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The Social Construction Mechanisms of Traditional Crafts in Ethnic Border Areas: A Multidimensional Interaction Analysis of the Dali Tie-Dye Industry

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Abstract
This study explores the social construction mechanisms of traditional crafts in ethnic border areas, using the tie-dye industry of the Bai ethnic group in Dali, Yunnan as a case study. Through a multidimensional interaction analysis framework, it examines the transformation pathways of traditional crafts in modern society. The research finds that the development of tie-dye craftsmanship in Zhoucheng Village, Dali embodies the interactive effects of four key elements: government policies, stakeholder networks, personal experiences, and media dissemination. Through in-depth analysis of typical cases including Shishen Tie-dye, Puzhen Tie-dye, Blue Continuation Workshop, and Duan's Tie-dye, the study reveals differentiated development strategies adopted by various actors facing pressures of globalization, marketization, and cultural preservation: Shishen Tie-dye adheres to plant dyes and traditional production cycles, constructing "irreplicable authenticity" through seven generations of inheritance; Puzhen Tie-dye leverages intangible cultural heritage policies to obtain resource support, seeking dynamic equilibrium between traditional gene preservation and industrial scale expansion; the Blue Continuation model embeds tie-dye techniques into agricultural experiences and tourism narratives, achieving cultural-tourism-agriculture integrated ecosystem construction; Duan's Tie-dye realizes modern transformation of traditional craftsmanship through functional design and integration of poetic-pictorial elements. The research demonstrates that the modern reconstruction of traditional crafts involves not only technological continuity but also requires establishing a three-dimensional synergy system of "policy instruments-market mechanisms-cultural identity," transforming local knowledge into cross-cultural value currency in global contexts, ultimately achieving a cognitive paradigm revolution in civilizational dialogues beyond technological continuity propositions.

Keywords
Traditional crafts, social construction mechanisms, modern reconstruction

1 Multiple Conventions: A Review of the Construction Mechanisms of Textile

Socio-Technical Networks" examines how textiles and plant-dyed fabrics function as material cultural

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carriers influenced by various social factors during their production, distribution, and cultural dissemination. The literature review identifies key elements shaping this field: government policies, stakeholder networks, personal experiences, and media.

Scrase (2003) points out how government interventions and global market forces shape artisanal textile production models, while Grosfilley (2018) observes that the strength of intellectual property protections directly impacts the innovation and competitiveness of local designs. Cardon's (2010) perspective, validated by Doty et al. (2016), emphasizes that tightening environmental regulations provide policy support for plant-based dyes. Littrell & Dickson (2010) demonstrate how fair trade networks reconfigure power dynamics between traditional artisans and global markets, and Hauge (2018) stresses that value within fashion systems is co-constructed through stakeholder interactions. Padilla-Díaz (2015) further notes that international organizations, artisans, and consumers form complex networks that redefine the value of plant-based dyes. Sennett (2008) posits craftsmanship as the materialization of individual life experiences, with Pöllänen (2013) and Hoskins (1998) expanding this view by arguing that textiles embody the skills, life narratives, and emotional memories of their creators. Jenss (2016) illustrates how visual social media transforms the presentation and storytelling of handmade textiles, while Skov et al. (2009) underscore media's role as active constructors of cultural value, and Padilla-Díaz (2015) observes how social media propels plant-based dyes to the forefront of sustainable fashion. From a pluralistic perspective, Clark & Paulicelli (2009) assert that textile culture emerges from the interaction of political, economic, and cultural forces, with Fletcher (2013) adding that sustainable textile practices involve intricate multi-actor collaborations. This synthesis underscores how socio-technical networks dynamically construct textile cultural carriers through overlapping conventions, reflecting the entanglement of materiality, policy, human agency, and mediated narratives.

2 The Origin and Historical Legacy of Chinese Tie-Dye: Craft Evolution and Cultural Impact from Qin-Han to Liao Dynasties

It is globally acknowledged that tie-dyeing originated in China. The development of tie-dyed textiles can be traced back to its emergence during the Qin and Han dynasties (221 BCE–220 CE), reaching its zenith in the Sui and Tang dynasties (581–907 CE), and gradually declining by the Song Dynasty (960–1279 CE). In China, the craft of jiaoxie (twist dyeing) boasts nearly a millennium of documented history.

Ancient texts provide rich descriptions of this technique, such as Luoyang Qielan Ji (The Record of Buddhist Monasteries in Luoyang), which states, "After dyeing, the knots are untied; the knotted areas remain uncolored, while the rest absorbs the dye, creating patterned silk." Shuowen Jiezi (Explaining Graphs and Analyzing Characters) defines xie (缬) as "binding fabric with threads before dyeing." Yunhui (Rhyme Compendium) explains, "Xie refers to tying silk to create patterns through dyeing." Yiqie Jing Yinyi (Sounds and Meanings of All Sutras) notes, "Binding silk with threads, then dyeing and untying them to form patterns is called xie." Poetic works also reflect its cultural significance, such as in Chao Feiqing (Mocking Fei Qing) mentioning "drunken sleeves brushed with fish-roe xie" and You Changning Gongzhu Liubei Chi Shi (Poem on Princess Changning's Floating Cup Pond) describing "leopard-skin rugs spread horizontally, deer-embossed scarves draped sideways."

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Historically preserved jiaoxie textiles fall into two categories: archaeological finds and heirloom collections. Due to the vulnerability of fabrics to humidity and temperature, intact ancient pieces are rare, often surviving as fragments. These relics are concentrated in three regions: China, Japan, and Europe/India. In China, key sites include Xinjiang (Turpan) and Gansu (Dunhuang), with major collections at the Xinjiang Uygur Autonomous Region Museum, Gansu Provincial Museum, and China National Silk Museum. In Japan, preserved heirlooms are housed in institutions like the Shosoin Repository, Horyuji Temple, and Ryukoku University Library. In Europe and India, the British Museum, Victoria and Albert Museum, and National Museum of New Delhi hold fragments excavated from Xinjiang and Dunhuang.

China's surviving jiaoxie textiles span from the Spring and Autumn Period (770–476 BCE) to the Liao Dynasty (907–1125 CE), showcasing diverse forms. During the Warring States Period, checkered plain-weave wool fabrics were common. From the Han to Jin Dynasties, silk xie with geometric patterns, such as the "red-ground rhombus-resist xie" from the Former Qin era (384 CE), were popular. The Tang Dynasty featured floral-patterned gauze (luo), brown-dyed silk, and "stacked victory motif" skirts. In the Liao Dynasty, red-ground polka-dot jiaoxie silk was prevalent. These artifacts, distributed across institutions like the Inner Mongolia Museum, Shosoin Repository (Japan), and Victoria and Albert Museum (UK), form a vital material foundation for studying traditional Chinese dyeing techniques.

3 Zhoucheng Village: A Living Heritage of Bai Tie-Dye Culture and a Paradigm for Agritourism Integration

Zhoucheng Village, the largest natural village in Dali Bai Autonomous Prefecture, spans 4.7 square kilometers and has a permanent population of 10,282 (as of late 2024). It stands as one of the most intact "living fossils" of Bai culture. Nestled between Erhai Lake to the east and the Yunlong Peak of Cangshan Mountain to the west, the village is strategically located near National Highway 214 and the world-renowned Butterfly Spring Scenic Area. Leveraging its cultural identity as the "Hometown of Bai Tie-Dye," Zhoucheng has become a benchmark for integrated cultural and tourism development in northwestern Yunnan.

In agriculture, the village has implemented high-standard farmland construction, establishing a "tripartite" crop system centered on rice, wheat, and broad beans. Recent introductions of premium varieties and smart farming technologies have systematically increased yields: wheat production rose by over 15%, rice by more than 20%, and total grain output surpassed 4,200 tons in 2024, placing per capita grain availability among the highest in Dali City. To support the tie-dye industry, indigo cultivation now accounts for 35% of cash crops, forming a unique "intangible cultural heritage + agriculture" model.

Decades of water conservancy projects have created a modern "three vertical, three horizontal" irrigation system. Centered on the Huanxintian Reservoir and supported by four-tier pumping stations and 15 ecological canals, the system ensures irrigation coverage for over 95% of arable land. A smart water management system introduced in 2023 uses IoT technology for precise water allocation, improving efficiency by 40%.

The industrial landscape combines traditional craftsmanship with modern manufacturing. The tie-dye industry, revitalized through digital transformation, has spawned cultural-tourism projects like the Puzhen Tie-Dye Museum, attracting over 200,000 annual visitors. Dairy processing enterprises now handle 350 tons of

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fresh milk daily, expanding into cheese and probiotics. To protect Erhai Lake's ecology, marble mining has been phased out in favor of green food processing.

The tertiary sector thrives on "Bai cultural experiences," driven by three pillars: a 3.8-kilometer intangible cultural heritage street (investing 230 million yuan) housing 200 tie-dye workshops and boutique homestays; a "Tea Horse Road" themed tourism project generating over 50 million yuan annually; and a smart tourism system integrated with the "One Phone Travels Yunnan" platform, offering full digital guidance. In 2024, commerce and service revenues grew by 28%, employing over 2,000 people.

The evolution of Zhoucheng's tie-dye industry mirrors China's socio-cultural transformations. From the late Ming to the Republic of China era (1912–1949), the craft took root through geographic advantages: mountain streams provided pristine water for rinsing, while fertile Erhai Basin soil nurtured indigo plants, forming a closed-loop production chain. Post-1912, caravan trade spurred the rise of 300 workshops along the Tea Horse Road, exporting fabrics to Tibet and Myanmar. Techniques preserved Tang and Song dynasty intricacies, such as "fish roe" patterns with 1mm knots and "deer fetus" gradients requiring seven dye baths—each bolt demanding 30 days of labor, far surpassing the simplicity of Jiangnan's blue calico.

During the Cultural Revolution, artisans like Zhang Shishen hid 12 century-old dye vats in cellars and stashed 187 traditional pattern templates in quilt linings. The Duan Yinkai family covertly taught techniques using rice-paste sketches on cloth, nurturing 32 core artisans who later revived the industry. In 1984, collective production at the Tie-Dye Factory marked a shift from planned to market economy: state purchases at 2.8 yuan per bolt, standardized 56-step processes, and daily output of 3,000 meters. Exports to Japan captured 43% of the kimono lining market, aligning with the Japanese mingei (folk craft) movement.

The 1990s marketization brought dual crises: Jiangsu-Zhejiang mechanized printing undercut costs by 80%, while local workshops replaced 7-day indigo fermentation with quicklime methods, causing colorfastness to plummet. "Tourist tie-dye" products boomed temporarily, but 78% of designs recycled clichéd motifs like butterflies and camellias, eroding 62% of traditional techniques like layered dyeing.

Tie-dye in Zhoucheng embodies cultural depth and social function. It defines Bai attire—indigo headscarves with floral patterns, sleeves with tie-dye bands, aprons, and festive shoes—while extending to home textiles (bedding, curtains) and accessories (scarves, bags). Emotionally, tie-dye handkerchiefs symbolize enduring love as betrothal tokens and serve as protective gifts for newborns. Ritually, they adorn Benzhu deity birthdays, Zhongyuan Festival ancestral rites, and harvest celebrations, blending solemnity with communal hopes. Modern innovations, from men's jackets in diplomatic events to car seat covers and appliance decor, showcase its dual role in preserving heritage and embracing modernity, making it a holistic vessel for Bai identity, daily life, and spiritual expression.

4 Dyeing Through the Ages: Zhang Shishen's Five-Generation Quest to Safeguard Traditional Tie-Dye

The tie-dyeing art boasts a profound historical legacy in China. The Tang Dynasty poetess Xue Tao expressed her fondness for dyed garments in her poem Ode to Begonia: "Spring teaches landscapes to dwell in

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celestial rosy clouds, fish bodies glisten with floral patterns in water. Mortals fail to perceive divine blossoms' wonder, yet dye sheer gauze with crimson batik splendor." This verse became an enduring aesthetic reference in dyeing circles. Xue Tao, a literary talent comparable to Zhuo Wenjun, once served as a female proofreader in General Wei Gao's mansion and experienced a passionate romance with poet Yuan Zhen. Her fascination with tie-dyed garments and accessories found vivid expression through her poetic works.

In Yunnan's Dali, the tie-dyeing craft in Zhoucheng Village originated during the late Ming and early Qing dynasties. Through over three centuries of evolution, it has matured into invaluable cultural heritage and a significant traditional industry. According to the Yang Family Genealogy Preface from the Daoguang era of Qing Dynasty, Zhoucheng's textile industry gained regional fame as early as the Ming period. The industry peaked in 1931 (20th year of the Republic of China), when over 300 households operated dyeing businesses in the village. Villagers maintained self-sufficient production cycles encompassing weaving, tying, dyeing and sales to sustain their livelihoods. Notable workshops and brands from that era included Dexinhe, Deyihe, Fuzhenxiang, Yujinhe, Fuyuhe, and Lijiang Branch, producing diverse varieties like plain cloth, reversible cloth, printed fabric, and particularly renowned tie-dyed cloth that sold well across Dali, Eryuan, Jianchuan, Heqing, Lijiang, and Lanping counties.

Zhang Shishen, hailed as the "Father of Modern Zhoucheng Tie-Dyeing," played a pivotal role in the craft's development. Appointed as Zhoucheng Village accountant at 18 in 1959, he later spearheaded the establishment of a collective tie-dyeing group in 1984, which expanded into the Butterfly Brand Tie-Dyeing Factory. As factory director from 1987, he rebranded it as Zhoucheng Ethnic Tie-Dyeing Factory in 1989, creating the folk brand Dianquan. By 1995, the factory achieved annual output value of 8 million yuan with 1.4 million yuan net profit. However, the widespread adoption of chemical dyes precipitated severe challenges for traditional plant-based dye techniques, leading to the factory's closure in 2004. Undeterred, Zhang Shishen's family persisted in safeguarding traditional craftsmanship across seven generations, forming an inheritance lineage spanning Zhang Shishen (5th generation), Zhang Renbiao (6th generation), and Zhang Xia (7th generation).

During the Cultural Revolution, Zhang Shishen risked his life to salvage and preserve 50 kilograms of traditional plant dye concentrate—native indigo, making crucial contributions to sustaining this craft. At the time, a work team planned to destroy the indigo under the campaign of "cutting off capitalist tails." Under cover of night, Zhang Shishen, along with the production team leader and technicians, secretly retrieved and safeguarded this precious dye. This act not only preserved traditional dyeing materials but also laid the foundation for the revival of tie-dye techniques. The production of native indigo involves an intricate process strictly tied to seasonal rhythms. According to Zhang Xia (Zhang Shishen's granddaughter), the leaves of Isatis root (板蓝根) are harvested in lunar September and October, with indigo production commencing in lunar November. After soaking the leaves in vats with lime for fermentation, experienced dyers adjust the leaf-to-water ratio based on climatic conditions—a process requiring 15 to 20 days. The dyeing begins in lunar November, as indigo can only be produced once annually; missing this window results in discoloration. This nature-synchronized craftsmanship embodies ancient wisdom and reverence for natural cycles.

Zhang Shishen once fiercely defended the dignity of Chinese tie-dye artisans. When Yunnan foreign trade company brought Japanese clients to Zhoucheng Village for orders, doubts arose about the authenticity of

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plant-dyed fabrics. To prove quality, Zhang dramatically drank a ladle of the dye liquid (harmless as plant-based), which skyrocketed orders and attracted Japanese and Korean buyers. His 1996 exhibition tour in Japan saw Bai ethnic tie-dye works enthusiastically received, with 80% of Zhang family workshop products exported to Japan and Korea. Collaborations with Japanese designers produced the treasured "Kyoto" series. However, traditional plant dyeing now faces severe challenges from chemical alternatives: cost (35 CNY vs. 300 CNY per m^2), production time (1 day vs. 1 week), process complexity (3 vs. 20+ steps), and technical demands. Plant dyeing requires cold immersion and repeated dipping, coupled with rising fabric costs, intensifying preservation difficulties.

The craft's inheritance faces a talent crisis. Few local youth engage in tie-dye, with most practitioners over 45. The labor-intensive stitching process pays merely 20 CNY daily—far below other jobs. Zhang Xia noted, "Local youth show little interest, while outsiders are increasingly curious." A 2016 breakthrough came when deaf-mute students mastered 1.2×1.8m tablecloth production within a week through focused practice.

As the seventh-generation inheritor influenced by her grandfather, Zhang Xia initially abandoned the craft for fashion pursuits but was inspired by Zhang Shishen's predawn pattern-drawing dedication. In 2015, she revived the craft, establishing "Shishen Tie-Dye Workshop" (registered in 2017). Insisting on plant dyes, she cultivates Isatis root on Cangshan Mountain and criticizes chemically dyed, crudely patterned products dominating Dali's tourist market. Having inherited 10,000 patterns from her grandfather, Zhang Xia completed 2,000 designs (1,700 applicable) for a 2017 government project, now organizing elders to restore traditional motifs for cultural preservation.

On December 29, 2017, the "Zhang Shishen Tie-Dye Technique Inheritance Exhibition" at his former residence drew over 200 participants, including Dali University professors and national inheritors. Endorsed by the Dali Prefecture Ethnic and Religious Affairs Commission, the event unveiled plaques for "Zhang Shishen's Former Residence" and "Bai Tie-Dye Family." Zhang Renbiao and Zhang Xia pledged to continue the legacy. Recognized as a national intangible cultural heritage inheritor in 2007, Zhang Shishen created over 6,000 works rich in cultural depth during his five-decade career, his techniques and patterns remaining vital to Zhoucheng's Bai cultural identity.

The development of tourism has created opportunities for the dissemination of tie-dye culture. Zhang Xia suggests that as a renowned tourist destination, Dali attracts numerous visitors who are highly likely to purchase tie-dye souvenirs for gifting purposes, particularly favoring purely handmade products. Although domestic tourists generally have limited awareness of plant-based tie-dye techniques, some visitors still recognize the value of botanical dyeing and accept its premium pricing. Through tourists purchasing handmade souvenirs, this indirectly promotes the spread of tie-dye culture and industrial development. Zhoucheng's "Shishen Tie-Dye", recognized as a national intangible cultural heritage, transcends mere traditional craftsmanship to embody the cultural memory and spiritual essence of the Bai ethnic group. Amidst the fast-paced lifestyle and commercial influences of modern society, the Zhang Shishen family persists in upholding the philosophy of "plant-based dyes". Through skill inheritance, industrial innovation, and cultural promotion, they have infused new vitality into traditional tie-dye techniques. As Zhang Shishen once stated during his lifetime: "Although most now opt for low-cost chemical dyes, consumers will eventually rediscover the value of plant-based tie-dye techniques, which must never be abandoned." This spirit of perseverance and inno-

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vation provides invaluable experience for the preservation and development of intangible cultural heritage, while offering crucial insights for contemplating the value and positioning of traditional culture within modern society.

5 Dual-Driven Commercialization of Bai Handicrafts: Government and Market Roles in Puzhen Tie-Dye Development

As a typical example of the commercialization transformation of Bai ethnic traditional handicrafts, the development of Puzhen Tie-Dye exemplifies the effective integration of intangible cultural heritage protection with market economy principles. Duan Shukun, the 18th-generation inheritor of Bai tie-dye craftsmanship, has successfully modernized traditional techniques through innovative business models and policy resource integration since reviving the ancestral "Puzhen Tie-Dye Workshop" in 1999. Between 2003 and 2005, the workshop generated profits of 2-3 million yuan, preliminarily validating the feasibility of market-oriented operations. Facing an industry crisis in 2006, when the Zhoucheng Ethnic Tie-Dye Factory collapsed due to cost pressures (with plant dye costs being 20 times higher than chemical dyes), Duan keenly seized emerging e-commerce opportunities. In 2007, through B2B models connecting Taobao sellers and tourism retailers in first-tier cities like Beijing, Shanghai, Guangzhou, and Shenzhen, he established a nationwide wholesale network.

During the scale expansion phase, the strategic acquisition of the original Zhoucheng Ethnic Tie-Dye Factory in 2008 proved pivotal. The 3,000-square-meter production base and an annual outsourcing system serving 3,000 person-times in tie-cloth craftsmanship preserved traditional techniques while developing industrialized production capabilities. Following the implementation of the Intangible Cultural Heritage Law in 2011, the enterprise leveraged policy opportunities to be designated as a "National Intangible Cultural Heritage Productive Protection Demonstration Base" in 2014, securing 1.5 million yuan in project funding—a milestone marking official recognition of its development model. The Bai Tie-Dye Museum, innovatively constructed in 2015, features specialized exhibition zones like "Three Workshops and One Screen Wall" within its 1,970-square-meter space. Under the professional management of retired cultural expert Zhang Shen, it combines static displays with dynamic experiences, creating a composite space that integrates skill transmission, cultural education, and tourism engagement.

The enterprise's commercialization path exhibits distinctive characteristics. In terms of material usage, it adopts a compromise strategy by blending traditional indigo dyes with chemical dyes for some products, balancing cost control with craft authenticity. Product categories have expanded from the initial 300-400 types to over 2,000 varieties, covering apparel, home decor, and cultural creative fields. Through interactive programs like "Tie-Dye Experience Halls," production spaces have been transformed into cultural consumption venues, fostering a tie-dye-themed tourism ecosystem in Zhoucheng Village and supporting industries such as homestays and catering. This "productive protection" model sustains over 50 permanent employees and more than 2,000 outsourced tie-dye workers, achieving a positive interaction between heritage preservation and regional economic development.

Notably, Puzhen Tie-Dye retains its core of traditional craftsmanship even as it modernizes. Product in-

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novation occurs only in appearance design, preserving the authenticity of core tie-dye techniques. This "form-changing while essence-preserving" innovation principle adapts to market demands while safeguarding cultural heritage spirituality, offering a replicable paradigm for similar intangible cultural heritage commercialization. Through bidirectional university collaboration mechanisms, the enterprise builds sustainable channels between technical inheritance and design innovation, demonstrating the robust vitality of traditional culture in modern commercial contexts.

6 Xiao Bai's Blue Continuation Tie-Dye Workshop: Innovative Practice of Cultural-Tourism-Agriculture Integration

Xiao Bai and her Blue Continuation Green Cultural Development Center present an innovative approach to integrating cultural tourism with agriculture, fostering the harmonious coexistence of nature, culture, and humanity. Their efforts exemplify the successful fusion of traditional culture with commercial development across various facets such as corporate philosophy, social responsibility, strategic partnerships, technical inheritance, and cultural presentation, offering hope for the sustainable preservation of cultural heritage.

The founders of Blue Continuation, Xiao Bai and her husband, are intellectuals dedicated to this cause. Xiao Bai, originally Zhang Hanmin from the Bai ethnic group in Dali, transitioned from working at an NGO in Beijing to establishing her business in her hometown, Zhoucheng Village in Dali—a prime example of the "Utown returnee" phenomenon. After graduating from Shaanxi Normal University, she taught history at Huaining Middle School in Yuxi, Yunnan Province, but left the stable education system in 2007 to join World Vision International in Beijing, coordinating poverty alleviation projects in Inner Mongolia. Her concern for aging parents eventually brought her back home.

Blue Continuation's vision statement declares: "We are not a traditional dye workshop, but a green cultural development institution. We collaborate with local communities to inherit, develop, and innovate ethnic minority green cultures, explore pathways for cultural transmission, practice sustainable green living, and promote accessible sustainable lifestyles." Xiao Bai emphasizes that tie-dyeing serves as a bridge and platform to convey sustainable development concepts and showcase Bai culture. She insists on active engagement, viewing her enterprise as an integral part of society dedicated to solving real-world issues.

Situated at No. 84 Dachong Road, Zhoucheng Village, the Blue Continuation workshop occupies a traditional Bai-style courtyard with "four buildings surrounding a courtyard and five skylights" (sihe wutianjing), originally the 1886 residence of Xiao Bai's great-grandfather Zhang Lizhi, a provincial-level imperial examination scholar. The choice of this location reflects three considerations: rejecting noisy roadside commercial spaces despite their tourist accessibility, limited startup capital after returning from Beijing, and a commitment to protecting ancestral heritage.

In forming strategic partnerships, Blue Continuation prioritizes cultural transmission over profit maximization. A notable collaborator is the Linden Centre in Xizhou—a boutique hotel housed in the former mansion of Yang Pinxiang, a renowned merchant from the historic Xizhou Trading Group. Located amidst farmland, the hotel offers cultural immersion programs for its international clientele, including Chinese culinary experiences (dumplings, Xizhou pastry, Bai Three-Course Tea), outdoor adventures (market tours, horseback excur-

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sions), and cultural activities like tie-dye workshops. This shared commitment to cultural preservation solidified their partnership: the Linden Centre channels culturally curious visitors to Blue Continuation, which in turn provides authentic tie-dye education.

Xiao Bai critiques conventional narratives of cultural preservation that rely on "tragic sentimentalism"—such as staged scenes of elderly artisans with trembling hands performing dyeing rituals. She argues this approach perpetuates a "culture-as-pity" mentality that undermines inherent cultural vitality and reinforces misconceptions equating tradition with backwardness. Instead, she advocates reconstructing Zhoucheng tie-dyeing as a living specimen of ancestral ecological wisdom. The indigo patterns interwoven with white spaces embody a slow-living philosophy of human-nature symbiosis, while the millennium-old sustainable design thinking offers modern societies profound inspiration.

Cultural dissemination, in her view, should abandon hierarchical assumptions and foster equal dialogue. The intersection of indigo craftsmanship and contemporary fashion exemplifies this ethos—it represents both the modern reinterpretation of traditional techniques and a vibrant case of cross-civilizational mutual learning. True cultural transmission, Xiao Bai believes, should radiate creative joy. The process of indigo blooming on fabric becomes a delightful nexus connecting past and future, local traditions and global perspectives.

When managing relationships with industry peers, Xiao Bai adheres to the ancestral teachings of the Bai people: "In ancient Xizhou, the town served as the marketplace, while the villages functioned as workshops. Each village mastered a unique craft, establishing customary agreements to avoid competing for profits." Xizhou Town consists of thirteen villages: Xizhou Village, Zhoucheng Village, Shangguan Village, Taoyuan Village, Renliyi Village, Yongxing Village, Wenge Village, Shacun Village, Sili Village, Jinhe Village, Heyijiang Village, Qingdong Village, and Zuoyi Village. Each village sustains itself through its distinctive expertise. Zhoucheng is renowned for its tie-dye craftsmanship, while Xizhou is famous for specialties like Baba (a type of sugar cake). This ancient "one village, one skill" tradition, dating back to the Song Dynasty, created a commercial landscape where "every village possesses unique expertise, and no two towns offer identical products." To Xiao Bai, this thousand-year-old business ethic resembles the reflection of the Three Pagodas in Xizhou's waters: beneath the calm surface lies intricate ecological equilibrium. While modern commerce still debates "zero-sum games," the thirteen villages of Xizhou have long demonstrated through practice that true prosperity stems from respecting diversity rather than pursuing uniformity□

7 The Modern Transformation and Life Aesthetics of Intangible Cultural Heritage in Everyday Life: The Case of Duan's Tie-dye

Yang Xiaowu (born 1993), a fourth-generation inheritor of Duan's Tie-dye and a 2016 graduate in Physical Education, has been passionate about sports and Bai ethnic traditions since childhood. During his university holidays, he frequently traveled to various regions, building interpersonal networks while engaging in folk cultural activities such as the Benchu Festival and Torch Festival. When faced with the opportunities and challenges of returning to his hometown for entrepreneurship, Yang acknowledged that his family background in tie-dye equipped him with technical expertise and market insights. However, he initially faced limitations due to a lack of social experience after graduation. To overcome this, he sought mentorship from industry vet-

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erans, expanded his collaborative networks with peers, and utilized digital platforms like Weibo and WeChat to create a modern marketing ecosystem.

Yang highlights the importance of continuous innovation in heritage preservation. Focusing on the philosophy of "simplicity and practicality," he incorporates tie-dye craftsmanship into functional lifestyle products, allowing the ancient craft to maintain its vitality through everyday items. "Each generation revitalizes tradition with contemporary elements," he asserts. "No matter how challenging the environment, we will never stop moving forward."

Currently, Duan's Tie-Dye offers a diverse product portfolio. In terms of product line breadth, they primarily offer tablecloths, short-sleeved shirts, skirts, table runners, bags, fans, wall paintings, door curtains, scarves, hats, wallets, cushions, seat pads, sofa covers, table lamps, and Cizixiu embroidery. Regarding product line depth, tablecloths are categorized into traditional patterns and premium patterns, with sizes ranging from 50 cm x 50 cm to 2.5 m x 2 m. Short-sleeved shirts feature full-dye and gradient-dye techniques using stitch-tie, hand-tie, or combined methods, available in children's sizes 10-20 and adult sizes S to XXXXL. Skirts come in traditional cheongsam and minimalist styles with S/M/L sizing. Table runners include floral-tie and patchwork patterns in three sizes. Bags employ hand-tie or stitch-tie techniques across multiple sizes. Fans consist of folding and cattail leaf varieties. Wall paintings depict landscapes, calligraphy, floral patterns, figures, animals, and embroidery frame designs. Door curtains have short and long versions. Scarves utilize cotton, linen, silk, and wool materials. Hats feature stitch-tie and hand-tie techniques in one-size-fits-all. Wallets come in small coin purses and multi-functional styles with different tying methods. Cushions include square and rectangular shapes using various techniques. Seat pads showcase pure floral-tie or patchwork patterns. Sofa covers employ cotton thread binding techniques. Table lamps offer three sizes with stitch-tie or hand-tie designs. Cizixiu embroidery ranges from small to extra-large coin patterns.

The author observed that Xiao Wu has created numerous innovative patterns such as Moonlit Lotus Pond, Gradient, Retro Tie-Dye Cheongsam, Fabric Lampshades, Summer Dresses, and Large Cizixiu. When asked about his signature works and inspiration, he explained: The Moonlit Lotus Pond originated from observing cross-stitch artwork Nine Fish Painting combined with his personal fondness for lotus flowers, highlighting their purity and symbolic status as "gentleman among flowers," aligning with the Bai ethnic group's preference for white. The Gradient concept derived from traditional Bai indigo tie-dye, achieving three-dimensional effects through systematic color gradation. The Retro Tie-Dye Cheongsam reimagined China's iconic qipao with vibrant tie-dye elements. Fabric lampshades replaced conventional materials with tie-dye textiles using batik-inspired patterns to enhance ethnic characteristics. Light blue summer dresses evoke coolness in hot weather. The oversized Cizixiu was custom-made per an American client's request.

Regarding creative motivation and influences from cuisine, sports, and travel, Xiao Wu noted that inspiration stems from both traditional patterns and contemporary trends. He continuously explores ways to align tie-dye creations with market demands and public aesthetics for daily use. Culinary environments influence appetite, hence many Bai restaurants in Dali use tie-dye decorations. Athletic enthusiasm sparks unconventional ideas that could inspire sportswear designs. Travel exposes him to diverse cultural elements across regions, with cross-cultural integration fueling innovation and customer recognition serving as primary motivation.

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When introducing new product development, Xiao Wu described his latest Poetry Painting series – literary artworks that combine verses with visual elements to create emotional resonance. The creative process involves selecting meaningful poems, integrating tie-dye techniques through composition planning, template creation, pattern tying, dyeing, thread removal, and framing.

Regarding market research, Xiao Wu's approach comprises two components: First, monitoring competitor product updates and sales performance across major markets including Dali, Lijiang, Chuxiong, and Kunming, tracking bestsellers, new launches, and consumer responses. Second, conducting digital investigations by analyzing online product showcases, promotional campaigns, and consumer voting data, followed by comprehensive synthesis of findings.

The author notes that Xiao Wu's tie-dye works feature elements such as blue patterns on a white background (contrary to the traditional white patterns on a blue background), landscape paintings, and natural floral motifs. When asked about current trends and the relationship between life, fashion, and tie-dye, he explained that the traditional blue-background-white-pattern tie-dye requires inheritance and promotion, as these traditional fabrics endure aesthetically over time. The white-background-blue-pattern tie-dye products draw inspiration from Chinese ink wash paintings, infusing traditional techniques with a fresh sensibility. Representative works include landscapes, natural scenes, and motifs of flowers, birds, insects, and fish, where touches of blue highlight natural hues. The minimalist style allows these pieces to integrate more seamlessly into modern society. He emphasized that what is popular in daily life defines the mainstream, and by incorporating these crafts into contemporary living, tie-dye products breathe new vitality into the art form's development.

When questioned about the pressures of cultural inheritance and his commitment to continuing this work, Xiao Wu acknowledged significant challenges but stressed that "pressure fuels motivation." Despite lacking intangible cultural heritage funds or media hype, he remains undeterred in his mission. He reflected that every generation of inheritors faces obstacles, yet none have abandoned the craft. With over a millennium of history, tie-dye has become inseparable from his daily life. His personal motto is: "As long as I don't falter, I'll carve my own path. Achieving a splendid future depends entirely on how hard I strive."

Regarding his vision for an ideal tie-dye workshop and the experience he hopes to offer visitors, Xiao Wu described a space that provides a comprehensive immersion into the craft. He aims to dismantle traditional perceptions by guiding visitors through the entire process: understanding plant-based dyes, pattern design, fabric binding, dyeing, and finished product appreciation (both visual and tactile). The workshop would allow hands-on interaction with diverse materials like linen, silk, and wool. Beyond observation, visitors could create their own tie-dye artworks, experiencing the psychological wonder of the technique. Through practice, they would gain deeper insight into the craft, with bold experimentation often yielding unexpected rewards—a testament to tie-dye's modern relevance.

On the topic of visitors' understanding of tie-dye's value and his hopes for their engagement with the culture, Xiao Wu observed that most tourists underestimate the labor-intensive nature of handmade processes. Without explanations of the production stages, they might perceive tie-dye merely as "a piece of cloth with pretty patterns." He emphasized that tie-dye's status as an intangible cultural heritage underscores its pro-

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found significance and worth preserving. He hopes visitors will thoughtfully engage with the craft, appreciating the depth of Chinese culture and taking pride in these remarkable inventions as part of their heritage. Additionally, he urges respect for artisans' efforts, as every tie-dye piece embodies meticulous craftsmanship and dedication.

8 Conclusion

The diversified development models of Bai ethnic tie-dye in Zhoucheng, Dali, profoundly illustrate multiple pathways for traditional craftsmanship in modern reconstruction. Through practical analysis of Shishen Tie-dye, Puzhen Tie-dye, the Lanxu Model, and Duan Family Tie-dye, different actors have developed distinct operational logics when facing globalization, marketization, and cultural preservation pressures. These practices theoretically resonate with the technology-society interaction framework proposed in academic literature. Shishen Tie-dye adheres to plant dyes and traditional cyclical production patterns, resisting the impact of low-cost chemical dyes through seven generations of family craftsmanship inheritance. This validates Scrase's revelation of "the tension between government intervention and market forces" – when external markets compress the survival space of traditional craftsmanship through capital efficiency, technological continuity relies on culturally conscious actors comprehensively guarding traditional knowledge systems. This preservation extends beyond technical continuation, embodying what Sennett described as transforming local ecological wisdom (such as indigo production according to lunar cycles) through artisans' embodied experiences into cultural weapons against standardization, ultimately constructing an "irreplicable authenticity" barrier in high-end Japanese and Korean markets.

The developmental trajectory of Puzhen Tie-dye dynamically demonstrates the "complex political-economic interaction" mechanism emphasized by Clark and Paulicelli. Utilizing intangible cultural heritage policies as legitimacy instruments, it obtains resource support through national demonstration base certifications. Simultaneously, through industrial chain integration (tie-dye factory acquisitions) and business model innovation (experience economy), it finds compromise in Doty's proposed "environmental standards-cost pressure" dilemma (strategic use of mixed dyes). This path essentially transforms institutional constraints into developmental momentum, constructing dynamic equilibrium between "traditional gene preservation" and "industrial scale expansion" through policy interpretation and market adaptation, realizing Fletcher's concept of "sustainable practices under multi-stakeholder interactions". Under the "productive preservation" framework, artisans become crucial nodes in cultural capital transformation, while the expanding outsourcing embroidery workforce restructures labor value distribution within stakeholder networks.

The Lanxu Model further transcends Padilla-Díaz's "stakeholder value reconstruction" framework. Its construction of cultural-tourism-agriculture integrated ecosystems essentially represents the spatial reproduction of cultural meaning systems. By embedding tie-dye techniques into agricultural experiences (indigo cultivation), historical architecture revitalization (Juren Courtyard renovation), and tourism narratives (breaking tragic narratives), this model expands Coote's "ecological attributes of plant dyes" into complete cognitive schemata: tourists participating in tie-dye production are not merely purchasing crafts but engaging in cross-cultural decoding of Bai ecological wisdom through bodily practices. This process implicitly aligns with the "mutual gaze" theory in media studies – enabling traditional culture to obtain modern expression

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while transforming outsiders into new cultural transmission media. Notably, its "one village, one skill" collaborative network extends undocumented local problem-solving wisdom, maintaining differentiated competitive advantages while creating inter-village industrial complementarity, providing a cultural gene-oriented innovative model for Craig's "SME cluster development".

Duan Family Tie-dye's innovative practices highlight the core role of inheritors' agency. Yang Xiaowu injects physical education paradigms into traditional craftsmanship innovation, achieving what Littrell and Dickson observed as "market power relationship reconstruction" through functional sportswear design and poetic-pictorial element integration. This transformation process echoes Sennett's re-examination of "craft cognitive dimensions": inheritors' higher education backgrounds constitute crucial mediators for upgrading embodied knowledge systems into codifiable skills rather than betraying tradition. Their rational application of digital tools (online research, new media marketing) confirms Jenss's contemporary trend of "visual media reshaping cultural narratives", accomplishing intergenerational transition of communication contexts while preserving craftsmanship authenticity.

These diversified practices collectively reveal theoretical implications for traditional craftsmanship modernization: First, technological continuity essentially employs differential cultural logics to resolve market homogenization dilemmas, requiring reconstruction of the "tradition-modernity" binary framework to focus on translation strategies of local knowledge in global contexts. Second, intangible cultural heritage preservation needs to establish a three-dimensional synergy system of "policy instruments-market mechanisms-cultural identity", as Puzhen Tie-dye proves institutional resilience stems from dynamic adaptation rather than static compensation. Third, cultural empowerment should transcend functionalist perspectives – as shown in the Lanxu Model, only by constructing a "production-consumption-communication" meaning loop can traditional craftsmanship become cross-cultural value currency. Ultimately, intergenerational succession of inheritors points to fundamental innovation in knowledge reproduction methods. When educational backgrounds, life experiences, and media literacy become new cultural capital, the modernity reconstruction of traditional craftsmanship has evolved from technological continuity propositions to cognitive paradigm revolutions in civilizational dialogues.

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