**Unit 7: 6.1 Summary Measures**

**Objective**

This exercise focuses on the use of **descriptive statistics** to analyse and interpret sample data using Excel.

The tasks involve computing **summary measures** such as mean, median, standard deviation, quartiles, and frequency distributions for multiple datasets.

These foundational techniques are essential for later stages of research, including the analysis of data related to *Information Systems (IS) adoption by SMEs in Indonesia.*

**Exercise 6.1 – Comparing Diet A and Diet B**

**Task**

Using dataset *Exa8.1B.xlsx*, calculate for **Diet B**:

* Sample size
* Sample mean weight loss
* Sample standard deviation

**Method**

Excel functions used:

=COUNT(range) // Calculates sample size

=AVERAGE(range) // Calculates mean

=STDEV(range) // Calculates standard deviation

**Interpretation**

|  |  |
| --- | --- |
| A close up of a sign  AI-generated content may be incorrect. | A close up of a sign  AI-generated content may be incorrect. |

Based on the available information, Diet A appears to be more effective than Diet B. The mean weight loss for Diet A (5.34 kg) is higher than for Diet B (3.71 kg), indicating greater average weight reduction. Although Diet A has slightly less variation in results (SD = 2.54) than Diet B (SD = 2.77), both show similar consistency. Overall, participants on Diet A achieved greater weight loss on average.

**Exercise 6.2 – Median and Interquartile Range (Diet B)**

**Task**

Using dataset *Exa8.2B.xlsx*, calculate:

* Median
* First and third quartiles (Q1, Q3)
* Interquartile range (IQR = Q3 − Q1)

**Method**

Excel functions used:

=MEDIAN(range)

=QUARTILE(range, 1)

=QUARTILE(range, 3)

**Interpretation**

|  |  |
| --- | --- |
| A table with numbers and letters  AI-generated content may be incorrect. | A table with numbers and letters  AI-generated content may be incorrect. |

Based on the summary statistics, Diet A appears to be more effective than Diet B. The median weight loss for Diet A (5.64 kg) is higher than for Diet B (3.75 kg), indicating that participants on Diet A generally lost more weight. Although Diet B has a slightly larger interquartile range (3.45 vs. 3.29), suggesting slightly greater variability, the overall results show that Diet A leads to greater and more consistent weight loss among participants.

**Exercise 6.3 – Brand Preference by Demographic Area**

**Task**

Using dataset *Exe8.3D.xlsx*, calculate frequency and percentage frequency for **Area 2** respondents’ brand preferences.

**Method**

Excel functions used:

=COUNTIF(range, "BrandName")

=SUM(range)

=100\*cell/total

**Interpretation**

|  |  |
| --- | --- |
| A table with numbers and text  AI-generated content may be incorrect. | A table with numbers and text  AI-generated content may be incorrect. |

The results show clear differences in brand preference patterns between the two demographic areas. In Area 1, the majority of respondents (60%) preferred “Other” brands, while smaller proportions preferred Brand B (24.3%) and Brand A (15.7%). In contrast, Area 2 shows stronger preferences for the manufacturer’s brands: Brand A (21.1%) and Brand B (33.3%) together account for more than half of respondents’ choices, with only 45.6% choosing other brands.

Overall, this suggests that the manufacturer’s brands, particularly Brand B, are more popular in Area 2 than in Area 1, where consumers show a stronger tendency toward alternative brands.

**Reflective Commentary**

This exercise strengthened my understanding of data accuracy and descriptive statistics—core skills I will apply when analysing IS adoption survey data in my own research project.

**Skills Developed**

| **Skill** | **Application** |
| --- | --- |
| Statistical analysis (Excel) | Mean, SD, median, quartiles, frequency counts |
| Data interpretation | Understanding summary statistic |
| Analytical reasoning | Comparing group performance objectively |
| Ethical reporting | Ensuring honesty and transparency in data presentation |

**Conclusion**

This first data analytics task provided hands-on experience in calculating and interpreting summary measures, bridging theoretical statistics with practical research analysis.