

The Influence of Product Aesthetic Value on Consumers' Repurchase Intention of H-brand Mobile Phone in Nanning

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Abstract: Against the backdrop of stock competition and severe hardware homogenization in China's smartphone market, hardware parameter iteration can no longer effectively stimulate consumer replacement demand, while product aesthetic value has become a core driver of brand differentiation and consumer repurchase behavior. This study adopts a quantitative research method based on the three-dimensional theoretical framework of product aesthetic value (image connotation beauty, modeling sense beauty, and functional experience beauty). Taking 385 H-brand smartphone consumers in Nanning (a typical western non-first-tier central city) as research samples, this study explores the influence mechanism of multi-dimensional product aesthetic value on consumer repurchase intention through descriptive statistics and regression analysis. The results indicate that the overall product aesthetic value and its three sub-dimensions all exert significant positive effects on repurchase intention. In terms of influence weight, modeling sense beauty ranks first ($\beta = 0.311$), followed by functional experience beauty ($\beta = 0.308$) and image connotation beauty ($\beta = 0.290$). This study fills the research gap in aesthetic value research in non-first-tier smartphone markets, provides empirical support for the aesthetic-driven transformation of the domestic high-end mobile phone industry, and offers targeted optimization suggestions for brand product design and market operation.

Keywords: Product aesthetic value; Consumer repurchase intention; Smartphone; Non-first-tier market; H brand

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1. Introduction

China's smartphone market has fully entered a state of stock competition. CAICT^[1] data shows that the domestic smartphone shipment volume reached 294 million units in 2024 with a year-on-year growth of only 6.5%, presenting limited incremental space. Meanwhile, the average consumer replacement cycle has extended to 36 months^[2], and hardware performance overcapacity and homogenization have become industry consensus. For high-end smartphone brands represented by H brand, hardware iteration can no longer form sustainable competitive advantages, while product aesthetic attributes including appearance design, material technology, and brand connotation have become the core of differentiated competition.

Current Chinese consumption has transformed from performance-driven to aesthetic and value-driven. Consumers' purchase decisions pay more attention to aesthetic experience, brand identity, and emotional

value rather than pure hardware parameters^[3,4]. Existing studies have confirmed that product aesthetic value significantly affects consumer purchase behavior, but most samples focus on first-tier cities, lacking empirical verification for Western non-first-tier markets and specific high-end mobile phone brands. Therefore, this study takes Nanning consumers of H brand as samples to explore the impact of multi-dimensional product aesthetic value on repurchase intention, which makes up for regional and brand-specific research gaps.

In practical terms, this study clarifies the aesthetic demand characteristics of non-first-tier market consumers, helps H brand optimize product design and marketing resource allocation, and provides references for other consumer electronics enterprises to achieve aesthetic value transformation. In theoretical terms, it verifies the applicability of the three-dimensional aesthetic value framework in high-end smartphone scenarios and enriches the research system of consumer repurchase intention influencing factors.

Existing repurchase intention research mostly focuses on brand image, satisfaction, and perceived value, lacking systematic research on product aesthetic value. Most aesthetic value studies take first-tier city samples, while non-first-tier market consumption logic is significantly different, leading to insufficient regional applicability of existing conclusions. In addition, most studies only focus on a single visual aesthetic dimension, lacking comparative analysis of the differential influence of the three-dimensional aesthetic framework on repurchase intention for specific high-end mobile phone brands.

This study puts forward two core research questions: first, what is the current perception level of product aesthetic value (three dimensions) and repurchase intention among H-brand consumers in Nanning? Second, do overall product aesthetic value and each dimension significantly positively influence consumer repurchase intention?

Corresponding research hypotheses are proposed based on theoretical deduction: H1, Overall product aesthetic value has a significant positive influence on consumer repurchase intention; H2, Image connotation beauty has a significant positive influence on consumer repurchase intention; H3, Modeling sense beauty has a significant positive influence on consumer repurchase intention; H4, Functional experience beauty has a significant positive influence on consumer repurchase intention.

The research population covers Nanning consumers who have purchased and used H-brand mobile phones. Taking Nanning, a typical western non-first-tier regional central city, as the research area, this study takes three dimensions of product aesthetic value as independent variables and consumer repurchase intention as the dependent variable to carry out empirical analysis, excluding moderating and mediating variables, focusing on direct causal effects.

2. Literature review and theoretical framework

Product aesthetic value, as a core component of product symbolic value and experiential value, has gradually become a hot research topic in the field of consumer behavior and product design. Early foreign scholars started the research on product aesthetics from the perspective of industrial design and sensory psychology. Bloch^[5] pioneered the research on product visual aesthetics, pointing out that product appearance aesthetics is the first intuitive perception of consumers, which can generate instant emotional arousal and effectively affect consumers' product attitude and purchase decision-making behavior. On this basis, Creusen and Schoormans^[6] further expanded the connotation of product aesthetics, proposing that product aesthetic value is not limited to visual modeling, but also includes multi-sensory experience such as touch and use perception, and its impact on consumer behavior has significant industry heterogeneity. In terms of the aesthetic theory system, Böhme^[3] put forward the atmospheric aesthetic theory, emphasizing that modern aesthetic consumption has shifted from pure formal beauty to situational experience and emotional identity, which provides a theoretical basis

for explaining aesthetic consumption in the smartphone industry. Emotional Design Theory divides consumer product experience into the visceral layer, behavioral layer, and reflective layer, which perfectly explains the internal logic of multi-dimensional aesthetic value affecting consumer psychology, and has been widely applied in electronic consumer goods research.

In domestic research on product aesthetic value, scholars have formed diversified research achievements combined with China's consumer market characteristics. Wu^[6] took digital consumer electronics as the research object and pointed out that with the upgrading of residents' consumption level, Chinese consumers have entered the era of aesthetic consumption. The product's aesthetic design, brand tonality, and cultural connotation have become important factors affecting consumers' brand choice, even surpassing hardware performance and cost performance in high-end product markets. Ma^[7] constructed a three-dimensional system of product aesthetic value, including modeling sense beauty, functional experience beauty, and image connotation beauty, through empirical research, which realized the dimensional refinement of product aesthetic value research and provided a mature theoretical framework for subsequent empirical research on consumer goods. Filieri *et al.*^[8] focused on the smartphone market and found that aesthetic differentiation is the core competitive barrier for high-end mobile phone brands, and excellent aesthetic design can significantly improve consumer brand stickiness and premium acceptance. In addition, many scholars have confirmed that product aesthetic value has significant positive effects on consumer perceived value, brand preference, and emotional satisfaction, laying a foundation for exploring its causal relationship with repurchase intention.

In terms of consumer repurchase intention research, repurchase intention is defined as consumers' subjective willingness to purchase the same brand of products or services again after completing consumption and use experience, and it is the core predictive variable of actual repurchase behavior. Traditional research on repurchase intention mostly focuses on the service industry and daily consumer goods, and the influencing factors mainly concentrate on product quality, service experience, customer satisfaction, perceived value, and brand trust. For smartphone products with high purchase frequency and strong replacement attributes, a continuous excellent aesthetic experience can effectively reduce consumer brand switching willingness and stimulate long-term repurchase behavior^[9].

In terms of the research on the relationship between product aesthetic value and repurchase intention, existing studies have verified the basic positive correlation between the two, but there are still obvious research gaps. Most foreign studies focus on traditional industrial products and daily consumer goods, lacking targeted empirical research on intelligent terminal products such as smartphones. Hagedorn and Piller^[10] found that product design aesthetics not only affects initial purchase intention but also has a long-term impact on consumer satisfaction and repurchase behavior through use experience. Domestic-related research mostly takes first-tier and new first-tier city consumers as research samples, and there is a lack of in-depth discussion on the aesthetic preference and repurchase driving mechanism of consumers in non-first-tier markets. Due to the differences in consumption concept, income level, and aesthetic cognition between different tier cities, the research conclusions of first-tier markets cannot be directly applied to non-first-tier markets^[11]. At the same time, most existing studies regard product aesthetic value as a single whole variable to explore its impact on repurchase intention, and fail to compare the differential influence and mechanism of different aesthetic dimensions, resulting in insufficient targeted guiding significance for brand product design and market operation.

Based on the above literature review, this study takes the three-dimensional aesthetic value model as the core theoretical support, takes consumers in typical non-first-tier cities as research samples, and systematically explores the differential influence of modeling sense beauty, functional experience beauty, and image connotation beauty on smartphone consumers' repurchase intention. It makes up for the deficiencies of single-dimensional research and regional sample limitations in existing studies, and further enriches the theoretical

research system of aesthetic value and consumer repurchase behavior in the smartphone industry.

In terms of core variable definition, product aesthetic value refers to consumers' comprehensive aesthetic pleasure and emotional identity generated by product appearance, materials, cultural connotation and functional experience, including three dimensions: image connotation beauty (the emotional identity and symbolic value brought by brand culture and design concept), modeling sense beauty (the visual and tactile aesthetic experience brought by product appearance, materials and craft), and functional experience beauty (the comfortable and efficient user experience formed by the matching of product functional design and consumer needs). Consumer repurchase intention refers to consumers' subjective willingness to repurchase and recommend H-brand mobile phones after long-term use experience, which is a core indicator for measuring brand loyalty and predicting repeated purchase behavior.

This study constructs a direct effect model: three independent variables (image connotation beauty, modeling sense beauty, functional experience beauty) jointly affect the dependent variable (consumer repurchase intention), focusing on comparing the differential influence intensity of each dimension.

3. Research methodology

This study adopts a cross-sectional quantitative survey design. The minimum sample size is 385. Finally, 385 valid questionnaires are collected, meeting the statistical standard. This study adopts convenience sampling, distributing questionnaires through Nanning local H-brand fan communities and digital consumer groups.

A 5-point Likert scale is adopted in the research instrument (1 = Strongly Disagree, 5 = Strongly Agree). The scale is adapted from mature scales of Ma ^[7], Clay ^[12], and Liu *et al.* ^[13], including 9 items for three aesthetic dimensions and 3 items for repurchase intention, plus demographic items. A pilot study of 55 samples is conducted to verify reliability and validity. This study uses descriptive statistical analysis to analyze variable perception status and sample characteristics, and adopts simple linear regression and multiple linear regression to test research hypotheses and compare dimension influence intensity.

4. Data analysis and empirical results

This part systematically analyzes sample demographic characteristics, scale reliability and validity, and core variable empirical results through professional statistical analysis, with all test data and statistical results presented in corresponding tables, ensuring the scientificity and accuracy of the research conclusions.

4.1. Sample demographic characteristic analysis

The 385 valid samples have a reasonable and balanced structural distribution, which is highly consistent with the characteristics of H-brand's core consumer groups in Nanning's non-first-tier market. The specific demographic distribution is shown in **Table 1**.

Table 1. Demographic characteristics distribution of respondents ($n = 385$)

Demographic dimension	Category options	Frequency (n)	Percentage (%)
Gender	Male	198	51.4
	Female	187	48.6
Age	20–30 years old	142	36.9
	31–40 years old	125	32.5

Demographic dimension	Category options	Frequency (<i>n</i>)	Percentage (%)
Education level	41–50 years old	88	22.9
	51–60 years old	30	7.8
	Junior high school or below	29	7.5
	Senior high school/technical secondary school	68	17.7
	College	103	26.8
	Undergraduate	152	39.5
Monthly income	Master's degree or above	33	8.6
	≤ 3000 RMB	65	16.9
	3001–5000 RMB	132	34.3
	5001–9999 RMB	148	38.4
	≥ 10000 RMB	40	10.4

4.2. Reliability and validity test analysis

Validity and reliability tests are conducted to verify the scientificity and stability of the research scale, and all indicators meet academic standards. The specific test results are shown in **Table 2**. In terms of validity, KMO = 0.852, Bartlett's Test $\chi^2 = 681.739$ ($P < 0.001$), suitable for factor analysis. Four effective factors are extracted, with a cumulative variance interpretation rate of 86.625%. All item factor loadings exceed 0.6 without cross-loading, indicating good construct validity. In terms of reliability, the overall Cronbach's $\alpha = 0.951$; all dimensional coefficients are higher than 0.8, indicating excellent internal consistency and stability of the scale data.

Table 2. Reliability and validity test results

Test type	Dimension/indicator	Test result	Evaluation standard	Conclusion
Reliability test (α)	Overall Questionnaire	0.951	$\alpha \geq 0.8$: Good	Excellent
	Image Connotation Beauty	0.974	$\alpha \geq 0.8$: Good	Excellent
	Modeling Sense Beauty	0.925	$\alpha \geq 0.8$: Good	Excellent
	Functional Experience Beauty	0.869	$\alpha \geq 0.8$: Good	Good
	Consumer Repurchase Intention	0.862	$\alpha \geq 0.8$: Good	Good
	KMO Value	0.852	≥ 0.7 : Suitable	Excellent
Validity test (EFA)	Bartlett's Test Significance	$P < 0.001$	$P < 0.05$: Significant	Pass
	Cumulative Variance Interpretation Rate	86.625%	$\geq 60\%$: Good	Excellent
	Item Factor Loadings	All ≥ 0.6 , no cross-loading	≥ 0.5 : Good	Pass

4.3. Descriptive statistical analysis of core variables

To intuitively reflect consumers' overall perception level of H-brand smartphone aesthetic value and repurchase intention in the Nanning market, this study conducts descriptive statistical analysis on all core research variables, calculating the mean value (M) and standard deviation (SD) of each dimension. The evaluation standard adopts a 5-point Likert scale: 1.00–1.80 represents strongly disagree, 1.81–2.60 represents disagree, 2.61–3.40 represents neutral, 3.41–4.20 represents agree, and 4.21–5.00 represents strongly agree. Standard deviation can reflect the degree of data dispersion; a smaller standard deviation indicates that respondents' perceptions are more concentrated and consistent. The specific descriptive statistical results are shown in **Table 3**.

Table 3. Descriptive statistical results of core variables ($n = 385$)

Variable name	Mean (M)	Standard deviation (SD)	Evaluation level
Modeling Sense Beauty	3.797	0.796	Agree
Image Connotation Beauty	3.721	0.963	Agree
Functional Experience Beauty	3.710	0.781	Agree
Overall Product Aesthetic Value	3.743	0.752	Agree
Consumer Repurchase Intention	3.683	0.738	Agree

According to the statistical results, all core variables score between 3.41 and 4.20, falling into the “Agree” level, indicating that Nanning H-brand smartphone consumers hold a positive and high recognition of the brand’s product aesthetic value and repurchase willingness. Among the three aesthetic dimensions, modeling sense beauty has the highest mean value (3.797), which fully indicates that product appearance, modeling design, and tactile sensory experience are the most recognized aesthetic advantages by local consumers. Followed by image connotation beauty (3.721) and functional experience beauty (3.710), the scores of the three dimensions are relatively close, showing that consumers have a balanced and comprehensive perception of the multi-dimensional aesthetic value of H-brand products. In terms of data dispersion, the standard deviation of all variables is lower than 1, among which the standard deviation of repurchase intention is the smallest (0.738), meaning that respondents have highly consistent attitudes towards repurchase willingness, and the research data is stable and credible. The overall product aesthetic value score is 3.743, which further verifies that aesthetic value has become an important part of consumers’ user experience of H-brand smartphones, laying a solid empirical foundation for subsequent regression analysis of the correlation between aesthetic value and repurchase intention.

4.4. Regression analysis and hypothesis test results

This study adopts simple linear regression to test the overall effect of product aesthetic value on repurchase intention, and multiple linear regression to test the differential influence of each dimension and compare their relative importance. All models pass the overall significance test, and all research hypotheses are supported, as shown in **Table 4**.

Table 4. Regression analysis and hypothesis test results

Model type	Independent variable	Standardized coefficient (β)	t -value	P -value	Hypothesis	Test result	Model fit statistics
Simple Linear Regression	Overall Product Aesthetic Value	0.837	29.924	< 0.001**	H1	Supported	$R^2=0.700$; Adjusted $R^2=0.700$; $F=895.426$, $P < 0.001$
	Modeling Sense Beauty	0.311	5.979	< 0.001**	H3	Supported	
Multiple Linear Regression	Functional Experience Beauty	0.308	6.613	< 0.001**	H4	Supported	$R^2=0.752$; Adjusted $R^2=0.750$; $F=384.215$, $P < 0.001$
	Image Connotation Beauty	0.290	5.798	< 0.001**	H2	Supported	

Note: ** $P < 0.01$

5. Discussion and conclusion

This study draws three core conclusions: first, Nanning consumers have medium-high positive recognition of H-brand's product aesthetic value and repurchase intention, with the highest evaluation on product modeling and sensory design. Second, overall product aesthetic value is a core driving factor of consumer repurchase intention, which can explain 70% of repurchase intention variance. Third, the three aesthetic dimensions jointly and positively affect repurchase intention with differential influence intensity, and the influence ranking is Modeling Sense Beauty > Functional Experience Beauty > Image Connotation Beauty.

Theoretically, this study verifies the applicability of Ma's^[7] three-dimensional aesthetic value framework in Western non-first-tier high-end smartphone markets, expanding the regional boundary of existing theories. It confirms that in the hardware homogenization era, multi-dimensional aesthetic value has replaced hardware parameters as the core driver of consumer repurchase behavior, supplementing the aesthetic-driven consumption theory in the smartphone industry, and making up for the deficiency of single-dimensional aesthetic research. Consistent with Landwehr *et al.*'s^[14] findings, this study further proves that product aesthetic value has a long-term impact on consumer repurchase behavior beyond initial purchase attraction.

In practical terms, this study puts forward targeted optimization suggestions: prioritize modeling sense beauty optimization, continue to iterate appearance design and material craft, and take sensory aesthetics as the core marketing selling point; stabilize functional experience advantages, optimize system fluency and human-computer interaction to maintain user experience stability; strengthen brand image and cultural connotation building to enhance consumers' emotional resonance and long-term loyalty; realize coordinated development of three aesthetic dimensions to maximize overall product value.

This study has limitations of convenience sampling, a single regional sample, and cross-sectional data, without exploring mediating and moderating variables and cross-brand differences. Future research can adopt stratified sampling, expand multi-regional samples, adopt longitudinal tracking data, introduce mediating and moderating variables, and carry out cross-brand comparative research to further enrich relevant theoretical and empirical conclusions.

Disclosure statement

The author declares no conflict of interest.

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