

Exercise 6.1

Summary of Results:

Statistic	Diet A	Diet B
Sample Size (n)	50	50
Mean Weight Loss (\bar{x})	5.341 kg	3.710 kg
Standard Deviation (s)	2.536 kg	2.769 kg

Note: Data Excel Workbook for Exercise 6.1 is extracted from Exa 8.2B.xlsx. The summary table findings are based on the analysis of this data.

Interpretation:

- Average Weight Loss

Participants on Diet A showed a higher average weight loss of 5.341 kg compared to Diet B's Participants 3.710 kg. This means participants on Diet A lost, on average, 1.631 kg more than those on Diet B.

- Variation in Results:

The standard deviation for Participants on Diet B is slightly higher at 2.769 kg, compared to Diet A's Participants 2.536 kg. This suggests that weight loss results for Diet B were a bit more variable

- Effectiveness Conclusion:

Diet A is clearly more effective in terms of average weight loss and consistency. A higher mean and a slightly lower standard deviation show that a larger portion of participants experienced significant weight loss on Diet A.

Exercise 6.2

Summary of Results (Statistics for Diet A and Diet B)

Statistic	Diet A	Diet B
Sample Size (n)	50	50
Mean Weight Loss (kg)	5.341	3.710
Standard Deviation (kg)	2.536	2.769
Median Weight Loss (kg)	5.642	3.745
First Quartile (Q1)	3.748	1.953
Third Quartile (Q3)	7.033	5.404
Interquartile Range (IQR)	3.285	3.451

Note: Data Excel Workbook for Exercise 6.2 is extracted from Exa 8.2B.xlsx. The summary table findings are based on the analysis of this data.

Interpretation:

- **Central Tendency (Mean and Median):**

Diet A Participants consistently shows a higher mean (5.341 kg) and median (5.642 kg) weight loss compared to Diet B Participants (mean 3.710 kg, median 3.745 kg). This indicates that, on average, Diet A Participants leads to more significant weight loss.

- **Spread of Data (Standard Deviation and IQR):**

Diet B Participants has a slightly higher standard deviation (2.769 vs. 2.536) and a somewhat wider interquartile range (3.451 vs. 3.285). This shows more variability in the weight loss results among participants on Diet B. Some participants on Diet B experienced a broader range of weight loss, with some results possibly very low or even negative, compared to Diet A.

- **Quartiles:**

The first quartile for Diet B (1.953 kg) is much lower than for Diet A (3.748 kg). This suggests that the lower 25% of Diet B participants lost less weight, or lost weight less consistently, than those on Diet A.

- **Effectiveness:**

Overall, Diet A seems to be the more effective diet for weight loss, showing higher average weight loss and more consistent results. While Diet B does lead to weight loss, it is generally less and has more variability.

Conclusion:

The statistical evidence strongly suggests that Diet A is superior to Diet B in terms of promoting weight loss. Participants on Diet A not only lost more weight on average but also had more consistent outcomes, which could indicate better reliability and predictability of Diet A's effectiveness.

Exercise 6.3

Summary of Results (Frequencies and Percentage Frequencies for Area 2)

Brand	Frequency (Area 1)	Frequency (Area 2)	Percentage (Area 1)	Percentage (Area 2)
A	11	19	15.7%	21.1%
B	17	30	24.3%	33.3%
Other	42	41	60.0%	45.6%
Total	70	90	100%	100%

Note: Data Excel Workbook for Exercise 6.3 is extracted from Exa 8.2B.xlsx. The summary table findings are based on the analysis of this data.

Interpretation:

- In Area 2, a larger share of respondents preferred Brand A (21.1%) compared to Area 1 (15.7%).
- Brand B is also more popular in Area 2 (33.3%) than in Area 1 (24.3%).
- On the other hand, fewer respondents in Area 2 (45.6%) prefer brands other than A or B compared to Area 1 (60.0%).
- This shows that respondents in Area 2 have stronger preferences for the main brands A and B, while respondents in Area 1 tend to prefer a wider range of other brands.
- Overall, the pattern of brand preferences is different between the two areas. Area 2 has a stronger focus on Brands A and B, while Area 1 has a more varied preference distribution.