Cross-Tabulation (Crosstabs)

Let’s interpret the results for \*\*Question 1\*\*: \*Are there differences in flavor preferences (Q13) based on demographic factors like age (Q1), gender (Q2), or income (Q6)?\* We’ll break this down by \*\*flavor\*\* and \*\*demographic factor\*\*, summarize the key findings, and provide actionable insights for NutriBev.

---

### \*\*1. Citrus Flavor Preference\*\*

#### \*\*Citrus Flavor vs. Age Group\*\*

- \*\*Crosstab\*\*:

- \*\*Under 18\*\*: 37.5% prefer citrus.

- \*\*18–24\*\*: 75.0% prefer citrus.

- \*\*25–34\*\*: 99.1% prefer citrus.

- \*\*35–44\*\*: 100.0% prefer citrus.

- \*\*45+\*\*: 0.0% prefer citrus.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 115.718, p = 0.000 (significant).

- \*\*Insight\*\*: Citrus flavor preference \*\*increases with age\*\* but drops to \*\*0% for the 45+ group\*\*.

#### \*\*Citrus Flavor vs. Gender\*\*

- \*\*Crosstab\*\*:

- \*\*Male\*\*: 90.8% prefer citrus.

- \*\*Female\*\*: 73.3% prefer citrus.

- \*\*Prefer not to say\*\*: 0.0% prefer citrus.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 73.447, p = 0.000 (significant).

- \*\*Insight\*\*: \*\*Men\*\* are more likely to prefer citrus flavor than women.

#### \*\*Citrus Flavor vs. Income\*\*

- \*\*Crosstab\*\*:

- \*\*Less than EGP 5,000\*\*: 62.1% prefer citrus.

- \*\*EGP 5,000–10,000\*\*: 91.4% prefer citrus.

- \*\*EGP 10,001–20,000\*\*: 82.8% prefer citrus.

- \*\*EGP 20,001–30,000\*\*: 0.0% prefer citrus.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 87.068, p = 0.000 (significant).

- \*\*Insight\*\*: Citrus flavor preference is \*\*highest among middle-income groups\*\* (EGP 5,000–20,000) and \*\*absent in the highest income group\*\*.

---

### \*\*2. Berry Flavor Preference\*\*

#### \*\*Berry Flavor vs. Age Group\*\*

- \*\*Crosstab\*\*:

- \*\*Under 18\*\*: 100.0% prefer berry.

- \*\*18–24\*\*: 37.0% prefer berry.

- \*\*25–34\*\*: 58.1% prefer berry.

- \*\*35–44\*\*: 0.0% prefer berry.

- \*\*45+\*\*: 0.0% prefer berry.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 72.074, p = 0.000 (significant).

- \*\*Insight\*\*: Berry flavor is \*\*most popular among younger consumers\*\* (Under 18) and \*\*declines with age\*\*.

#### \*\*Berry Flavor vs. Gender\*\*

- \*\*Crosstab\*\*:

- \*\*Male\*\*: 25.9% prefer berry.

- \*\*Female\*\*: 57.2% prefer berry.

- \*\*Prefer not to say\*\*: 100.0% prefer berry.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 55.044, p = 0.000 (significant).

- \*\*Insight\*\*: \*\*Women\*\* are more likely to prefer berry flavor than men.

#### \*\*Berry Flavor vs. Income\*\*

- \*\*Crosstab\*\*:

- \*\*Less than EGP 5,000\*\*: 81.6% prefer berry.

- \*\*EGP 5,000–10,000\*\*: 30.5% prefer berry.

- \*\*EGP 10,001–20,000\*\*: 41.9% prefer berry.

- \*\*EGP 20,001–30,000\*\*: 0.0% prefer berry.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 74.769, p = 0.000 (significant).

- \*\*Insight\*\*: Berry flavor is \*\*most popular among lower-income groups\*\* and \*\*absent in the highest income group\*\*.

---

### \*\*3. Tropical Flavor Preference\*\*

#### \*\*Tropical Flavor vs. Age Group\*\*

- \*\*Crosstab\*\*:

- \*\*Under 18\*\*: 37.5% prefer tropical.

- \*\*18–24\*\*: 20.3% prefer tropical.

- \*\*25–34\*\*: 66.7% prefer tropical.

- \*\*35–44\*\*: 71.4% prefer tropical.

- \*\*45+\*\*: 0.0% prefer tropical.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 85.273, p = 0.000 (significant).

- \*\*Insight\*\*: Tropical flavor preference \*\*increases with age\*\* but is \*\*absent in the 45+ group\*\*.

#### \*\*Tropical Flavor vs. Gender\*\*

- \*\*Crosstab\*\*:

- \*\*Male\*\*: 39.7% prefer tropical.

- \*\*Female\*\*: 40.0% prefer tropical.

- \*\*Prefer not to say\*\*: 0.0% prefer tropical.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 9.674, p = 0.008 (significant).

- \*\*Insight\*\*: Tropical flavor preference is \*\*similar across genders\*\*.

#### \*\*Tropical Flavor vs. Income\*\*

- \*\*Crosstab\*\*:

- \*\*Less than EGP 5,000\*\*: 27.6% prefer tropical.

- \*\*EGP 5,000–10,000\*\*: 39.7% prefer tropical.

- \*\*EGP 10,001–20,000\*\*: 51.6% prefer tropical.

- \*\*EGP 20,001–30,000\*\*: 0.0% prefer tropical.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 20.664, p = 0.000 (significant).

- \*\*Insight\*\*: Tropical flavor preference \*\*increases with income\*\* but is \*\*absent in the highest income group\*\*.

---

### \*\*4. Mint Flavor Preference\*\*

#### \*\*Mint Flavor vs. Age Group\*\*

- \*\*Crosstab\*\*:

- \*\*Under 18\*\*: 37.5% prefer mint.

- \*\*18–24\*\*: 50.0% prefer mint.

- \*\*25–34\*\*: 35.9% prefer mint.

- \*\*35–44\*\*: 28.6% prefer mint.

- \*\*45+\*\*: 0.0% prefer mint.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 19.476, p = 0.001 (significant).

- \*\*Insight\*\*: Mint flavor is \*\*most popular among younger consumers\*\* (18–24) and \*\*declines with age\*\*.

#### \*\*Mint Flavor vs. Gender\*\*

- \*\*Crosstab\*\*:

- \*\*Male\*\*: 60.3% prefer mint.

- \*\*Female\*\*: 26.7% prefer mint.

- \*\*Prefer not to say\*\*: 0.0% prefer mint.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 52.420, p = 0.000 (significant).

- \*\*Insight\*\*: \*\*Men\*\* are more likely to prefer mint flavor than women.

#### \*\*Mint Flavor vs. Income\*\*

- \*\*Crosstab\*\*:

- \*\*Less than EGP 5,000\*\*: 44.8% prefer mint.

- \*\*EGP 5,000–10,000\*\*: 25.9% prefer mint.

- \*\*EGP 10,001–20,000\*\*: 74.2% prefer mint.

- \*\*EGP 20,001–30,000\*\*: 0.0% prefer mint.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 69.528, p = 0.000 (significant).

- \*\*Insight\*\*: Mint flavor is \*\*most popular among higher-income groups\*\* (EGP 10,001–20,000) and \*\*absent in the highest income group\*\*.

---

### \*\*5. Coffee Flavor Preference\*\*

#### \*\*Coffee Flavor vs. Age Group\*\*

- \*\*Crosstab\*\*:

- \*\*Under 18\*\*: 37.5% prefer coffee.

- \*\*18–24\*\*: 10.9% prefer coffee.

- \*\*25–34\*\*: 0.0% prefer coffee.

- \*\*35–44\*\*: 0.0% prefer coffee.

- \*\*45+\*\*: 0.0% prefer coffee.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 43.283, p = 0.000 (significant).

- \*\*Insight\*\*: Coffee flavor is \*\*only preferred by younger consumers\*\* (Under 18 and 18–24).

#### \*\*Coffee Flavor vs. Gender\*\*

- \*\*Crosstab\*\*:

- \*\*Male\*\*: 3.4% prefer coffee.

- \*\*Female\*\*: 13.3% prefer coffee.

- \*\*Prefer not to say\*\*: 0.0% prefer coffee.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 12.958, p = 0.002 (significant).

- \*\*Insight\*\*: \*\*Women\*\* are more likely to prefer coffee flavor than men.

#### \*\*Coffee Flavor vs. Income\*\*

- \*\*Crosstab\*\*:

- \*\*Less than EGP 5,000\*\*: 10.3% prefer coffee.

- \*\*EGP 5,000–10,000\*\*: 12.1% prefer coffee.

- \*\*EGP 10,001–20,000\*\*: 0.0% prefer coffee.

- \*\*EGP 20,001–30,000\*\*: 0.0% prefer coffee.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 13.743, p = 0.003 (significant).

- \*\*Insight\*\*: Coffee flavor is \*\*only preferred by lower-income groups\*\* and \*\*absent in higher-income groups\*\*.

---

### \*\*Key Insights and Recommendations\*\*

1. \*\*Citrus Flavor\*\*:

- Popular among \*\*middle-aged consumers (25–44)\*\* and \*\*men\*\*.

- Target middle-income groups (EGP 5,000–20,000).

2. \*\*Berry Flavor\*\*:

- Popular among \*\*younger consumers (Under 18)\*\* and \*\*women\*\*.

- Target lower-income groups (Less than EGP 5,000).

3. \*\*Tropical Flavor\*\*:

- Popular among \*\*older consumers (25–44)\*\* and \*\*both genders\*\*.

- Target middle-income groups (EGP 5,000–20,000).

4. \*\*Mint Flavor\*\*:

- Popular among \*\*younger consumers (18–24)\*\* and \*\*men\*\*.

- Target higher-income groups (EGP 10,001–20,000).

5. \*\*Coffee Flavor\*\*:

- Popular among \*\*younger consumers (Under 18 and 18–24)\*\* and \*\*women\*\*.

- Target lower-income groups (Less than EGP 5,000).

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Let’s interpret the results for \*\*Question 2\*\*: \*Are flavor preferences (Q13) influenced by consumption frequency (Q7)?\* We’ll analyze the relationship between each flavor preference and consumption frequency, summarize the key findings, and provide actionable insights for NutriBev.

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### \*\*1. Citrus Flavor Preference\*\*

#### \*\*Citrus Flavor vs. Consumption Frequency\*\*

- \*\*Crosstab\*\*:

- \*\*Daily\*\*: 100.0% prefer citrus.

- \*\*3–4 times a week\*\*: 50.0% prefer citrus.

- \*\*1–2 times a week\*\*: 100.0% prefer citrus.

- \*\*Occasionally\*\*: 93.6% prefer citrus.

- \*\*Never\*\*: 50.0% prefer citrus.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 108.333, p = 0.000 (significant).

- \*\*Insight\*\*: Citrus flavor is \*\*highly preferred by daily and occasional consumers\*\* but \*\*less preferred by those who consume energy drinks 3–4 times a week or never\*\*.

---

### \*\*2. Berry Flavor Preference\*\*

#### \*\*Berry Flavor vs. Consumption Frequency\*\*

- \*\*Crosstab\*\*:

- \*\*Daily\*\*: 56.9% prefer berry.

- \*\*3–4 times a week\*\*: 80.8% prefer berry.

- \*\*1–2 times a week\*\*: 0.0% prefer berry.

- \*\*Occasionally\*\*: 35.9% prefer berry.

- \*\*Never\*\*: 25.0% prefer berry.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 77.957, p = 0.000 (significant).

- \*\*Insight\*\*: Berry flavor is \*\*most popular among frequent consumers (3–4 times a week)\*\* and \*\*least popular among those who consume energy drinks 1–2 times a week or never\*\*.

---

### \*\*3. Tropical Flavor Preference\*\*

#### \*\*Tropical Flavor vs. Consumption Frequency\*\*

- \*\*Crosstab\*\*:

- \*\*Daily\*\*: 29.4% prefer tropical.

- \*\*3–4 times a week\*\*: 30.8% prefer tropical.

- \*\*1–2 times a week\*\*: 37.5% prefer tropical.

- \*\*Occasionally\*\*: 50.0% prefer tropical.

- \*\*Never\*\*: 25.0% prefer tropical.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 17.125, p = 0.002 (significant).

- \*\*Insight\*\*: Tropical flavor preference \*\*increases with occasional consumption\*\* but is \*\*less preferred by daily consumers and those who never consume energy drinks\*\*.

---

### \*\*4. Mint Flavor Preference\*\*

#### \*\*Mint Flavor vs. Consumption Frequency\*\*

- \*\*Crosstab\*\*:

- \*\*Daily\*\*: 41.2% prefer mint.

- \*\*3–4 times a week\*\*: 50.0% prefer mint.

- \*\*1–2 times a week\*\*: 100.0% prefer mint.

- \*\*Occasionally\*\*: 34.6% prefer mint.

- \*\*Never\*\*: 25.0% prefer mint.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 45.941, p = 0.000 (significant).

- \*\*Insight\*\*: Mint flavor is \*\*most popular among those who consume energy drinks 1–2 times a week\*\* and \*\*least popular among occasional and non-consumers\*\*.

---

### \*\*5. Coffee Flavor Preference\*\*

#### \*\*Coffee Flavor vs. Consumption Frequency\*\*

- \*\*Crosstab\*\*:

- \*\*Daily\*\*: 11.8% prefer coffee.

- \*\*3–4 times a week\*\*: 11.5% prefer coffee.

- \*\*1–2 times a week\*\*: 62.5% prefer coffee.

- \*\*Occasionally\*\*: 0.0% prefer coffee.

- \*\*Never\*\*: 0.0% prefer coffee.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 116.216, p = 0.000 (significant).

- \*\*Insight\*\*: Coffee flavor is \*\*only preferred by those who consume energy drinks 1–2 times a week\*\* and \*\*absent among occasional and non-consumers\*\*.

---

### \*\*Key Insights and Recommendations\*\*

1. \*\*Citrus Flavor\*\*:

- \*\*Target\*\*: Daily and occasional consumers.

- \*\*Strategy\*\*: Promote citrus flavor as a refreshing option for regular and occasional drinkers.

2. \*\*Berry Flavor\*\*:

- \*\*Target\*\*: Frequent consumers (3–4 times a week).

- \*\*Strategy\*\*: Highlight berry flavor as a fruity and energizing choice for frequent drinkers.

3. \*\*Tropical Flavor\*\*:

- \*\*Target\*\*: Occasional consumers.

- \*\*Strategy\*\*: Market tropical flavor as a fun and exotic option for those who drink energy drinks occasionally.

4. \*\*Mint Flavor\*\*:

- \*\*Target\*\*: Consumers who drink energy drinks 1–2 times a week.

- \*\*Strategy\*\*: Position mint flavor as a cool and refreshing choice for moderate drinkers.

5. \*\*Coffee Flavor\*\*:

- \*\*Target\*\*: Consumers who drink energy drinks 1–2 times a week.

- \*\*Strategy\*\*: Promote coffee flavor as a bold and energizing option for moderate drinkers.

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Let’s interpret the results for \*\*Question 3\*\*: \*Does willingness to pay (Q15) vary by income level (Q6)?\* We’ll analyze the relationship between \*\*maximum price willing to pay for a 250ml can of energy drink\*\* and \*\*monthly income range\*\*, summarize the key findings, and provide actionable insights for NutriBev.

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### \*\*1. Cross-Tabulation Table Interpretation\*\*

#### \*\*Table Structure\*\*:

- \*\*Rows\*\*: Maximum price willing to pay for a 250ml can (Less than EGP 10, EGP 10–15, EGP 15–20, EGP 20–25, Above EGP 25).

- \*\*Columns\*\*: Monthly income range (Less than EGP 5,000, EGP 5,000–10,000, EGP 10,001–20,000, EGP 20,001–30,000).

- \*\*Cells\*\*: Counts and percentages of respondents in each income group willing to pay a specific price.

#### \*\*Key Observations\*\*:

1. \*\*Less than EGP 10\*\*:

- \*\*Less than EGP 5,000\*\*: 10.3% are willing to pay less than EGP 10.

- \*\*EGP 5,000–10,000\*\*: 8.6% are willing to pay less than EGP 10.

- \*\*EGP 10,001–20,000\*\*: 0.0% are willing to pay less than EGP 10.

- \*\*EGP 20,001–30,000\*\*: 100.0% are willing to pay less than EGP 10 (but note this group has only 15 respondents).

2. \*\*EGP 10–15\*\*:

- \*\*Less than EGP 5,000\*\*: 27.6% are willing to pay EGP 10–15.

- \*\*EGP 5,000–10,000\*\*: 3.4% are willing to pay EGP 10–15.

- \*\*EGP 10,001–20,000\*\*: 16.1% are willing to pay EGP 10–15.

- \*\*EGP 20,001–30,000\*\*: 0.0% are willing to pay EGP 10–15.

3. \*\*EGP 15–20\*\*:

- \*\*Less than EGP 5,000\*\*: 27.6% are willing to pay EGP 15–20.

- \*\*EGP 5,000–10,000\*\*: 17.2% are willing to pay EGP 15–20.

- \*\*EGP 10,001–20,000\*\*: 0.0% are willing to pay EGP 15–20.

- \*\*EGP 20,001–30,000\*\*: 0.0% are willing to pay EGP 15–20.

4. \*\*EGP 20–25\*\*:

- \*\*Less than EGP 5,000\*\*: 0.0% are willing to pay EGP 20–25.

- \*\*EGP 5,000–10,000\*\*: 19.0% are willing to pay EGP 20–25.

- \*\*EGP 10,001–20,000\*\*: 25.8% are willing to pay EGP 20–25.

- \*\*EGP 20,001–30,000\*\*: 0.0% are willing to pay EGP 20–25.

5. \*\*Above EGP 25\*\*:

- \*\*Less than EGP 5,000\*\*: 34.5% are willing to pay above EGP 25.

- \*\*EGP 5,000–10,000\*\*: 51.7% are willing to pay above EGP 25.

- \*\*EGP 10,001–20,000\*\*: 58.1% are willing to pay above EGP 25.

- \*\*EGP 20,001–30,000\*\*: 0.0% are willing to pay above EGP 25.

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### \*\*2. Chi-Square Test Interpretation\*\*

#### \*\*Test Results\*\*:

- \*\*Pearson Chi-Square\*\*: 218.143

- \*\*Degrees of Freedom (df)\*\*: 12

- \*\*Asymptotic Significance (p-value)\*\*: 0.000

#### \*\*Key Observations\*\*:

1. \*\*Significance\*\*:

- The p-value (\*\*0.000\*\*) is \*\*less than 0.05\*\*, indicating that there is a \*\*statistically significant relationship\*\* between \*\*monthly income range\*\* and \*\*willingness to pay\*\*.

2. \*\*Effect Size\*\*:

- The Chi-Square value (\*\*218.143\*\*) suggests a \*\*strong association\*\* between the two variables.

3. \*\*Expected Counts\*\*:

- The note at the bottom says: \*\*"4 cells (20.0%) have expected count less than 5. The minimum expected count is 1.59."\*\*

- This means that some cells in the table have low expected counts, which can affect the reliability of the Chi-Square test. However, since the p-value is still significant, the result is likely valid.

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### \*\*3. Key Insights\*\*

1. \*\*Higher Income, Higher Willingness to Pay\*\*:

- Respondents with higher incomes (EGP 10,001–20,000) are more willing to pay \*\*above EGP 25\*\* (58.1%).

- Lower-income groups (Less than EGP 5,000 and EGP 5,000–10,000) are also willing to pay above EGP 25, but to a lesser extent (34.5% and 51.7%, respectively).

2. \*\*Price Sensitivity\*\*:

- Lower-income groups (Less than EGP 5,000) are more price-sensitive, with a significant percentage willing to pay \*\*less than EGP 10\*\* (10.3%) or \*\*EGP 10–15\*\* (27.6%).

- Higher-income groups (EGP 10,001–20,000) are less price-sensitive, with no respondents willing to pay less than EGP 10.

3. \*\*EGP 20–25 Range\*\*:

- The \*\*EGP 20–25\*\* range is most popular among middle-income groups (EGP 5,000–10,000 and EGP 10,001–20,000), with 19.0% and 25.8% willing to pay this price, respectively.

4. \*\*EGP 20,001–30,000 Group\*\*:

- The highest income group (EGP 20,001–30,000) shows \*\*no willingness to pay above EGP 25\*\*, which is unexpected. This could be due to the small sample size (only 15 respondents) or other factors like brand perception or product quality.

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### \*\*4. Recommendations\*\*

1. \*\*Pricing Strategy\*\*:

- For \*\*lower-income groups\*\* (Less than EGP 5,000 and EGP 5,000–10,000), consider offering energy drinks in the \*\*EGP 10–15\*\* range to align with their willingness to pay.

- For \*\*middle-income groups\*\* (EGP 5,000–10,000 and EGP 10,001–20,000), consider pricing energy drinks in the \*\*EGP 20–25\*\* range, as this is a popular price point for these groups.

- For \*\*higher-income groups\*\* (EGP 10,001–20,000), consider premium pricing (above EGP 25) to maximize revenue, as this group is willing to pay more.

2. \*\*Product Differentiation\*\*:

- Offer \*\*different product tiers\*\* (e.g., basic, premium) to cater to different income groups.

- Highlight \*\*value-added features\*\* (e.g., natural ingredients, unique flavors) for higher-priced products to justify the cost.

3. \*\*Further Analysis\*\*:

- Investigate why the highest income group (EGP 20,001–30,000) is unwilling to pay above EGP 25. Is it due to brand perception, product quality, or other factors?

- Combine willingness to pay with other variables (e.g., flavor preferences, brand loyalty) for deeper insights.

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Let’s interpret the results for \*\*Question 4\*\*: \*Is there a relationship between price sensitivity (Q9) and consumption frequency (Q7)?\* We’ll analyze the relationship between \*\*price influence rank\*\* and \*\*energy drink consumption frequency\*\*, summarize the key findings, and provide actionable insights for NutriBev.

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### \*\*1. Cross-Tabulation Table Interpretation\*\*

#### \*\*Table Structure\*\*:

- \*\*Rows\*\*: Price influence rank (Most Important, Second Most Important, Third Most Important, Fourth Most Important, Fifth Most Important, Least Important).

- \*\*Columns\*\*: Energy drink consumption frequency (Daily, 3–4 times a week, 1–2 times a week, Occasionally, Never).

- \*\*Cells\*\*: Counts and percentages of respondents in each consumption frequency group who ranked price at a specific level of importance.

#### \*\*Key Observations\*\*:

1. \*\*Most Important\*\*:

- \*\*Daily\*\*: 41.2% rank price as most important.

- \*\*3–4 times a week\*\*: 42.3% rank price as most important.

- \*\*Occasionally\*\*: 59.6% rank price as most important.

- \*\*Never\*\*: 0.0% rank price as most important.

2. \*\*Second Most Important\*\*:

- \*\*3–4 times a week\*\*: 38.5% rank price as second most important.

- \*\*Occasionally\*\*: 5.8% rank price as second most important.

- \*\*Never\*\*: 25.0% rank price as second most important.

3. \*\*Third Most Important\*\*:

- \*\*Daily\*\*: 58.8% rank price as third most important.

- \*\*Occasionally\*\*: 9.6% rank price as third most important.

4. \*\*Fourth Most Important\*\*:

- \*\*1–2 times a week\*\*: 100.0% rank price as fourth most important.

5. \*\*Fifth Most Important\*\*:

- \*\*Occasionally\*\*: 9.6% rank price as fifth most important.

6. \*\*Least Important\*\*:

- \*\*3–4 times a week\*\*: 19.2% rank price as least important.

- \*\*Occasionally\*\*: 15.4% rank price as least important.

- \*\*Never\*\*: 75.0% rank price as least important.

---

### \*\*2. Chi-Square Test Interpretation\*\*

#### \*\*Test Results\*\*:

- \*\*Pearson Chi-Square\*\*: 673.107

- \*\*Degrees of Freedom (df)\*\*: 20

- \*\*Asymptotic Significance (p-value)\*\*: 0.000

#### \*\*Key Observations\*\*:

1. \*\*Significance\*\*:

- The p-value (\*\*0.000\*\*) is \*\*less than 0.05\*\*, indicating that there is a \*\*statistically significant relationship\*\* between \*\*price sensitivity\*\* and \*\*consumption frequency\*\*.

2. \*\*Effect Size\*\*:

- The Chi-Square value (\*\*673.107\*\*) suggests a \*\*very strong association\*\* between the two variables.

3. \*\*Expected Counts\*\*:

- The note at the bottom says: \*\*"9 cells (30.0%) have expected count less than 5. The minimum expected count is 0.98."\*\*

- This means that some cells in the table have low expected counts, which can affect the reliability of the Chi-Square test. However, since the p-value is still significant, the result is likely valid.

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### \*\*3. Key Insights\*\*

1. \*\*Price Sensitivity Among Frequent Consumers\*\*:

- \*\*Daily\*\* and \*\*3–4 times a week\*\* consumers rank price as \*\*most important\*\* (41.2% and 42.3%, respectively).

- This suggests that frequent consumers are \*\*price-sensitive\*\* and prioritize affordability.

2. \*\*Price Sensitivity Among Occasional Consumers\*\*:

- \*\*Occasional\*\* consumers also rank price as \*\*most important\*\* (59.6%).

- This indicates that occasional consumers are \*\*even more price-sensitive\*\* than frequent consumers.

3. \*\*Price Sensitivity Among Non-Consumers\*\*:

- \*\*Never\*\* consumers rank price as \*\*least important\*\* (75.0%).

- This suggests that non-consumers are \*\*not influenced by price\*\*, possibly because they do not value energy drinks enough to consider price a factor.

4. \*\*Moderate Consumers\*\*:

- \*\*1–2 times a week\*\* consumers rank price as \*\*fourth most important\*\* (100.0%).

- This group is \*\*less price-sensitive\*\* compared to daily and occasional consumers.

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### \*\*4. Recommendations\*\*

1. \*\*Pricing Strategy for Frequent Consumers\*\*:

- Offer \*\*competitive pricing\*\* for frequent consumers (daily and 3–4 times a week) to retain their loyalty.

- Consider \*\*bulk discounts\*\* or \*\*subscription models\*\* to appeal to their price sensitivity.

2. \*\*Pricing Strategy for Occasional Consumers\*\*:

- Focus on \*\*affordable pricing\*\* for occasional consumers, as they are highly price-sensitive.

- Highlight \*\*value for money\*\* in marketing campaigns to attract this group.

3. \*\*Pricing Strategy for Non-Consumers\*\*:

- Since non-consumers are not influenced by price, focus on \*\*brand awareness\*\* and \*\*product benefits\*\* to convert them into consumers.

- Consider \*\*sampling campaigns\*\* or \*\*promotional offers\*\* to encourage trial.

4. \*\*Product Differentiation\*\*:

- For moderate consumers (1–2 times a week), emphasize \*\*quality\*\* and \*\*unique features\*\* rather than price.

- Offer \*\*premium options\*\* at higher price points to cater to this group’s willingness to pay.

5. \*\*Further Analysis\*\*:

- Investigate why \*\*1–2 times a week\*\* consumers rank price as fourth most important. Is it due to brand loyalty, product quality, or other factors?

- Combine price sensitivity with other variables (e.g., flavor preferences, brand loyalty) for deeper insights.

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Let’s interpret the results for \*\*Question 5\*\*: \*How does consumption frequency (Q7) vary by demographic factors like age (Q1), gender (Q2), or occupation (Q5)?\* We’ll analyze the relationship between \*\*energy drink consumption frequency\*\* and \*\*age group\*\*, \*\*gender\*\*, and \*\*occupation\*\*, summarize the key findings, and provide actionable insights for NutriBev.

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### \*\*1. Consumption Frequency vs. Age Group\*\*

#### \*\*Crosstab\*\*:

- \*\*Daily\*\*:

- \*\*18–24\*\*: 10.9% consume energy drinks daily.

- \*\*25–34\*\*: 25.6% consume energy drinks daily.

- \*\*Under 18\*\*, \*\*35–44\*\*, and \*\*45+\*\*: 0.0% consume energy drinks daily.

- \*\*3–4 times a week\*\*:

- \*\*Under 18\*\*: 100.0% consume energy drinks 3–4 times a week.

- \*\*18–24\*\*: 28.1% consume energy drinks 3–4 times a week.

- \*\*25–34\*\*, \*\*35–44\*\*, and \*\*45+\*\*: 0.0% consume energy drinks 3–4 times a week.

- \*\*1–2 times a week\*\*:

- \*\*18–24\*\*: 7.8% consume energy drinks 1–2 times a week.

- \*\*25–34\*\*: 7.7% consume energy drinks 1–2 times a week.

- \*\*Under 18\*\*, \*\*35–44\*\*, and \*\*45+\*\*: 0.0% consume energy drinks 1–2 times a week.

- \*\*Occasionally\*\*:

- \*\*18–24\*\*: 29.7% consume energy drinks occasionally.

- \*\*25–34\*\*: 66.7% consume energy drinks occasionally.

- \*\*35–44\*\*: 100.0% consume energy drinks occasionally.

- \*\*Under 18\*\* and \*\*45+\*\*: 0.0% consume energy drinks occasionally.

- \*\*Never\*\*:

- \*\*18–24\*\*: 23.4% never consume energy drinks.

- \*\*45+\*\*: 100.0% never consume energy drinks.

- \*\*Under 18\*\*, \*\*25–34\*\*, and \*\*35–44\*\*: 0.0% never consume energy drinks.

#### \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 287.137, p = 0.000 (significant).

- \*\*Insight\*\*: Consumption frequency \*\*varies significantly by age group\*\*. Younger consumers (18–24 and 25–34) are more likely to consume energy drinks daily or occasionally, while older consumers (45+) are more likely to never consume energy drinks.

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### \*\*2. Consumption Frequency vs. Gender\*\*

#### \*\*Crosstab\*\*:

- \*\*Daily\*\*:

- \*\*Male\*\*: 12.1% consume energy drinks daily.

- \*\*Female\*\*: 16.7% consume energy drinks daily.

- \*\*Prefer not to say\*\*: 0.0% consume energy drinks daily.

- \*\*3–4 times a week\*\*:

- \*\*Male\*\*: 17.2% consume energy drinks 3–4 times a week.

- \*\*Female\*\*: 18.3% consume energy drinks 3–4 times a week.

- \*\*Prefer not to say\*\*: 100.0% consume energy drinks 3–4 times a week.

- \*\*1–2 times a week\*\*:

- \*\*Male\*\*: 5.2% consume energy drinks 1–2 times a week.

- \*\*Female\*\*: 8.3% consume energy drinks 1–2 times a week.

- \*\*Prefer not to say\*\*: 0.0% consume energy drinks 1–2 times a week.

- \*\*Occasionally\*\*:

- \*\*Male\*\*: 56.9% consume energy drinks occasionally.

- \*\*Female\*\*: 31.7% consume energy drinks occasionally.

- \*\*Prefer not to say\*\*: 0.0% consume energy drinks occasionally.

- \*\*Never\*\*:

- \*\*Male\*\*: 8.6% never consume energy drinks.

- \*\*Female\*\*: 25.0% never consume energy drinks.

- \*\*Prefer not to say\*\*: 0.0% never consume energy drinks.

#### \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 89.014, p = 0.000 (significant).

- \*\*Insight\*\*: Consumption frequency \*\*varies significantly by gender\*\*. \*\*Men\*\* are more likely to consume energy drinks occasionally, while \*\*women\*\* are more likely to never consume energy drinks.

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### \*\*3. Consumption Frequency vs. Occupation\*\*

#### \*\*Crosstab\*\*:

- \*\*Daily\*\*:

- \*\*Student\*\*: 12.8% consume energy drinks daily.

- \*\*Working Professional\*\*: 17.5% consume energy drinks daily.

- \*\*Self-employed\*\* and \*\*Other\*\*: 0.0% consume energy drinks daily.

- \*\*3–4 times a week\*\*:

- \*\*Student\*\*: 41.0% consume energy drinks 3–4 times a week.

- \*\*Working Professional\*\*: 8.8% consume energy drinks 3–4 times a week.

- \*\*Other\*\*: 93.8% consume energy drinks 3–4 times a week.

- \*\*Self-employed\*\*: 0.0% consume energy drinks 3–4 times a week.

- \*\*1–2 times a week\*\*:

- \*\*Working Professional\*\*: 14.0% consume energy drinks 1–2 times a week.

- \*\*Student\*\*, \*\*Self-employed\*\*, and \*\*Other\*\*: 0.0% consume energy drinks 1–2 times a week.

- \*\*Occasionally\*\*:

- \*\*Working Professional\*\*: 54.4% consume energy drinks occasionally.

- \*\*Student\*\*: 20.5% consume energy drinks occasionally.

- \*\*Self-employed\*\*: 37.5% consume energy drinks occasionally.

- \*\*Other\*\*: 6.3% consume energy drinks occasionally.

- \*\*Never\*\*:

- \*\*Student\*\*: 25.6% never consume energy drinks.

- \*\*Self-employed\*\*: 62.5% never consume energy drinks.

- \*\*Working Professional\*\*: 5.3% never consume energy drinks.

- \*\*Other\*\*: 0.0% never consume energy drinks.

#### \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 176.658, p = 0.000 (significant).

- \*\*Insight\*\*: Consumption frequency \*\*varies significantly by occupation\*\*. \*\*Students\*\* are more likely to consume energy drinks 3–4 times a week, while \*\*working professionals\*\* are more likely to consume energy drinks daily or occasionally. \*\*Self-employed\*\* individuals are more likely to never consume energy drinks.

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### \*\*4. Key Insights and Recommendations\*\*

1. \*\*Age Group\*\*:

- \*\*Target\*\*: Younger consumers (18–34) for daily and occasional consumption.

- \*\*Strategy\*\*: Focus on marketing campaigns that appeal to younger demographics, emphasizing energy and productivity.

2. \*\*Gender\*\*:

- \*\*Target\*\*: Men for occasional consumption and women for converting non-consumers.

- \*\*Strategy\*\*: Tailor messaging to highlight benefits like energy boost for men and health-conscious options for women.

3. \*\*Occupation\*\*:

- \*\*Target\*\*: Students for frequent consumption and working professionals for daily/occasional consumption.

- \*\*Strategy\*\*: Offer student discounts and promote energy drinks as a productivity tool for working professionals.

4. \*\*Non-Consumers\*\*:

- \*\*Target\*\*: Older consumers (45+) and self-employed individuals.

- \*\*Strategy\*\*: Focus on brand awareness and sampling campaigns to convert non-consumers.

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### \*\*5. Next Steps\*\*

1. \*\*Segment Marketing Campaigns\*\*:

- Develop targeted campaigns for different age groups, genders, and occupations.

- Example: Promote energy drinks as a study aid for students and a productivity booster for working professionals.

2. \*\*Product Development\*\*:

- Consider developing products tailored to specific demographics (e.g., low-sugar options for women, high-energy options for men).

3. \*\*Further Analysis\*\*:

- Combine consumption frequency with other variables (e.g., flavor preferences, brand loyalty) for deeper insights.

Let’s interpret the results for \*\*Question 6\*\*: \*Are there differences in consumption occasions (Q8) based on demographic factors like age (Q1) or gender (Q2)?\* We’ll analyze the relationship between \*\*consumption occasions\*\* and \*\*age group\*\* and \*\*gender\*\*, summarize the key findings, and provide actionable insights for NutriBev.

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### \*\*1. Consumption Occasions vs. Age Group\*\*

#### \*\*During Work/Studies\*\*:

- \*\*Crosstab\*\*:

- \*\*Under 18\*\*: 100.0% consume energy drinks during work/studies.

- \*\*18–24\*\*: 54.7% consume energy drinks during work/studies.

- \*\*25–34\*\*: 46.2% consume energy drinks during work/studies.

- \*\*35–44\*\*: 71.4% consume energy drinks during work/studies.

- \*\*45+\*\*: 0.0% consume energy drinks during work/studies.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 43.494, p = 0.000 (significant).

- \*\*Insight\*\*: Younger consumers (Under 18 and 18–24) are more likely to consume energy drinks during work/studies, while older consumers (45+) are less likely.

#### \*\*During Exercise\*\*:

- \*\*Crosstab\*\*:

- \*\*Under 18\*\*: 0.0% consume energy drinks during exercise.

- \*\*18–24\*\*: 4.7% consume energy drinks during exercise.

- \*\*25–34\*\*: 20.5% consume energy drinks during exercise.

- \*\*35–44\*\*: 28.6% consume energy drinks during exercise.

- \*\*45+\*\*: 0.0% consume energy drinks during exercise.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 31.076, p = 0.000 (significant).

- \*\*Insight\*\*: Middle-aged consumers (25–34 and 35–44) are more likely to consume energy drinks during exercise.

#### \*\*During Social Events\*\*:

- \*\*Crosstab\*\*:

- \*\*Under 18\*\*: 0.0% consume energy drinks during social events.

- \*\*18–24\*\*: 24.5% consume energy drinks during social events.

- \*\*25–34\*\*: 12.8% consume energy drinks during social events.

- \*\*35–44\*\*: 0.0% consume energy drinks during social events.

- \*\*45+\*\*: 0.0% consume energy drinks during social events.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 21.539, p = 0.000 (significant).

- \*\*Insight\*\*: Younger consumers (18–24) are more likely to consume energy drinks during social events.

#### \*\*When Tired/Low Energy\*\*:

- \*\*Crosstab\*\*:

- \*\*Under 18\*\*: 0.0% consume energy drinks when tired/low energy.

- \*\*18–24\*\*: 0.0% consume energy drinks when tired/low energy.

- \*\*25–34\*\*: 19.7% consume energy drinks when tired/low energy.

- \*\*35–44\*\*: 0.0% consume energy drinks when tired/low energy.

- \*\*45+\*\*: 0.0% consume energy drinks when tired/low energy.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 52.831, p = 0.000 (significant).

- \*\*Insight\*\*: Middle-aged consumers (25–34) are more likely to consume energy drinks when tired/low energy.

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### \*\*2. Consumption Occasions vs. Gender\*\*

#### \*\*During Work/Studies\*\*:

- \*\*Crosstab\*\*:

- \*\*Male\*\*: 43.1% consume energy drinks during work/studies.

- \*\*Female\*\*: 60.0% consume energy drinks during work/studies.

- \*\*Prefer not to say\*\*: 100.0% consume energy drinks during work/studies.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 23.661, p = 0.000 (significant).

- \*\*Insight\*\*: \*\*Women\*\* are more likely to consume energy drinks during work/studies compared to men.

#### \*\*During Exercise\*\*:

- \*\*Crosstab\*\*:

- \*\*Male\*\*: 22.4% consume energy drinks during exercise.

- \*\*Female\*\*: 0.0% consume energy drinks during exercise.

- \*\*Prefer not to say\*\*: 0.0% consume energy drinks during exercise.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 48.872, p = 0.000 (significant).

- \*\*Insight\*\*: \*\*Men\*\* are more likely to consume energy drinks during exercise compared to women.

#### \*\*During Social Events\*\*:

- \*\*Crosstab\*\*:

- \*\*Male\*\*: 17.2% consume energy drinks during social events.

- \*\*Female\*\*: 17.8% consume energy drinks during social events.

- \*\*Prefer not to say\*\*: 0.0% consume energy drinks during social events.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 3.176, p = 0.204 (not significant).

- \*\*Insight\*\*: There is \*\*no significant difference\*\* in consumption during social events by gender.

#### \*\*When Tired/Low Energy\*\*:

- \*\*Crosstab\*\*:

- \*\*Male\*\*: 8.6% consume energy drinks when tired/low energy.

- \*\*Female\*\*: 4.4% consume energy drinks when tired/low energy.

- \*\*Prefer not to say\*\*: 0.0% consume energy drinks when tired/low energy.

- \*\*Chi-Square Test\*\*:

- \*\*Pearson Chi-Square\*\*: 3.680, p = 0.159 (not significant).

- \*\*Insight\*\*: There is \*\*no significant difference\*\* in consumption when tired/low energy by gender.

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### \*\*3. Key Insights and Recommendations\*\*

1. \*\*Age Group\*\*:

- \*\*Younger Consumers (Under 18 and 18–24)\*\*:

- Focus on \*\*work/studies\*\* and \*\*social events\*\* as key consumption occasions.

- Example: Promote energy drinks as a study aid or party drink.

- \*\*Middle-Aged Consumers (25–34 and 35–44)\*\*:

- Focus on \*\*exercise\*\* and \*\*tired/low energy\*\* occasions.

- Example: Market energy drinks as a workout booster or energy replenisher.

2. \*\*Gender\*\*:

- \*\*Women\*\*:

- Target \*\*work/studies\*\* as a key consumption occasion.

- Example: Highlight energy drinks as a productivity tool for working women.

- \*\*Men\*\*:

- Target \*\*exercise\*\* as a key consumption occasion.

- Example: Promote energy drinks as a fitness companion for men.

3. \*\*Non-Consumers\*\*:

- Focus on \*\*older consumers (45+)\*\* and \*\*non-consumers\*\* to convert them into consumers.

- Example: Use sampling campaigns or health-focused messaging to appeal to these groups.

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### \*\*4. Next Steps\*\*

1. \*\*Segment Marketing Campaigns\*\*:

- Develop targeted campaigns for different age groups and genders based on their preferred consumption occasions.

- Example: Create ads showcasing energy drinks as a study aid for students and a workout booster for fitness enthusiasts.

2. \*\*Product Development\*\*:

- Consider developing products tailored to specific consumption occasions (e.g., low-calorie options for exercise, caffeine-free options for social events).

3. \*\*Further Analysis\*\*:

- Combine consumption occasions with other variables (e.g., flavor preferences, brand loyalty) for deeper insights.

Let me know if you’d like to explore another question or need further clarification!