cultural identity that clearly distinguishes Qiang embroidery from Han Chinese embroidery traditions like Suzhou embroidery and Shu embroidery. Simplify complex cultural expressions and use modern design language to translate cultural narratives into product features that are easy for consumers to understand and perceive, reinforcing the cultural perception of "Qiang embroidery exclusivity". For markets outside the province and younger demographics, prioritize communicating cultural uniqueness to capture consumer minds through differentiated advantages (Sun & Tang, 2025).

3) Promote Fashion-Forward Collaborations to Expand the Mainstream Consumer Base

To reach a broader consumer market, we will engage in cross-industry collaborations with domestic mass-market apparel, lifestyle and cultural creativity, and trend-setting brands to develop fashion items that blend traditional craftsmanship with modern aesthetics, thereby breaking the stereotype of Qiang embroidery as a "niche souvenir". Collaborative designs will prioritize simplicity, minimalism, and practicality, covering high-frequency usage scenarios such as apparel, accessories, and home goods to increase daily usage and visibility. By adopting a fashion-forward approach, we will lower the barrier to entry, attract mainstream consumers who previously had no interest in ethnic minority crafts, and expand market reach.

4) Enhancing Product Utility and Quality to Boost Repeat Purchases

Focusing on the practicality, aesthetics, and after-sales service valued by consumers, we will optimize product functionality, improve the quality of base materials such as fabrics and accessories, and enhance the visual appeal of packaging. We will refine the service system—including returns, exchanges, and maintenance consultations—to elevate the overall consumer experience. By building a solid reputation through high-quality, highly practical products, we will drive the shift from one-time tourist purchases to regular repeat purchases, thereby expanding a

stable consumer base.

(II) Development Strategies for the Digital Dimension

1) Establish a Comprehensive Digital Resource Library for Qiang Embroidery to Strengthen the Foundation for Innovation

Systematically collect and archive digital data on Qiang embroidery techniques, motifs, patterns, and color systems to establish a standardized, searchable digital resource repository. This will provide a stable foundation of materials for product design and pattern innovation. Utilize digital tools to standardize craftsmanship documentation, mitigate the risk of skill loss, and ensure a solid resource base for long-term market-oriented development.

2) Optimize Digital Content Distribution to Improve Traffic Conversion Rates

Leverage mainstream online channels such as Douyin, Xiaohongshu, and WeChat Official Accounts to create high-quality content showcasing Qiang embroidery culture and products. Focus on sharing stories about the craft, the symbolism behind patterns, and artisans' experiences to enhance cultural appeal. Optimize content presentation by highlighting real-life product displays, usage scenarios, and pricing information to address the "high exposure, low conversion" issue, effectively converting online traffic into actual purchases.

3) Develop Digital Consumption Models and Cultivate a Sustainable Market

Moderately develop new products such as digital collectibles, virtual cultural and creative merchandise, and online digital exhibition halls featuring Qiang embroidery. Use lightweight, engaging digital content to attract young consumers and enhance the brand's fashion-forward and cutting-edge image. Digital products should not be aimed at short-term sales but rather serve as tools for building brand awareness, increasing consumers' familiarity with and affinity for Qiang embroidery, and providing long-term support for offline product sales (Fan et al., 2026).

4) Advance Digital Operations to Improve Market Responsiveness

Utilize online data to monitor shifts in consumer preferences and promptly adjust product styles, pricing, and promotional priorities. Establish an online e-commerce and distribution system to expand sales channels, reduce geographical barriers, and enable consumers outside the province and overseas to purchase Qiang embroidery products more conveniently, thereby increasing market coverage.

(III) Development Strategies for the Cultural Tourism Dimension

1) Comprehensively Standardize Cultural and Tourism Experience Standards to Improve the Consumer Experience

To address the current lack of quality travel photography experiences featuring Qiang embroidery, standardize service procedures, scene design, costumes, props, and photography standards. Conduct training for practitioners on skills and service protocols, consolidate fragmented operators, and enhance the professionalism and consistency of services. Clearly define service quality requirements to eliminate low-cost, substandard experiences and mitigate the negative impact of such shortcomings on consumer choices.

2) Enrich the Content of Cultural and Tourism Experiences and Strengthen Cultural Appeal

Upgrade single-purpose photo shoots into comprehensive cultural experiences by incorporating explanations of Qiang embroidery patterns, simple embroidery workshops, and introductions to Qiang folk customs. This will allow visitors to understand the cultural value of Qiang embroidery through hands-on engagement, thereby fostering emotional connection. Integrate Qiang embroidery experiences with Qiang villages and scenic tour routes to create themed, immersive cultural tourism hubs, enhancing the uniqueness and memorability of the experience.

3) Integrating the Experience and Consumption Pathways to Boost Product Sales

Set up product display and sales areas within cultural tourism experience settings to achieve a closed-loop process of “Experience — Awareness — Purchase”. Bundle photography packages with Qiang embroidery accessories and small cultural and creative products to increase average transaction value and product conversion rates. Through tangible, immersive experiences, strengthen consumers’ purchasing intent and drive the conversion of cultural tourism traffic into product sales.

4) Establish a Long-Term Monitoring Mechanism to Continuously Improve Service Quality

Establish consumer evaluation and feedback channels to monitor satisfaction with cultural and tourism experiences in real time, and promptly optimize and adjust based on identified issues. Foster stable partnerships between scenic areas, intangible cultural heritage workshops, and artisan teams to form a sustainable operational model, ensuring that cultural and tourism experiences truly become a positive driving force for the Qiang embroidery market.

7. Conclusion

This paper takes Qiang embroidery, a national-level intangible cultural heritage, as its research subject. Against the backdrop of the national strategy to build a cultural powerhouse and the rural revitalization initiative, it addresses the practical challenges facing Qiang embroidery—including a generational gap in inheritance, product homogenization, weak brand power, insufficient integration of culture and tourism, and inefficient digital transformation. By integrating the Theory of Planned Behavior, the Technology Acceptance Model, and Social Capital Theory, the study constructs an analytical framework from the consumer’s perspective. Based on 244 valid questionnaires and in-depth interview data, the study employs a multinomial logit model, heterogeneity tests, and robustness analysis to systematically identify the key drivers and constraints influencing consumer choices regarding Qiang embroidery. Based on these findings, the study proposes a market-oriented development path for Qiang embroidery that aligns with market demands.

The study yielded four core findings:

First, Reasonable pricing and unique cultural significance are the most critical factors driving consumer choice of Qiang embroidery. Reasonable pricing constitutes a fundamental competitive advantage for Qiang embroidery in the market, while its unique ethnic cultural significance serves as a key differentiator distinguishing it from Han Chinese embroidery styles such as Suzhou embroidery and Shu embroidery.

Second, the scope of co-branding strategies is limited; while they are significantly effective in competition within the ethnic minority embroidery sector, they struggle to establish an independent competitive edge when targeting the mainstream Han Chinese consumer market.

Third, the Qiang embroidery travel photography experience exhibits characteristics of a “liability”. Affected by issues such as immature settings, unstandardized services, and inconsistent quality, it actually discourages consumer choice and represents a clear shortcoming in the current integration of Qiang embroidery with cultural tourism.

Fourth, digital products do not significantly drive immediate consumer choices and have not yet formed a direct sales driver; their value is more evident in the preservation of craftsmanship, the safeguarding of patterns, and the dissemination of cultural knowledge.

At the same time, heterogeneity analysis indicates significant differences in consumer decision-making mechanisms across different regions, age groups, and income levels. Consumers from outside the province place greater emphasis on price and cultural signals, while those within the province are more responsive to fashion collaborations and digital business models; younger groups seek deep cultural identification, whereas older groups focus more on price and traditional quality; high-income groups are willing to pay a premium for cultural value, while the mass consumer market is more resistant to poor-quality cultural tourism experiences and complex digital products.

Based on these empirical findings, this paper proposes three core pathways for the market-oriented development of Qiang embroidery from a practical implementation perspective:

First, the product marketization pathway is centered on price anchoring and cultural differentiation. This involves optimizing production models while preserving core handcrafted techniques to stabilize the pricing structure of mainstream products; deeply exploring and clearly communicating the cultural essence of Qiang embroidery to enhance the distinctiveness of its ethnic characteristics; and leveraging fashion collaborations to expand into the mainstream market, thereby enhancing the modernity and reach of the products.

Second is the cultural tourism experience enhancement pathway, which prioritizes service standardization. This involves standardizing travel photography settings, costumes, props, and service procedures to rapidly reverse negative experiences; building upon this foundation to integrate cultural content, transforming

simple photo sessions into immersive experiences that combine cultural commentary and hands-on craft activities; and ultimately establishing a closed-loop cultural tourism operation model that links experiences with sales and ensures sustainable revenue, thereby transforming cultural tourism from a constraint into a driving force for Qiang embroidery consumption.

Third, the digital support pathway: Position digitalization as a long-term foundational project, prioritizing the digitization and knowledge management of Qiang embroidery stitches and patterns; optimize the quality of digital content to improve the efficiency of converting online traffic into cultural awareness and actual consumption; use digital technology to support product innovation and cultural dissemination, while not treating digital product sales as a short-term goal.

Overall, the market-oriented development of Qiang embroidery should be grounded in genuine consumer preferences, with products as the core, cultural tourism as the breakthrough, and digital technology as the foundation. It should follow a path of precise development focused on market demand, ensuring commercial sustainability while promoting the long-term preservation of Qiang embroidery techniques and culture.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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