Summary Measures Worksheet

Exe 8.1B

Diet B	n	50
	Mean	3.710
	SD	2.769

The sample size for Diet B is n = 50 (50 individuals undertook Diet B)

The sample mean weight loss for Diet B is $\bar{x}$ = 3.710. The average weight loss for those individuals who undertook Diet B is 3.710 kg, so the diet appears to have been effective.

The sample standard deviation of the weight loss for Diet B is s = 2.769 kg. Since the mean weight loss is a little larger than 2s, then a high proportion of those individuals on Diet B had a positive weight loss, again emphasising the effectiveness of the diet.

Exe 8.2B

Diet B	n	50
	Mean	3.710
	SD	2.769
	Median	3.745
	Q1	1.953
	Q3	5.404
	IQR	3.451

The sample median weight loss for Diet B is M = 3.745 kg, so the diet appears to have been effective.

The sample interquartile range of the weight loss for Diet B is IQR = 3.451 kg. A high proportion of those individuals on Diet B had a positive weight loss, again emphasising the effectiveness of the diet.

Exe 8.3D

	Area 1	Area 2
A	15.7	21.1
B	24.3	33.3
Other	60.0	45.6
Total	**100**	**100**

Thus, of the 70 respondents in Area 1, 15.7% preferred Brand A, 24.3% preferred Brand B, and the remaining 60.0% preferred some other brand of breakfast cereal. On the contrary, out of the 90 respondents in Area 2, 21.1% preferred Brand A, 33.3% preferred Brand B, and the remaining 45.6% preferred some other brand of breakfast cereal.

Hypothesis Testing Worksheet

Exe 8.6C

T-test	P-value
Two-tailed	0.001419
One-tailed	0.00071

The associated two-tailed p-value is p = 0.0014, which is less than 0.05 and hence the observed t is statistically significant at the 1% level (two-tailed).
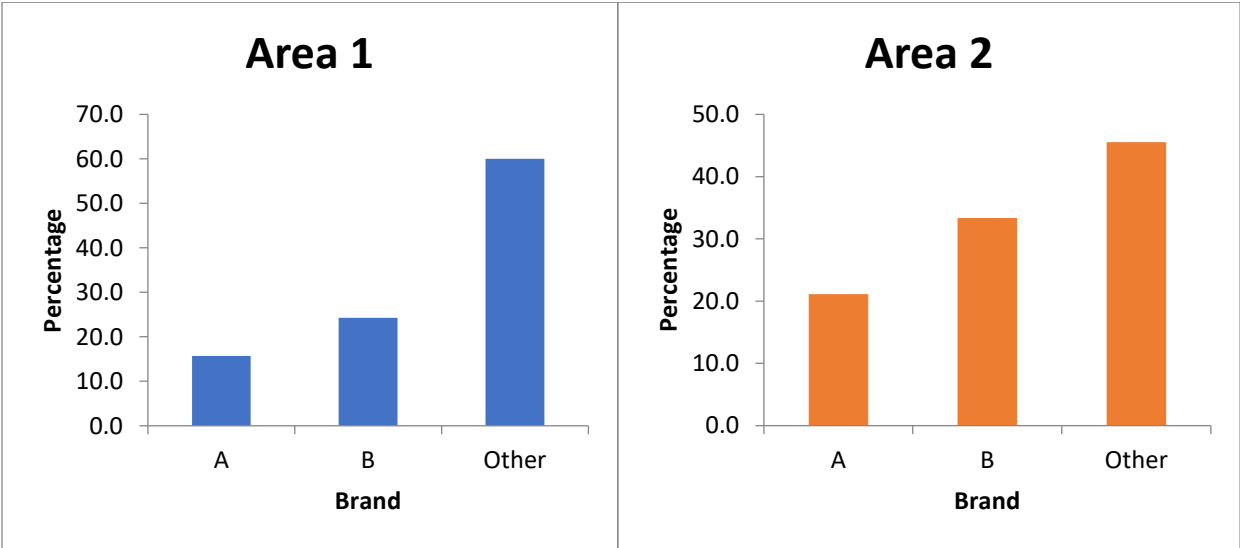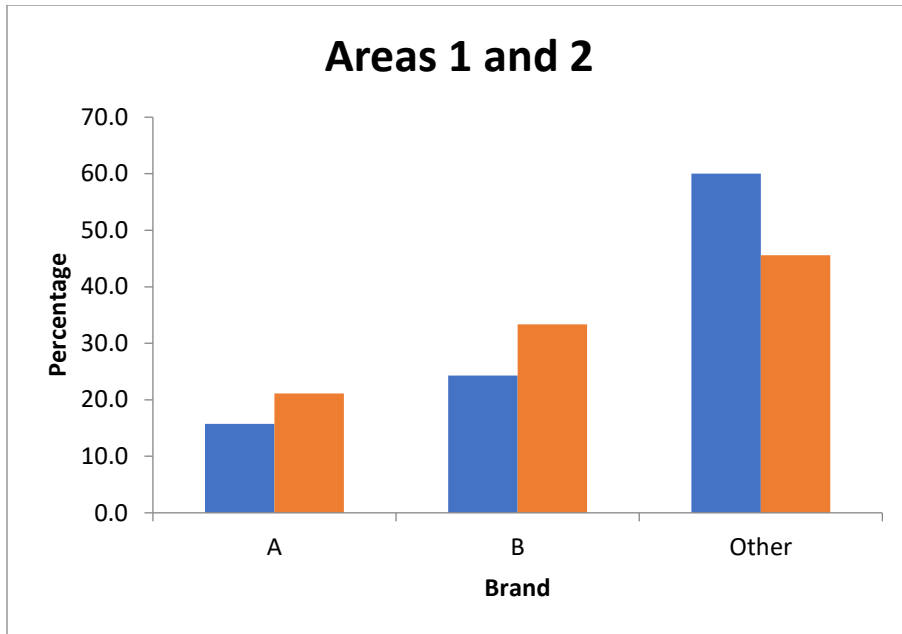
Charts Worksheet

Exe 9.1D

Figure 1 (left): Percentage Frequency Brand Preferences in Area 1

Figure 2 (right): Percentage Frequency Brand Preferences in Area 2

Figure 3: Comparison of Percentage Frequency Brand Preferences in Areas 1 and 2

Figures 1 and 2 show the percentage frequency bar charts of brand preferences for Areas 1 and 2, respectively. According to Figure 3, Brands A and B were less preferred in favour of other brands in Area 1 compared to Area 2.
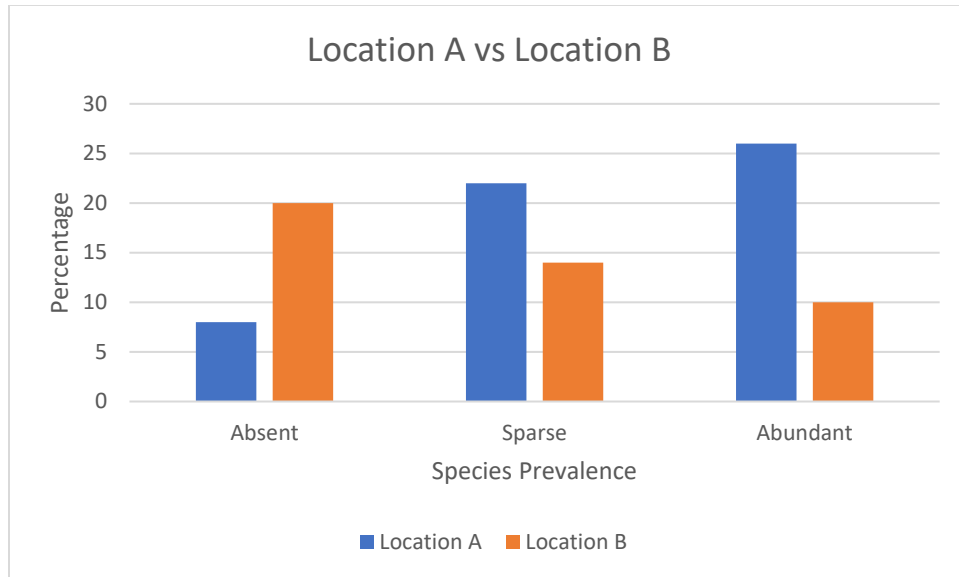
Exe 9.2E

Figure 4: Comparison of Percentage Frequency Species Prevalence in Locations A and B

Figure 4 shows the percentage frequency bar chart of species prevalence in Locations A and B. Location A seem to be more sparse and abundant whereas there is a higher percentage that is absent in Location B.