**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.