

**Title: Packaging Preference Analysis by Age Group**

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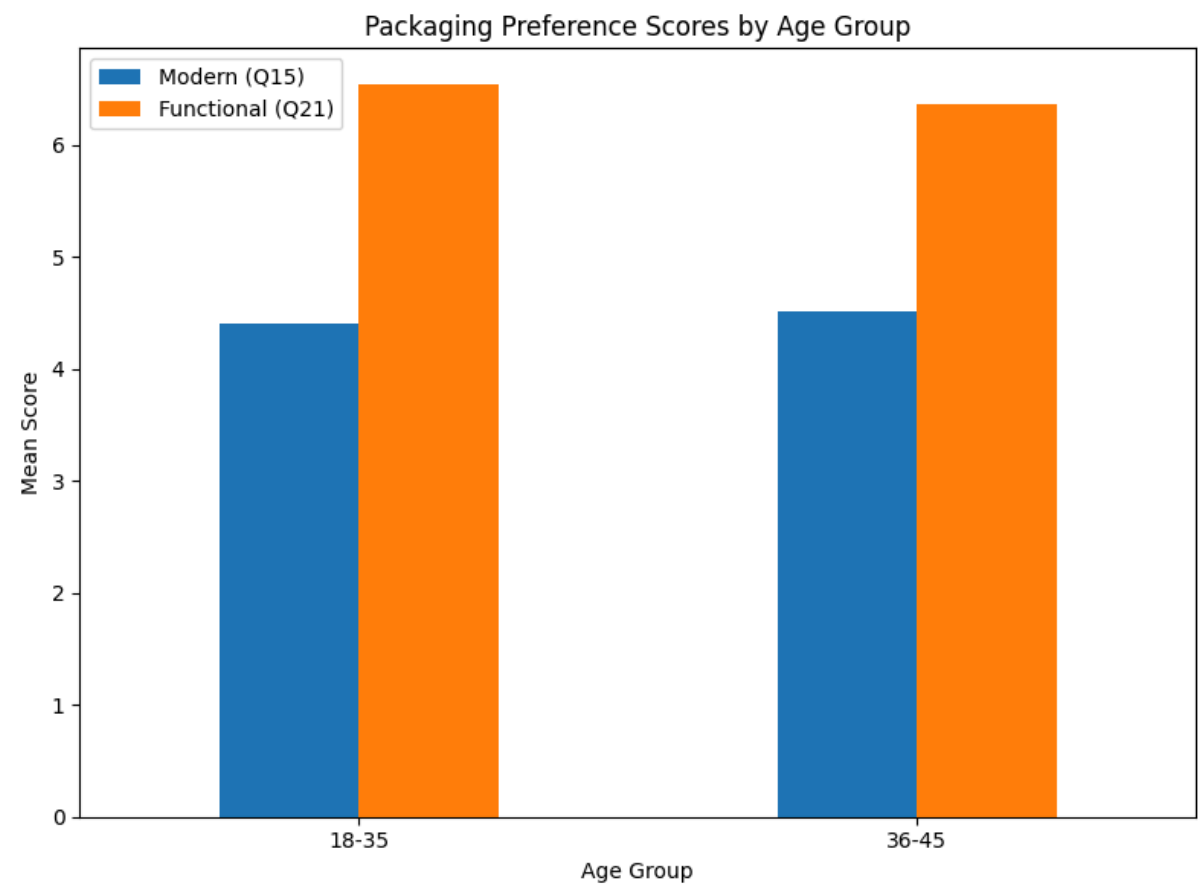
**Overview:**

This analysis explores how consumers across different age groups perceive two types of packaging: **Modern (Q15)** and **Functional (Q21)**. Using both descriptive statistics and advanced visualizations, we examine patterns in consumer preferences and visual attention.

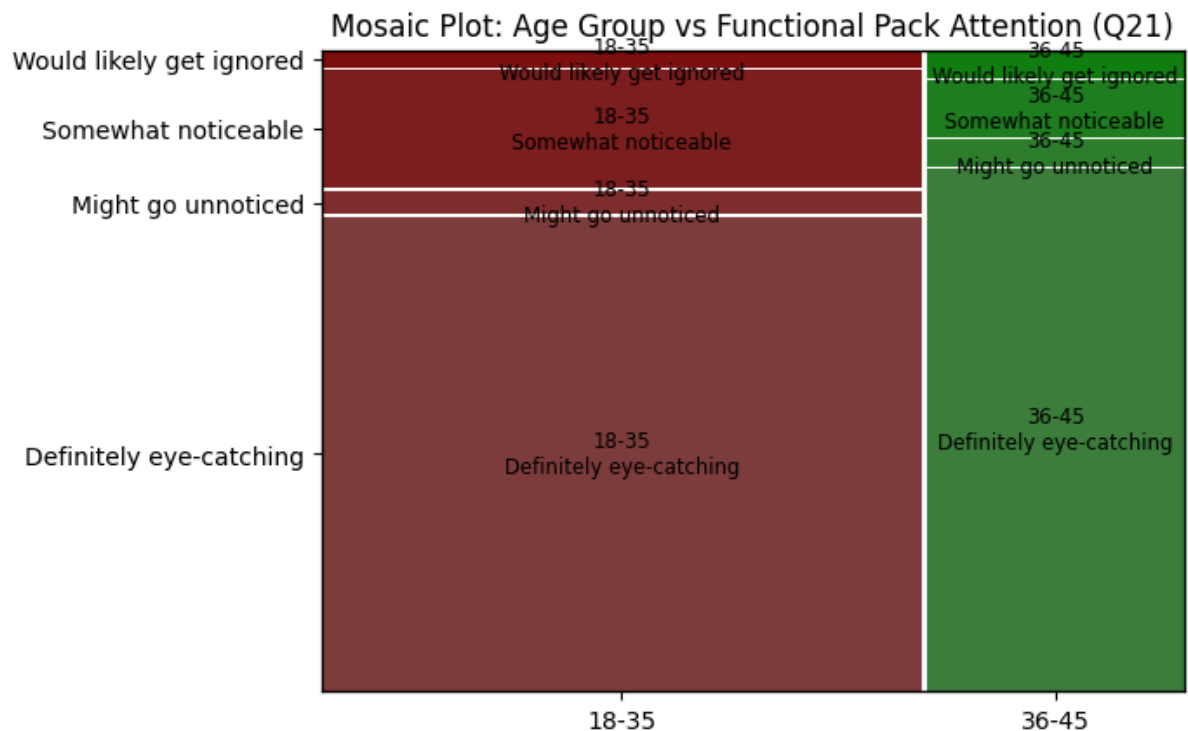
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**Key Visualizations:**

- 1. **Mean Packaging Preference Scores by Age Group:**
  - This bar chart compares average preference scores between age groups (18-35 and 36-45) for both Modern and Functional packaging.



- 2. **Mosaic Plot - Age Group vs Functional Pack Attention:**
  - Displays the proportion of attention-grabbing response levels to functional packs across age groups.



### Mean Preference Scores by Age Group:

Age Group	Modern Pack (Q15)	Functional Pack (Q21)
18-35	6.53	4.40
36-45	6.36	4.51

- Younger consumers (18-35) marginally prefer **modern packaging**.
- Slight increase in preference for **functional packaging** among older consumers (36-45).

### Statistical Analysis:

Chi-Square Test on Q21 (Attention-Grabbing Functional Pack Ratings):

- Chi2 = 4.77
- p-value = 0.1898

- Interpretation: There is **no statistically significant** association between age group and pack attention levels (at 95% confidence).

**Two-Way ANOVA:**

Source	Sum of Squares	df	F-value	p-value
Age Group	0.14	1	0.079	0.778
Pack Type (Modern vs Func.)	628.33	1	354.698	< 0.000001
Interaction (Age * Pack)	2.63	1	1.484	0.224

- **Main Effect of Pack Type is significant:** Functional vs Modern preferences differ significantly.
- **Age Group and interaction effects are not statistically significant.**

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**Insights & Interpretation:**

- 1. Modern Packaging:**
  - Highly preferred across both age groups.
  - Younger audience (18-35) shows slightly higher preference.
- 2. Functional Packaging (Q21):**
  - Preferred slightly more by the 36-45 age group.
  - Most responses across both age groups were in the **"Definitely eye-catching"** category.
- 3. No age-based bias** detected in functional packaging visibility (confirmed by mosaic plot and chi-square test).
- 4. Strong overall preference difference** between modern and functional styles, suggesting clear emotional or aesthetic appeal differences.

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**Recommendations:**

- 1. Leverage Modern Aesthetics:**
  - Especially to attract the 18-35 demographic.
- 2. Balance Design with Functionality:**

- Since functional packaging also appeals to older consumers, ensure packaging combines aesthetic appeal with practical features.
3. **Invest in Visual Standout Factors:**
- Even though pack visibility wasn't statistically linked to age, responses indicate that a majority found the functional pack "eye-catching". Continue enhancing standout design elements.
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## **Conclusion:**

This analysis reveals that while both age groups appreciate modern packaging, functional packaging preferences are slightly skewed by age but not significantly so. Clear visual cues, modern designs, and balanced practical appeal will support brand success across age segments.