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Influence of Brand Information on Consumers' Expectations and Liking of Honey Lemon Healthy Drinks

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Abstract. *This study evaluates the impact of brand information on consumer expectations and liking of honey lemon health drinks in Surakarta. The study involved four product samples marketed in Surakarta. Eighty consumers participated in three evaluation conditions: blind test (without brand information), expected test (brand information only), and informed test (complete product information). The evaluation was conducted using a 9-point hedonic scale and Check-all-that-apply (CATA) questions to identify consumer perceptions of the brands. Data analysis included ANOVA and Tukey tests for significant differences, as well as Multiple Factor Analysis (MFA) to compare preferences across conditions. Results showed that brand information significantly affected consumer liking, particularly for well-known brands. These findings provide insights for honey lemon product development, especially in branding strategies to enhance consumer preference.*

Keywords: *Brand Information, Consumer Liking, Honey Lemon Drink, Internal Preference Mapping.*

I. INTRODUCTION

During the process of developing and improving food products, companies need to strive to understand the desires, needs, and perceptions of consumers regarding these food products to ensure their success in the market. Understanding consumer needs and wants is a crucial aspect. Gaining insight into consumers will guide marketers towards appropriate marketing policies (Farahdiba, 2020).

The sensory factors in beverage products are highly crucial elements. Traditionally, these evaluations are conducted by asking consumers to taste various products and assess their preferences, for instance, using a hedonic scale to evaluate their overall liking (Popper et al., 2004). In most studies, samples are presented under blind conditions in containers with random three-digit codes, and all information regarding the non-sensory characteristics of the samples is removed. Thus, consumers evaluate their overall liking based solely on their perception of the sensory attributes of the samples, without considering the product's non-sensory factors. However, in daily life, consumer preferences and purchase intentions for food products are influenced not only by their perception of sensory attributes but also by non-sensory variables such as brand and price (Shepherd et al., 1991). Consumers must weigh several sensory and non-sensory factors when making everyday food choices (Jaeger, 2006). For this reason, there is often significant debate within companies about whether a product's market performance is due to its sensory characteristics or its associated image (Rousseau & Ennis, 2008).

One non-sensory attribute that plays a critical role is the brand. According to Kotler (2009), a brand is a name, term, sign, symbol, or design, or a combination of these, intended to identify the goods or services of one seller or group of sellers and differentiate them from those of competitors. In previous studies, brands have been reported to significantly influence consumers' affective reactions to food products. Guinard et al. (2001) noted that consumer preferences for lager beer changed significantly when they were informed about the brand and price information. Furthermore, Gacula et al. (1996) found that consumers became less critical in their evaluations when samples were identified by brand name; their perceptions were influenced

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by the brand's popularity. These findings highlight the importance of branding in shaping consumer food choices. Considering that lemon honey beverages are not yet widely recognized by the public, branding could be a vital factor in consumers' product selection process.

In addition to influencing consumer preferences and sensory perception, non-sensory attributes also tend to affect consumers' sensory and hedonic expectations (Sabbe et al., 2009). Expectations influence individuals' daily reactions and decisions, both consciously and unconsciously (Deliza & MacFie, 1996). Essentially, there are two types of expectations: sensory-based and hedonic-based expectations (Cardello, 1994). In sensory expectations, consumers form an image of the sensory characteristics they are likely to perceive, while in hedonic expectations, they anticipate how much they will enjoy the food product (Moreno et al., 2011). Both types of expectations can form after prior experience with the product, by observing its appearance through packaging, or by reading the information on the packaging. High expectations are likely to lead consumers to choose the product, while low expectations may result in rejection (Cardello, 1994). Therefore, the ability to build expectations about a specific product becomes an essential strategy for the food industry to promote consumer sensory satisfaction (Deliza et al., 2003).

The lemon honey beverage market in Indonesia holds significant potential, especially as public awareness of healthy lifestyles and the demand for natural products continue to grow. This product, which is still relatively uncommon in the market, is beginning to be adopted by many local producers who see opportunities in this segment. Brands offering lemon honey beverages typically position their image as health products, focusing on benefits such as "boosting immunity," "high in antioxidants," "enriched with various nutrients and vitamins," and "soothing sore throats." Since this product is not yet widely recognized, a strong and reputable brand may play a crucial role in influencing consumer choices. Strong brands are more likely to be trusted and chosen by consumers, particularly in the category of health-related products. Thus, understanding the factors driving consumer acceptance of these products is a key step toward developing successful marketing strategies.

In addressing competition among similar products in the market, it is also important to consider the acceptance of the product by consumers. One way to determine the quality of a product that meets consumer expectations, especially in terms of taste, is to conduct a comparative study of sensory attributes with well-known similar products in the market (Tarwendah, 2017). Therefore, this study is expected to provide evidence of the influence of brand information on expectations and preferences for lemon honey beverage products.

II. Research Method

Honey Lemon Drink Samples

Four samples of lemon honey beverages were evaluated in this study, denoted by alphabetical labels. These four samples are available in the Surakarta market. This beverage category generally targets low- to middle-income consumers, based on the price and quality of the products. Samples A, B, and C promote their products with a "healthy" image, while Sample D, which incorporates soda in its product, emphasizes a "refreshing" and "hydrating" image. However, Sample C is a new product (start-up) and is relatively less well-known, in contrast to Samples A, B, and D, which are already widely available in the market. The samples were prepared in plastic cup containers for each beverage and presented to consumers. Mineral water was provided to cleanse the palate between samples.

Consumer Samples

Eighty participants, all consumers within the target category, took part in this study. The participants were individuals who enjoy sports and consume healthy beverages at least once a week. Consumers were recruited from university campuses and public places based on their interest and availability to participate in the study. The same participants were involved in three

types of evaluation: Blind, Expected, and Informed, as detailed in the following sections.

Table 1 Description of the honey lemon drink samples used in the study.

Sample	Market	Market Segment
A	Indonesia	Medium
B	Indonesia	Medium
C	Surakarta	Economy
D	Indonesia	Economy

Consumer Test

Data were collected through questionnaires distributed to each consumer after being explained in advance. Four types of data were collected from the same participants: (i) liking scores from the blind test, (ii) liking scores from the expected test, and (iii) liking scores from the informed test. A Check-All-That-Apply (CATA) questionnaire was used to describe the brands based on pre-defined statements and was administered after the expected test.

Two sessions were conducted during the sample evaluations. In both sessions, the four samples were presented following a balanced rotation for each subject, sequentially, with a break between sessions.

In the first session, consumers evaluated the samples under blind conditions (blind test). The lemon honey beverages were served to the participants with alphabetic codes. Consumers were asked to taste the samples and indicate their overall liking using a 9-point hedonic scale.

The second session was divided into two parts. First, consumers were asked to examine the full packaging of the four lemon honey beverage samples (expected test) and to rate their liking using the 9-point hedonic scale. The product packages were presented in a balanced rotation design. To understand consumer perceptions of the brands, participants were also asked to respond to a CATA questionnaire containing eight statements related to product characteristics and usage occasions (Table 2). The CATA statements were derived from literature studies relevant to the main "domain" behind the purchase of this product category.

Table 2 Statements considered in the CATA question for evaluating' consumers perception of the evaluated brands.

CATA Statements
1. It is the best way to start the morning in a healthy way
2. It is good for nutrition
3. It is a good product to go along with meals
4. It is a product that makes meals special
5. It is good for refreshing and hydrating
6. It is good for gratification
7. It is a product for the whole family
8. It is a perfect complement for dieting

After a five-minute break, the samples were presented for tasting again, identified by their brand names (informed test). Consumers were asked to taste the samples and rate their overall liking using the hedonic scale.

Data Analysis

Analysis of variance (ANOVA) was performed on liking scores from the blind, expected, and informed tests, considering sample and consumer as fixed sources of variation. ANOVA was also conducted on liking scores by treating consumer, sample, evaluation condition, and sample-evaluation condition interaction as fixed sources of variation. If significant differences were observed, honestly significant differences were calculated using Tukey's test. A significance level of 5% was applied.

Internal preference mapping (PCA) for the liking scores from the blind, expected, and informed tests was conducted using principal component analysis on the correlation matrix of individual consumer liking data.

To assess whether the check-all-that-apply (CATA) questionnaire could detect differences in consumer perceptions of the evaluated brands, Friedman tests were performed for each statement, considering sample and consumer as sources of variation. Multiple Factor Analysis (MFA) was applied to the frequency tables containing responses to the CATA questions. MFA is a factor analysis method designed to handle different sets of data, which can include quantitative variables and frequency tables

(Bécue-Bertaut & Pagès, 2008; Bécue-Bertaut, Álvarez-Esteban, & Pagès, 2008).

Statistical analyses were performed using XL-Stat 2016. Multiple factor analysis was performed using FactoMineR (Husson, Josse, Lê, & Mazet, 2007; Lê, Josse, & Husson, 2008) in R language (R Development Core Team, 2007).

Table 3 Mean liking scores 4 evaluated samples, for the three evaluation conditions considered: blind, expected and informed

Sample	Evaluation Condition		
	Blind	Expected	Informed
A	6,0	6,3	6,4
B	6,6	6,5	6,6
C	6,4	5,5	5,7
D	5,5	6,0	6,1

III. Result and Discussion

Consumers Blind Testing

As shown in Table 3, highly significant differences were observed in the overall consumer liking of the samples under blind conditions (sig. 0.050 < 0.003), indicating that consumers reacted differently to the sensory characteristics of the samples. Overall liking scores ranged from 5.5 to 6.6, reflecting varying affective reactions among consumers.

Samples B and C were the most liked, while Samples A and D were the least liked. With the exception of Sample C, the overall liking for most samples was positioned in the middle of the scale, classifying them as neutral or slightly disliked on the 9-point hedonic scale. The four most liked samples corresponded to two brands perceived as Premium and two brands considered Moderate in terms of price range.

The internal preference mapping of overall liking scores for the blind condition is presented in Figure 1. The first two principal components (F) explained 78.04% of the experimental data variability. As shown, consumers are distributed along a semicircle, illustrating heterogeneity in consumer preferences. Samples B and C, positioned on the right side of F1, indicate high consumer liking for these samples. Conversely, most consumers expressed lower preference for Samples A and D, as indicated by their low liking scores. The positive and negative responses to these samples determined the primary direction of preference on F1, explaining the majority of variability in the dataset.

Consumers Expected Liking Scores

Significant differences were observed in consumer liking scores for the evaluated brands (sig. 0.050 > 0.007), indicating that the brands generated varying hedonic expectations among consumers. Expected liking scores ranged from 5.4 to 6.7, higher than the overall liking scores under blind conditions, as shown in Table 4.1. This suggests that the hedonic expectations evoked by the brands exceeded the affective reactions caused by the sensory characteristics of the products.

Two main consumer subgroups were identified: one preferred Samples A and B, while

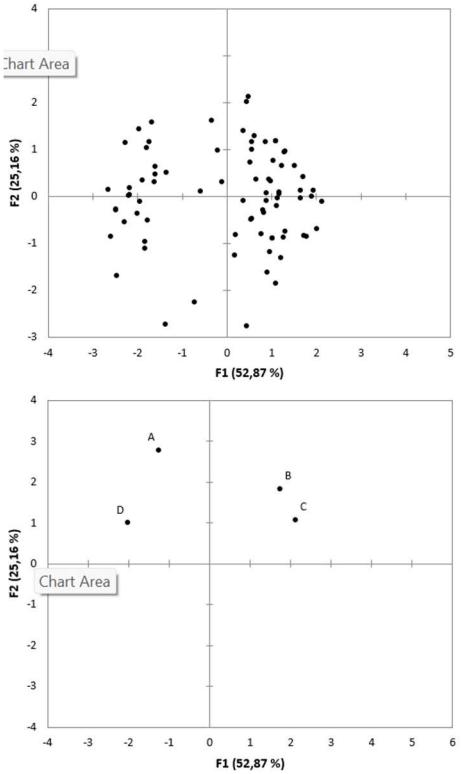

Figure 1 Internal preference map of consumers' blind liking scores of the 4 evaluated honey lemon drinks sample: (a) Consumers' representation and (b) samples' representation.

the other favored Sample D. Sample B achieved the highest liking scores in the expected test.

These three samples are well-established brands widely available in the market, with well-structured products and highly positive consumer perceptions, which enhanced the expected scores. Conversely, Sample C, a start-up product still building its brand in the Surakarta region, showed the lowest expected liking scores. Sample C appears to lack maturity for market entry, as its name and brand image remain relatively unknown among consumers.

These results highlight that consumer hedonic expectations generated by packaging and especially branding are strongly influenced by brand positioning. Even after consumers examined the packaging, brand information had the highest impact on their product perception. The highest hedonic expectations were observed for brands with a stronger market presence, underscoring the importance of branding in eliciting consumer expectations. This aligns with findings by Di Monaco et al. (2004), which state that well-known brands generally produce the greatest hedonic expectations.

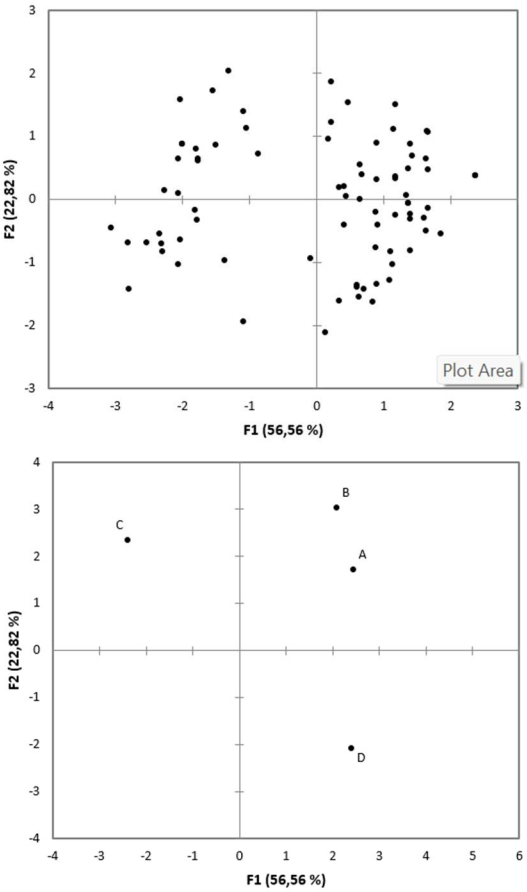

Figure 2 Internal preference map of consumers' expected liking scores of the 4 evaluated honey lemon drinks sample: (a) Consumers' representation and (b) samples' representation.

The abovementioned results are further supported by the internal preference mapping of expected test liking scores. The first two principal components (F) of the preference map explained 79.38% of the variability in the experimental data. As shown in Figures 2, most consumers are located on the right side of F1, reflecting minimal variation in their preferences for the evaluated brands. The samples are ranked along F1 according to their market segments. Well-known brands (A, B, and D) are positioned on the right, corresponding to the most preferred brands, while the new brand (C) is located on the left side of F1, representing the sample with the lowest expected liking scores.

Interestingly, the samples are ranked along F2 based on their positioning. Brands A, B, and C, which are positioned as "healthy" (described in Subsection 2 "Honey Lemon Drink Samples"), are located at the upper side of F2, whereas Brand D is positioned at the lower side of F2. Sample D emphasizes its brand image as "refreshing" and "hydrating" by incorporating soda into the lemon honey beverage. This suggests that one consumer group distinctly prefers beverages with a "healthy" image, while another group is uninterested in such beverages and clearly favors those marketed without health-related claims.

Table 4 Number of consumers who used each statement of the check-all-that-apply question for each of the 4 honey lemon drinks

Sample	Statements							
	1***	2***	3***	4***	5***	6***	7***	8***
A	11	15	39	3	29	8	40	8
B	16	24	38	4	24	8	49	4
C	7	31	27	3	9	4	37	11
D	3	7	46	4	39	12	44	1

Consumer responses to the CATA questionnaire regarding the brands are presented in Table 4. Based on the Friedman test, significant differences were found in the frequency of mentions across the eight CATA statements describing the brands. This indicates that consumers perceive the evaluated brands as having distinct characteristics suitable for different purposes. The most frequently used statement for these samples was "This is a product for the whole family," suggesting that consumers did not specifically associate these brands with terms related to healthiness or deliciousness. Conversely, other brands were clearly associated with statements such as "This is a good product to enjoy with meals" and "This is good for refreshing and hydrating" by a substantial number of consumers.

Correspondence Analysis (CA) was performed on the CATA response counts for each product, as provided by consumers, to identify relationships between the brands and the evaluated statements.

As shown in Figure 3, the correspondence analysis plot illustrates the relationships between samples (blue points) and statements (red points)

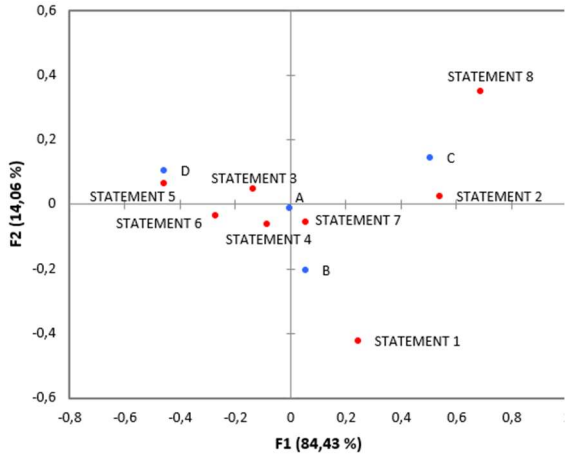

Figure 3 Correspondence analysis of the correlation between samples and Check-All-That-Apply questionnaire results.

across two primary dimensions, F1 and F2, which together explain 98.49% of the data variability. The horizontal axis, F1, accounts for most of the data variability. The horizontal axis, F1, accounts for most of the data variability (84.43%), while the vertical axis, F2, explains an additional 14.06%.

In this plot, the proximity between points indicates the degree of association or relationship between categories and statements. Statement 5 ("It is good for refreshing and hydrating") and Sample D are positioned close to one another, indicating a strong association between the two. Conversely, Statement 1 ("It is the best way to start the morning in a healthy way") is situated far from other categories and statements, particularly in the bottom-right quadrant, signifying that this statement has unique characteristics or response patterns and lacks a strong association with other categories.

Each quadrant of the plot represents distinct groups based on similarity patterns. The top-right quadrant contains Statement 2, Statement 8, and Sample C, indicating a significant relationship between these categories. The top-left quadrant features Statement 5 and Sample D, which share a close association. The bottom-right quadrant is occupied by Statement 1, which stands out with its unique characteristics. The bottom-left quadrant includes Sample B, which is associated with Statement 6 and Statement 4. Sample A is located in the center of the plot, indicating a neutral position with some associations but not as strong as those in the other quadrants.

These findings demonstrate that consumers have a clear image of each evaluated brand, which likely explains the differences in expected liking scores.

Consumers Informed Testing

The analysis of variance (ANOVA) conducted on liking scores revealed significant differences between the samples (sig. 0.050 > 0.006). Liking scores from the informed test ranged from 5.7 to 6.6, with Samples A, B, and D being the most liked, while Sample C was the least liked. The three most liked samples corresponded to the more established and well-known brands, whereas the least liked sample was associated with a start-up brand.

The internal preference mapping of overall consumer liking scores under informed conditions is presented in Figures 4 As shown, the first two

components of the internal preference map explained 84.96% of the experimental variability. Most consumers are experimental variability. Most consumers are located on the right side of F1, indicating a clear preference for the well-known brands that inspire greater trust, particularly Samples A, B, and D. This preference

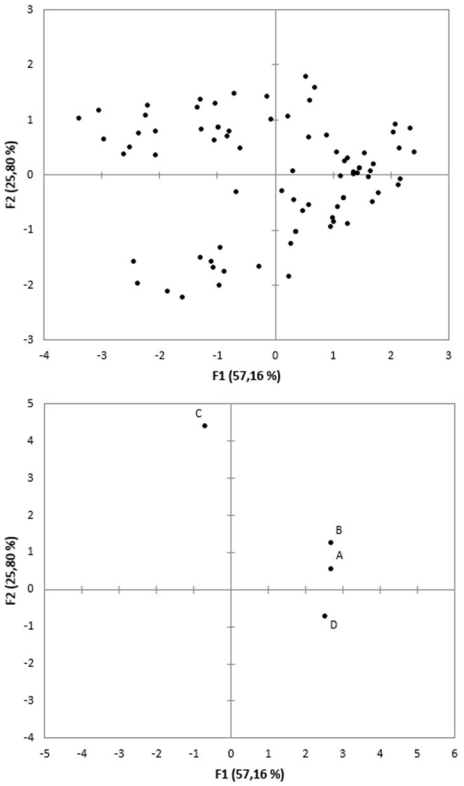

Figure 4 Internal preference map of consumers' informed liking scores of the 4 evaluated honey lemon drinks sample: (a) Consumers' representation and (b) samples' representation.

map differs significantly from the map based on blind test scores, highlighting the substantial impact of brand information on consumer liking scores.

Comparison Between Expected, Blind and Informed Liking Scores

There was a significant effect of evaluation conditions on consumer liking scores, indicating that unmet expectations and brand information had a substantial impact on consumer preferences. The sample-evaluation condition interaction was also significant, suggesting that the degree of expectation fulfillment and the influence of brand on liking scores depended on the brand under consideration.

As shown in Table 3., for most samples (Samples A and D), consumer liking scores in the expected test were significantly higher than those in the blind test, indicating that consumers' hedonic expectations, elevated by brand names, were not fully met. The largest differences between blind and expected liking scores were observed for well-established brands widely available in the market, which elicited the highest hedonic expectations among consumers. For these samples, a mismatch in hedonic expectations occurred. However, for Sample B, the expected liking scores did not differ significantly from the informed liking scores, indicating a good alignment between brand expectations and sensory appreciation.

When consumers became aware of the sample brands, they either increased or maintained their liking scores depending on the sample under consideration, as shown in Table 3. None of the samples experienced a significant drop in liking scores upon brand disclosure, suggesting that brand information had either a positive or neutral effect on consumers' hedonic perceptions.

On the other hand, consumers' hedonic expectations for Sample C were not met, and brand information significantly lowered the liking scores for this sample. This can be attributed to the fact that Sample C originated from a start-up product by the Product Planning and Design Laboratory at Universitas Sebelas Maret, which is still relatively new and less recognized by the public, lacking a positive brand image in consumers' eyes.

For Samples A, B, and D, which were classified as established brands widely available in the market, consumers significantly increased their liking scores in the informed test. This suggests that when hedonic expectations generated by these brands were not fulfilled by the sensory characteristics of the samples, assimilation of unmet hedonic expectations occurred. Consequently, consumers increased

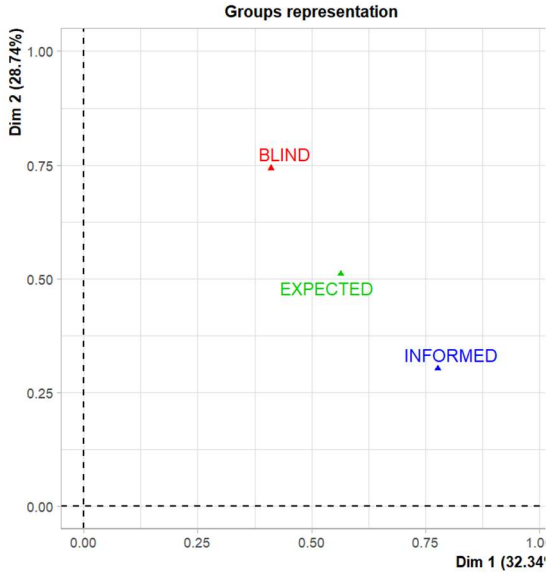

Figure 5 Representation of consumers' liking scores under the three evaluation instances considered in the multiple factor analysis.

their liking scores in the informed condition compared to the blind test, highlighting the positive influence of brand information on consumers' hedonic perceptions of these samples. This phenomenon indicates a form of "forgiveness" by consumers for unmet expectations, as the expected test scores were higher than the blind test scores, but the informed test scores exceeded even the expected test scores.

According to Festinger (1957), unmet expectations create a state of psychological discomfort that is alleviated by altering perceptions. As a result, the perceived product performance falls between the objective performance and the expected performance. In this case, liking scores for well-known brands were positioned between the expected and blind test scores. This assimilation effect aligns with previous consumer studies that demonstrated the assimilation of unmet expectations (Di Monaco et al., 2004).

Thus, when hedonic expectations are unmet and well-known brands are considered, assimilation occurs, albeit not completely. This indicates that for such samples, both brand and sensory characteristics influence liking scores under informed conditions. The samples where full assimilation occurred, meaning that informed test scores did not differ significantly from expected test scores, were Samples A, B, and D.

The impact of brand information on consumers' hedonic perceptions caused changes in consumer preference patterns. Brands A and D, which did not have the highest liking scores under blind conditions, rose to the top rankings when evaluated with brand information. The average liking scores for these samples increased by 0.7 points from the blind to the informed condition on a 9-point hedonic scale, demonstrating the substantial impact of brand information on consumers' affective reactions to these products. Brand information caused significant distortions in consumer liking scores but only for brands that were well-known in the market. Interestingly, Brand B, not exclusively marketed within the lemon honey beverage category during the study, still influenced liking scores as effectively as brands well-positioned in the category.

The importance of brand image on consumers' informed test liking scores is also evident in the representation of evaluation instances across the first two dimensions of Multiple Factor Analysis (MFA). As shown in Figure 5., informed liking scores were closer to expected liking scores than blind test scores, emphasizing the role of brand information in shaping consumers' overall liking scores for food products under informed conditions. This also indicates that consumers' hedonic reactions in the informed condition more closely resemble their reactions to the brand rather than the sensory characteristics of the samples. These findings suggest that consumers' overall hedonic perceptions of lemon honey health drinks may be more influenced by brand perception than by the sensory characteristics of the product.

IV. Conclusion

Brand image exerts a significant influence on consumers' hedonic perceptions of lemon honey health beverages. Consumers' perceptions of a brand have a stronger effect on informed liking scores than sensory characteristics, indicating that blind testing may not fully predict consumers'

affective reactions to this type of beverage. This highlights the importance of non-sensory aspects, such as branding, in the development of new products in this category, as they can significantly shape consumers' hedonic impressions. Therefore, when companies develop lemon honey health beverages, brand information should be integrated into consumer studies alongside sensory characteristics to more accurately predict product performance in the market. The "blind-expected-informed" approach can provide additional insights, particularly in detecting potential mismatches between brand image and sensory profiles.

The impact of packaging information on consumer liking scores depends on brand image, where brand information can significantly enhance liking scores for well-established brands. Consumers' hedonic expectations generated by the brand are largely shaped by the brand image itself. Well-known brands tend to evoke high hedonic expectations, even if the sensory characteristics of the product do not fully meet them. When hedonic expectations are unmet, assimilation occurs, bringing consumer liking scores closer to their initial expectations. This behavior aligns with previous research demonstrating similar patterns.

From a methodological perspective, the use of check-all-that-apply (CATA) questions with statements about product characteristics and usage occasions helps identify brand images in consumers' minds. This method allows for the grouping of brands based on distinct images and the identification of effective positioning strategies.

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