

# Brand Culture Value Co-Creation in Hengzhou Jasmine Tea: SEM-fsQCA Investigation of the Mediating Role of Three-Tea Coordination Perception

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**Abstract:** This study investigates the mechanisms underlying brand culture value co-creation (BVC) in Hengzhou Jasmine Tea—the world's foremost jasmine tea producing region—by developing a theoretically grounded mediation model. Drawing on Service-Dominant Logic, cultural branding theory, and China's Three-Tea Coordination (Sancha Tongchou) policy framework, we propose that Cultural Identity (CI), Digital Engagement (DE), Enterprise Capability (EC), and Government Support (GS) jointly influence BVC both directly and indirectly through Three-Tea Coordination Perception (TTC) as a mediator. The model is tested using an integrated SEM-fsQCA methodology on a national survey dataset ( $n = 532$ ). SEM is employed to estimate net causal paths and test mediation effects; fsQCA reveals the configurational, equifinal pathways to high BVC. Empirical evidence from the 2025 field investigation—covering enterprise interviews at Nanfang Tea Factory and Xiangjuyimo, as well as transaction market observations—grounds the case analysis. The study contributes a novel TTC construct, a mediation-enriched co-creation model, and hybrid analytical insights for agricultural regional brand governance.

**Keywords:** Brand Value Co-Creation; Three-Tea Coordination; Mediation; SEM; FsQCA; Hengzhou Jasmine Tea; Regional Public Brand

## 1. Introduction

### 1.1 Research Background

The governance of regional agricultural brands sits at the intersection of industrial policy, consumer psychology, and digital market dynamics. In China, the national strategy of rural revitalization has elevated regional public brand construction to a strategic priority, with

geographical indication (GI) products serving as the principal vehicle for converting place-based resource endowments into marketable brand equity. Recent empirical evidence reinforces this mechanism: using a large county-level panel dataset, Yin et al. demonstrate that GI registration significantly raises both agricultural added value and rural per capita disposable income across China, with effects varying by product category. Within this landscape, the tea sector occupies a uniquely prominent position: China produces over 3.18 million tonnes of tea annually, and its GI tea brands collectively represent tens of billions of RMB in assessed brand value.

In March 2021, General Secretary Xi Jinping articulated the "Three-Tea Coordination" framework during his inspection of Wuyi Mountain in Fujian Province<sup>3</sup>. The framework calls for the synergistic integration of the tea industry, tea culture, and tea technology as the organizing logic of tea sector development. Rather than treating industrial scale, cultural heritage, and technological innovation as independent axes of competition, Three-Tea Coordination mandates their mutual reinforcement—arguing that genuine brand premium and sustainable growth require all three dimensions to operate in concert. This policy paradigm represents a fundamental reconceptualization of agricultural brand development, moving beyond output-oriented metrics toward a holistic model in which brand culture value co-creation becomes the primary objective.

Hengzhou City in Guangxi Zhuang Autonomous Region constitutes the world's most significant jasmine tea production hub and the most directly relevant implementation context for the Three-Tea Coordination framework. Designated by the Food and Agriculture Organization of the United Nations as the "World Center of Jasmine and Jasmine Tea Production," Hengzhou accounts for over 80% of national and more than 60% of

global jasmine tea output by volume. By 2024, its jasmine cultivation area reached 129,900 acres (approximately 8,667 ha), with fresh flower yields exceeding 110,000 tons and a total integrated industrial chain value surpassing RMB 18 billion [3]. The regional public brand "Hengxian Jasmine Flower (Tea)" has attained national GI product status, China Famous Trademark designation, and, as of 2025, a brand value assessment of RMB 226.69 billion-ranking consistently among the top tea GI brands nationally [3].

Despite this extraordinary scale advantage, Hengzhou's jasmine tea sector confronts deep structural contradictions that the Three-Tea Coordination framework was designed to address. Field research conducted in 2025 reveals that only 32.6% of the city's 86 principal tea enterprises engage in self-branded operations; 83.7% operate as original equipment manufacturers (OEMs) for external brands [based on field research report, 2025]. Consumer brand recognition stands at 32% nationally-remarkably low given the industry's scale [based on field research report, 2025]. Cultural heritage assets-including nearly a millennium of jasmine cultivation history, traditional flower-scenting craft, and rich festival traditions-remain largely untranslated into brand storytelling, with cultural content comprising less than 15% of key tourism attraction programming. Technology adoption gaps are similarly pronounced: processing automation rates stand at 15% versus 45% in Fuzhou and 40% in Zhejiang, the two other major jasmine tea regions [based on field research report, 2025]. These structural imbalances render Hengzhou jasmine tea a textbook case of a brand that possesses the raw materials for world-class value but has not yet assembled them into an effective co-creative ecosystem.

## 1.2 Research Significance

### 1.2.1 Theoretical Significance

This study makes three principal theoretical contributions. First, it introduces Three-Tea Coordination Perception (TTC) as a new consumer-level construct capturing the perceived integration of the tea industry, tea culture, and tea technology-operationalizing a policy framework that has hitherto remained at the macro-sectoral level of analysis. Second, it repositions TTC as a mediator in the brand value co-creation model rather than simply as an

additional predictor, theorizing the mechanism through which Cultural Identity (CI), Digital Engagement (DE), Enterprise Capability (EC), and Government Support (GS) influence Brand Value Co-creation (BVC). This mediation architecture provides a more nuanced account of how antecedent forces exercise their effects by shaping stakeholders' holistic perception of industry-culture-technology integration before that perception catalyzes co-creative behavior. Third, by combining Structural Equation Modeling (SEM) for net causal effects with fuzzy-set Qualitative Comparative Analysis (fsQCA) for configurational pathways, the study transcends the limitations of either method in isolation and delivers a more complete account of both the magnitude and the combinatorial logic of co-creation drivers.

### 1.2.2 Practical Significance

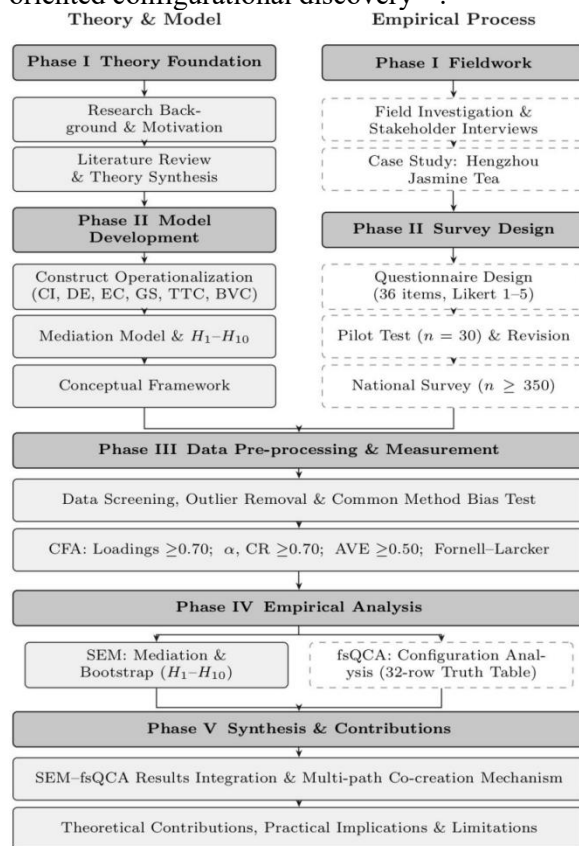
Practically, this research provides an empirically grounded decision-support framework for multiple stakeholders in the Hengzhou jasmine tea ecosystem and, by extension, for comparable regional agricultural brand contexts across China. For government administrators, the mediation analysis identifies TTC as an actionable leverage point: policies that simultaneously advance industrial capacity, cultural transmission, and technology diffusion will amplify co-creation outcomes beyond the additive effects of any single dimension. For enterprise managers, the configurational fsQCA results reveal which resource combinations-among cultural positioning, digital marketing, operational capability, and institutional embeddedness-produce high BVC under different contextual conditions. For the scholarly community studying China's rural revitalization and agricultural brand governance, this study provides a replicable analytical template applicable to other GI product sectors.

## 1.3 Research Content and Technical Route

The remainder of this paper proceeds as follows. Section 2 reviews the theoretical foundations spanning regional public brand research, brand cultural value theory, value co-creation and Service-Dominant Logic, and the Three-Tea Coordination framework, culminating in the identification of research gaps. Section 3 develops the mediation model and formalizes ten research hypotheses (H1-H10). Section 4 presents the Hengzhou jasmine tea case analysis grounded in field research data from the 2025

three summer action investigation. Section 5 details the research design, questionnaire, and SEM-fsQCA methodology. Sections 6-8 will report the empirical findings, discussion, and conclusions.

The technical route follows a five-stage spiral: (Stage 1) conceptual grounding through literature review and theory synthesis; (Stage 2) fieldwork and survey design; (Stage 3) data pre-processing and measurement model validation; (Stage 4) parallel SEM path analysis and fsQCA configuration analysis; (Stage 5) results integration and multi-path mechanism construction. The dual-method design ensures both variable-oriented inference and case-oriented configurational discovery<sup>5 6</sup>.



**Figure 1. Research Design and Technical Route (Five-Stage SEM-fsQCA Framework)**

#### 1.4 Research Methods and Key Contributions

The empirical strategy combines (i) SEM implemented in AMOS 26.0 via the two-step procedure of Anderson and Gerbing, testing a reflective measurement model with six constructs (CI, DE, EC, GS, TTC, BVC) each operationalized with six Likert-scaled items; and (ii) fsQCA implemented in fsQCA 3.0, calibrating condition and outcome scores from construct composites using the direct method

and analyzing a  $2^5$  truth table to identify sufficient configurational paths to high BVC. Mediation effects are tested via bootstrapped indirect effect estimation (5,000 replications) in the SEM framework.

Key contributions are: (1) the first empirical operationalization of Three-Tea Coordination Perception as a reflective measurement scale; (2) a mediation model demonstrating that TTC transmits the effects of CI, DE, EC, and GS onto BVC; (3) configurational evidence of equifinal co-creation pathways from fsQCA; (4) rich case grounding in Hengzhou field data from 2025 enterprise interviews, market observations, and a national survey.

## 2. Literature Review and Theoretical Foundations

### 2.1 Regional Public Brand Research

Regional public brands-encompassing geographical indications (GIs), collective marks, and certification trademarks-function as shared intellectual assets that aggregate quality signals, cultural associations, and provenance cues for products originating within defined geographic areas. The seminal frameworks of Aaker<sup>1</sup> and Keller on brand equity have been extended to the regional context by scholars who demonstrate that geographic origin signals serve as quality proxies and cultural anchors, generating consumer perceptions and willingness-to-pay premiums that individual firms cannot achieve independently<sup>9</sup>.

Belletti, Marescotti, and Touzard<sup>9</sup> theorize GIs as "anchored public goods" that externalize positive effects across producing communities, linking local tacit knowledge and natural resource endowments to internationally legible quality signals. Tregear and Arfini<sup>11</sup> analyze the multi-level governance negotiations-among producers, regional authorities, and national agencies-that determine brand definition, enforcement, and strategic direction. At the regional scale, Liu et al. develop a multiscale quantification framework for GI spatial patterns in Shandong Province, finding that urbanization level and agricultural output value are dominant drivers of GI spatial heterogeneity, situating regional brand development within broader socioeconomic geographies. Dentoni, Menozzi, and Capelli examine how producer heterogeneity within GI consortia creates coordination challenges that constrain collective

brand performance.

In the Chinese agricultural context, Zhang et al. find that government promotional investment and regulatory quality significantly enhance regional brand equity and co-creation potential but that over-reliance on government-driven development suppresses enterprise-level brand innovation. A critical gap persists: no prior study has examined how consumer-level participation in brand value creation-through the lens of value co-creation theory-operates under the institutional architecture of the Three-Tea Coordination policy, nor has any study modeled TTC as a mechanism variable transmitting stakeholder-level antecedents to co-creative outcomes.

## 2.2 Brand Cultural Value Theory

Cultural branding theory, most fully articulated by Holt, posits that iconic brands succeed not primarily through functional benefit communication but through their ability to perform cultural myths that resolve felt contradictions in consumers' social worlds. Brands achieve iconic status by consistently expressing ideologies resonant with the anxieties and aspirations of their target publics at historically specific moments. Cayla and Arnould extend this perspective to the global marketplace, arguing that cultural branding operates through imaginative geographies-narratives that transform place-based resources into globally intelligible brand meanings. Schroeder and Salzer-Mörling emphasize that brand culture is co-produced through the interactions among brand managers, consumers, media, and broader cultural systems, prefiguring later value co-creation frameworks.

For agricultural regional brands, cultural value takes a form rooted in geographic authenticity, traditional craft knowledge, and rural heritage. Beverland's<sup>18</sup> study of luxury wine brands demonstrates that authenticity-the honest expression of cultural tradition and place identity-is a central driver of brand cultural value. Liu et al.<sup>12</sup> directly examine brand cultural value co-creation in Chinese GI products, finding that consumers who perceive strong cultural authenticity are significantly more likely to engage in co-creative behaviors. Importantly, these studies treat cultural identity as a demand-side variable that either directly or indirectly activates co-creative behavior-supporting our positioning of CI as a key antecedent in the

model. The mechanism through which CI activates BVC, we argue, runs partially through consumers' perception that the regional brand successfully integrates cultural heritage with industrial and technological dimensions-the essence of TTC.

## 2.3 Value Co-Creation Theory and Service-Dominant Logic

Value co-creation theory received its canonical formulation in Vargo and Lusch's foundational exposition of Service-Dominant Logic (S-D Logic), which established that value is not embedded in outputs at the point of production but is always co-created through the interactive deployment of competences among multiple actors. Vargo and Lusch<sup>20</sup> elaborated this perspective by identifying consumers as operant resources-active value co-creators rather than passive recipients-and reconceptualizing marketing as the orchestration of service ecosystems in which value creation is irreducibly collaborative.

Prahalad and Ramaswamy operationalized co-creation through the DART model (Dialogue, Access, Risk Assessment, Transparency), arguing that co-creation experiences emerge when firms provide platforms enabling two-way communicative engagement. Payne, Storbacka, and Frow mapped co-creation opportunities across customer encounter, relationship episode, and lifetime value dimensions. Grönroos distinguished between value creation (providers create value propositions) and value co-creation (value emerges in the customer's use process). Yi and Gong validated a behavioral scale for customer value co-creation, establishing the foundation for empirical operationalization.

In the digital domain, Brodie et al. and Hollebeek et al. conceptualized consumer brand engagement as the affective, cognitive, and behavioral expression of co-creative participation in brand communities. Jayashankar et al. argue that big data technologies facilitate value co-creation by enhancing information sharing, stakeholder collaboration, and resource integration across agricultural value chains. Liu et al., surveying cultural and creative practitioners in Shanghai via structural equation modeling, confirm that cooperative innovation and customer-linking capabilities jointly elevate both enterprise value and customer co-creation value, paralleling the cultural-identity pathway examined here. Extending the locus of co-

creation beyond the firm-customer dyad, Nguyen and Menezes articulate a customer-dominant framework identifying eighteen distinct customer-to-customer co-creation activities, consonant with the multi-stakeholder conception adopted in this study. At the mechanism level, Liu employs an evolutionary game model to show that reward mechanisms and reputational accountability raise the probability of active consumer participation in enterprise value co-creation.

These studies support the inclusion of DE as an antecedent in our model and, crucially, suggest that digital engagement may also shape consumers' perceptions of how well-integrated a brand's ecosystem is-providing a theoretical bridge to the TTC mediator.

Critically, existing co-creation literature has not been applied to the Three-Tea Coordination policy framework, and no prior study has tested TTC as a mediating variable in the BVC model. This gap motivates the central theoretical innovation of the present study.

## 2.4 the Three-Tea Coordination Policy Framework

General Secretary Xi Jinping's articulation of the Three-Tea Coordination framework in March 2021<sup>3</sup> marked a paradigm shift in how China conceptualizes tea sector development. The framework mandates synergistic integration across three dimensions: tea industry-encompassing the productive, processing, and commercialization base; tea culture-the historical heritage, ceremonial traditions, and aesthetic meanings embedded in tea; and tea technology-scientific and engineering innovations applied to cultivation, processing, quality assurance, and market development.

The concept of Three-Tea Coordination originates from China's national strategy emphasizing the integrated development of tea culture, tea industry, and tea technology<sup>3</sup>. Subsequent studies on tea-industry transformation have highlighted that sustainable development depends on the coordinated advancement of industrial upgrading, cultural revitalization, and technological innovation<sup>36</sup>. The technological dimension increasingly extends to quality assurance: Yang et al. review the analytical techniques used to authenticate the geographical origin of Chinese GI agricultural products under the China-EU Geographical Indications Agreement, evidencing the growing

technological infrastructure that underpins the "tea technology" leg of the framework. Zhang et al.<sup>15</sup> establish that government institutional support is a primary enabler of Three-Tea Coordination implementation, consistent with our positioning of GS as an antecedent that both directly influences BVC and shapes TTC perceptions.

No prior study has operationalized Three-Tea Coordination at the individual perception level or examined TTC as a mediating mechanism. This study fills that gap by developing a six-item reflective scale (TTC1-TTC6) and positioning TTC as the mediator through which CI, DE, EC, and GS exercise their indirect effects on BVC.

## 2.5 Literature Review Summary and Research Gaps

Four principal gaps emerge from the foregoing review. First, value co-creation research has not been applied within the Three-Tea Coordination institutional context; the mechanism by which the policy framework shapes individual-level co-creation behavior remains unknown. Second, TTC has never been operationalized as a consumer perception construct or tested as a mediating variable-the consumer-facing dimension of Three-Tea Coordination theory is entirely undeveloped empirically. Third, existing agricultural brand studies rely predominantly on single-method (regression or SEM) designs that cannot capture equifinality and configurational causation inherent in complex co-creation systems. Fourth, the structural contradictions of Hengzhou jasmine tea-the world's largest producer with the weakest brand identity relative to its scale-have not been examined through a value co-creation lens. This study addresses all four gaps.

## 3. Theoretical Model and Hypotheses

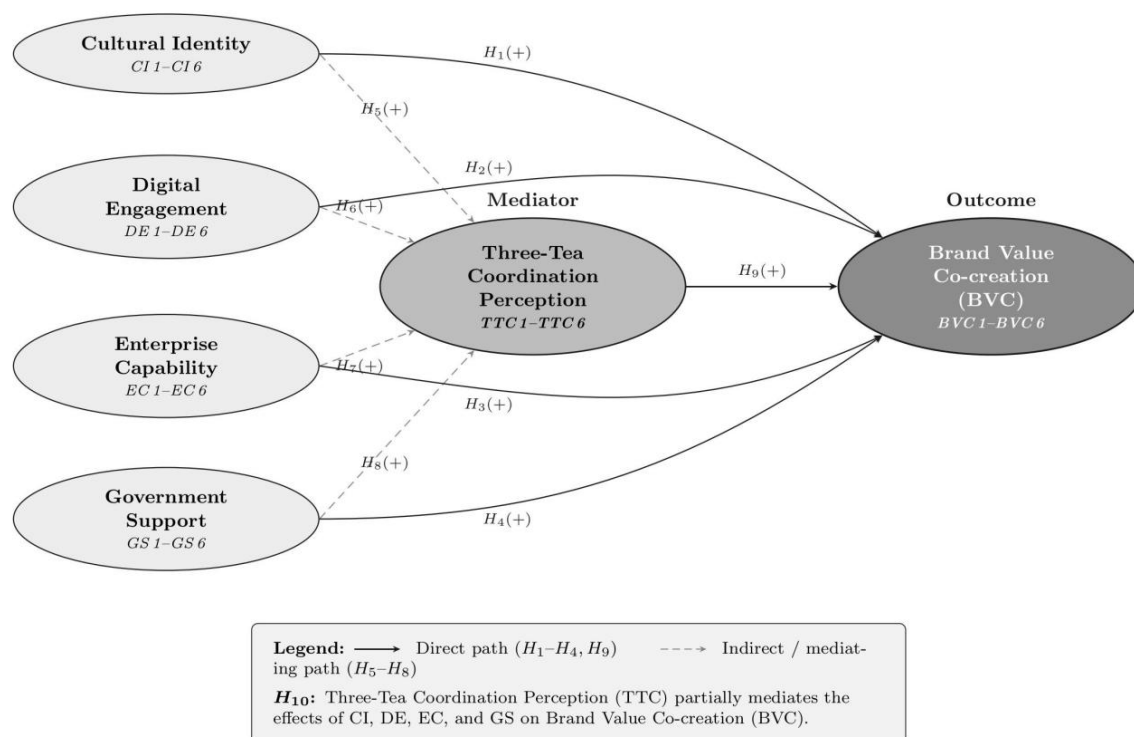
### 3.1 Conceptual Framework

Figure 1 presents the theoretical model, which specifies a partial mediation architecture. Four exogenous constructs-Cultural Identity (CI), Digital Engagement (DE), Enterprise Capability (EC), and Government Support (GS)-each exert both direct effects on Brand Value Co-creation (BVC) (H1-H4) and indirect effects through Three-Tea Coordination Perception (TTC) as the mediating variable (H5-H9). Three-Tea Coordination Perception captures stakeholders' holistic evaluation of the perceived integration

and balance across the three dimensions mandated by China's Three-Tea Coordination policy: tea industry capacity, tea cultural vitality, and tea technological application. H10 formalizes the overall mediation proposition. Six demographic variables serve as controls: gender, age, education, industry role, brand familiarity, and purchase frequency.

The mediation structure rests on the theoretical proposition that CI, DE, EC, and GS shape BVC partly through an evaluative intermediary: consumers and stakeholders first form a

judgment of how effectively the regional brand ecosystem integrates industry, culture, and technology (TTC), and this integrative perception then activates their co-creative engagement (BVC). This is theoretically distinct from a simple additive model in which each antecedent independently contributes to BVC; instead, TTC functions as the cognitive and evaluative bridge through which the separate contributions of CI, DE, EC, and GS are synthesized into a unified basis for co-creative action.



**Figure 2. Conceptual Framework of Brand Cultural Value Co-creation in Hengzhou Jasmine Tea: a Partial Mediation Model with Three-Tea Coordination Perception**

### 3.2 Variable Definition and Measurement

**Table 1. Variable Definitions and Theoretical Sources**

| Construct                         | Abbrev.        | Definition                                                                                                 | Scale Source / Items                                                                                                                   |
|-----------------------------------|----------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Cultural Identity                 | CI (CI1–CI6)   | Consumers' emotional and cognitive attachment to cultural meanings of Hengzhou jasmine tea                 | Cayla & Arnould <sup>17</sup> ; Beverland <sup>19</sup> ; Tuskej et al.                                                                |
| Digital Engagement                | DE (DE1–DE6)   | Behavioral and cognitive engagement with the brand through digital platforms and media                     | Brodie et al. <sup>25</sup> ; Hollebeck et al. <sup>26</sup> ; Jayashankar et al. <sup>27</sup>                                        |
| Enterprise Capability             | EC (EC1–EC6)   | Perceived organizational competences of jasmine tea enterprises                                            | Teece et al.; Barney                                                                                                                   |
| Government Support                | GS (GS1–GS6)   | Perceived effectiveness of government policy, infrastructure, and regulatory frameworks                    | North ; Zhang et al. <sup>15</sup>                                                                                                     |
| Three-Tea Coordination Perception | TTC(TTC1–TTC6) | Perceived integration and balance of tea industry, tea culture, and tea technology in Hengzhou             | Developed for this study based on the Three-Tea Coordination policy framework <sup>3</sup> and tea-industry transformation literature. |
| Brand Value Co-creation           | BVC(BVC1–BVC6) | Multi-stakeholder co-creation of brand value through interaction, sharing, and collaborative participation | Vargo & Lusch <sup>20</sup> ; Yi & Gong <sup>24</sup> ; Liu et al. <sup>12</sup>                                                       |

### 3.3 Research Hypotheses

#### 3.3.1 Direct Effects on Brand Value Co-creation (H1-H4)

Cultural Identity (CI) reflects consumers' emotional and cognitive attachment to the cultural meanings embedded in a regional product-its historical narratives, craft traditions, and aesthetic distinctiveness<sup>14 16</sup>. Cultural branding theory<sup>16</sup> establishes that consumers who identify with a brand's cultural mythology exhibit stronger co-creative behaviors, including advocacy, storytelling, and community participation. Liu et al.<sup>13</sup> provide direct empirical evidence that cultural identity significantly enhances BVC in Chinese GI products. We therefore propose:

H1: Cultural Identity (CI) has a significant positive direct effect on Brand Value Co-creation (BVC).

Digital Engagement (DE) encompasses stakeholders' affective, cognitive, and behavioral engagement with the brand through digital platforms-including social media content consumption, e-commerce purchasing, user-generated content creation, and live-streaming participation<sup>22 23</sup>. S-D Logic identifies digital platforms as operant resources enabling consumers to co-create value at scale, and Jayashankar et al.<sup>24</sup> demonstrate that digital technologies enhance stakeholder collaboration and information exchange, thereby facilitating active participation in value co-creation processes. Reinforcing this, Huyen et al. show via PLS-SEM that dimensions of social media marketing activities significantly drive value co-creation behavior through brand trust and brand commitment, indicating that digital engagement translates into co-creative behavior rather than mere exposure. Accordingly:

H2: Digital Engagement (DE) has a significant positive direct effect on Brand Value Co-creation (BVC).

Enterprise Capability (EC) represents stakeholders' perceptions of the strategic and operational competences of jasmine tea enterprises, encompassing quality management, product innovation, brand communication, and multi-stakeholder coordination<sup>25 26</sup>. Resource-based theory<sup>26</sup> argues that firms with distinctive, perceived competences generate higher brand equity, and dynamic capabilities theory<sup>25</sup> emphasizes firms' ability to reconfigure resources in response to market opportunities.

Consumers who perceive enterprises as highly capable are more likely to engage in co-creative behaviors and advocate for the brand<sup>17 29</sup>:

H3: Enterprise Capability (EC) has a significant positive direct effect on Brand Value Co-creation (BVC).

Government Support (GS) reflects stakeholders' perceptions of the effectiveness of governmental policies, infrastructure investments, regulatory frameworks, and promotional programs supporting the industry<sup>12 27</sup>. North's<sup>35</sup> institutional theory argues that effective formal institutions reduce transaction costs and mobilize collective resources for brand development that individual firms cannot achieve independently. Zhang et al.<sup>15</sup> demonstrate that government promotional quality significantly drives regional brand co-creation. Thus:

H4: Government Support (GS) has a significant positive direct effect on Brand Value Co-creation (BVC).

#### 3.3.2 Effects on Three-Tea Coordination Perception (H5-H8)

Three-Tea Coordination Perception (TTC) is conceptualized as stakeholders' holistic evaluation of the perceived integration of tea industry capacity, cultural vitality, and technological application in Hengzhou jasmine tea. We argue that each of the four antecedents shapes TTC through a distinct mechanism.

Cultural Identity shapes TTC through the cultural dimension: consumers with stronger affective attachment to jasmine tea culture are more attuned to and appreciative of how cultural heritage is embedded in the brand ecosystem. They are better positioned to perceive the cultural leg of Three-Tea Coordination, and-because TTC requires all three dimensions to be perceived as integrated-stronger cultural identification heightens the overall TTC perception<sup>14 15</sup>:

H5: Cultural Identity (CI) has a significant positive effect on Three-Tea Coordination Perception (TTC).

Digital Engagement shapes TTC by exposing stakeholders to multi-dimensional brand information across the tea industry, cultural, and technological domains simultaneously. Social media content, live-streaming, and e-commerce platforms increasingly present jasmine tea brands through integrated narratives that highlight industry credentials, cultural heritage, and technological innovation. In the agricultural context specifically, Chen et al. find, using an

extended Technology Acceptance Model with 424 Chinese farmers, that government support, platform support, and social learning jointly shape farmers' adoption of live-streaming e-commerce, evidence that digital engagement in agricultural markets is co-determined by technological and institutional factors. Greater digital engagement means greater exposure to and cognitive processing of such integrative brand messages, increasing TTC 23 24. The specific transmission mechanism operates through what Hollebeek et al.<sup>26</sup> term the cognitive brand engagement pathway: as consumers process brand information encountered through digital channels, they form evaluative schemas about the brand ecosystem's internal coherence. When these schemas consistently reflect the simultaneous presence of industrial competence, cultural authenticity, and technological application-the three dimensions mandated by Three-Tea Coordination-digital engagement serves as the experiential conduit through which consumers construct a holistic perception of industry-culture-technology integration (TTC). Critically, this cognitive mechanism is contingent on the richness and integrative quality of brand information accessible through digital channels; consumers who engage more deeply with brand content thus develop a stronger and more differentiated TTC perception than those with limited digital contact: H6: Digital Engagement (DE) has a significant positive effect on Three-Tea Coordination Perception (TTC).

Enterprise Capability shapes TTC through stakeholders' attributions about enterprise competence. Enterprises that exhibit strong quality management, product innovation, cultural brand storytelling, and digital marketing capabilities are perceived as orchestrating the industry, cultural, and technological assets of the jasmine tea ecosystem effectively. Strong enterprise capability signals that the Three-Tea dimensions are not only present but actively coordinated by competent actors, thereby enhancing TTC 25 26 28. The transmission mechanism here is cognitive attribution: when consumers perceive a jasmine tea enterprise as highly capable across multiple strategic dimensions, they attribute to that enterprise the role of system integrator-an actor capable of simultaneously advancing industrial scale, cultural transmission, and technological application in a coordinated manner. This

attribution directly elevates consumers' holistic perception of the regional brand ecosystem's Three-Tea Coordination achievement (TTC). This mechanism is grounded in Teece et al.'s<sup>33</sup> dynamic capabilities framework, which holds that perceived organizational competence in sensing, seizing, and reconfiguring resources signals to external stakeholders that the firm is capable of managing complex multi-dimensional coordination challenges. In the jasmine tea context, an enterprise that is perceived as simultaneously excelling in production quality, product innovation, cultural brand communication, and digital market development is seen as the embodiment of Three-Tea Coordination at the firm level, thereby shaping consumers' overall TTC perception of the regional brand:

H7: Enterprise Capability (EC) has a significant positive effect on Three-Tea Coordination Perception (TTC).

Government Support shapes TTC by creating the institutional architecture within which industry, cultural, and technology policies are coordinated. Effective government support-such as the Digital Jasmine platform, the Jasmine Industry Park, and GI protection mechanisms-signals to stakeholders that public institutions are actively integrating and balancing the three dimensions of the Three-Tea Coordination framework. Perceptions of effective government coordination directly enhance TTC<sup>2 12 27</sup>:

H8: Government Support (GS) has a significant positive effect on Three-Tea Coordination Perception (TTC).

### 3.3.3 Three-Tea Coordination Perception to Brand Value Co-creation (H9)

Three-Tea Coordination Perception activates BVC through both affective and cognitive pathways. Affectively, perceiving that a regional brand effectively integrates industry, culture, and technology generates a sense of holistic brand authenticity and distinctiveness-qualities that increase consumers' identification with the brand and their motivation to participate in its co-creation<sup>2 16</sup>. Cognitively, high TTC signals that the brand ecosystem is well-governed and multi-dimensionally competent, reducing perceived risk in co-creative investment. The Three-Tea Coordination strategy advocates the synergistic development of tea culture, tea industry, and tea technology<sup>3</sup>. By promoting industrial upgrading and sustainable development in tea-producing regions, such coordination creates favorable

conditions for regional brand cultivation and value co-creation<sup>3</sup>:

H9: Three-Tea Coordination Perception (TTC) has a significant positive effect on Brand Value Co-creation (BVC).

#### 3.3.4 Mediation of Three-Tea Coordination Perception (H10)

Drawing on the theoretical logic developed above, we propose that TTC functions as a partial mediator transmitting the effects of all four antecedents onto BVC. Partial mediation is posited rather than full mediation because: (i) CI, DE, EC, and GS each have direct pathways to BVC that do not require TTC as an intermediary (e.g., cultural identification directly activates co-creative advocacy independent of integrative ecosystem perceptions); and (ii) there is theoretical and empirical grounds for expecting that TTC does not fully account for the antecedent-BVC relationships<sup>4</sup>. Formally:

H10: Three-Tea Coordination Perception (TTC) partially mediates the effects of Cultural Identity (CI), Digital Engagement (DE), Enterprise Capability (EC), and Government Support (GS) on Brand Value Co-creation (BVC).

### 3.4 Model Construction

The full structural model contains: six first-order reflective latent variables (CI, DE, EC, GS, TTC, BVC), each operationalized with six Likert-scaled items (Likert 1-5; total 36 items); four direct structural paths (H1-H4) from exogenous to endogenous outcome; four indirect structural paths (H5-H8) from exogenous to the mediator; one structural path from mediator to outcome (H9); four indirect effect tests via bootstrap (H10); and six demographic control variables. The measurement model is estimated via CFA following the two-step procedure of Anderson and Gerbing<sup>6</sup>. Structural parameters are estimated by maximum likelihood in AMOS 26.0. Bootstrapped indirect effects (5,000 replications, 95% CI) test H10. The minimum required sample is 200 valid responses for stable SEM parameter estimates; the target is  $n = 5007$ . For fsQCA, the five antecedent conditions are CI, DE, EC, GS, and TTC (each calibrated from composite scores), and BVC is the outcome;  $2^5 = 32$  logically possible configurations are generated, of which rows with fewer than 8 empirical cases are excluded<sup>4</sup> 30.

## 4. Case Analysis: Hengzhou Jasmine Tea Industry

### 4.1 Overview of Industrial Development

Hengzhou City's jasmine cultivation history extends across nearly a millennium, benefiting from a South Asian subtropical monsoon climate with annual precipitation averaging 1,200-1,600 mm, distinctive selenium-enriched sandy loam soils, and a year-round growing season that produces jasmine with early flowering onset, extended bloom duration, plump buds, and exceptionally concentrated fragrance compounds. These natural endowments, combined with decades of industrial policy investment, have produced the world's dominant jasmine tea production cluster.

By 2024, Hengzhou's jasmine cultivation area reached 129,900 acres (approximately 8,667 ha), with annual fresh flower yields exceeding 110,000 tonnes. Processed jasmine tea output exceeded 90,000 tonnes, with a processing value surpassing RMB 10 billion and an integrated full-industrial-chain value exceeding RMB 18 billion. These figures represent over 80% of China's national output and over 60% of global jasmine tea production<sup>4</sup>. The sector encompasses more than 150 tea processing enterprises, including 18 deep-processing firms and 63 above-scale enterprises. The regional public brand "Hengzhou Jasmine Flower" is a national GI product, China Famous Trademark, and one of China's Most Valuable Agricultural Regional Brands, with a brand value assessment reaching RMB 226.69 billion in 2025-consistently ranking among the top tea GI brands nationally<sup>4</sup>.

The city has also developed a "1+9" industrial cluster model, integrating core jasmine tea production with nine associated sectors: potted jasmine plants, jasmine food products, cultural tourism, daily-use products, catering, pharmaceuticals, sports, health and wellness, and creative industries. Extended industries generated approximately RMB 3.8 billion in 2024, representing 31.7% of total industrial chain value<sup>3</sup>-a diversification effort grounded in the Three-Tea Coordination policy logic of integrating productive, cultural, and technological dimensions of the tea ecosystem.

### 4.2 Brand Development Status

#### 4.2.1 Production and Processing Infrastructure

Hengzhou's processing infrastructure is globally unrivaled in scale. The traditional jasmine scenting process-in which freshly picked

jasmine petals are layered with green or white tea base through multiple rounds of temperature-controlled contact to transfer fragrant compounds-represents a high-skill, labor-intensive craft that has been progressively industrialized over the past four decades. However, processing automation lags significantly behind peer regions: the penetration rate of automated scenting production lines in Hengzhou is 15%, compared to 45% in Fuzhou, Fujian, and 40% in Zhejiang [based on field research report, 2025]. Labor costs account for over 40% of total processing costs, creating escalating pressure as agricultural wages rise with urbanization. The average worker produces five times less output than an automated line. Quality standardization in the flower-purchasing transaction chain remains a persistent challenge: only 38% of flower transactions follow standardized grading procedures, with the remainder relying on experienced-based visual and olfactory assessment [based on field research report, 2025].

The "Digital Jasmine" platform-a government-supported digital trading and traceability system-achieved a transaction volume of RMB 4.8 billion in 2024, serving over 40,000 flower farmers and 194 tea enterprises, with a digital market display screen pilot improving transaction efficiency by 25% and reducing price disputes by 30% [based on field research report, 2025]. This represents a meaningful, if partial, application of the "tea technology" dimension of Three-Tea Coordination to the core transaction infrastructure.

#### 4.2.2 Enterprise Structure and Brand Self-Actualization

The commercial landscape exhibits a pronounced structural imbalance between production scale and brand development depth. Of 86 principal jasmine tea enterprises, only 28 (32.6%) engage in self-branded commercial operations; 83.7% operate primarily as OEM processors for external brands [based on field research report, 2025]. Leading national brands-including Zhangyi Yuan, Wuyutai, Bitanpiaoxue, and China Tea-have established processing facilities in Hengzhou to capture high-quality raw material, while local enterprises remain in low-margin upstream processing roles with average gross profit margins of approximately 8-10% versus 30%+ for brand-owning firms.

Field interviews with three enterprises illuminate the range of developmental trajectories and

constraints. Nanfang Tea Factory represents the modal local enterprise: a stable, well-equipped processor operating entirely in OEM mode with reliable production capacity but zero self-brand ambition, primarily because technology upgrade subsidies are difficult to access due to complex application processes, and because the enterprise lacks digital marketing personnel. The enterprise's situation exemplifies the "has capacity, lacks brand; has processing, lacks premium" structural trap common to the majority of Hengzhou's jasmine tea processors [based on field research report, 2025].

Xiangjuyimo represents an emergent success trajectory. The enterprise pivoted from OEM processing (2019) to independent tea beverage brand development, building a product system around the concept of "jasmine flower plus regional specialty agricultural products" with a "front shop, back factory" (an integrated structure combining retail at the front and manufacturing at the back) tea house operational model. By 2025, the enterprise had established six production facilities in Hengzhou and over ten directly operated milk tea stores in Nanning and Hangzhou. The brand name "cognate partner in adversity" was registered with government assistance and encodes the brand narrative of mutual dependence among jasmine flower farmers, tea enterprises, and consumers [based on field interview, 2025]. Critically, the enterprise chairman serves concurrently as President of the Hengzhou Jasmine Tea Industry Association and a People's Congress representative-a position that enables direct policy input and amplifies government support access, illustrating the GS→TTC pathway.

The enterprise reported that brand building has not yet returned to profitability (annual rent RMB 480,000; each employee required to generate RMB 5,000 minimum production value) but emphasized that "without brand, the future market will have no place for us". This reflects the structural logic of the Three-Tea Coordination framework: scale-only competition is not sustainable; brand cultural value co-creation requires integrating the cultural dimension. Notably, the enterprise's jasmine tea products have been selected for use at high-profile events including the Beijing National People's Congress sessions-a government-endorsed quality signal that reinforces both GS and BVC [based on field research report, 2025].

#### 4.2.3 Digital Commerce and E-commerce

### Development

Online sales account for approximately 30% of total jasmine tea sales in Hengzhou, but the internal structure is significantly imbalanced. Cross-border e-commerce represents only 5% of online sales (versus 25% in Fuzhou), and live-streaming commerce accounts for only 8%. Professional live-streaming infrastructure, specialized operations personnel, and supportive supply chain logistics are acutely scarce; e-commerce talent gap rates exceed 65% [field survey, 2025]. Most enterprises rely on price-competitive positioning on conventional platforms like Taobao, Pinduoduo, with products priced below RMB 50 per unit comprising over 70% of online sales-structurally limiting brand premium realization and, consequently, inhibiting the DE→BVC pathway that our model predicts.

An exception is the enterprise associated with the field interview session, which operates a dedicated short-video production team and has established an e-commerce subsidiary in Hangzhou, with partner live-streaming accounts achieving single-day view counts exceeding 2 million for agricultural products. This enterprise demonstrates that DE, when effectively developed, can serve as a significant BVC driver-but also illustrates that such capability is currently exceptional rather than typical in the Hengzhou ecosystem.

### 4.3 Deficits in Brand Cultural Value and Three-Tea Coordination

#### 4.3.1 Cultural Resources: Rich but Underexploited

Hengzhou possesses extraordinary cultural capital: nearly a millennium of documented jasmine cultivation history, the UNESCO-adjacent "World Capital of Jasmine" designation, traditional flower-scenting craft heritage, oral farming traditions, and festival cultures linking jasmine to local identity. Yet this cultural foundation is systematically underutilized in brand construction. The 2025 consumer survey (n = 1,128 valid responses) found that only 32% of respondents were aware of Hengzhou jasmine tea's historical origins and cultural significance; only 27% could distinguish Hengzhou from Fuzhou jasmine tea in terms of cultural positioning and quality attributes [based on field research report, 2025].

Physical cultural infrastructure is correspondingly limited. As of 2025, Hengzhou

has no comprehensive, publicly accessible jasmine tea cultural museum. Small exhibitions are maintained within the Xiangxiang Garden enterprise facility and the Zhangyi Yuan factory compound [based on field observation, 2025]. Cultural content in key scenic areas-including the Zhonghua Jasmine Garden and Mojique Essence Garden-comprises less than 15% of total visitor experience programming. Annual tourist arrivals reached 3.6 million in 2024, but average stay duration was less than 4 hours, and per-capita consumption was below RMB 80, reflecting the shallowness of cultural engagement and the absence of high-value immersive experiences that would catalyze BVC through cultural identity activation.

#### 4.3.2 Brand Cultural IP Deficit and Three-Tea Imbalance

The most structurally significant cultural deficit is the absence of a dominant, nationally resonant cultural intellectual property (IP) for the Hengzhou jasmine tea brand. Fuzhou jasmine tea has successfully crystallized its brand identity around the "tribute tea" cultural narrative-a historically resonant, symbolically powerful positioning that commands consumer premium recognition nationally and internationally. Hengzhou, despite its substantially larger productive scale, has not achieved comparable cultural brand crystallization. Enterprise brand identities are fragmented, with no unified visual language, narrative framework, or cultural symbol representing the regional brand as a whole [based on field observation, 2025].

This cultural deficit directly impedes the Three-Tea Coordination logic. The tea industry dimension is strong: production scale, processing capacity, and supply chain depth are unrivaled. However, the tea culture dimension is weak: brand storytelling is superficial, cultural heritage is not systematically embedded in product design or consumer communication, and there is no cultural IP capable of generating the narrative differentiation needed for premium positioning. The tea technology dimension is mixed: digital trading infrastructure is developing, but agricultural mechanization and processing automation lag substantially. The result is a systemic Three-Tea Coordination imbalance-a finding directly observable in the field research report and hypothesized to suppress both TTC (low due to perceived imbalance) and BVC (low due to insufficient cultural and technological activation of co-

creative engagement).

This imbalance validates the theoretical positioning of TTC as a mediating variable in our model. Enterprises and policy actors that successfully address the cultural and technological gaps-as Xiangjuyimo has attempted through its brand narrative development and food-safety automation investment-create conditions for higher TTC perception and, through the TTC→BVC pathway, higher co-creation outcomes. The case analysis thus provides empirical grounding for all ten hypotheses and contextualizes the structural deficits that the quantitative analysis in subsequent sections will seek to measure and explain.

## 5. Research Design

### 5.1 Data Collection and Sample Description

Data collection was conducted via an online structured questionnaire distributed through the Wenjuanxing platform between April and June 2026, complemented by field distribution in Hengzhou City during the 2025 Three Summer Action social practice program. Respondents were recruited from a national sample with deliberate oversampling in Guangxi, Guangdong, and major tea consumption centres. To be eligible, respondents were required to have at least some awareness of or engagement with the Hengzhou Jasmine Tea brand. A pilot test with 30 respondents confirmed item clarity and was excluded from the final dataset. Invalid responses-defined as those with more than one-third missing items, straight-line response patterns, or completion times below three minutes-were removed during screening, yielding a final valid sample of  $n = 532$ .

Table 2 presents the demographic profile of the sample. Male respondents constituted 55.5% of the sample. The age distribution skewed towards middle-aged and older respondents, with 43.2% falling in the 46-55 bracket and 26.1% in the 36-45 bracket, reflecting the age profile of active jasmine tea consumers and industry participants in China. Junior college graduates comprised the largest education group (54.7%), consistent with the demographic composition of Hengzhou's local workforce and tea industry participants. General consumers accounted for 64.8% of respondents, with tea industry enterprise employees (15.6%), government and association personnel (9.0%), and academic researchers

(5.8%) making up the balance-a multi-stakeholder composition appropriate for a brand value co-creation study. In terms of brand familiarity, 71.2% of respondents reported moderate to extreme familiarity; 72.5% consumed Hengzhou Jasmine Tea at least occasionally, confirming meaningful engagement with the research object.

**Table 2. Sample Demographic Profile ( $n = 532$ )**

| Category           | Item                              | n   | %     |
|--------------------|-----------------------------------|-----|-------|
| Gender             | Male                              | 295 | 55.5  |
|                    | Female                            | 237 | 44.5  |
| Age                | 18-25                             | 18  | 3.4   |
|                    | 26-35                             | 68  | 12.8  |
|                    | 36-45                             | 139 | 26.1  |
|                    | 46-55                             | 230 | 43.2  |
|                    | 56 and above                      | 77  | 14.5  |
| Education          | High school or below              | 56  | 10.5  |
|                    | Junior college / Vocational       | 291 | 54.7  |
|                    | Bachelor's degree                 | 148 | 27.8  |
|                    | Master's degree or above          | 37  | 7.0   |
| Industry Role      | General consumer                  | 345 | 64.8  |
|                    | Tea enterprise employee/owner     | 83  | 15.6  |
|                    | Government / Association official | 48  | 9.0   |
|                    | Academic / Researcher             | 31  | 5.8   |
|                    | Other                             | 25  | 4.7   |
| Brand Familiarity  | Not familiar at all               | 45  | 8.5   |
|                    | Slightly familiar                 | 103 | 19.4  |
|                    | Moderately familiar               | 217 | 40.8  |
|                    | Quite familiar                    | 105 | 19.7  |
|                    | Very familiar                     | 62  | 11.7  |
| Purchase Frequency | Never                             | 82  | 15.4  |
|                    | Rarely (a few times per year)     | 48  | 9.0   |
|                    | Occasionally (monthly)            | 229 | 43.0  |
|                    | Frequently (weekly)               | 147 | 27.6  |
|                    | Very frequently (daily)           | 26  | 4.9   |
| Total              |                                   | 532 | 100.0 |

### 5.2 Measurement Instrument

The survey instrument comprises eight sections. Section 1 collects six demographic variables. Sections 2 through 7 contain the six reflective latent constructs-Cultural Identity (CI), Digital Engagement (DE), Enterprise Capability (EC), Government Support (GS), Brand Value Co-creation (BVC), and Three-Tea Coordination Perception (TTC)-each measured by six items on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree; 36 items total). Section 8 comprises three open-ended qualitative

questions. All items were adapted from established scales and reworded to reflect the Hengzhou Jasmine Tea context following expert review by three academics and two industry practitioners. Table 3 presents the complete measurement instrument.

**Table 3. Measurement Instrument (36 Items, Likert 1-5)**

| Construct                     | Item  | Statement                                                                                             | Source                                                            |
|-------------------------------|-------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Cultural Identity (CI)        | CI1   | I am aware of the historical and cultural heritage of Hengzhou Jasmine Tea.                           | Cayla & Arnould <sup>17</sup> ; Beverland <sup>19</sup>           |
|                               | CI2   | I consider Hengzhou Jasmine Tea to be an important symbol of local culture.                           |                                                                   |
|                               | CI3   | The cultural stories associated with Hengzhou Jasmine Tea resonate with me personally.                |                                                                   |
|                               | CI4   | I feel a sense of pride when I see Hengzhou Jasmine Tea promoted at a national/international level.   |                                                                   |
|                               | CI5   | The unique cultural identity of Hengzhou Jasmine Tea distinguishes it from other tea brands.          |                                                                   |
|                               | CI6   | I believe preserving the traditional craftsmanship of Hengzhou Jasmine Tea is important.              |                                                                   |
| Digital Engagement (DE)       | DE1   | I follow or engage with Hengzhou Jasmine Tea content on social media (e.g., WeChat, Weibo, Douyin).   | Hollebeek et al. <sup>26</sup> ; Jayashankar et al. <sup>27</sup> |
|                               | DE2   | I have purchased Hengzhou Jasmine Tea through e-commerce platforms (e.g., Taobao, JD.com).            |                                                                   |
|                               | DE3   | I actively share or recommend Hengzhou Jasmine Tea products/content online.                           |                                                                   |
|                               | DE4   | Digital marketing campaigns have influenced my purchase decisions.                                    |                                                                   |
|                               | DE5   | Online reviews and user-generated content enhance the brand value of Hengzhou Jasmine Tea.            |                                                                   |
|                               | DE6   | I have participated in online brand activities related to Hengzhou Jasmine Tea.                       |                                                                   |
| Enterprise Capability (EC)    | EC1   | Hengzhou Jasmine Tea enterprises have strong production quality and standardisation capabilities.     | Teece et al. <sup>33</sup> ; Barney <sup>34</sup>                 |
|                               | EC2   | Enterprises in this industry innovate effectively in product development and packaging.               |                                                                   |
|                               | EC3   | The enterprises effectively communicate brand stories and cultural values to consumers.               |                                                                   |
|                               | EC4   | Enterprises make good use of digital tools and data analytics in marketing.                           |                                                                   |
|                               | EC5   | The enterprises collaborate effectively with other stakeholders to promote the brand.                 |                                                                   |
|                               | EC6   | I trust that Hengzhou Jasmine Tea enterprises are committed to sustainable production.                |                                                                   |
| Government Support (GS)       | GS1   | Government policies have effectively supported the development of the Hengzhou Jasmine Tea industry.  | North <sup>35</sup> ; Zhang et al. <sup>15</sup>                  |
|                               | GS2   | Government investment in infrastructure has benefited the jasmine tea sector.                         |                                                                   |
|                               | GS3   | Government-led promotional activities have raised the brand's visibility.                             |                                                                   |
|                               | GS4   | Regulatory frameworks established by the government ensure quality and authenticity.                  |                                                                   |
|                               | GS5   | Government support has strengthened collaboration among enterprises, farmers, and other stakeholders. |                                                                   |
|                               | GS6   | I am satisfied with government involvement in protecting the GI of Hengzhou Jasmine Tea.              |                                                                   |
| Brand Value Co-creation (BVC) | BV C1 | Consumers, enterprises, and government collectively shape the brand value of Hengzhou Jasmine Tea.    | Vargo & Lusch <sup>20</sup> ; Yi & Gong <sup>24</sup>             |
|                               | BV C2 | My personal engagement (purchasing, sharing, reviewing) contributes to the brand's overall value.     |                                                                   |

|                                         |          |                                                                                                                        |                                                                                                                                |
|-----------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|                                         | BV<br>C3 | The cultural heritage of Hengzhou is effectively integrated into the brand's value proposition.                        |                                                                                                                                |
|                                         | BV<br>C4 | I perceive the brand value of Hengzhou Jasmine Tea to have increased in recent years.                                  |                                                                                                                                |
|                                         | BV<br>C5 | Multi-stakeholder collaboration is essential for sustaining the brand's competitive advantage.                         |                                                                                                                                |
|                                         | BV<br>C6 | Overall, I consider Hengzhou Jasmine Tea to be a high-value, trustworthy regional brand.                               |                                                                                                                                |
| Three-Tea Coordination Perception (TTC) | TTC<br>1 | A relatively complete industrial system has been formed across cultivation, processing, and marketing.                 | This study; the Three-Tea Coordination policy framework <sup>3</sup> and tea-industry transformation literature <sup>3</sup> . |
|                                         | TTC<br>2 | I can sense a deep traditional cultural heritage in the products and promotions of Hengzhou Jasmine Tea.               |                                                                                                                                |
|                                         | TTC<br>3 | Modern science and technology have been actively introduced into production, processing, or brand communication.       |                                                                                                                                |
|                                         | TTC<br>4 | The brand development effectively integrates industrial scale, cultural characteristics, and technological innovation. |                                                                                                                                |
|                                         | TTC<br>5 | Coordinated development of tea industry, culture, and technology has significantly enhanced brand competitiveness.     |                                                                                                                                |
|                                         | TTC<br>6 | Overall, I am impressed by the balanced development in terms of industry, culture, and technology.                     |                                                                                                                                |

### 5.3 Analytical Methods

The study adopts a two-stage analytical strategy. In the first stage, Structural Equation Modeling (SEM) is implemented in AMOS 29.0 following the two-step procedure of Anderson and Gerbing<sup>7</sup>. A confirmatory factor analysis (CFA) assesses the measurement model's reliability and validity prior to structural path estimation. Maximum likelihood (ML) estimation is used. Bootstrapped indirect effect tests (5,000 replications, 95% bias-corrected percentile confidence intervals) are employed to evaluate mediation hypotheses (H10). In the second stage, fuzzy-set Qualitative Comparative Analysis (fsQCA 4.1) identifies configurational pathways to high Brand Value Co-creation. The integration of configurational and net-effect analysis has gained traction in agricultural management research. Yu et al., combining grounded theory with fsQCA, identify equifinal competency configurations underpinning farm cooperatives' performance, while Fan et al. couple necessary condition analysis with fsQCA to reveal multiple driving paths to innovation quality among agricultural enterprises. These studies reinforce the methodological premise-central to the present study-that no single antecedent is necessary and that outcomes arise from condition combinations. The five antecedent conditions (CI, DE, EC, GS, TTC)

are calibrated from construct composite scores using the direct calibration method, with the 95th, 50th, and 5th percentiles serving as the fully-in, crossover, and fully-out anchors, respectively. A minimum frequency threshold of 8 cases and a raw consistency threshold of 0.80 govern truth table row inclusion. Parsimonious, intermediate, and complex solutions are produced; the intermediate solution is reported as the primary result. The integration of SEM (net causal inference) and fsQCA (configurational logic) follows Misangyi and Acharya<sup>6</sup>, providing both variable-oriented and case-oriented analytical coverage.

### 6 EMPIRICAL ANALYSIS

#### 6.1 Common Method Bias Test

Given that all constructs were measured through a single self-report questionnaire, Harman's single-factor test was conducted to assess common method bias. An exploratory factor analysis of all 36 items without rotation was performed; the largest unrotated factor accounted for 26.31% of total variance, well below the 40% threshold<sup>42</sup>, indicating that common method bias does not constitute a serious threat to the validity of the findings. Additionally, the strong model fit of the CFA measurement model and the meaningful variance distribution across six distinct factors provide further evidence against single-source bias.

## 6.2 Measurement Model: Reliability and Validity

Table 4 reports the reliability and convergent validity statistics. All Cronbach's alpha ( $\alpha$ ) coefficients range from .867 to .895, exceeding the threshold of .70. Composite reliability (CR) values range from .868 to .895, and average

variance extracted (AVE) values range from .522 to .588, both satisfying the required thresholds of .70 and .50, respectively. All standardized factor loadings fall between .667 and .809, with the single minimum (.667 for GS4) remaining above .60<sup>8</sup>. These results confirm satisfactory internal consistency and convergent validity for all six constructs.

**Table 4. Measurement Model: Reliability and Convergent Validity**

| Construct                     | Item | Loading | $\alpha$ | CR   | AVE  | Mean (SD)          |
|-------------------------------|------|---------|----------|------|------|--------------------|
| Cultural Identity (CI)        | CI1  | .707    | .877     | .877 | .544 | <b>3.58 (0.72)</b> |
|                               | CI2  | .729    |          |      |      |                    |
|                               | CI3  | .763    |          |      |      |                    |
|                               | CI4  | .719    |          |      |      |                    |
|                               | CI5  | .747    |          |      |      |                    |
|                               | CI6  | .760    |          |      |      |                    |
| Digital Engagement (DE)       | DE1  | .758    | .895     | .895 | .588 | <b>3.63 (0.68)</b> |
|                               | DE2  | .788    |          |      |      |                    |
|                               | DE3  | .766    |          |      |      |                    |
|                               | DE4  | .742    |          |      |      |                    |
|                               | DE5  | .735    |          |      |      |                    |
|                               | DE6  | .809    |          |      |      |                    |
| Enterprise Capability (EC)    | EC1  | .761    | .882     | .882 | .554 | <b>3.77 (0.65)</b> |
|                               | EC2  | .778    |          |      |      |                    |
|                               | EC3  | .743    |          |      |      |                    |
|                               | EC4  | .739    |          |      |      |                    |
|                               | EC5  | .707    |          |      |      |                    |
|                               | EC6  | .736    |          |      |      |                    |
| Government Support (GS)       | GS1  | .718    | .867     | .868 | .522 | <b>3.82 (0.66)</b> |
|                               | GS2  | .721    |          |      |      |                    |
|                               | GS3  | .738    |          |      |      |                    |
|                               | GS4  | .667    |          |      |      |                    |
|                               | GS5  | .721    |          |      |      |                    |
|                               | GS6  | .768    |          |      |      |                    |
| Brand Value Co-creation (BVC) | BVC1 | .721    | .890     | .891 | .577 | <b>3.91 (0.63)</b> |
|                               | BVC2 | .797    |          |      |      |                    |
|                               | BVC3 | .780    |          |      |      |                    |
|                               | BVC4 | .714    |          |      |      |                    |
|                               | BVC5 | .758    |          |      |      |                    |
|                               | BVC6 | .784    |          |      |      |                    |
| Three-Tea Coordination (TTC)  | TTC1 | .764    | .884     | .885 | .561 | <b>3.74 (0.70)</b> |
|                               | TTC2 | .744    |          |      |      |                    |
|                               | TTC3 | .742    |          |      |      |                    |
|                               | TTC4 | .769    |          |      |      |                    |
|                               | TTC5 | .709    |          |      |      |                    |
|                               | TTC6 | .764    |          |      |      |                    |

Note.  $\alpha$  = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted. All factor loadings are standardized (ML estimation, AMOS 29.0).

Discriminant validity was assessed using the Fornell-Larcker criterion<sup>43</sup>: the square root of each construct's AVE must exceed its

correlations with all other constructs. Table 5 presents the inter-construct correlation matrix with AVE square roots on the diagonal. All diagonal values exceed the off-diagonal correlations in the corresponding rows and columns, confirming discriminant validity. The highest inter-construct correlation is between GS

and EC (.547) and between BVC and TTC (.557), both below the corresponding AVE square roots of .723 and .749/.760, satisfying the Fornell-Larcker criterion for all pairs.

**Table 5. Discriminant Validity: Fornell-Larcker Criterion**

| Construct | CI   | DE   | EC   | GS   | BVC  | TTC  |
|-----------|------|------|------|------|------|------|
| CI        | .738 |      |      |      |      |      |
| DE        | .209 | .767 |      |      |      |      |
| EC        | .251 | .207 | .744 |      |      |      |
| GS        | .297 | .285 | .547 | .723 |      |      |
| BVC       | .420 | .438 | .540 | .521 | .760 |      |
| TTC       | .416 | .460 | .372 | .420 | .557 | .749 |

Note. Bold diagonal values = square root of AVE. Off-diagonal values = Pearson correlations between construct composite scores. All off-diagonal values are smaller than the corresponding AVE square roots, confirming discriminant validity.

### 6.3 SEM Path Analysis

#### 6.3.1 Model Fit

Table 6 confirms excellent model fit across all major indices. The chi-square-to-degrees-of-freedom ratio ( $\chi^2/df = 1.151$ ) and RMSEA (.017, 90% CI [.009, .022], PCLOSE = 1.000) are well within accepted thresholds of 3.0 and .06, respectively<sup>7 8</sup>. Incremental fit indices all exceed the stringent .95 standard (CFI = .991, TLI = .990, IFI = .991). Absolute fit indices satisfy the .90 criterion (GFI = .937, AGFI = .928), and RMR = .042 is below .05. The significant chi-square ( $\chi^2 = 666.471$ ,  $df = 579$ ,  $p = .007$ ) is expected given the large sample size and does

not indicate model misfit.

**Table 6. Structural Model Fit Indices**

| Index     | Value        | Threshold | Index |
|-----------|--------------|-----------|-------|
| chi-sq/df | 1.151        | ≤ 3.0     | NFI   |
| RMSEA     | .017         | ≤ .06     | CFI   |
| 90% CI    | [.009, .022] | -         | TLI   |
| PCLOSE    | 1.000        | ≥ .05     | IFI   |
| GFI       | .937         | ≥ .90     | RMR   |
| AGFI      | .928         | ≥ .90     | AIC   |

Note.  $n = 532$ ;  $\chi^2 = 666.471$ ,  $df = 579$ ,  $p = .007$ . Estimates obtained via ML estimation in AMOS 29.0.

#### 6.3.2 Structural Paths (H1-H9)

Table 7 reports the standardized path coefficients and 95% bias-corrected (BC) bootstrap confidence intervals for the nine structural paths. All paths are statistically significant with confidence intervals excluding zero. Enterprise Capability exerts the strongest direct effect on BVC ( $\beta = .313$ , 95% CI: .205, .418), followed by Digital Engagement ( $\beta = .205$ , CI: .119, .289), Cultural Identity ( $\beta = .172$ , CI: .092, .259), Government Support ( $\beta = .157$ , CI: .042, .273), and Three-Tea Coordination Perception ( $\beta = .235$ , CI: .121, .346). On the pathways to TTC, Digital Engagement shows the strongest effect ( $\beta = .360$ , CI: .268, .450), followed by Cultural Identity ( $\beta = .288$ , CI: .194, .387), Government Support ( $\beta = .169$ , CI: .034, .307), and Enterprise Capability ( $\beta = .150$ , CI: .014, .282). All nine hypotheses H1-H9 are supported.

**Table 7. SEM Structural Path Coefficients (n = 532)**

| Hypothesis | Path      | beta | SE   | 95% BC CI    | p    | Result    |
|------------|-----------|------|------|--------------|------|-----------|
| H5         | CI → TTC  | .288 | .050 | [.194, .387] | .000 | Supported |
| H6         | DE → TTC  | .360 | .047 | [.268, .450] | .000 | Supported |
| H7         | EC → TTC  | .150 | .070 | [.014, .282] | .030 | Supported |
| H8         | GS → TTC  | .169 | .082 | [.034, .307] | .012 | Supported |
| H1         | CI → BVC  | .172 | .044 | [.092, .259] | .000 | Supported |
| H2         | DE → BVC  | .205 | .044 | [.119, .289] | .001 | Supported |
| H3         | EC → BVC  | .313 | .055 | [.205, .418] | .001 | Supported |
| H4         | GS → BVC  | .157 | .058 | [.042, .273] | .008 | Supported |
| H9         | TTC → BVC | .235 | .058 | [.121, .346] | .000 | Supported |

Note.  $\beta$  = standardized path coefficient; SE = standard error; 95% BC CI = bias-corrected bootstrap confidence interval (5,000 replications). p-values based on BC method. All CIs exclude zero.

#### 6.3.3 Mediation Analysis (H10)

Table 8 reports the indirect effects of CI, DE, EC, and GS on BVC through TTC, estimated via BC bootstrapping with 5,000 replications. All four

indirect effects are statistically significant (95% BC CIs exclude zero,  $p < .05$ ), providing full support for H10: TTC partially mediates the effects of all four antecedents on BVC. The DE-mediated indirect effect is the largest (.085), reflecting DE's strong pathway to TTC and TTC's subsequent effect on BVC. The CI-mediated indirect effect (.068) is the second largest. EC and GS exhibit smaller but

significant indirect effects (.035 and .040, respectively), consistent with their weaker effects on TTC. Total effects show that EC yields the highest aggregate impact on BVC (.349), followed by DE (.290), CI (.240), and GS

(.197). In all four cases, TTC serves as a partial mediator: direct effects remain significant while indirect effects through TTC provide an additional pathway, confirming partial mediation as the appropriate characterization.

**Table 8. Mediation Analysis: Indirect Effects via TTC (H10)**

| Path               | Direct Effect | Indirect Effect | 95% BC CI    | p    | Total Effect | Mediation Type |
|--------------------|---------------|-----------------|--------------|------|--------------|----------------|
| CI -> (TTC) -> BVC | .172          | .068            | [.034, .119] | .000 | .240         | Partial        |
| DE -> (TTC) -> BVC | .205          | .085            | [.044, .142] | .000 | .290         | Partial        |
| EC -> (TTC) -> BVC | .313          | .035            | [.007, .080] | .015 | .349         | Partial        |
| GS -> (TTC) -> BVC | .157          | .040            | [.010, .091] | .006 | .197         | Partial        |

Note. All effect estimates are standardized. Indirect effects = product of (antecedent -> TTC) x (TTC -> BVC) paths. 95% BC CI = bias-corrected bootstrap confidence intervals (5,000 replications). All CIs exclude zero. Partial mediation is confirmed because direct effects remain significant after controlling for TTC

## 6.4 FsQCA Configuration Analysis

### 6.4.1 Calibration

Following Ragin39, the six construct composite scores were calibrated into fuzzy-set membership values (0-1) using the direct

calibration function with three anchors: fully in (0.95 membership), crossover point (0.50 membership), and fully out (0.05 membership). The anchors were determined from the empirical distribution of each variable: the 95th percentile as the fully-in threshold, the 50th percentile (median) as the crossover, and the 5th percentile as the fully-out threshold. Table 9 reports the calibration thresholds. To avoid indeterminate cases at exactly 0.50 membership-which create unresolvable logical remainders in the truth table-all values within 0.001 of 0.50 were shifted by adding 0.001, following standard practice5.

**Table 9. Fuzzy-Set Calibration Thresholds**

| Variable                    | Label   | Fully In (95th pct) | Crossover (50th pct) | Fully Out (5th pct) |
|-----------------------------|---------|---------------------|----------------------|---------------------|
| Cultural Identity           | X1 (CI) | 5.000               | 3.833                | 1.942               |
| Digital Engagement          | X2 (DE) | 5.000               | 3.833                | 1.667               |
| Enterprise Capability       | X3 (EC) | 4.833               | 3.833                | 1.833               |
| Government Support          | X4 (GS) | 5.000               | 4.000                | 2.167               |
| Three-Tea Coord. Perception | M (TTC) | 4.892               | 3.833                | 1.833               |
| Brand Value Co-creation     | Y (BVC) | 4.833               | 4.000                | 1.667               |

Note. Percentile-based direct calibration. Thresholds represent raw Likert composite score values on the 1-5 scale. Membership scores shift by +0.001 for values exactly at the crossover to avoid logical indeterminacy.

### 6.4.2 Necessary Condition Analysis

Prior to configurational analysis, each condition was tested for necessity with respect to high BVC (Y = 1). A condition is considered necessary if its consistency exceeds 0.9039.

Table 10 shows that no single condition achieves the 0.90 consistency threshold. EC has the highest consistency (.784), followed by CI (.773). The absence of any necessary condition demonstrates that no single antecedent is indispensable for achieving high Brand Value Co-creation-confirming the theoretical expectation that BVC is a multi-conditional, equifinal outcome rather than a linearly determined one.

**Table 10. Necessary Condition Analysis (Outcome: High BVC)**

| Condition | Consistency | Coverage | Necessary? |
|-----------|-------------|----------|------------|
| CI (X1)   | 0.773       | 0.777    | No         |
| ~CI       | 0.523       | 0.593    | No         |
| DE (X2)   | 0.753       | 0.788    | No         |
| ~DE       | 0.519       | 0.564    | No         |
| EC (X3)   | 0.784       | 0.785    | No         |
| ~EC       | 0.490       | 0.559    | No         |
| GS (X4)   | 0.741       | 0.793    | No         |
| ~GS       | 0.536       | 0.569    | No         |
| TTC (M)   | 0.753       | 0.794    | No         |
| ~TTC      | 0.519       | 0.559    | No         |

Note. ~ = logical NOT (absence of condition). Necessity threshold: consistency  $\geq 0.90$ . No condition meets the threshold.

#### 6.4.3 Sufficient Condition Analysis

The truth table was constructed from  $2^5 = 32$  logically possible configurations. Applying the frequency threshold of 8 empirical cases and a raw consistency cutoff of 0.80<sup>5 39</sup>, six truth table rows were assigned Y = 1, eleven were assigned Y = 0, and fifteen remainders were excluded. Boolean minimization produced the intermediate

solution presented in Table 11, which coincides with the complex solution because the directional assumptions (all conditions present when high) were consistent with the data and yielded no simplifying counterfactuals. Four sufficient configurations emerged, collectively covering 67.5% of the high-BVC outcome cases (solution coverage = 0.675) with high solution consistency (0.897), confirming that the identified configurations reliably produce the outcome.

**Table 11. FsQCA Sufficient Configurations for High Brand Value Co-creation (Intermediate Solution)**

| Condition / Metric           | Config 1 | Config 2 | Config 3 | Config 4 |
|------------------------------|----------|----------|----------|----------|
| Cultural Identity (CI)       | ⊗        | ●        | ●        | ●        |
| Digital Engagement (DE)      | ●        | ●        | ●        |          |
| Enterprise Capability (EC)   | ●        | ●        |          | ●        |
| Government Support (GS)      | ●        |          | ●        | ●        |
| Three-Tea Coordination (TTC) |          | ●        | ●        | ●        |
| Raw Coverage                 | 0.348    | 0.480    | 0.479    | 0.493    |
| Unique Coverage              | 0.089    | 0.047    | 0.046    | 0.060    |
| Consistency                  | 0.909    | 0.930    | 0.920    | 0.925    |
| Solution Coverage            | 0.675    |          |          |          |
| Solution Consistency         | 0.897    |          |          |          |

Note. ● = core condition present; ⊗ = core condition absent; blank = condition is irrelevant (may be present or absent). Frequency cutoff:  $n \geq 8$ . Consistency cutoff: 0.908 (derived from truth table).

#### 6.4.4 Configuration Interpretation

Configuration 1 (~CI\*DE\*EC\*GS): This configuration- characterised by the simultaneous presence of high Digital Engagement, Enterprise Capability, and Government Support in the absence of Cultural Identity-is labelled the Institutional Compensation Configuration. It demonstrates that strong multi-stakeholder institutional coordination (government support, enterprise capability) combined with active digital market engagement can achieve high BVC even when consumers' personal cultural identification with the brand is low. This finding reveals an important substitutability: institutional strength can partially compensate for weak cultural identity, particularly in consumer segments that engage primarily through digital channels and perceive brand value through quality assurance and policy endorsement rather than cultural resonance.

Configurations 2 (CI\*DE\*EC\*TTC), 3 (CI\*DE\*GS\*TTC), and 4 (CI\*EC\*GS\*TTC): These three configurations consistently feature Cultural Identity and Three-Tea Coordination Perception as co-present conditions, and are

collectively labelled the Three-Tea-Anchored Co-creation Configurations. The co-presence of CI and TTC across all three pathways suggests that cultural identification with the regional brand and holistic perception of Three-Tea Coordination integration constitute a stable combinatorial foundation for high BVC, with Digital Engagement, Enterprise Capability, and Government Support serving as strategically interchangeable complementary conditions. Their differences reveal strategic equifinality: Config 2 achieves BVC through the combination of CI, DE, EC, and TTC-a configuration most representative of digitally-active, culturally-identified, enterprise-driven co-creation; Config 3 replaces EC with GS, indicating that strong government institutional support can serve as an alternative enabling condition to enterprise-level capability - a distinct pathway in which policy scaffolding, rather than firm-level competence, activates co-creation alongside high digital engagement and cultural identity; Config 4 replaces DE with GS, suggesting that for some stakeholders, institutional trust (government and enterprise) combined with cultural identity and TTC suffices without requiring active digital channel engagement. Config 4 achieves the highest raw coverage (.493), identifying it as the most common pathway to high BVC in this sample.

## 6.5 Results Comparison and Integration

Table 12 synthesises the SEM and fsQCA findings to provide an integrated account of brand value co-creation mechanisms. The SEM analysis establishes net causal effects: EC has the largest direct impact on BVC, suggesting that perceived enterprise quality and innovation capacity are the most influential independent drivers of co-creation outcomes. TTC exerts a significant mediating role for all four antecedents, confirming that consumers' holistic perception of industry-culture-technology integration serves as a cognitive pathway through which antecedent forces are translated into co-creative behaviour. The fsQCA analysis reveals that neither EC nor any other single

condition is necessary-co-creation is equifinal. TTC and CI jointly appear as core conditions in three of four sufficient configurations, whereas EC, DE, and GS exhibit conditional relevance depending on the configuration context. Together, the two methods establish that while EC and DE are the strongest independent net drivers of BVC, the Three-Tea Coordination Perception-anchored configurations explain the largest proportion of actual high-BVC cases (.493 and .480 raw coverage for Configs 4 and 2). This convergence between SEM's net-effect and fsQCA's configurational logic provides a rich, multi-layered understanding of brand value co-creation mechanisms in the Hengzhou jasmine tea context.

**Table 12. Integrated SEM-fsQCA Findings Summary**

| Dimension                  | SEM Finding (Net Effects)                                                                                                                                         | fsQCA Finding (Configurations)                                                                                                                                                            |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CI (Cultural Identity)     | Positive direct effect on BVC ( $\beta=.172^{***}$ ); and TTC ( $\beta=.288^{***}$ ); second-largest antecedent total effect (.240).                              | Core condition present in 3 of 4 configurations; absent in Config 1, which demonstrates substitutability by institutional factors.                                                        |
| DE (Digital Engagement)    | Strongest predictor of TTC ( $\beta=.360^{***}$ ); significant direct effect on BVC ( $\beta=.205^{**}$ ); second-largest total effect (.290).                    | Core in Configs 1, 2, 3; absent from Config 4, replaced by stronger institutional (GS) and TTC presence. Conditional but not universal.                                                   |
| EC (Enterprise Capability) | Largest direct effect on BVC ( $\beta=.313^{**}$ ); significant TTC predictor ( $\beta=.150^{*}$ ); highest total effect (.349).                                  | Core in Configs 1, 2, 4; absent from Config 3, where GS serves a compensating role. Substitutable by government support.                                                                  |
| GS (Government Support)    | Smallest direct effect on BVC ( $\beta=.157^{*}$ ) and TTC ( $\beta=.169^{*}$ ); lowest total effect (.197).                                                      | Core in Configs 1, 3, 4; can substitute for EC (Config 3) or DE (Config 4) when TTC and CI are present.                                                                                   |
| TTC (Mediator)             | Partial mediator for all four antecedents (H10 fully supported); significant direct effect on BVC ( $\beta=.235^{***}$ ).                                         | Core condition in 3 of 4 configurations; absent only from Config 1. The single most consistent co-occurrence partner with CI.                                                             |
| Key Insight                | EC is the dominant independent driver; TTC mediates all antecedent-BVC relationships, confirming the theoretical centrality of Three-Tea Coordination perception. | No single condition is necessary; co-creation is equifinal. TTC+CI form the stable core of the dominant pathways; institutional and digital conditions are strategically interchangeable. |

## 7. Discussion and Path Construction

### 7.1 Theoretical Discussion of SEM Findings

The SEM results support all nine structural hypotheses, yielding several theoretically substantive insights. First, Enterprise Capability emerges as the strongest direct driver of BVC ( $\beta = .313$ ), exceeding Cultural Identity, Digital Engagement, and Government Support. This finding extends resource-based theory<sup>26</sup> and dynamic capabilities theory<sup>33</sup> into the regional agricultural brand domain: consumers' perception of enterprise competence-encompassing quality control, product innovation, and multi-stakeholder coordination-is the most influential individual lever for co-

creation. This aligns with our field observation that brand-capable enterprises such as Xiangjuyimo generate significantly higher consumer engagement and advocacy than their OEM-producing counterparts. The implication is that brand value co-creation in regional product markets is not primarily an institutional or cultural phenomenon but fundamentally a firm capability-driven one.

Second, Digital Engagement demonstrates the strongest effect on TTC ( $\beta = .360$ ), consistent with the theoretical proposition that digital platforms expose consumers to integrative brand narratives spanning industry, culture, and technology simultaneously<sup>26 27</sup>. That DE's indirect effect through TTC (.085) is the largest of the four mediated paths-larger than CI's (.068)

despite CI's stronger direct effect on BVC—suggests an important mechanism: digital engagement does not merely connect consumers to brand products but actively constructs their evaluative schemas regarding the coherence and completeness of the regional brand ecosystem.

Third, the full support for H10 confirms that TTC serves as a partial mediator for all four antecedents. This finding makes an original theoretical contribution: it operationalizes the Three-Tea Coordination framework as a consumer-level perception construct and demonstrates empirically that how stakeholders perceive the integration of tea industry, tea culture, and tea technology constitutes a meaningful cognitive pathway through which antecedent forces are channelled into co-creative behaviour. No prior study has established this micro-level mechanism. The theoretical implication is that the Three-Tea Coordination policy achieves its effects on brand value not merely through aggregate sectoral development but through an individual-level evaluative mechanism—TTC perception—that can be measured and managed.

Fourth, Government Support has the smallest direct effect on BVC but significant effects on both BVC and TTC. This pattern is consistent with North's<sup>35</sup> institutional theory: government support primarily creates the conditions and incentives for co-creative behaviour rather than directly activating it. The GS-TTC pathway ( $\beta = .169$ ) is theoretically meaningful: government policies—such as the Digital Jasmine platform, the Jasmine Industry Park, and GI protection mechanisms—signal institutional integration of the three Tea Coordination dimensions, thereby elevating consumer TTC perception and subsequently BVC.

## 7.2 Theoretical Discussion of FsQCA Configurations

The four fsQCA configurations collectively reveal two distinct co-creation logics operating in the Hengzhou jasmine tea market. The Institutional Compensation Configuration (Config 1:  $\sim CI * DE * EC * GS$ ) demonstrates that for a segment of stakeholders—plausibly those with lower personal cultural attachment to the jasmine tea heritage but high digital market literacy and positive perceptions of enterprise and government competence—brand value co-creation can be achieved through institutional and market mechanisms without cultural identity

as a triggering condition. This finding has important practical implications: brand managers and policy actors need not assume that cultural identity development is a prerequisite for all stakeholder segments; for digitally-engaged, institutionally-oriented respondents, capability signals and government legitimacy suffice.

The Three-Tea-Anchored Configurations (Configs 2, 3, 4) are theoretically more significant. Their shared core of Cultural Identity and Three-Tea Coordination Perception—with TTC being the single most consistently present condition across all three high-coverage configurations—provides the first configurational evidence that TTC perception is the pivotal integrative mechanism in the majority of high-BVC pathways. This extends the SEM mediation finding: not only does TTC mediate the effects of individual antecedents on BVC, but TTC co-presence with cultural identity constitutes the stable foundation of multiple co-creation pathways, with digital engagement, enterprise capability, and government support serving as strategically interchangeable peripheral enhancers. The strategic substitutability among DE, EC, and GS across Configs 2, 3, and 4 confirms the equifinality principle of fsQCA<sup>5</sup>: different stakeholder contexts and resource endowments can achieve equivalent high-BVC outcomes through different combinatorial routes.

## 7.3 Multi-Path Co-creation Mechanism Construction

Synthesising the SEM and fsQCA findings, two primary co-creation pathways can be theorised for the Hengzhou Jasmine Tea brand. The first is the Enterprise-Driven Direct Pathway (supported by H3 and Configs 1, 2, 4): Enterprise Capability directly activates BVC through quality assurance, product innovation, and cultural brand communication, with TTC perception serving as an amplifying mediator. This pathway is particularly active among respondents with moderate-to-high familiarity with the brand and those embedded in the tea industry ecosystem. The second is the Cultural-TTC-Anchored Pathway (supported by H1, H5, H9, and Configs 2, 3, 4): Cultural Identity shapes TTC perception, and TTC perception activates BVC through the evaluative mechanism of holistic ecosystem assessment. This pathway is particularly prominent among general consumers and those with strong cultural attachment. Government Support and Digital

Engagement function as contextual enablers in both pathways, activating TTC through institutional signalling and informational exposure, respectively, while also contributing independently to BVC. These two pathways collectively explain 67.5% of the high-BVC outcome space, with the Cultural-TTC-Anchored pathway covering the larger proportion.

#### 7.4 Theoretical Contributions

This study makes four principal theoretical contributions. First, it introduces Three-Tea Coordination Perception (TTC) as the first empirically validated individual-level construct derived from China's Three-Tea Coordination policy framework, operationalised through a six-item reflective scale with confirmed reliability ( $\alpha = .884$ ), convergent validity ( $AVE = .561$ ), and discriminant validity. Second, it establishes TTC as a partial mediator in the brand value co-creation model, demonstrating empirically the mechanism through which cultural identity, digital engagement, enterprise capability, and government support translate into co-creative behaviour. Third, by integrating SEM and fsQCA, the study transcends conventional net-effect analysis to reveal the equifinal, configurational pathways to BVC, establishing that no single antecedent is necessary and that co-creation is achievable through at least four distinct combinatorial routes. Fourth, it extends Service-Dominant Logic and value co-creation theory<sup>20 23 28</sup> to the regional agricultural public brand context, a domain previously underexplored in the co-creation literature.

#### 7.5 Practical Implications

For Hengzhou City administrators and the Jasmine Tea Industry Association, the dominance of TTC in the high-BVC configurations suggests that coordinating policies across all three Tea dimensions simultaneously-rather than pursuing industrial scale, cultural promotion, or technological investment in isolation-is the most effective strategy for activating broad-based brand value co-creation. The consistent TTC-CI core across three configurations indicates that cultural identity programming (museum development, traditional craft revitalisation, brand storytelling) should be treated as a foundational investment alongside industrial and technological policy. For enterprise managers, the finding that Enterprise Capability is the strongest individual

driver of BVC (total effect = .349) underscores the priority of building perceived quality, innovation, and cultural communication competence. The success of Xiangjuyimo in brand building-contrasted with the stagnation of OEM processors-directly instantiates this finding. Enterprises that can credibly signal Three-Tea Coordination alignment in their product design, brand narrative, and operational practices will benefit from the TTC-BVC pathway.

For digital marketing strategists, the finding that Digital Engagement is the strongest predictor of TTC ( $\beta = .360$ ) indicates that content strategies should explicitly integrate industrial, cultural, and technological dimensions of the Hengzhou jasmine tea story-rather than focusing narrowly on product features or price promotions. Integrated brand narratives delivered through Douyin live-streaming, WeChat brand communities, and Taobao traceability systems can simultaneously build DE and elevate TTC, triggering the largest mediated pathway to BVC (.085).

For policy designers, the Institutional Compensation Configuration (Config 1) demonstrates that for stakeholders with low cultural identity, government support combined with enterprise capability and digital engagement can still generate high BVC. This implies that government investment in Digital Jasmine platform infrastructure, enterprise park development, and quality certification systems can reach a distinct stakeholder segment that cultural programming alone would miss.

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