INTRODUCTION

I decided to take up the analytics challenge from Olanrewaju Oyinbooke and as well as improve my own skills and gain more experience as I work on this project.

PROBLEM STATEMENT

**SellCheapy Retail** is a chain of department stores that sells a wide range of products, including bikes and different components. Despite having a large customer base, the company has been struggling to increase sales in recent years. The management team is looking to use data analysis to understand customer spending patterns and make changes to their sales and marketing strategies to improve performance.

The company collected data on customer demographics, purchasing history, and other relevant information over the course of a year. The data includes information on the products purchased, the price paid, and the date of purchase, etc.

I’ll be using the provided dataset to understand customer spending patterns and make changes to their sales and marketing strategies to improve performance.

* What do customers spend on the most?
* What encourages them to spend on this product?
* Where are our customers from?
* What is our order fulfilment rate?
* How much do our customers spend when shopping & how do we increase spending?

DATA SOURCING

The dataset for this analysis is from the Adventure works database provided by Olanrewaju Oyinbooke at; <https://techcommunity.microsoft.com/t5/educator-developer-blog/data-analysis-challenge-analyze-customer-spending-pattern/ba-p/3719590?WT.mc_id=academic-86947-ooyinbooke>.

The database contains multiple tables, but for this project I am interested in the tables with data on customer demographics and sales/order details. I carefully studied the database schema and data dictionary to pick out this tables and also used multiple joins to extracted the right information; all this was done in MS SQL SERVER

SKILLS DEMONSTRATED

For this project, I used the following skills or tools;

* SQL: I used complex JOINS to query the database in SQL SERVER to gather the necessary data for this project.
* DAX: After loading the data into Power BI I used Measures and DAX to aggregate the necessary data I needed
* Power Buttons: I used the buttons feature in Power BI to create a more interactive dashboard.

DATA TRANSFORMATION

After importing the data to Power BI, I did some transformation to add additional columns (Conditional columns). I added this column to the CUSTOMER\_DETAILS & ORDER\_DETAILS\_&\_SHIPPING table, some of the steps include;

* Adding conditional column “Person Type” to the CUSTOMER\_DETAILS table to assign descriptive values to the column instead of the default abbreviations for more context ie SC = ‘Store Contact’, IN = ‘Individual (retail) Customer’ etc..
* Adding conditional column “Order Status” to the ORDER\_DETAILS\_&\_SHIPPING table to assign descriptive values to the column instead of the default numeric values ie 1 = ‘In Process’, 2 = ‘Approved’ etc.
* Adding conditional column “Country” to the CUSTOMER\_DETAILS table to assign Country names to the column instead of the default ISO codes.

DATA MODELLING

I have 3 tables;

CUSTOMER\_DETAILS

SALES\_DETAILS

ORDER\_DETAILS\_&\_SHIPPING

Loading the dataset into Power Bi automatically creates an automatic model, but I will be making some adjustments to the auto model created by Power BI;

* I changed the ‘Cross-filter direction’ to ‘Both’ to allow a more dynamic filtering.
* CUSTOMER\_DETAILS & ORDER\_DETAILS\_&\_SHIPPING have a Many to One(\*:1) relationship
* SALES\_DETAILS & ORDER\_DETAILS\_&\_SHIPPING have a Many to One(\*:1) relationship

The relationship formed in the model is a star schema as seen below

ANALYSIS & VISUALIZATION

Customer Dashboard

Sales Dashboard

RECOMMENDATION & CONCLUSION

Special OFFErS HAVE NO EFFECT ON THE Accessories category so they should be more special offers for other categories to boost their sales

Data collection process should be reviewed to get proper customer demography