**Unit 9 – Data Visualisation and Interpretation**

This unit introduced **data visualisation and descriptive presentation** techniques in Excel and LibreOffice, focusing on **bar charts** and **histograms** to represent and interpret frequency distributions.  
The exercises aimed to enhance analytical interpretation skills by connecting statistical summaries (from Units 7–8) with **visual communication of data trends**.

Through these activities, I developed practical understanding of how data visualisation supports **exploratory analysis**, pattern identification, and narrative clarity in research — key components for analysing and presenting SME digital adoption data in my capstone project.

**Exercise 9.1 – Bar Chart (Area 1 and Area 2)**

**Interpretation:**  
Both areas were dominated by “Other” brand then followed by brand B and lastly A. Area 2 has smaller domination by the “Other” brand rather than in Area 1.

**Exercise 9.2 – Comparative Bar Chart (Areas 1 & 2)**

A **clustered column bar chart** was generated comparing *Area 1 vs Area 2* brand preferences.

**Findings:**

* Both areas showed similar ranking (Other > B > A).
* However, Area 2 displayed higher percentages for Brands A and B, and a lower proportion for “Other”.

**Interpretation:**  
The prevalence of the target heather species is substantially higher in Heathland A compared to Heathland B. In Location A, almost half of the transects show abundant growth, whereas in Location B, nearly half lack the species entirely. This suggests that environmental conditions or management practices at Location A are more favorable to the species’ proliferation.

In research on SMEs, similar comparative bar charts could visualise **regional adoption rates** of digital tools — illustrating geographic disparities in IS utilisation.

**Exercise 9.3 – Histograms (Diet A vs Diet B)**

|  |  |
| --- | --- |
|  |  |

**Interpretation:**  
Diet A produced greater and more frequent weight losses. A smaller proportion of participants gained weight, and more achieved substantial losses. Therefore, Diet A appears more effective overall than Diet B.

**Learning Point:**  
Bar charts are effective for categorical comparisons, while histograms reveal distributional properties (shape, spread, and symmetry).

Together, they provide both descriptive clarity and analytical depth for interpreting datasets.

**Reflection**

This unit demonstrated that data visualisation is a bridge between analysis and communication.  
While numerical tests quantify differences, charts *show* them — allowing audiences to perceive variation intuitively.

For my future project on SME digital transformation in Indonesia, these methods can be applied to:

* Compare IS adoption levels across provinces (clustered bar chart).
* Display distribution of productivity improvements among SMEs (histogram).
* Combine visual analytics with inferential results for a clear research narrative.

I also learned the importance of consistent axis scaling, labelling clarity, and colour accessibility, which are essential for ethical and professional data communication.

**Skills Developed**

| **Skill** | **Description** |
| --- | --- |
| Data visualisation design | Creating clear and accurate graphical summaries |
| Comparative analysis | Using charts to identify inter-group differences |
| Statistical interpretation | Linking visuals with numerical measures |
| Excel analytics proficiency | Applying data visualization in excel |
| Research presentation | Translating data findings into meaningful visual narratives |

**Conclusion**

This unit reinforced how visual literacy enhances analytical reasoning.  
Bar charts and histograms transformed abstract numerical results into accessible insights, supporting transparent and persuasive reporting.