

# Consumer Emotional Engagement with Pringles Packaging Design and Logo from 1968, 1992, and 2009: A Face-Coding and Eye-Tracking Analysis

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## Overview

Packaging design serves as a crucial touchpoint for brands, communicating identity, capturing consumer attention, and influencing purchase decisions. This study investigates how Pringles' packaging has evolved over time, focusing on three designs from 1968, 1992, and 2009.

Using advanced neuromarketing tools such as facial coding and eye-tracking, we analyzed consumer responses to these designs to understand their impact on emotions, attention, and appeal. Our findings offer actionable insights for brands aiming to optimize packaging strategies and foster stronger emotional connections with consumers.

## Objective

The primary goal of this study is to assess how Pringles' packaging designs influence consumer engagement by examining emotional responses, visual attention, and perceived appeal. Using advanced neuromarketing tools such as facial coding and eye-tracking, the research explores how design elements shape consumer emotions and decision-making.

- ❖ Emotional and attention metrics were analyzed to evaluate the effectiveness of each design in capturing interest and fostering positive connections.
- ❖ The findings offer valuable insights for brands to create packaging that enhances engagement, maximizes visual appeal, and strengthens long-term brand loyalty.

## Data Sources



We had access to a comprehensive neurotechnology tool, MindMetriks. This technology comprises real-time recordings of facial coding and eye-tracking metrics focusing on emotional engagement and visual attention.

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## Methodology

This study used neuromarketing tools and statistical methods to analyze consumer reactions to Pringles' packaging designs from 1968, 1992, and 2009. Data was collected from 20 participants, with 15 valid datasets analyzed after addressing anomalies. Participants viewed the designs sequentially in a controlled environment, where facial coding captured emotional responses and eye-tracking technology measured visual attention metrics like fixation duration. Post-exposure surveys provided additional insights into purchase intentions and perceived appeal, while statistical analyses, including ANOVA, correlation, and regression, explored the relationships between design elements and consumer engagement.

## Data Wrangling

The data wrangling process ensured the reliability and accuracy of the dataset for analysis. Data collection involved capturing emotional and gaze metrics using facial coding and eye-tracking technologies. Anomalies, such as incomplete emotional responses or missing fixation data, were identified and removed.

An aggregated datasets for each design variant were created, combining emotional engagement and visual attention metrics. This comprehensive dataset allowed for robust statistical analysis, supporting the evaluation of how packaging design impacts consumer behavior and emotions.



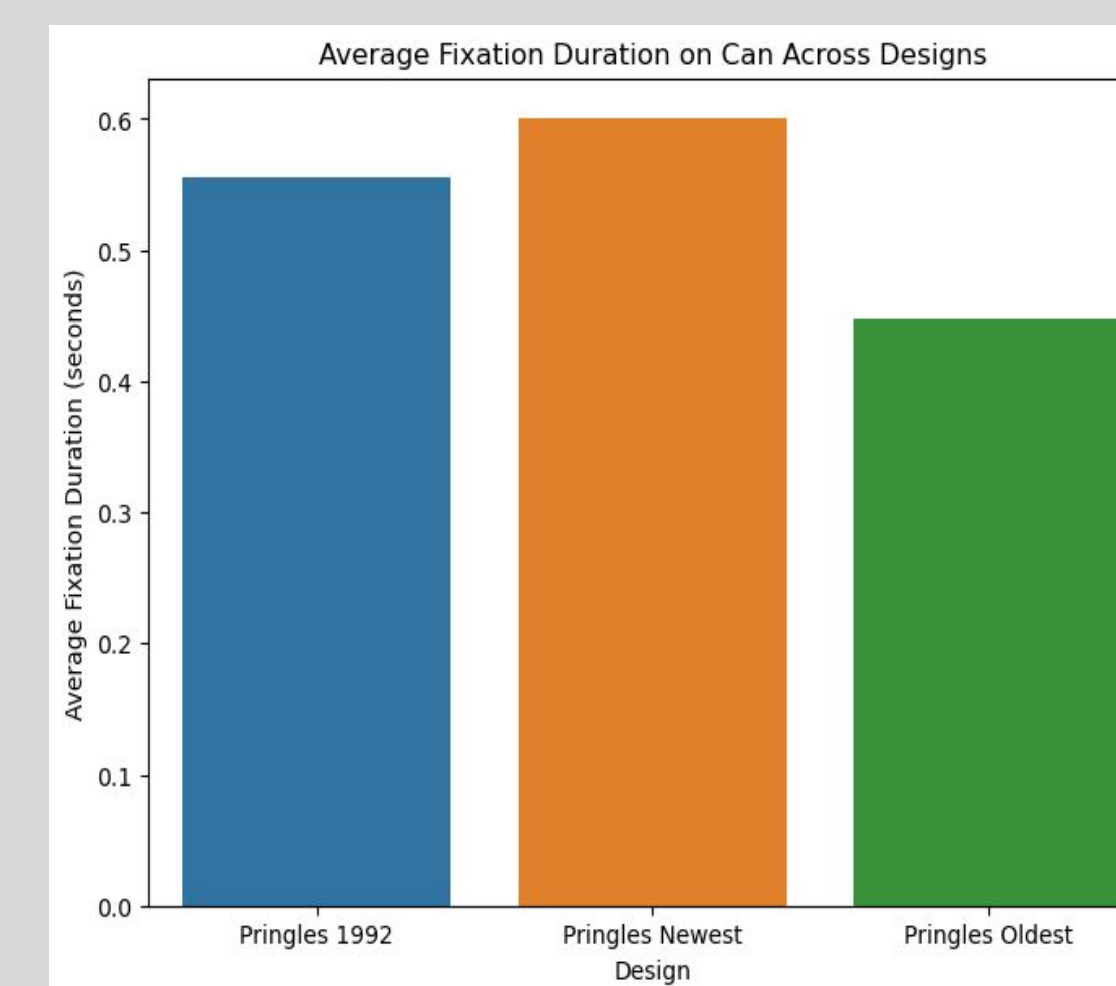
## Hypothesis Testing

The research evaluated the significance of packaging design on consumer emotions, attention, and appeal, guided by the following hypotheses:

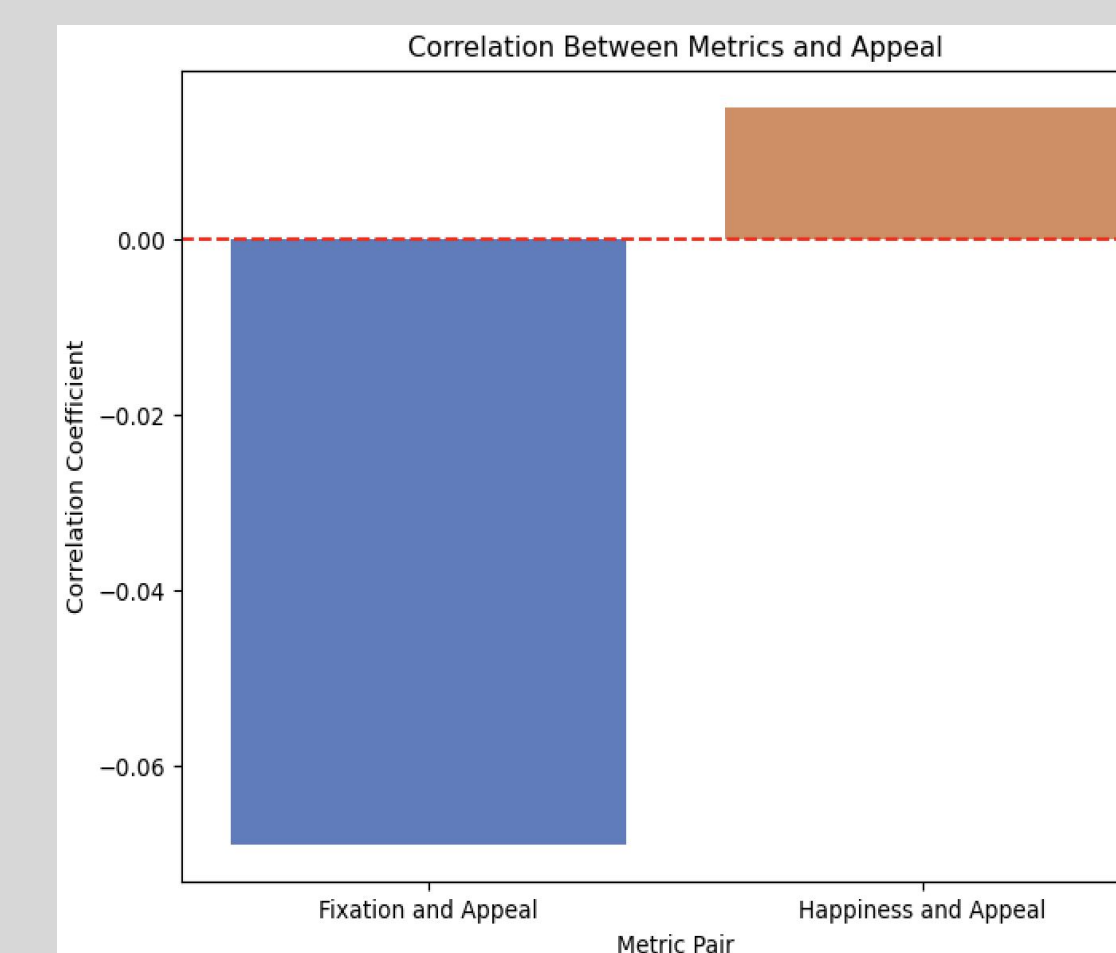
- **Null Hypothesis (H<sub>0</sub>):** Packaging design has no significant effect on consumer emotions, attention, or behavioral outcomes.
- **Alternative Hypothesis (H<sub>1</sub>):** Packaging design significantly impacts consumer emotions, attention, or behavioral outcomes.

## Data Visualization

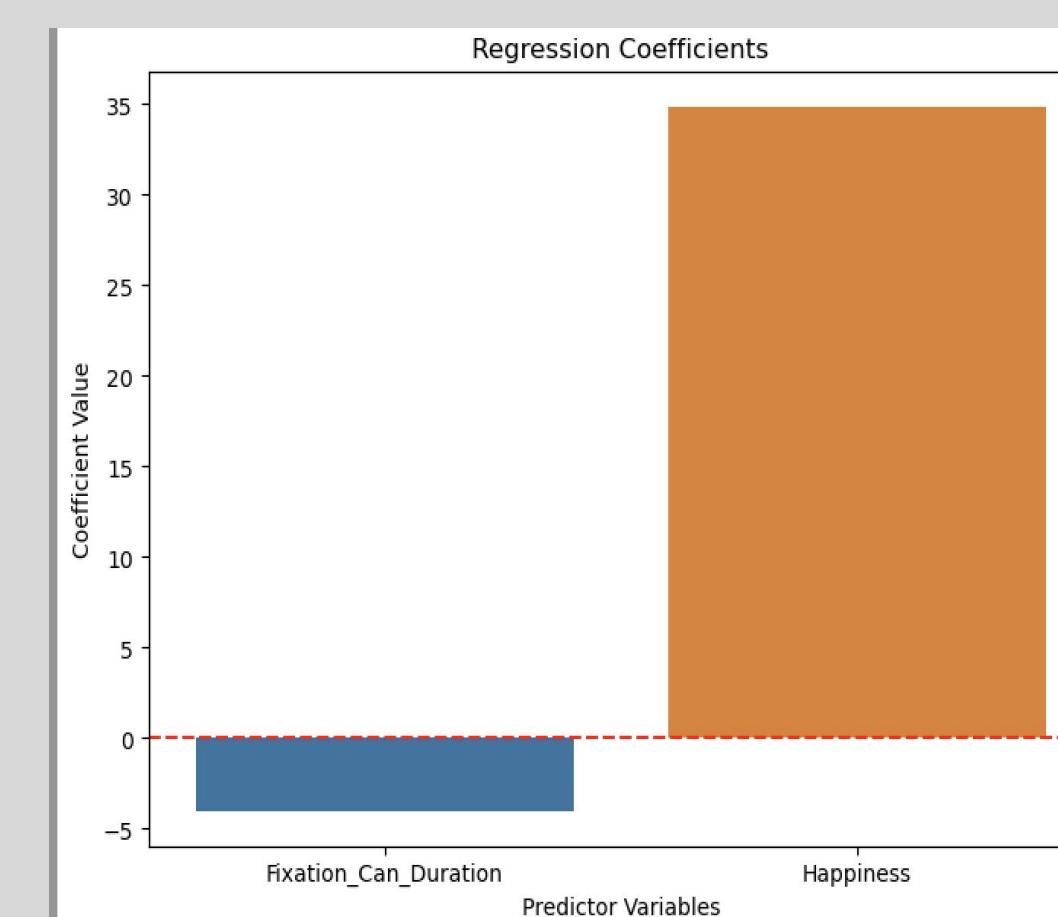
Utilizing Jupyter Notebook, we conduct ANOVA, correlation and regression analysis which have no significant impact on consumer emotions, visual attention, or appeal across three design variants. **These findings collectively support the null hypothesis (H<sub>0</sub>) that Pringles' packaging designs do not significantly impact consumer emotions, attention, or appeal.**



ANOVA revealed no significant differences in attention metrics (e.g., fixation duration on the can:  $F=0.556, p=0.601$ ) or emotional metrics (happiness:  $F=0.111, p=0.895$ ).



Correlation results revealed weak, statistically insignificant relationships between fixation and appeal ( $r=-0.069, p=0.859$ ) and happiness and appeal ( $r=0.015, p=0.925$ ).



Regression analysis further confirmed no significant predictors, with fixation ( $\beta=-4.011, p=0.1377$ ) and happiness ( $\beta=34.893, p=0.103$ ) failing to explain differences in appeal. These findings highlight that the designs evoke similar consumer responses.

## Data Insights

Our research leveraged multiple tables to analyze participant engagement with Pringles' packaging designs. Data was collected and analyzed using MindMetriks tools, which provided group results incorporating facial coding and eye-tracking metrics. Key findings from the tables include:

- ❖ **Emotion Metrics:** Consistently low happiness and high sadness scores across all designs, indicating limited positive emotional engagement.
- ❖ **Dominant Expressions:** Sadness was the dominant expression for all designs, particularly Pringles Oldest (65%).
- ❖ **Attention Distribution:** Pringles 1992 achieved the highest fully attentive rate (94%), outperforming other variants.
- ❖ **Attention Metrics:** Fixation durations for the can and logo showed minor variations, with the 1992 design achieving slightly higher engagement.
- ❖ **Appeal Ratings:** The Newest design (2009) received the highest Likert-scale rating (4.0), indicating a preference for modern aesthetics.

These insights, derived from MindMetriks' advanced neuromarketing tools, provide a comprehensive understanding of how consumers engage with visual elements of packaging, emphasizing the subtle differences in attention and emotional responses across design variants.

## Findings and Recommendation

The results collectively support the null hypothesis (H<sub>0</sub>), indicating that Pringles' packaging designs do not significantly influence consumer emotions, attention, purchase intentions, or brand loyalty based on the analyzed metrics.

Nevertheless, thoughtful packaging design remains vital for driving engagement. Brands should integrate bold, vibrant colors and storytelling visuals that capture attention and build a deeper emotional connection. Incorporating sensory features, such as tactile textures or interactive elements, can enhance memorability by leveraging the strong link between emotions and cognitive processing. Additionally, aligning packaging updates with broader marketing campaigns and staying attuned to evolving consumer trends can maximize both visual appeal and brand loyalty.