## Unit 9: Validity and Generalisability in Research

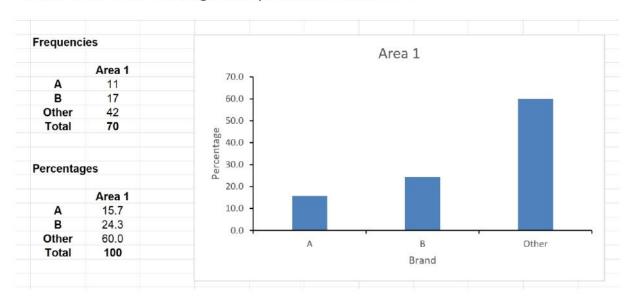
# e-Portfolio Activity: Charts Worksheet

Task 1: Percentage Frequency Bar Chart (Area 1)

File: Exa 9.1D.xlsx

# Objective

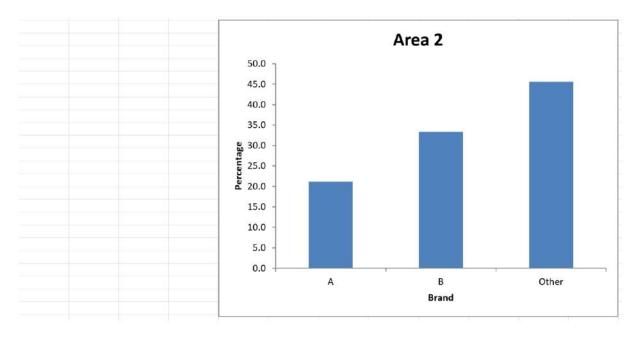
Create a bar chart showing brand preferences in Area 1.



Task 2: Percentage Frequency Bar Chart (Area 2)

File: Exa 9.1D.xlsx

Objective: Create a second bar chart for Area 2.

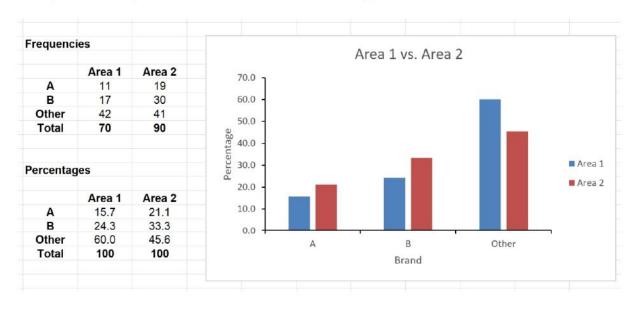


Task 3: Clustered Column Chart (Both Areas)

File: Exa 9.2D.xlsx

### Objective

Compare brand preferences in both areas side-by-side.



Task 4: Histogram for Diet A (Weight Loss Data)

File: Exa 9.3B.xlsx

**Objective:** Create a histogram for Diet A weight loss distribution.

							Class	Relative
Diet A	n	50		UCB	Frequency		Mark	Frequency
	Mean	5.341		0	1		-1	0.02
	SD	2.536		2	3		1	0.06
				4	10		3 5 7	0.2
	Min	-1.715		6 8	15		5	0.3
	Max	10.062			15			
	Range	11.777		10	5		9	0.1
				12	1		11	0.02
					50			
		0.35			Diet A			
		0.3 -			DIEL A			
		0.3 - 0.25 - 0.2 -			DIEL A			
		0.3 -			DIEL A			
		Relative Freduency - 2.0 - 2.0 - 2.1.0						
		0.3 - 0.25 - 0.20 - 0.15 - 0.10 - 0.05 -	-1	1	3 5	7	9	11
		0.3 - 0.25 - 0.20 - 0.15 - 0.10 - 0.05 -	-1	1			9	11

Task 5: Histogram for Diet B (Exercise)

File: Exa 9.3B.xlsx

**Objective:** Create a histogram for Diet B weight loss distribution.

		33					Class	Relative
Diet B	n	50		UCB	Frequency		Mark	Frequency
	Mean	3.710		-2	1		-3	0.02
	SD	2.769		0	2		-1	0.04
				0 2 4	10		1	0.2
	Min	-4.148			15		3	0.3
	Max	10.539		6	11		5	0.22
	Range	14.687		8	8		7	0.16
				10	2		9	0.04
				12	1 50		11	0.02
					50			
		0.35						
		0.3 -						
		Relative Freduency - 0.2.0 - 0.15 - 0.15 - 0.10 - 0						
		0.3 -						
		Relative Freduency - 0.2.0 - 0.15 - 0.15 - 0.10 - 0						
		0.3 -  Relative Freduency - 0.15 0.10 0.05 -	-3	-1 3	1 3 Weight Lo	5 oss (kg)	7 9	11

#### Diet A (Histogram)

- Shape: Unimodal and roughly symmetrical, with a slight left skew (longer tail on the left).
- Peak: Most weight loss values cluster around 3–7 kg (central class marks).
- Extremes: Few outliers at the tails (e.g., one value near -1.715 kg [gain] and one near 10.062 kg [large loss]).
- Conclusion: Predictable results, with most participants losing a moderate amount of weight.

#### Diet B (Histogram)

- Shape: Likely right-skewed (longer tail on the right), with more variability than Diet A.
- Peak: Most values fall between 1–5 kg, but with a wider spread.
- Extremes:
  - o More extreme weight gains (e.g., -4.148 kg) compared to Diet A.

- Some participants achieved very high losses (e.g., 10.539 kg).
- Conclusion: Less consistent results—some participants responded exceptionally well, while others gained weight.

## Comparison of the Two Diets

- Diet A is more consistent, with most participants losing a moderate amount of weight (3–7 kg).
- Diet B shows greater variability:
  - Higher risk of weight gain (left tail).
  - Higher potential for extreme weight loss (right tail).
- Possible Implications:
  - Diet A may be safer for general use.
  - Diet B might work exceptionally well for some but could be risky for others.
- Key Takeaway
  - Diet A: Reliable, moderate outcomes.
  - Diet B: High-reward but high-risk, with unpredictable results.