**Methodology**

This analysis aims to evaluate the performance and trends of the coffee shop to support data-driven decision-making. The following steps outline the methodology used to collect, process, analyze, and interpret the relevant data:

**1. Objectives**

* key questions to answer:
  + What are the most popular products?

-Coffee and Tea.

* + What times during the day, we see the highest sales?

-Mornings.

* + Are there trends in customer preferences?

-Yes, customers love their coffee.

* + What factors contribute to low or high sales periods?

-For high sales: Most sales were made in the mornings and during cold season i.e May and June.

-For low sales: few sales were made in the evening and during hot weather i.e January and February.

**2. Data Collection**

* **Sources:** Gather historical sales data, POS transactions, inventory logs, and customer feedback.
* **Time Period:** Define a relevant time frame (e.g., past 6–12 months) for sufficient trend analysis.
* **Data Points:** Include product sold, quantity, price, date/time, promotions, and customer demographics if available.

**3. Data Cleaning and Preparation**

* Remove duplicates and correct errors in the raw data.
* Format date and time fields to enable time-based analysis.
* Categorize products into logical groups.
* Create calculated fields as needed (e.g transaction quantity\*unit price to get total revenue).

**4. Data Analysis**

* I used Excel and Snowflake(SQL) to:
  + Analyze sales volume and revenue by product category.
  + Identify peak hours/days for staffing optimization.
  + Calculate average transaction value and customer purchase frequency.
  + Perform trend analysis to detect seasonal patterns.

**5. Data Visualization**

* I used Excel to Develop clear visualizations (charts, graphs, dashboards) to highlight insights:
  + Line charts for sales trends over product category.
  + Bar charts for store location comparisons over 6 months.
  + Doughnut chart for time bucket contributions.

**6. Interpretation and Insights**

* Summarize findings with a focus on actionable recommendations, such as:
  + Adjusting inventory based on top-selling items.
  + Planning promotions during off-peak times.
  + Revising staffing schedules to match busy periods.

**7. Reporting**

* Compile the results into a clear, concise report or presentation.
* Include an executive summary for stakeholders.
* Suggest next steps, such as follow-up analysis or pilot tests for proposed changes.