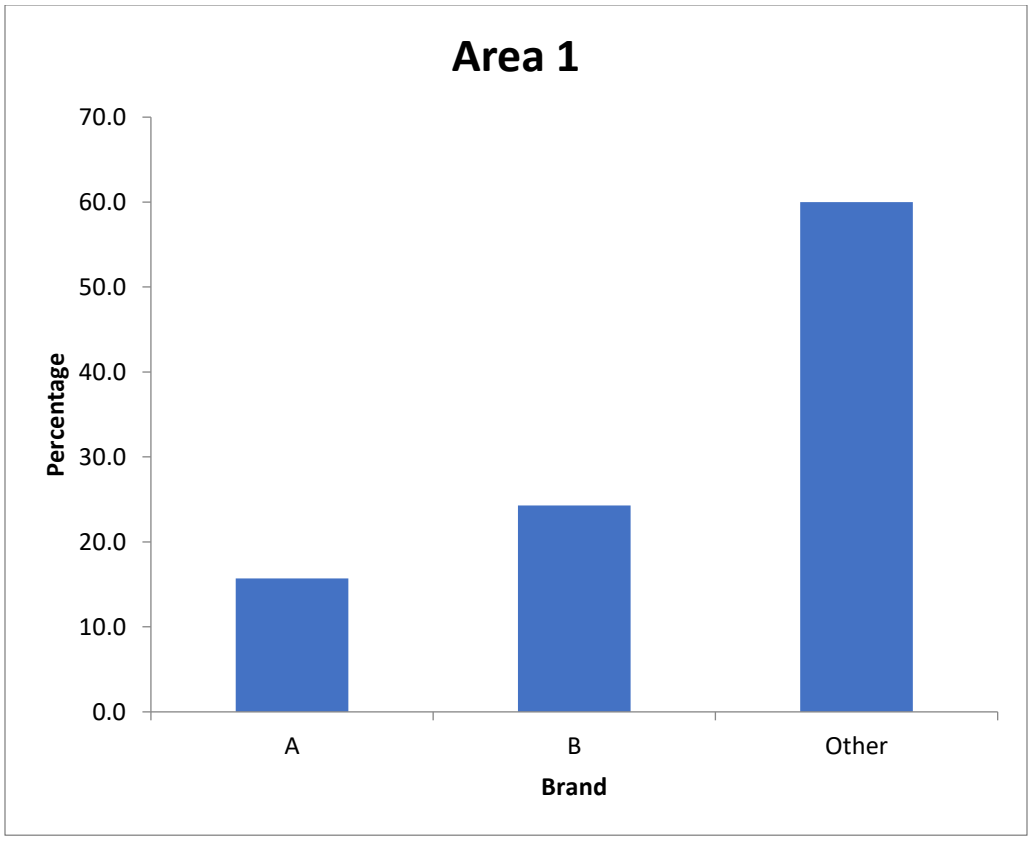
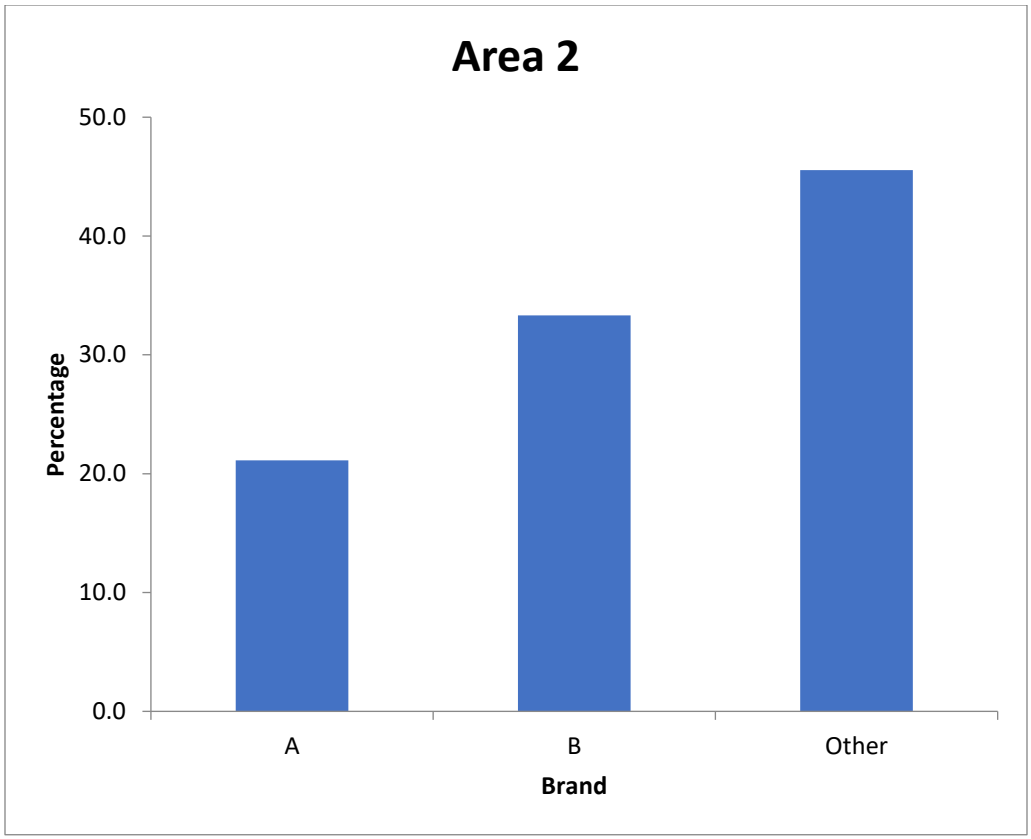
Exercise 9.1

Open the Excel workbook in **Exe 9.1D.xlsx** from the Exercises folder. This contains the percentage frequencies together with the bar chart just created in the above example. Add a percentage frequency bar chart showing the brand preferences in Area 2, using the same format as that employed for the Area1 results in the above example. Drag your new chart so that it lies alongside that for Area 1.

Briefly interpret your findings. What do these results tell you about the patterns of brand preferences for each of the two demographic areas?

Answer:





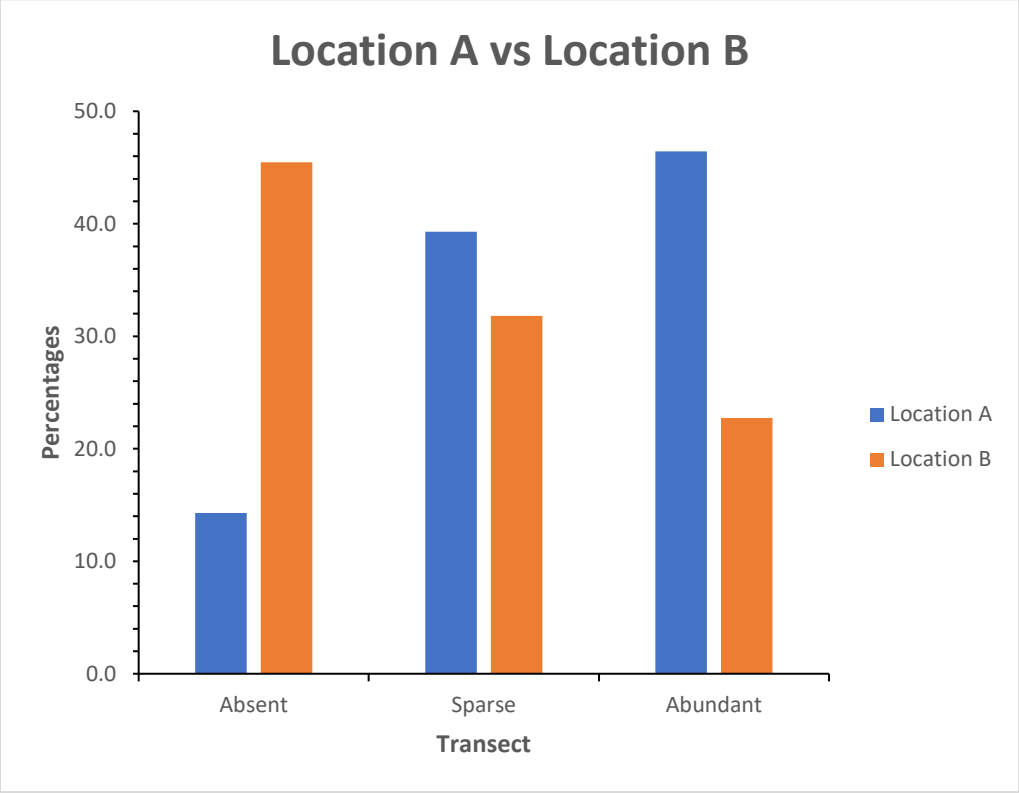
The two graphs illustrate customer preferences for various brands in Area 1 and Area 2. In Area 1, the "Other" brand dominates the top three choices, followed by Brand B and Brand A, respectively. In contrast, the graph for Area 2 reveals a more balanced distribution of customer preferences, with no single brand exceeding 50% market share. Nevertheless, the preference ranking remains consistent with Area 1, where the order from largest to smallest market share is "Other," Brand B, and Brand A. This suggests that Area 2 may have a more competitive market environment compared to Area 1.

Exercise 9.2

Open the Excel workbook in **Exe 9.2E.xlsx** from the Exercises folder. This contains the frequency distributions for Data Set E (see the Data Annexe) to which has been added the corresponding percentage frequency distributions. Complete a percentage frequency clustered column bar chart showing the heather species prevalences in the two different locations.

Briefly interpret your findings.

Answer:



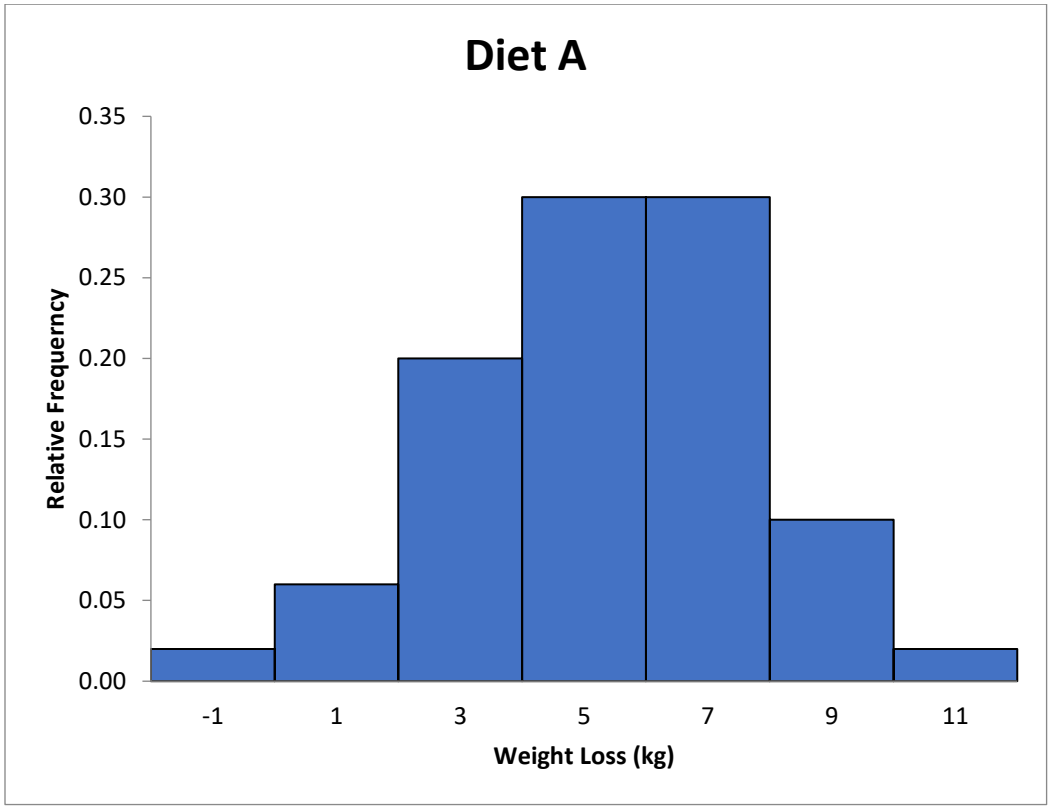
In the chart, Location A has a higher proportion of transects classified as abundant and sparse, while Location B has a greater percentage of transects where the species is absent. The visual representation of the data in the cluster column chart highlights the contrasting distribution of the target heather species in the two locations.
The chart supports the finding that Location A has a more favorable environment for the growth and propagation of the species, whereas Location B has a higher percentage of transects where the species is absent, indicating less favorable conditions.

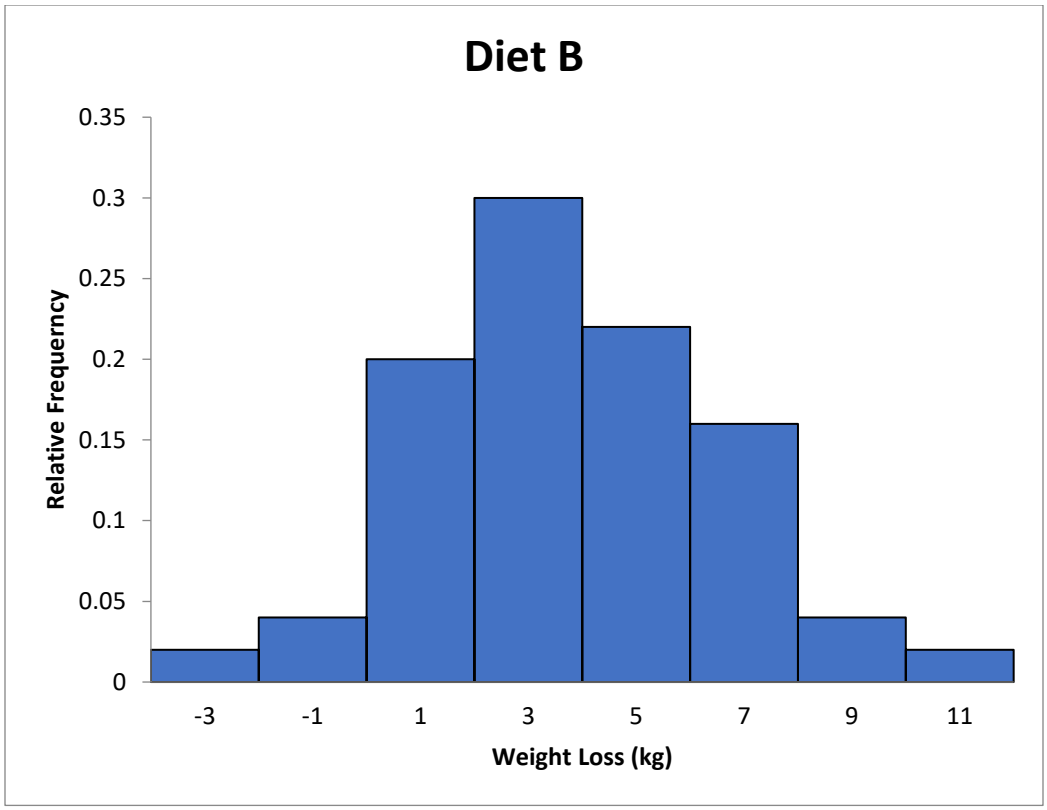
Exercise 9.3

Open the Excel workbook in **Exe 9.3B.xlsx** from the Exercises folder. This contains the relative frequency histogram for the Diet A weight loss produced in Example 9.3 together with some of the Diet B weight loss summary statistics. Add a relative frequency histogram of the weight loss for Diet B, where possible using the same classes as those employed for the Diet A results in the above example.

Briefly interpret your histogram. What do these results tell you about the patterns of weight loss for each of the two diets?

Answer:





After comparing histogram of Diet A and B, we can see A has a more symmetrical shape, and appears closer to a normal distribution than B. This could indicate A's results are more consistent than B's.

A's SD is smaller than B's, which could suggest that A's weight loss effectiveness is more stable than B's. Additionally, A's min and max range is smaller than B's, further supporting that A is more stable than B. We can also draw the same conclusion from A's smaller outlier range compared to B's.

Looking at the shape of the histograms for both diets, in A's shape, weight loss from 5 to 7 has the highest percentage, while B's is just from 3 to 5. This also suggests that A has better weight loss effectiveness. This conclusion can be observed as well by A having a higher mean than B.

Based on our analysis, We can concluded A could be more effective for weight loss.