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Research on the Impact Mechanism of Compensatory Health Consumption of Traditional Chinese Medicine under the Workplace Stress of Generation Z

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Abstract

As Generation Z fully enters the workforce, high-intensity work pressure has triggered a compensation-driven health consumption wave characterized by continuous depletion and replenishment. Traditional Chinese medicine brands, however, face severe cognitive aging challenges among younger demographics. Based on 1,055 valid questionnaires from Generation Z employees in Zhengzhou, this study integrates SOR theory, perceived value theory, and brand cultural translation theory to construct an analytical framework linking "workplace stress-compensatory health motivation-cultural identity-perceived value-consumption behavior." Empirical validation employs structural equation modeling, binary logistic regression, CCSI-IPA coupling analysis, and grey prediction models.The study found: First, perceived value plays a complete mediating role between workplace stress, compensatory health motivation, cultural identity, and consumption behavior, meaning all three antecedent variables translate into actual consumption behavior through product value perception.Second, perceived value serves as the core positive anchor in consumption decisions, with brand rejuvenation and traditional Chinese medicine cultural identity acting as positive supporting factors. Third, consumption demand can be categorized into four tiers: essential, expected, attractive, and indifferent. Workplace-adapted expected demands such as fragmented desk usage, portability, easy storage, and ready-to-eat convenience are currently the largest supply-demand mismatch pain points. Fourth, from 2026 to 2028, Zhengzhou's compensatory health consumption market for traditional Chinese medicine is expected to grow at an average annual rate of approximately 14.2%, with continued market expansion. Traditional Chinese medicine brands face three layers of disconnection-symbol, scenario, and value-requiring a tripartite approach centered on visual renewal, scenario adaptation, and cultural translation to drive rejuvenation transformation.

Keywords

Workplace Stress; Compensatory Health; Brand Rejuvenation; Structural Equation Modeling; Binary Logistic Regression Model.

1. Introduction

Generation Z (born between 1996 and 2008) has fully entered the workplace and become the backbone of social consumption. However, this group faces unprecedented workplace pressure. Keywords such as "overtime", "staying up late", "sitting for long periods", and "socializing" appear with a frequency of up to 73% in their social media discussions. The resulting sub-health conditions, such as fatigue, insomnia, gastrointestinal disorders, and anxiety, have become a

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common phenomenon [1]. To cope with continuous health depletion, Generation Z has developed a unique compensatory health consumption psychology, actively seeking to repair and balance the physical and mental exhaustion brought about by work through instant and fragmented consumption of health products.

Meanwhile, the penetration rate of traditional Chinese medicine (TCM) brands among Generation Z is less than 30%, far lower than the 70% among people over 45 years old. Generation Z generally perceives traditional Chinese medicine brands as "visually outdated," "cumbersome to use," and "lacking emotional resonance," with obvious pain points in terms of symbols, scenarios, and values. On the one hand, Generation Z has a natural identification with the concept of preventing diseases with traditional Chinese medicine and China-Chic culture [2]; on the other hand, the packaging design, usage scenarios, and communication language of existing TCM products still remain in traditional modes, unable to effectively reach young consumers.

Existing research on compensatory consumption often adopts a single perspective, either analyzing stress and consumer psychology, exploring the development of the traditional Chinese medicine (TCM) market, or discussing brand rejuvenation strategies. It lacks an integrated theoretical framework to systematically reveal how workplace stress drives the compensatory consumption decisions of Generation Z in TCM, as well as the internal logical chain of how traditional pharmaceutical companies should effectively respond to this demand through rejuvenation strategies. Based on this, this paper takes Zhengzhou as a typical sample, integrates the SOR theory, perceived value theory, and brand culture translation theory,constructs an integrated analytical framework, and uses various empirical methods to systematically explore the consumption decision-making mechanism and brand rejuvenation path, with the aim of providing theoretical reference and practical basis for the rejuvenation transformation of the TCM industry [3].

2. Literature Review and Theoretical Framework

2.1. Psychological Mechanisms of Compensatory Consumption

The theory of compensatory consumption posits that individuals actively choose specific products or services to seek psychological comfort in order to compensate for a psychological deficiency or alleviate negative emotions. Zheng Xiaoying and Peng Siqing (2014) systematically reviewed the concepts, types, and psychological mechanisms of compensatory consumption behavior, noting that such consumption is highly emotionally driven and context-embedded [4]. Tu Jianbo et al. (2023) further introduced the concept of compensatory health consumption, emphasizing that Generation Z copes with daily health depletion through the consumption of immediate,fragmented health products [5]. Wang Xinxin (2021) proposed the“stress scenario-immediate need-value fulfillment” consumption trigger pathway, emphasizing that a product’s ability to quickly resolve problems in specific scenarios is key to consumption decisions [6].

However, existing research has largely focused on compensatory consumption in the fast-moving consumer goods (FMCG) and beauty sectors. Research on the compensatory mechanisms of TCM health consumption remains insufficient, and there is a severe lack of micro-level empirical analysis specifically targeting “workstation wellness”-a core consumption scenario for Generation Z.

2.2. Research on the Rejuvenation of Traditional Chinese Medicine Brands

From a communication studies perspective, Zhang Zhuoran (2021) pointed out that time-honored brands such as Tongrentang and Chen Li Ji face a cultural generation gap [7], meaning that their brand discourse systems do not align with young people’s information consumption

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habits, resulting in an outdated brand image.Wu Gang et al. (2020) found through a questionnaire survey that some young consumers' perceptions of TCM remain stuck in stereotypes such as "bitter medicine is good medicine" or "exclusively for the middle-aged and elderly" [8], and they lack a deep understanding of its modern practical value. The research by Ma Gang, Guo Xuanqi, and others (2025) emphasizes that the rejuvenation of TCM brands must be advanced simultaneously across three dimensions: product form, channel reach, and cultural symbols [9].

Most existing studies are conducted from a single perspective-either marketing or communication-and lack systematic empirical research that integrates consumer psychology, cultural identity, and brand strategy within a unified framework.

2.3. Theoretical Framework and Research Hypotheses

This study adopts the Stimulus-Organism-Response (SOR) theory as its core framework, integrating Perceived Value Theory and Brand Cultural Translation Theory to construct an integrated analytical framework of "workplace stress-compensatory health motivation-cultural identity-perceived value-consumer behavior" [10]. In this framework, workplace stress, compensatory health motivation, and cultural identity constitute the stimulus dimension (S); perceived value constitutes the organism dimension (O); and consumption behavior constitutes the response dimension (R). Based on this, the following research hypotheses are proposed:

H1: Workplace stress has a significant positive effect on perceived value.

H2: Compensatory health motivation has a significant positive effect on perceived value.

H3: Cultural identity has a significant positive effect on perceived value.

H4: Perceived value has a significant positive effect on consumer behavior.

H5–H7: Workplace stress, compensatory health motivation, and cultural identity all have no significant direct effect on consumer behavior (i.e., perceived value acts as a complete mediator).

3. Research Methodology

3.1. Data Sources and Sample Characteristics

Table 1. Distribution of Demographic Characteristics of the Sample (N=1,055)

Dimension	Category	Sample Percentage (%)
Industry	Internet/Technology	11.85
	Finance/Accounting	10.98
	Manufacturing	11.85
	Lifestyle Services (Food & Beverage/Retail/Culture & Tourism)	12.72
	Business Services (Consulting/Media/Public Relations)	13.87
	State-Owned Enterprises/Public Institutions	9.25
	Education/Healthcare	12.72
	Other	16.76
Monthly Income Level	3,000 yuan or less	10.98
	3001-5000yuan	29.19
	5001-8000yuan	22.25
	8001-12000yuan	17.92
	12001-20000yuan	12.43
	Over 20,000 yuan	7.23
Average Daily Work Hours	≤7 hours	23.12
	8-9hours	44.8
	10-11hours	21.1
	≥12hours	10.98

Note: Data source: Compiled from the written questionnaire survey

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This study employed a combination of multistage stratified cluster sampling and quota sampling to conduct simultaneous online and offline questionnaire surveys across six major business and office clusters in Zhengzhou: Jinshui District, Zhongyuan District, Zhengdong New District, Erqi District, Guancheng District, and Xinzheng City. A total of 1,253 questionnaires were distributed, with 1,055 valid responses collected, resulting in a valid response rate of 84.2%. The distribution of sample characteristics is shown in Table 1.

3.2. Variable Measurement and Reliability and Validity Testing

The questionnaire was designed around six core dimensions: workplace stress, compensatory health motivation, brand youthfulness, cultural identity, perceived value, and consumer behavior. Among these, perceived value encompasses three sub-dimensions: instrumental value, affective value, and social value. The overall Cronbach's Alpha was 0.869. The KMO value was 0.869, the approximate chi-square value for Bartlett's sphericity test was 3,662.821 ($p < 0.001$), and the cumulative variance explained was 71.459%. The scale demonstrated good reliability and validity.

4. Empirical Results and Analysis

4.1. Full Mediation Effect of Perceived Value

A structural equation model was constructed using AMOS 26.0. The model fit indices were as follows: $\chi^2/df = 2.253$ (<3, excellent), RMSEA = 0.060 (<0.08, good), CFI = 0.942, TLI = 0.929, and NFI = 0.900, all exceeding the 0.9 threshold, indicating that the model exhibited good overall fit.

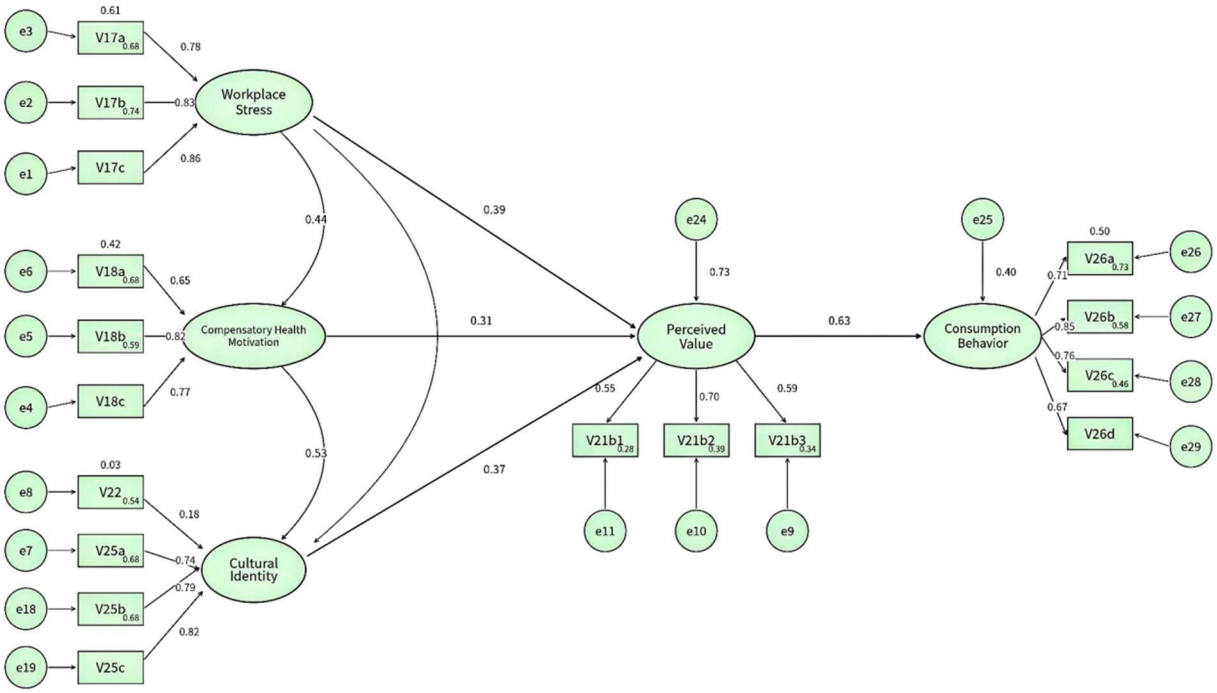


Figure 1. Structural equation model path diagram

Mediation effects were examined using the bias-corrected percentile Bootstrap method with 5,000 resamples. The results are summarized in Table 2.

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Table 2. Bootstrap test results for the mediating effect of perceived value

Path	Estimate	S.E.	BCa 95% CI			Percentile 95% CI		
			Lower	Upper	p	Lower	Upper	p
Workplace stress → Perceived value → Consumption behavior	0.250	0.064	0.136	0.391	0.000	0.136	0.391	0.000
Compensatory health motivation → Perceived value → Consumption behavior	0.199	0.061	0.090	0.328	0.001	0.090	0.328	0.001
Cultural identity → Perceived value → Consumption behavior	0.236	0.058	0.125	0.354	0.000	0.125	0.354	0.000
Workplace stress → Consumption behavior	0.157	0.208	−0.328	0.401	0.317	−0.420	0.378	0.410
Compensatory health motivation → Consumption behavior	−0.033	0.253	−0.552	0.240	0.876	−0.643	0.220	0.764
Cultural identity → Consumption behavior	−0.217	0.335	−0.832	0.090	0.168	−1.047	0.058	0.115

The confidence intervals for all three indirect paths did not include zero, whereas those for all three direct paths included zero, indicating that perceived value exerts a full mediating effect between the three antecedent variables and consumption behavior. Among the indirect paths, workplace stress showed the strongest indirect effect on consumption behavior through perceived value (0.250), suggesting that, under heavy workloads, Generation Z employees place the greatest weight on whether a product can address their immediate health depletion. Cultural identity ranked second in indirect effect magnitude (0.236), indicating that deep identification with traditional Chinese medicine (TCM) culture will influence consumption behavior through the mediating pathway of product perceived value. Compensatory health motivation exhibited a relatively smaller yet highly significant indirect effect (0.199), suggesting that the "deplete-and-replenish" health behavior pattern is conditional on consumers' evaluation of product value. These findings provide clear practical guidance for the brand rejuvenation of traditional pharmaceutical enterprises: companies should focus on comprehensively enhancing product efficacy, scenario adaptability, and emotional value, and effectively translate Generation Z employees' health needs and cultural identification into actual consumption behavior through the bridge of value perception.

4.2. Identification of Key Factors Driving Consumption Decisions.

A binary logistic regression model was constructed with "whether TCM compensatory health consumption occurred" as the binary dependent variable. The Omnibus likelihood ratio test indicated that the model was overall significant ($\chi^2 = 44.815$, $p < 0.01$), and the Hosmer–Lemeshow test yielded a p-value of 0.751 (> 0.05), indicating adequate model fit. Average marginal effects (AME) were estimated, and the results are presented in Table 3.

As shown by the AME estimates in Table 3, product perceived value serves as the core positive anchor of consumption decision-making: each one-unit increase in perceived value raises the probability of TCM compensatory health consumption by approximately 2.51 percentage points. Brand rejuvenation and TCM cultural identity emerge as significant positive supporting factors, indicating that rejuvenation initiatives for traditional TCM brands can effectively bridge intergenerational cognitive gaps and significantly enhance consumption behavior. Compensatory health motivation shows a marginally significant positive driving effect, reflecting that the underlying need of Generation Z to compensate for health depletion through TCM has taken initial shape but has not yet fully translated into a stable driver of consumption decisions. Educational level exerts a significant negative effect, revealing an intergenerational

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gap between the traditional TCM discourse system and the cognitive frameworks and consumption scenarios of highly educated groups. The ROC analysis yielded an AUC of 0.786 ($p < 0.001$), indicating good discriminative performance of the model.

Table 3. Parameter estimates of the binary logistic regression model (AME)

Variable	AME	S.E.	z	p	95% CI Lower	95% CI Upper	Sig.
Workplace stress level	0.0025	0.0072	0.352	0.7249	−0.0115	0.0166	
Compensatory health motivation	0.0152	0.0084	1.813	0.0698	−0.0012	0.0315	▪
Product perceived value	0.0251	0.0128	1.961	0.0498	0	0.0501	*
Brand rejuvenation	0.0118	0.0056	2.107	0.0351	0.0008	0.0228	*
TCM cultural identity	0.0125	0.0059	2.115	0.0345	0.0009	0.0241	*
Educational level	−0.0147	0.0063	−2.329	0.0199	−0.0270	−0.0023	*
Daily working hours	0.0090	0.0091	0.996	0.3192	−0.0087	0.0268	

Note: ▪ $p < 0.10$ (marginally significant); * $p < 0.05$ (significant).

4.3. Hierarchical Division of Consumer Demand

A coupled analysis was conducted between the CCSI model and the IPA matrix. Using the importance mean value of 3.7 and the standardized satisfaction mean value of 3.65 as the dividing lines, a four-quadrant matrix was constructed, dividing the 12 core requirements into four levels, as shown in Table 4:

Table 4. Demand hierarchy division based on CCSI-IPA coupling analysis

Requirements hierarchy	Demand characteristics	Core characteristics	Optimization priority
Expectation-based demand	S1 fragmented use at workstations, S2 portability and easy storage, P1 ready-to-eat without cooking, B2 customized meal plans for workplace scenarios, C2 professional health guidance.	High importance + low satisfaction.	Highest
Essential demand	F1 precise improvement of sub-health, F2 safe and transparent ingredients, F3 perceivable effects, B1 high cost-effectiveness, C1 local cultural elements.	High importance + high satisfaction.	Maintain
Charm-based demand	P3 China-Chic design	Low importance + high satisfaction	Optimization
Indifferent demand	P2: Taste-friendly without bitterness or astringency.	Low importance + low satisfaction.	Lowest

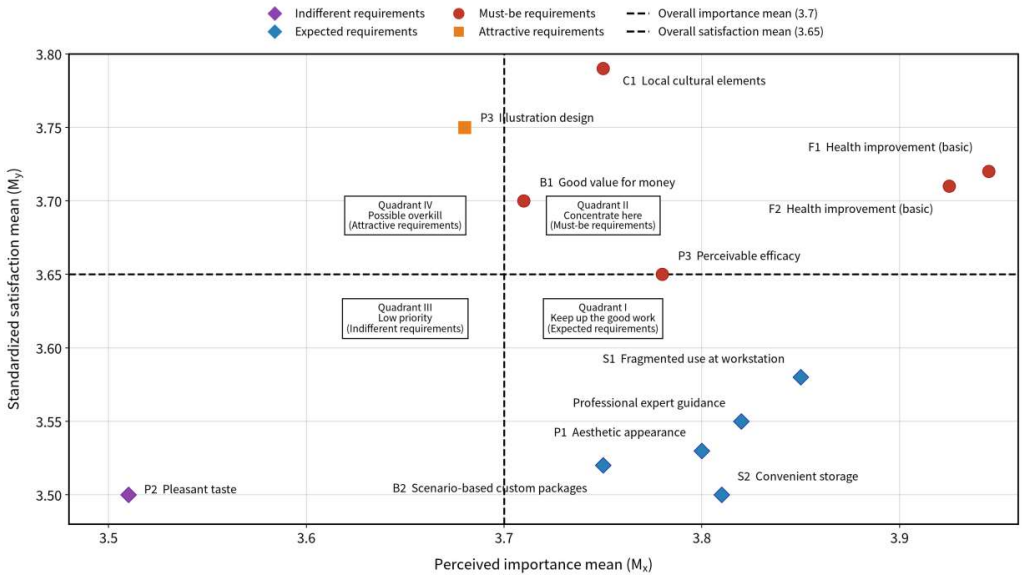


Figure 2. Hierarchical matrix diagram of traditional Chinese medicine consumption demand based on CCSI-IPA

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The expectation-driven demand for workplace adaptability represents the biggest pain point of supply-demand mismatch at present - 73% of Generation Z regard their workstations as the primary health maintenance scenario, yet traditional Chinese medicine products are deeply tied to the scenario of treating illnesses and prescribing medicine, unable to adapt to the fragmented pace of office work. Optimizing such demand can transform potential compensatory needs into sustained consumption behavior, which is the core lever for brands to achieve market growth.

4.4. Market Size Forecast

Using the grey forecasting GM(1,1) model, the market size of compensatory health consumption for traditional Chinese medicine in Zhengzhou from 2020 to 2025 was taken as the original sequence. The level ratio test showed that all level ratio values fell within the allowable coverage interval (0.751, 1.330), indicating good smoothness in the sequence. The model's average relative error was 5.68%, with a small error probability P=0.97 (>0.95), and a posteriori difference ratio C=0.40 (<0.5).The model accuracy reached a qualified to excellent level. As shown in Figure 3, the predicted market sizes for 2026 to 2028 are 1.685 billion yuan, 1.923 billion yuan, and 2.195 billion yuan, respectively, with an average annual growth rate of approximately 14.2%. The market will continue to expand.

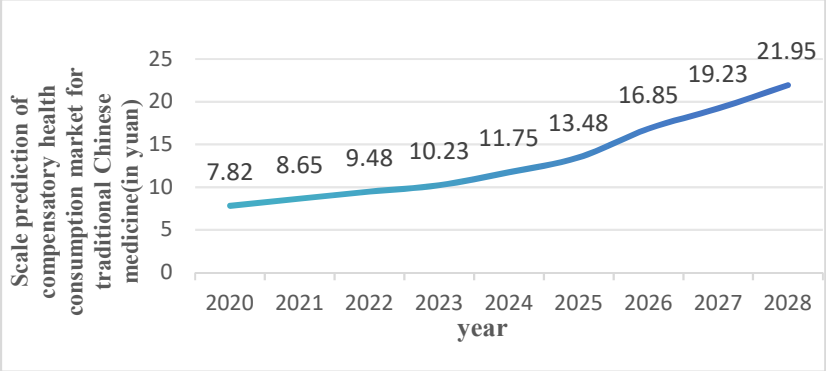


Figure 3. Predicted Trend of the Market Size of Compensatory Health Consumption in Traditional Chinese Medicine in Zhengzhou

Note: Data source: "White Paper on the Development of Traditional Chinese Medicine Industry in Henan Province" and survey data and calculations of the traditional Chinese medicine health consumption market in Zhengzhou

5. Conclusion and Suggestions

5.1. Research Conclusion

First, the complete mediation mechanism of value perception reveals the underlying logic of compensatory health consumption: workplace stress, compensatory health motivations, and cultural identity fundamentally shape consumers' value perceptions of products, which in turn drive their consumption behaviors. Enterprises should focus on comprehensively enhancing product efficacy, scenario suitability, and emotional value, thereby leveraging the bridge of value perception to effectively translate the health needs and cultural identities of Gen Z professionals into concrete consumption behaviors. Second, traditional Chinese medicine (TCM) brands face three key pain points: symbolic, scenario, and value gaps. The symbolic gap manifests as outdated visual designs and advertising slogans that fail to resonate; the scenario gap manifests as inconvenient product usage and mismatched application contexts; the value gap manifests as a lack of emotional value and social attributes. The cumulative effect of these three gaps results in a conversion rate of only 4.4% from initial brand exposure to final

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customer retention. Third, workplace-specific expectation-based demands-such as fragmented workstation usage, portability and easy storage, and ready-to-eat, no-cook convenience-represent the most significant supply-demand mismatch in the current market. Notably, 81.79% of Gen Z consumers would prioritize younger TCM brands when comparing products with equivalent price and efficacy; thus, a youth-oriented transformation strategy constitutes the core pathway to overcoming current developmental challenges.

5.2. Practical Suggestions

Based on the STP model and the 4P marketing mix framework, this study proposes the following strategic recommendations:

In terms of product strategy, set the R&D baseline as precise efficacy, transparent ingredient disclosure, and a high value-for-money ratio; address high-frequency pain points such as late-night work, gastrointestinal discomfort, and visual fatigue by developing portable, ready-to-eat, and standardized products-transforming the concept of "preventing disease" into tangible, immediate health compensation solutions perceived by users; In terms of communication strategy, reframe "strengthening the spleen and eliminating dampness" as "Edema First Aid Kit," and "soothing the liver and relieving depression" as "Emotional Comfort Drink," replacing traditional terminology with scenario-based language; focus communication channels on platforms like Xiaohongshu and TikTok, creating lightweight content such as "Workstation Wellness Vlogs" and "Emergency Care Blind Box Unboxing" to endow products with social sharing appeal; In terms of channel strategy, establish a complete value chain-from social platform product seeding to e-commerce platform conversion and private domain operations for repeat purchases; in offline channels, target high-frequency scenarios such as convenience store counters in office buildings, pop-up experience stores, and collaborations with traditional Chinese medicine clinics, ensuring scenario-based product placement and immediate accessibility; In terms of industry ecosystem development, collaborate with industry associations and leading enterprises to establish unified efficacy testing standards, raw material traceability regulations, and scenario-adaptation requirements, fostering industry-academia-research collaborative innovation and accelerating scientific research, technological transformation, and practical application of core challenges-including portability, flavor optimization, and quality standardization.

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