# Q2: Are flavor preferences (Q13) influenced by consumption frequency (Q7)

**Crosstabs**

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| --- | --- | --- |
| **Notes** | | |
| Output Created | | 28-FEB-2025 21:38:06 |
| Comments | |  |
| Input | Data | E:\WORK\Portfolio\Research\Consumer Preferences and Behavior in the Energy Drink Market\Consumer-Preferences-and-Behavior-in-the-Energy-Drink-Market\1\_Data\Analysis.sav |
| Active Dataset | DataSet1 |
| Filter | <none> |
| Weight | <none> |
| Split File | <none> |
| N of Rows in Working Data File | 370 |
| Missing Value Handling | Definition of Missing | User-defined missing values are treated as missing. |
| Cases Used | Statistics for each table are based on all the cases with valid data in the specified range(s) for all variables in each table. |
| Syntax | | CROSSTABS  /TABLES=Preference\_Caffeine Flavor\_Citrus Flavor\_Berry Flavor\_Tropical Flavor\_Mint Flavor\_Coffee  BY Consum\_Freq  /FORMAT=DVALUE TABLES  /STATISTICS=CHISQ  /CELLS=COUNT COLUMN  /COUNT ROUND CELL. |
| Resources | Processor Time | 00:00:00.03 |
| Elapsed Time | 00:00:00.03 |
| Dimensions Requested | 2 |
| Cells Available | 524245 |

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| **Case Processing Summary** | | | | | | |
|  | Cases | | | | | |
| Valid | | Missing | | Total | |
| N | Percent | N | Percent | N | Percent |
| Q12: Preference for caffeine. \* Q7: Energy drinks consume frequency. | 369 | 99.7% | 1 | 0.3% | 370 | 100.0% |
| Q13: Citrus flavor preference. \* Q7: Energy drinks consume frequency. | 369 | 99.7% | 1 | 0.3% | 370 | 100.0% |
| Q13: Berry flavor preference. \* Q7: Energy drinks consume frequency. | 369 | 99.7% | 1 | 0.3% | 370 | 100.0% |
| Q13: Tropical flavor preference. \* Q7: Energy drinks consume frequency. | 369 | 99.7% | 1 | 0.3% | 370 | 100.0% |
| Q13: Mint flavor preference. \* Q7: Energy drinks consume frequency. | 369 | 99.7% | 1 | 0.3% | 370 | 100.0% |
| Q13: Coffee flavor preference. \* Q7: Energy drinks consume frequency. | 369 | 99.7% | 1 | 0.3% | 370 | 100.0% |

**Q12: Preference for caffeine. \* Q7: Energy drinks consume frequency.**

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| **Crosstab** | | | | | | | | |
|  | | | Q7: Energy drinks consume frequency. | | | | | Total |
| Daily | 3–4 times a week | 1–2 times a week | Occasionally (less than once a week) | Never |
| Q12: Preference for caffeine. | I don’t care | Count | 6 | 39 | 0 | 78 | 45 | 168 |
| % within Q7: Energy drinks consume frequency. | 11.8% | 50.0% | 0.0% | 50.0% | 75.0% | 45.5% |
| No | Count | 15 | 9 | 0 | 24 | 15 | 63 |
| % within Q7: Energy drinks consume frequency. | 29.4% | 11.5% | 0.0% | 15.4% | 25.0% | 17.1% |
| Yes | Count | 30 | 30 | 24 | 54 | 0 | 138 |
| % within Q7: Energy drinks consume frequency. | 58.8% | 38.5% | 100.0% | 34.6% | 0.0% | 37.4% |
| Total | | Count | 51 | 78 | 24 | 156 | 60 | 369 |
| % within Q7: Energy drinks consume frequency. | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

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| **Chi-Square Tests** | | | |
|  | Value | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square | 102.879a | 8 | .000 |
| Likelihood Ratio | 134.029 | 8 | .000 |
| Linear-by-Linear Association | 39.136 | 1 | .000 |
| N of Valid Cases | 369 |  |  |
| a. 1 cells (6.7%) have expected count less than 5. The minimum expected count is 4.10. | | | |

**Q13: Citrus flavor preference. \* Q7: Energy drinks consume frequency.**

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| **Crosstab** | | | | | | | | |
|  | | | Q7: Energy drinks consume frequency. | | | | | Total |
| Daily | 3–4 times a week | 1–2 times a week | Occasionally (less than once a week) | Never |
| Q13: Citrus flavor preference. | Yes | Count | 51 | 39 | 24 | 146 | 30 | 290 |
| % within Q7: Energy drinks consume frequency. | 100.0% | 50.0% | 100.0% | 93.6% | 50.0% | 78.6% |
| No | Count | 0 | 39 | 0 | 10 | 30 | 79 |
| % within Q7: Energy drinks consume frequency. | 0.0% | 50.0% | 0.0% | 6.4% | 50.0% | 21.4% |
| Total | | Count | 51 | 78 | 24 | 156 | 60 | 369 |
| % within Q7: Energy drinks consume frequency. | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

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| **Chi-Square Tests** | | | |
|  | Value | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square | 108.333a | 4 | .000 |
| Likelihood Ratio | 117.665 | 4 | .000 |
| Linear-by-Linear Association | .991 | 1 | .320 |
| N of Valid Cases | 369 |  |  |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.14. | | | |

**Q13: Berry flavor preference. \* Q7: Energy drinks consume frequency.**

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| **Crosstab** | | | | | | | | |
|  | | | Q7: Energy drinks consume frequency. | | | | | Total |
| Daily | 3–4 times a week | 1–2 times a week | Occasionally (less than once a week) | Never |
| Q13: Berry flavor preference. | Yes | Count | 29 | 63 | 0 | 56 | 15 | 163 |
| % within Q7: Energy drinks consume frequency. | 56.9% | 80.8% | 0.0% | 35.9% | 25.0% | 44.2% |
| No | Count | 22 | 15 | 24 | 100 | 45 | 206 |
| % within Q7: Energy drinks consume frequency. | 43.1% | 19.2% | 100.0% | 64.1% | 75.0% | 55.8% |
| Total | | Count | 51 | 78 | 24 | 156 | 60 | 369 |
| % within Q7: Energy drinks consume frequency. | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

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| **Chi-Square Tests** | | | |
|  | Value | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square | 77.957a | 4 | .000 |
| Likelihood Ratio | 89.251 | 4 | .000 |
| Linear-by-Linear Association | 37.106 | 1 | .000 |
| N of Valid Cases | 369 |  |  |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.60. | | | |

**Q13: Tropical flavor preference. \* Q7: Energy drinks consume frequency.**

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| **Crosstab** | | | | | | | | |
|  | | | Q7: Energy drinks consume frequency. | | | | | Total |
| Daily | 3–4 times a week | 1–2 times a week | Occasionally (less than once a week) | Never |
| Q13: Tropical flavor preference. | Yes | Count | 15 | 24 | 9 | 78 | 15 | 141 |
| % within Q7: Energy drinks consume frequency. | 29.4% | 30.8% | 37.5% | 50.0% | 25.0% | 38.2% |
| No | Count | 36 | 54 | 15 | 78 | 45 | 228 |
| % within Q7: Energy drinks consume frequency. | 70.6% | 69.2% | 62.5% | 50.0% | 75.0% | 61.8% |
| Total | | Count | 51 | 78 | 24 | 156 | 60 | 369 |
| % within Q7: Energy drinks consume frequency. | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

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| **Chi-Square Tests** | | | |
|  | Value | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square | 17.125a | 4 | .002 |
| Likelihood Ratio | 17.258 | 4 | .002 |
| Linear-by-Linear Association | 1.940 | 1 | .164 |
| N of Valid Cases | 369 |  |  |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.17. | | | |

**Q13: Mint flavor preference. \* Q7: Energy drinks consume frequency.**

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| **Crosstab** | | | | | | | | |
|  | | | Q7: Energy drinks consume frequency. | | | | | Total |
| Daily | 3–4 times a week | 1–2 times a week | Occasionally (less than once a week) | Never |
| Q13: Mint flavor preference. | Yes | Count | 21 | 39 | 24 | 54 | 15 | 153 |
| % within Q7: Energy drinks consume frequency. | 41.2% | 50.0% | 100.0% | 34.6% | 25.0% | 41.5% |
| No | Count | 30 | 39 | 0 | 102 | 45 | 216 |
| % within Q7: Energy drinks consume frequency. | 58.8% | 50.0% | 0.0% | 65.4% | 75.0% | 58.5% |
| Total | | Count | 51 | 78 | 24 | 156 | 60 | 369 |
| % within Q7: Energy drinks consume frequency. | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

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| **Chi-Square Tests** | | | |
|  | Value | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square | 45.941a | 4 | .000 |
| Likelihood Ratio | 54.768 | 4 | .000 |
| Linear-by-Linear Association | 8.523 | 1 | .004 |
| N of Valid Cases | 369 |  |  |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.95. | | | |

**Q13: Coffee flavor preference. \* Q7: Energy drinks consume frequency.**

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| **Crosstab** | | | | | | | | |
|  | | | Q7: Energy drinks consume frequency. | | | | | Total |
| Daily | 3–4 times a week | 1–2 times a week | Occasionally (less than once a week) | Never |
| Q13: Coffee flavor preference. | Yes | Count | 6 | 9 | 15 | 0 | 0 | 30 |
| % within Q7: Energy drinks consume frequency. | 11.8% | 11.5% | 62.5% | 0.0% | 0.0% | 8.1% |
| No | Count | 45 | 69 | 9 | 156 | 60 | 339 |
| % within Q7: Energy drinks consume frequency. | 88.2% | 88.5% | 37.5% | 100.0% | 100.0% | 91.9% |
| Total | | Count | 51 | 78 | 24 | 156 | 60 | 369 |
| % within Q7: Energy drinks consume frequency. | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

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| **Chi-Square Tests** | | | |
|  | Value | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square | 116.216a | 4 | .000 |
| Likelihood Ratio | 83.578 | 4 | .000 |
| Linear-by-Linear Association | 16.965 | 1 | .000 |
| N of Valid Cases | 369 |  |  |
| a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 1.95. | | | |

### Interpretation of Results

The crosstabulation analysis examines whether \*\*flavor preferences (Q13)\*\* are influenced by \*\*consumption frequency (Q7)\*\*. Below is a summary of the findings for each flavor preference:

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#### \*\*1. Preference for Caffeine (Q12)\*\*

- \*\*Pearson Chi-Square\*\*: \( \chi^2 = 102.879 \), \( p < 0.001 \)

- \*\*Interpretation\*\*: There is a statistically significant association between caffeine preference and consumption frequency (\( p < 0.001 \)).

- \*\*Key Observations\*\*:

- Daily consumers are more likely to prefer caffeine (58.8%).

- Those who never consume energy drinks do not prefer caffeine (0%).

- Occasional consumers are split, with 50% indifferent and 34.6% preferring caffeine.

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#### \*\*2. Citrus Flavor Preference (Q13)\*\*

- \*\*Pearson Chi-Square\*\*: \( \chi^2 = 108.333 \), \( p < 0.001 \)

- \*\*Interpretation\*\*: There is a statistically significant association between citrus flavor preference and consumption frequency (\( p < 0.001 \)).

- \*\*Key Observations\*\*:

- Daily and weekly consumers (1–2 times a week) overwhelmingly prefer citrus flavor (100%).

- Occasional and non-consumers are less likely to prefer citrus flavor (50%).

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#### \*\*3. Berry Flavor Preference (Q13)\*\*

- \*\*Pearson Chi-Square\*\*: \( \chi^2 = 77.957 \), \( p < 0.001 \)

- \*\*Interpretation\*\*: There is a statistically significant association between berry flavor preference and consumption frequency (\( p < 0.001 \)).

- \*\*Key Observations\*\*:

- Frequent consumers (3–4 times a week) are most likely to prefer berry flavor (80.8%).

- Non-consumers are least likely to prefer berry flavor (25%).

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#### \*\*4. Tropical Flavor Preference (Q13)\*\*

- \*\*Pearson Chi-Square\*\*: \( \chi^2 = 17.125 \), \( p = 0.002 \)

- \*\*Interpretation\*\*: There is a statistically significant association between tropical flavor preference and consumption frequency (\( p = 0.002 \)).

- \*\*Key Observations\*\*:

- Occasional consumers are most likely to prefer tropical flavor (50%).

- Non-consumers are least likely to prefer tropical flavor (25%).

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#### \*\*5. Mint Flavor Preference (Q13)\*\*

- \*\*Pearson Chi-Square\*\*: \( \chi^2 = 45.941 \), \( p < 0.001 \)

- \*\*Interpretation\*\*: There is a statistically significant association between mint flavor preference and consumption frequency (\( p < 0.001 \)).

- \*\*Key Observations\*\*:

- Daily and weekly consumers (1–2 times a week) are more likely to prefer mint flavor (41.2% and 100%, respectively).

- Non-consumers are least likely to prefer mint flavor (25%).

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#### \*\*6. Coffee Flavor Preference (Q13)\*\*

- \*\*Pearson Chi-Square\*\*: \( \chi^2 = 116.216 \), \( p < 0.001 \)

- \*\*Interpretation\*\*: There is a statistically significant association between coffee flavor preference and consumption frequency (\( p < 0.001 \)).

- \*\*Key Observations\*\*:

- Weekly consumers (1–2 times a week) are most likely to prefer coffee flavor (62.5%).

- Non-consumers and occasional consumers do not prefer coffee flavor (0%).

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### Summary Table of Chi-Square Results

| \*\*Flavor Preference\*\* | \*\*Pearson Chi-Square\*\* | \*\*p-value\*\* | \*\*Interpretation\*\* |

|-----------------------------|------------------------|-------------|-----------------------------------------------------------------------------------|

| Preference for Caffeine | 102.879 | < 0.001 | Significant association; daily consumers prefer caffeine. |

| Citrus Flavor Preference | 108.333 | < 0.001 | Significant association; daily/weekly consumers prefer citrus. |

| Berry Flavor Preference | 77.957 | < 0.001 | Significant association; frequent consumers prefer berry. |

| Tropical Flavor Preference | 17.125 | 0.002 | Significant association; occasional consumers prefer tropical. |

| Mint Flavor Preference | 45.941 | < 0.001 | Significant association; daily/weekly consumers prefer mint. |

| Coffee Flavor Preference | 116.216 | < 0.001 | Significant association; weekly consumers prefer coffee; non-consumers do not. |

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### Overall Conclusion

- \*\*Consumption frequency (Q7)\*\* significantly influences \*\*flavor preferences (Q13)\*\* for all flavors tested.

- Frequent consumers (daily or weekly) tend to prefer \*\*caffeine, citrus, berry, and mint\*\* flavors.

- Occasional consumers are more likely to prefer \*\*tropical\*\* flavors.

- Non-consumers generally do not prefer \*\*caffeine, citrus, or coffee\*\* flavors.

This analysis suggests that marketing strategies for energy drinks could target specific consumer groups based on their consumption frequency and flavor preferences.