

Digital illustration and its impact on consumer perception of healthier food products

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Introduction



The role of packaging in influencing consumer perceptions is widely recognized within the domain of marketing and visual communications, and food product category is not an exception. Research on communication aspect of packaging suggests that people generally need more visual elements to understand the packaging messages, with a combination of text and illustration being the most effective approach (R. W. Y. Wang & Chou, 2010). Illustrations may be particularly beneficial for lesser-known brands. However, illustrations do not always have a positive effect on information comprehension, especially among older consumers (Liu, Kemper, & McDowd, 2009). Therefore, the purpose of this study was to test the influence of digital illustration on the packaging for an unknown healthy snack brand in order to explore the potential of packaging visual design in encouraging consumer preferences for healthier snack options.

Methods



A total of 116 Croatian participants were selected for this study, who voluntarily participated in a questionnaire. The study employed a 2x2 experimental design, in which participants were exposed to packaging designs varying across two factors: flavor and visual design. The first factor, flavor, consisted of two distinct tastes (namely, banana and peanut). The second factor, visual design, also had two categories: a design without illustration and a design with illustration. Four unique packaging designs were created (Figure 1). The questionnaire consisted of demographic information, an evaluation of packaging designs, and a choice task. Participants were first asked demographic questions regarding their age, gender, and how often they consume healthy snack bars. Then, they were asked to evaluate the level of the snack attractiveness using a 5-point scale. After the evaluation, the participants completed a choice task in which they were shown the packaging designs without illustration and designs with illustration, and were asked to indicate which one they would purchase. Next, the participants were asked how important they consider packaging design to be.

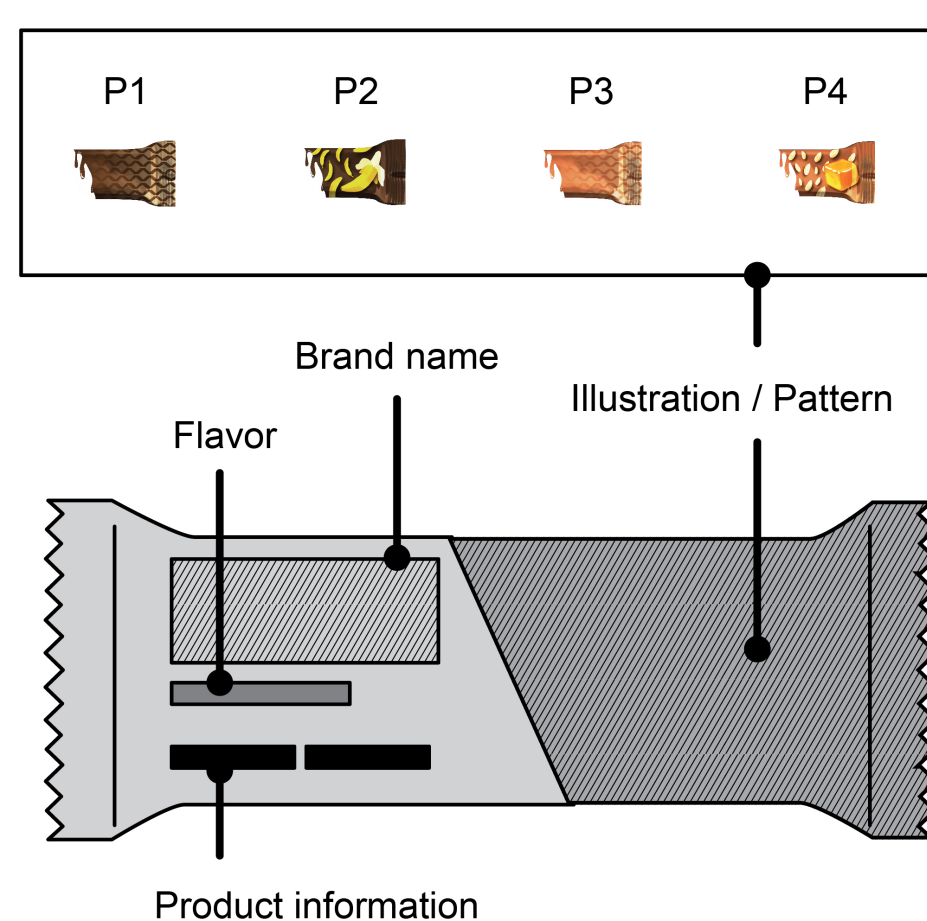


Figure 1
Design of the packaging variants used in the experiment

Results



A total of 56.03% of the participants reported eating healthy snacks bar rarely, while 26.72% reported they never eat them. 13.79% reported eating healthy snack bars once a month and only 3.45% reported eating the bars once a week. 50.86% participants identified design as an important factor, whereas 49.14% participants did not consider it to be of significant relevance. When asked "Do you think that illustrations on packaging can improve the perception of product quality?" 83.62% of respondents indicated "Yes". 8.62% responded "No", 7.76% indicated "I don't know". For the choice task, the results revealed a significant effect of the packaging visual design, $\chi^2(1) = 52.45$, $p < 0.001$, indicating that the illustration significantly influenced participants' choices (Figure 2). The analysis showed no significant effect of age, $\chi^2(1) = 0.619$, $p = 0.43$, indicating that the age of participants did not significantly influence their choice between two packaging designs.

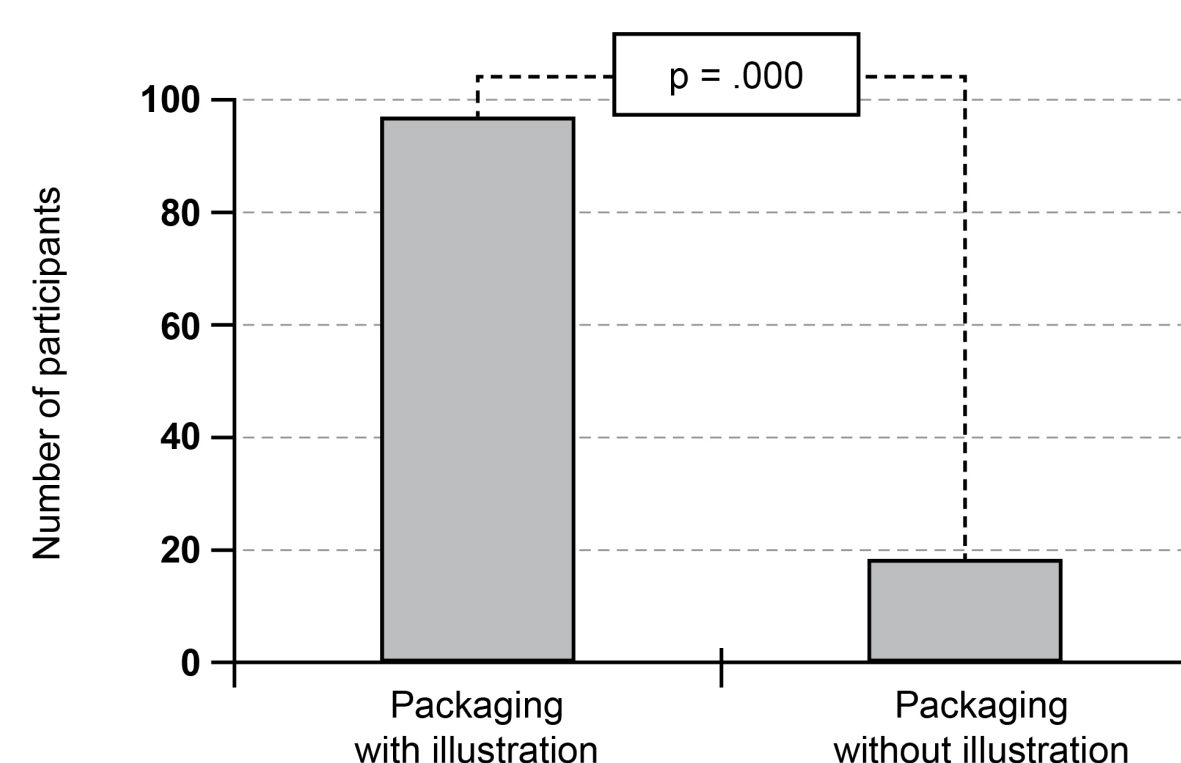


Figure 2
Results of the choice task

A repeated measures analysis of variance (ANOVA) was conducted to investigate the effects of flavor and visual design on the attractiveness ratings. The analysis revealed a significant main effect of visual design, $F(1, 115) = 62.99$, $p < 0.001$, indicating that the packaging with illustration was perceived as more attractive ($M = 3.61$, $SE = 0.09$) than the packaging without illustration ($M = 2.86$, $SE = 0.08$). In contrast, there was no significant difference in the attractiveness between two flavors, $p = 0.50$. The interaction between flavor and visual design was also non-significant, $p = 0.15$, suggesting that the effect of illustration was consistent across both product types. The results showed no significant main effect of age or attitude on the participants' responses, $ps > 0.05$.



Figure 3
The effect of illustration on perceived attractiveness

Discussion / Conclusion



The first part of our study, which explored the frequency of healthy snacks consumption among consumers from different age groups, indicated the surprisingly infrequent consumption of this type of food product among participants. This validated the need for more specific inquiries in our study, where the focus was on exploring the influence of digital illustration on their perception of the snack packaging designs. The main finding is that the packaging with illustration was perceived as more attractive than the non-illustrated packaging, which aligns with other studies conducted in the area of the food packaging design (Boudreaux & Palmer, 2007; Pires & Agante, 2011).

A surprising result in our study is that neither age nor the participants' attitude toward the importance of packaging design moderated the effects of illustration on the packaging design. This is in contrast with previous research which demonstrated that age may influence packaging evaluation under certain conditions (Kovačević, Kupres, Šepat, & Brozović, 2022; Vila-López, Küster-Boluda, & Sarabia-Sánchez, 2017). Additional results from the choice-task in our study confirmed the superiority of the illustrated packaging designs over non-illustrated ones. Our results on attitudes towards the importance of design suggested that the majority of our respondents consider the packaging visual design as a relevant product attribute, emphasizing its significant impact on product perception. This may indicate that digital illustrations on the packaging for snack bars can play a significant role in promoting healthier product choices, highlighting the potential benefits of deliberate packaging design in encouraging consumer preferences for healthier food options, regardless of their age.

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ACKNOWLEDGMENTS

This work was supported by the University of Zagreb