ISSN (print) : 2598-9545 & ISSN (online) : 2599-171X

JURNAL ILMIAH MANAJEMEN FORKAMMA

Hedonic Factors as Predictors of Consumer Purchase Intention In The Roselle–Cinnamon Herbal Drink (Jamu)

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ARTICLES INFORMATION ***ABSTRACT***

JURNAL ILMIAH MANAJEMEN FORKAMMA

Vol.9, No.3 Juli 2026
Halaman **: 271 - 278**

ISSN (*online*) : 2599-171X
ISSN (*print*) : 2598-9545

Keyword : Food Self-Sufficiency; Hedonic Test; Herbal Drink; Overall Liking; Purchase Intention.

JEL. classification : M31

Permalink:
DOI: 10.32493/frkm.v9i3.62315

Article info :
Received : Agustus 2022
Revised : Oktober 2022
Accepted : November 2022

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Abstrak. Penelitian ini menganalisis pengaruh faktor hedonik terhadap minat beli konsumen melalui peran mediasi overall liking pada dua formulasi minuman herbal rosela–kayu manis (dengan dan tanpa sorbitol). Desain kuantitatif eksperimental–survei ini melibatkan 96 responden yang menilai kedua formulasi menggunakan kuesioner hedonik skala Likert 1–7; data dianalisis menggunakan statistik deskriptif, uji-t sampel independen, regresi linier berganda, dan analisis mediasi. Formulasi dengan sorbitol secara signifikan lebih disukai pada seluruh atribut hedonik ($p < 0,001$), dengan selisih overall liking sebesar 2,67 poin. Rasa ($\beta = 0,379$) dan aftertaste ($\beta = 0,427$) merupakan prediktor utama overall liking ($R^2 = 0,653$), yang selanjutnya secara signifikan memprediksi minat beli ($\beta = 0,423$, $p = 0,004$). Overall liking memediasi sebagian besar pengaruh atribut hedonik terhadap minat beli (model mediasi $R^2 = 0,683$), sementara tidak ditemukan perbedaan gender yang signifikan dalam persepsi hedonik kecuali pada warna. Penambahan sorbitol secara nyata meningkatkan palatabilitas jamu, dengan implikasi strategis bagi pengembangan produk pangan lokal berbasis jamu yang berdaya saing.

Abstract. This study analyzes the effect of hedonic factors on consumer purchase intention through the mediating role of overall liking in two formulations of the roselle–cinnamon herbal drink (with and without sorbitol). An experimental–survey quantitative design involved 96 respondents who evaluated the two formulations using a 1–7 Likert hedonic questionnaire; data were analyzed using descriptive statistics, independent samples t-tests, multiple linear regression, and mediation analysis. The sorbitol formulation was significantly preferred on all hedonic attributes ($p < 0.001$), with an overall liking difference of 2.67 points. Taste ($\beta = 0.379$) and aftertaste ($\beta = 0.427$) were the main predictors of overall liking ($R^2 = 0.653$), which in turn significantly predicted purchase intention ($\beta = 0.423$, $p = 0.004$). Overall liking mediated most of the effect of hedonic attributes on purchase intention (mediation model $R^2 = 0.683$), while no significant gender difference in hedonic perception was found except for color. Adding sorbitol meaningfully improved jamu palatability, with strategic implications for developing competitive jamu-based local food products.

A. INTRODUCTION

Hedonic factors as predictors of consumer purchase intention have become a central issue in the development of functional food products, including herbal drinks (jamu), which represent Indonesia's traditional herbal heritage with high functional and economic value. The development of value-added local foods has been recognized as an important strategy for strengthening food self-sufficiency and community welfare, while also serving as an instrument for empowering local micro, small, and medium-sized enterprises (MSMEs) (Baker et al., 2022). However, the potential of jamu has not been fully realized because of sensory barriers: consumers frequently perceive the taste and aftertaste of jamu as unpleasant, which directly suppresses purchase intention even when its health benefits are perceived positively (Nurmalasari et al., 2025). This challenge underscores that the hedonic aspect, how consumers affectively perceive and evaluate a product is a crucial determinant of market acceptance that is often more influential than health-benefit claims alone.

Although the relationship between hedonic attributes and purchase intention has been extensively studied in its direct form, the psychological mechanism that bridges the two, particularly the role of overall liking as a mediating variable in the context of jamu remains very limited. Most previous studies have also not explicitly compared product formulations to examine the implications of compositional changes for sensory acceptance and consumer purchase intention (Moyes et al., 2025; Pereira et al., 2021). This gap forms the basis of the present study, which aims to: (1) analyze consumers' hedonic perception of two roselle–cinnamon jamu formulations; (2) test differences in hedonic perception and purchase intention across formulations and by gender; and (3) examine the role of overall liking as a mediator between hedonic attributes and purchase intention. The study uses an experimental–survey quantitative design (Creswell, 2022) with mediation regression analysis on the respondents.

Theoretically, this study contributes to the development of a consumer-behavior model that integrates sensory evaluation and purchasing behavior through an affective-mediation framework, consistent with the theory of planned behavior, in which affective attitudes act as the main determinant of behavioral intention. Practically, the findings are expected to provide evidence-based guidance for jamu MSME producers in optimizing product formulation for greater consumer acceptance, and to support strategies for strengthening local food self-sufficiency through the modernization of jamu products oriented toward the consumer's sensory experience.

B. LITERATURE REVIEW

Consumer sensory evaluation of functional foods and beverages has been widely examined through the hedonic testing approach, which is broadly recognized as a valid and reliable instrument for measuring consumers' affective responses to product attributes such as taste, aroma, and overall liking before a product is launched to market (Drake et al., 2023; Meta et al., 2025). Hedonic scales with 7–9 points have been shown to capture the variation in consumers' affective responses adequately and are consistently used in various studies on functional food acceptance (Addo-Preko et al., 2023; Lim, 2011). In the context of probiotic beverages, De Souza et al. (2024) showed that sensory acceptance, particularly taste and overall liking correlates significantly with increased purchase intention. In line with this, Skąpska et al. (2020) found that the level of taste enjoyment, or palatability, is the main determinant of consumer acceptance of herbal-based functional beverages, even for products perceived as healthy. Meanwhile, Su et al. (2022) emphasized that hedonic evaluation is multidimensional, in which visual and sensory attributes jointly shape consumers' perception of food products. Taken together, these findings depict a consistent pattern: sensory acceptance is a primary condition for the market success of functional beverage products.

These hedonic-testing findings are consistent with the broader behavioral premise that affective evaluation of a product precedes and shapes a consumer's intention to act on it. Under the theory of planned behavior, attitude toward a behavior, formed here through the sensory and affective evaluation of taste, aroma, and overall liking, is one of the principal antecedents

of behavioral intention (Ajzen, 1991), which provides the theoretical bridge this study uses to connect hedonic attributes, overall liking, and purchase intention within a single mediation model.

C. RESEARCH METHODOLOGY

Research Design and Sample

This study used a quantitative design with experimental and survey approaches (Creswell, 2022). The quantitative approach was chosen because it allows objective measurement of consumers' sensory perception and statistical testing of the relationships between variables. The experimental design was implemented by administering two product-formulation treatments tasted by respondents under controlled conditions: formula 243 (roselle–cinnamon jamu with added sorbitol) and formula 312 (without sorbitol). Data on hedonic perception and purchase intention were collected through a structured questionnaire after the taste test.

Instruments and Variables

The research instrument was a hedonic-test questionnaire using a 1–7 Likert scale (1 = strongly dislike, 7 = strongly like). The 7-point scale was chosen because it has been shown to provide adequate sensitivity in capturing the variation in untrained consumers' affective responses (Addo-Preko et al., 2023; Lim, 2011). The independent variables comprised six hedonic attributes: color, aroma, taste, sweetness level, cinnamon intensity, and aftertaste. The mediating variable was overall liking, which was treated as a construct distinct from the individual sensory attributes because it represents the consumer's integrative evaluation of the whole product-consumption experience (Mahieu et al., 2022; Moyes et al., 2025). The dependent variable was purchase intention, measured on a 1–5 scale. The order of product presentation was arranged to minimize order effects, in accordance with the recommendation of Lawless and Heymann (2010).

Data Analysis Technique

Data analysis was conducted in stages: (1) Kolmogorov–Smirnov and Shapiro–Wilk normality tests to determine the data distribution and to provide the basis for selecting the statistical tests; (2) descriptive statistics including mean, standard deviation, minimum, and maximum; (3) independent samples t-tests to compare hedonic perception across formulations and across genders; (4) multiple linear regression to test the effect of hedonic attributes on overall liking, as well as the effect of hedonic attributes and overall liking on purchase intention; and (5) mediation analysis using the Baron and Kenny (1986) framework to test the role of overall liking as a mediating variable. The coefficient of determination (R^2) was used to assess the proportion of variance explained by the model (Hair et al., 2009, 2019).

D. RESULTS AND DISCUSSION

Normality Test and Descriptive Statistics

The Kolmogorov–Smirnov and Shapiro–Wilk normality tests showed that all variables had $p < 0.05$, indicating a non-normal data distribution. This condition is common in hedonic data given that consumers' affective responses tend not to be symmetrically distributed (Lim, 2011). However, with a sample size of n = 96, the normality assumption is satisfied based on the Central Limit Theorem, so regression analysis can still be performed (Hair et al., 2009, 2019).

The overall descriptive statistics (n = 96) showed considerable variation in acceptance across attributes. Color obtained the highest mean (M = 4.33; SD = 1.68), followed by aroma (M = 4.09; SD = 1.75), cinnamon intensity (M = 3.77; SD = 1.71), overall liking (M = 3.75; SD = 1.88), aftertaste (M = 3.55; SD = 1.86), taste (M = 3.29; SD = 1.81), and sweetness (M = 3.22; SD = 1.77). Purchase intention was at a mean of 2.70 (SD = 1.21) on the 1–5 scale. This pattern indicates that, overall, both formulas were not yet optimally accepted, consistent with the finding

of Nurmalasari et al. (2025) that Indonesian herbal drinks generally receive moderate ratings on the taste and aftertaste attributes.

Table 1. Descriptive statistics per formulation (n = 48 per group).

Attribute	F243 (M)	D	in	ax	F312 (M)	D	in	(M)
Color	5.19	.57			3.48	.35		.74
Aroma	5.15	.41			2.96	.35		19
Taste	4.54	.54			1.98	.98		.56
Sweetness	4.38	.57			1.98	.02		.40
Cinnamon intensity	4.69	.53			2.75	.31		.94
Aftertaste	4.73	.57			2.25	.12		.48
Overall liking	5.04	.50			2.38	.16		.67
Purchase intention	3.56	.03			1.81	.61		.75

Note: M = mean; SD = standard deviation; Δ = mean difference (F243 − F312). Source: primary data analysis, 2026.

Differences in Hedonic Perception Across Formulations

The independent samples t-tests showed statistically significant differences on all hedonic attributes between formula 243 and formula 312 (all $p < 0.001$). Formula 243 consistently received higher ratings, with the largest differences on overall liking (Δ = 2.67), taste (Δ = 2.56), and aftertaste (Δ = 2.48). The difference in purchase intention between the two groups was also substantial (Δ = 1.75), meaning that consumers who tasted formula 243 tended to have a purchase inclination almost two points higher on the 1–5 scale.

This difference can be understood from the role of sorbitol in formula 243 as a sweetener and texturizing agent that modifies the flavor profile: it increases persistent sweetness while reducing the bitterness and aftertaste intensity that have historically been a barrier to jamu adoption in the mainstream market (Lim, 2011). Formula 312 without sorbitol produced a sharper flavor profile with a more intense aftertaste, two dimensions that, in the study by Nurmalasari et al. (2025), were shown to be the most significant in suppressing Indonesian consumers' purchase intention. Skąpska et al. (2020) likewise concluded that palatability, including aftertaste quality, is the key to the acceptance of herbal functional beverages, rather than merely health-benefit claims. Thus, the advantage of formula 243 is not only about better taste but rather its ability to reduce the sensory aspects that have long hindered consumer acceptance of jamu.

Differences in Hedonic Perception by Gender

Of the eight attributes tested, only color differed significantly between men and women ($t = 2.71$; $p = 0.008$), with female consumers tending to give higher ratings on the visual dimension. No significant differences were found for aroma, taste, sweetness, cinnamon intensity, aftertaste, overall liking, or purchase intention (all $p > 0.05$). This gender difference in color perception is consistent with the sensory-evaluation literature, which attributes it to women's physiologically higher chromatic sensitivity (Su et al., 2022). However, the fact that overall liking and purchase intention did not differ significantly by gender has an important marketing implication: product-development and communication strategies need not be segmented by gender and can instead be focused on improving the sensory attributes, particularly taste and aftertaste for all consumer segments in general.

Effect of Hedonic Attributes on Overall Liking

The regression model of hedonic attributes on overall liking yielded $R^2 = 0.653$ (Adjusted $R^2 = 0.630$), meaning that the six hedonic attributes together explain 65.3% of the variance in

overall liking. This is a strong level of prediction, confirming that individual sensory evaluations are the foundation for the formation of the consumer's overall liking (Moyes et al., 2025; Pereira et al., 2021). The VIF values, in the range of 2.07–4.73, were still below the threshold of 10, indicating multicollinearity within acceptable limits (Hair et al., 2019).

Table 2. Multiple regression results: hedonic attributes on overall liking.

Variable	B	Std. Error	Beta (β)	t	Sig.	IF
Constant	-0.206	0.239	–	-0.864	0.390	
Color	0.215	0.068	0.192	3.138	0.002**	.07
Aroma	-0.032	0.077	-0.030	-0.418	0.677	.86
Taste	0.395	0.088	0.379	4.487	0.000***	95
Sweetness	-0.103	0.097	-0.097	-1.067	0.289	.60
Cinnamon intensity	0.173	0.069	0.157	2.506	0.014*	.18
Aftertaste	0.433	0.094	0.427	4.622	0.000***	.73

*Note: R^2 = 0.653; Adjusted R^2 = 0.630. *p<0.05; **p<0.001. Source: primary data analysis, 2026.*

Aftertaste emerged as the strongest predictor of overall liking (β = 0.427, p < 0.001), followed by taste (β = 0.379, p < 0.001), color (β = 0.192, p = 0.002), and cinnamon intensity (β = 0.157, p = 0.014). Aroma and sweetness did not show a significant effect.

The dominance of aftertaste as the main predictor is a theoretically important finding. In sensory evaluation, aftertaste represents the residual taste experience that persists after consumption, a dimension that has a lasting impact on the consumer's affective memory (Lawless & Heymann, 2010). In the context of jamu, which is traditionally associated with a bitter or astringent taste, an unpleasant aftertaste can overshadow the entire consumption experience even when other attributes are already adequate. Formula 243 with sorbitol succeeded in moderating that aftertaste intensity, which directly increased overall liking. This finding aligns with the argument of Skąpska et al. (2020) that palatability, including aftertaste quality, is the key to the acceptance of herbal-based functional beverages.

The non-significance of aroma was likely caused by the dominance of the cinnamon aroma, which is already familiar to Indonesian consumers, so that small variations in this dimension were not sufficient to move the overall liking rating. The non-significance of sweetness can be understood in the context that consumers judged sweetness to be a 'sufficiently adequate' characteristic without needing to be dominant, a response commonly found in functional products, in which consumers want balance rather than excessive intensity (Drake et al., 2023).

Effect of Overall Liking on Purchase Intention: Mediation Analysis

When overall liking was entered as a predictor alongside the hedonic attributes, the model yielded R^2 = 0.683, an increase of 3% compared with the model without the mediator. More substantively important is the change in the pattern of coefficients that occurred: overall liking proved to be a significant predictor of purchase intention (β = 0.423, p = 0.004), while aftertaste, previously the strongest predictor of overall liking became non-significant with respect to purchase intention (p = 0.224). This is a classic sign of mediation within the Baron and Kenny (1986) framework: aftertaste does not directly drive purchase intention but instead works through the prior formation of overall liking, a pattern that confirms the role of overall liking as a partial mediator.

Sweetness was the only attribute that remained significant with respect to purchase intention after entering overall liking (β = 0.255, p = 0.047), indicating a direct effect that is not fully mediated. This can be interpreted to mean that sweetness has a 'dual pathway' toward purchase intention: indirectly through overall liking, and directly as a salient cue that independently influences the readiness to buy, regardless of the overall affective evaluation (Mahieu et al., 2022).

Overall, the mediation pattern found confirms the position of overall liking as an integrative affective construct that translates the multidimensional sensory experience into a purchasing-

behavior inclination. This is consistent with the theory of planned behavior, which places affective attitude as the main determinant of behavioral intention (Pereira et al., 2021), and with the finding of De Souza et al. (2024) of a significant correlation between sensory acceptance and purchase intention. The novelty of this study lies in the explicit testing of this mediation mechanism in the context of Indonesian traditional herbal drinks using a formulation-comparison approach, a contribution not yet widely found in the local food sensory literature.

Table 3. Mediation regression results: hedonic attributes + overall liking on purchase intention.

Variable	B	Std. Error	Beta (β)	t	Sig.	IF
Constant	0.768	0.213	–	3.603	0.001**	
Color	0.036	0.064	0.049	0.556	0.580	.29
Aroma	-0.065	0.069	-0.094	-0.944	0.348	.87
Taste	0.098	0.086	0.147	1.140	0.257	.81
Sweetness	0.174	0.087	0.255	2.012	0.047*	66
Cinnamon intensity	-0.069	0.063	-0.098	-1.093	0.277	.33
Aftertaste	0.113	0.092	0.173	1.224	0.224	.82
Overall liking	0.272	0.092	0.423	2.952	0.004**	.95

*Note: R^2 = 0.683; Adjusted R^2 = 0.659. *p<0.05; **p<0.01. Source: primary data analysis, 2026.*

Implications for Herbal Drink Product Development

The findings of this study have several practical implications that can be directly translated into product-development strategies. First, the addition of sorbitol in formula 243 was statistically shown to improve overall consumer acceptance, making it a formulation solution worth considering for jamu MSME producers. Second, because taste and aftertaste are the main predictors of overall liking, formulation innovation needs to prioritize these two dimensions—for example, through the exploration of other natural sweeteners, modification of the extraction process, or the addition of flavor-balancing ingredients. Third, the finding that hedonic perception does not differ significantly by gender except for color opens up an opportunity for an inclusive marketing strategy that is not segmented by gender, so that a broader market can be reached with more efficient communication investment.

E. CONCLUSION

This study produced three interrelated main findings. First, formula 243 with sorbitol was significantly more preferred by consumers than formula 312 on all hedonic attributes, with an overall liking difference of 2.67 points and a purchase intention difference of 1.75 points. Second, taste and aftertaste are the main predictors of overall liking (R^2 = 0.653), which in turn significantly predicts purchase intention, confirming the partial mediating role of overall liking in the relationship between hedonic attributes and purchase intention (mediation model R^2 = 0.683). Third, there is no significant difference in hedonic perception across genders except on the color dimension.

Theoretically, this study contributes by integrating the sensory-evaluation and consumer-behavior approaches through an affective-mediation framework, and by applying it to a strategic local food product that has so far received little attention in the scientific literature. Practically, these findings support the use of sorbitol as a formulation agent that meaningfully improves jamu palatability, while providing an empirical basis for jamu product-development strategies that are more accepted by the market. Further research is recommended to explore more diverse consumer segments, to test formulations with alternative natural sweeteners, and to extend the model with moderating variables such as prior jamu consumption experience.

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