

Both tasty and healthy? Conveying healthiness and tastiness for vice food utilizing packaging design

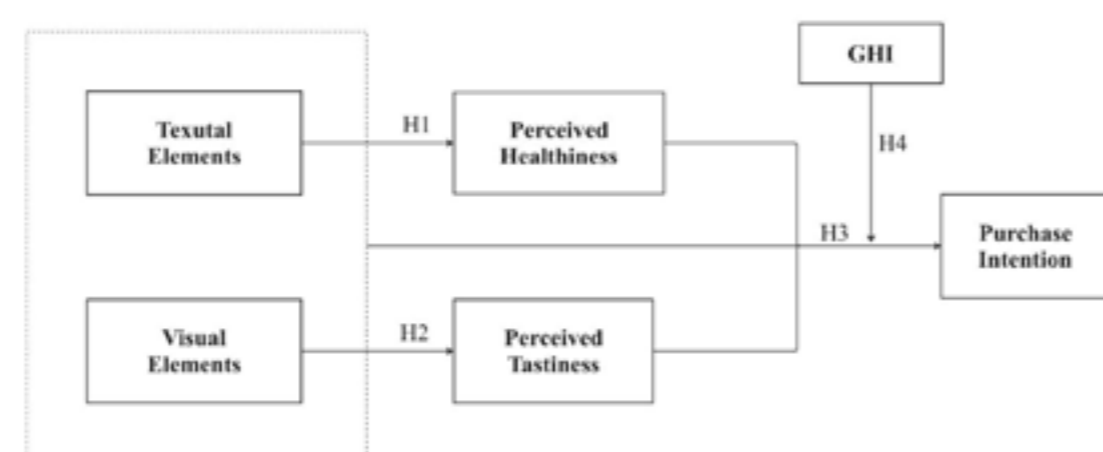
Introduction

This study explores the role of packaging design elements in shaping consumer perceptions and purchase intentions within the vice food category in order to facilitate healthier vice food choice. A 2 × 2 between-subject experiment was designed and conducted to test the hypotheses among Dutch consumers based on two product categories: chocolate cookies and yogurt dessert. The findings reveal that visual elements have a more substantial impact on consumer perceptions, particularly in the context of tastiness, highlighting their importance in vice food packaging. More specifically, visual cues that convey tastiness compared to healthiness are proved to be more effective in promoting higher purchase intention. Additionally, the study identifies aesthetic attractiveness as a significant driver of purchase intention, suggesting that consumers are more likely to be drawn to visually appealing packaging in vice food contexts. The research also explores the moderating role of General Health Interest (GHI), demonstrating that health-conscious consumers respond differently to packaging cues, even in indulgent product categories. This study failed to confirm the hypothesis regarding the interplay between visual and textual elements but offers some insights for future research to build upon. These insights offer valuable implications for marketers and designers aiming to create effective packaging strategies in the vice food sector.

Research question and hypotheses

The aim of this research is to identify the optimal combinations of elements that effectively convey both healthiness and tastiness, ultimately appealing to a broader range of consumers and promoting more healthy vice food choices. By leveraging their varying levels of health concern, we seek to maximize overall purchase intention for more healthier products. Based on the findings, the research question is proposed as:

How do aggregated packaging elements as a whole improve consumers' perception of healthiness while minimizing the decrease in perceived tastiness, achieving the optimal combination performance in terms of purchase intention?



H1: Textual elements have a stronger influence on shaping consumer's perceptions of food product's healthiness compared to visual elements.

H2: Visual elements have a stronger influence on shaping consumer's perceptions of food product's tastiness compared to textual elements.

H3: Packaging designs with graphic expressing tastiness and textual expressing healthiness will yield the highest consumer purchase intention compared to other combinations for vice food.

H4: General health interest moderates the effect of the packaging on purchase intentions. Consumers with higher GHI will show higher purchase intentions when exposed to products with elements expressing healthiness, while consumers with low GHI will show higher purchase intentions when exposed to products with elements expressing tastiness.

Method

A 2*2 between-subject experiment was designed and conducted in this research. The independent variables are textual and visual elements, which both have two levels in the experiment: tasty vs. healthy. A pretest was conducted (N=27) to determine the most suitable design content for each level of the two independent variable. Combining the result from the pretest, four packaging were created for each category. In the main test, participants were randomly assigned to one of the four experimental conditions from each food category. Participants were shown the stimuli and were asked to rate the product on perceived tastiness, perceived healthiness, perceived aesthetic package attractiveness and their purchase intention.



Result

The questionnaire was distributed via the online platform Prolific among Dutch consumers. We had 180 valid responses with an average age of 30 ranging from 18 years to 54 years old. Of the participants, 67% were male, 30% were female, and 3% were other. The one-way ANOVA results showed that there is no significant difference in age ($F(3, 177) = .72, p = .54$), gender ($F(3, 177) = 1.24, p = .30$), education level ($F(3, 177) = 1.59, p = .19$) and GHI level ($F(3, 177) = 1.35, p = .26$) among the participants under each different experimental conditions.

H1: Impact of visual vs. textual elements on healthiness perceptions
In both food category, the ANOVA (N=180) results showed that visual elements significantly impacted healthiness perceptions (chocolate cookies: $F(1, 176) = 46.10, p < .001$; yogurt dessert: $F(1, 176) = 26.72, p < .001$) compared to the non-significant effect of textual elements, indicating that visual elements had a more substantial impact on healthiness perceptions compared to textual elements.

H2: Impact of Visual vs. Textual Elements on Tastiness Perceptions
For the chocolate cookies, the visual elements significantly influenced tastiness perceptions ($F(1, 176) = 48.86, p < .001$), indicating that visual elements were more effective in conveying tastiness than textual elements.

H3: Impact of Visual vs. Textual Elements on Purchase Intentions:
The overall analysis showed that tasty visual cues resulted in significantly higher purchase intentions, while the influence of textual elements remained insignificant. The purchase intention was higher for packaging with tasty visual elements ($M=5.10$) compared to healthy visual elements ($M=3.90, p < .001$), indicating that Packaging with visual elements that emphasized tastiness led to higher purchase intentions compared to those emphasizing healthiness.

H3: Role of Aesthetic Attractiveness

The analysis showed that attractiveness had a significant positive effect on purchase intention (chocolate cookies: $\beta = .59, p < .001$, yogurt dessert: $\beta = .44, p < .001$). Visual cues that effectively conveyed tastiness significantly enhanced the perceived attractiveness of the packaging, which in turn boosted purchase intention.

H4: Moderating Role of General Health Interest (GHI):

For cookies, consumers with low GHI indeed exhibit higher purchase intentions when the visual elements emphasize tastiness ($F(1, 92) = 23.36, p < .001$), while the response from high GHI consumers to both visual and textual elements was relatively insignificant in this experiment. For yogurt dessert, in the high GHI group, consumers did show higher purchase intentions for products with visual elements expressing healthiness ($F(1, 78) = 7.06, p = .01$). Conversely, the purchase intention of consumers with low GHI was not influenced by both product benefits. In conclusion, General Health Interest to some extent moderated the impact of packaging cues.

Implications

Impact of Visual vs. Textual Elements: This study reveals that visual elements have a significantly stronger impact on consumer perceptions of both healthiness and tastiness in vice foods compared to textual elements. This finding aligns with existing research that visual cues are more immediate and emotionally engaging, particularly in indulgent product categories like chocolate cookies and yogurt desserts, suggesting that brands should prioritize visual cues in their packaging design.

Taste expectation still dominate the choice: It was observed that packaging with tasty visual cues significantly outperformed packaging with healthy visual cues in terms of purchase intention. This finding suggests that in the context of vice foods, tastiness remains a more influential factor than healthiness. This outcome contributes to the theoretical understanding of how consumers prioritize different product attributes in vice food categories. Marketers should consider emphasizing the tastiness of their vice food products through visually-driven marketing strategies to ensure higher purchase intention, while appropriately enhancing the expression of healthiness through other channel.

Role of Aesthetic Attractiveness: Aesthetic attractiveness emerged as a crucial factor influencing purchase intentions. The significant role of attractiveness reinforces the idea that visual attractiveness is a significant driver in the decision-making process for consumers seeking hedonic benefits. Marketers aiming to promote vice foods should therefore prioritize the visual appeal of their packaging to effectively capture consumer attention and increase purchase likelihood. Moreover, designers can devise more attractive expressions or forms to express health benefits in order to promote healthy vice food choices.

More accurate packaging strategy based on consumer health interest: By validating that the General Health Interest moderates the impact of packaging cues on vice foods, this research demonstrates that even within the vice food category, where hedonic value is priority, it is still essential to provide differentiating packaging communication strategies for those health-conscious consumers. Companies can therefore more effectively align their products with the preferences of their target consumers, leading to greater satisfaction and increased purchase intentions.