**EXECUTIVE SUMMARY ON THE XYZ SUPERMARKET DATA ANALYSIS PROJECT**

**PURPOSE OF REPORT**

Company XYZ owns a supermarket chain across, with its major branch located in three(3) cities Abuja, Lagos and Portharcourt with the following product lines; electrical accessories, Electronic accessories, Home and lifestyle, Food and beverages, Sports and travel, Health and beauty, Fashion accessories. Descriptive Data Analysis was performed on the gathered data from all three branches and insights are generated to help understand trends and determine growth as the rise of supermarket competition is seen to increase.

The purpose of this report are:

* Analysis on Customers reactions to different product lines and payment methods
* Date analysis summary of the data
* Ratings and profit estimation across all three branches and states
* Suggest ways to improve customer satisfaction (Rating).

**METHODOLOGY**

**Data Overview**

The data used in this analysis was gotten from the github repository containing records across all three cities Abuja, Lagos and Portharcourt containing entries in the following field Invoice ID, Branch, City, Customer type, Gender, Product line, Unit price, Quantity, Tax 5%, Total, Date, Time, Payment, cogs, gross margin percentage, gross income and Rating.

**Methods**

* Combined the three dataset using the glob function.
* Derived a statistical summary of the data using the **.describe()** function.
* **Groupby** and **Pivot\_table** were implemented in other to generate insights on some of the features.
* **Matplotlib** and **seaborn** were used to indentify trends, correlations and distributions.

**Analysis**

* Analysis was conducted on the statistical summary of the data
* Ratings across the three cities and branches
* Gender contribution to the gross income
* Visualisation analysis of product lines based on gender, payment method, Branch’s impact on each product line and cities contribution for each product line
* Correlation analysis: for all data features
* Distribution of Total sales by gender to see the gender that is moving the market

**FINDINGS/RESULTS**

* The data was properly collated as there were no missing values or outliers

**Statistical Summary**

* The approximate average unit price and quantity are #20,000 and 6 units respectively making our total sales/revenue to be around #120,000 without incurring tax. The tax on the supermarket is about 4.5% of the total sales. After accounting for tax the average total value is found to be around #116,000.
* The average rating is 6.97 indicating that the supermarket is doing slightly better above average implying that more work needs to be done to improve the companies services and products availability to customers

**Demographics**

* We can say inferentially that Port Harcourt has the highest total gross income with Abuja being the second and then Lagos.
* The city with the highest average rating is and the City with the highest average rating is PortHarcourt with Lagos being the next in line followed by Abuja.
* The branch with the highest average rating is and the City with the highest average rating is branch C with branch B being the next in line followed by branch A.

**City Reaction To Product lines**

* The most purchased Product line in Portharcourt is food and beverages
* The most purchased Product line in Lagos is home and lifestyle
* The most purchased Product lines in Abuja are sport and travel and fashion accessories

**Time Based Analysis**

* In the month of January branch B had the highest gross income of 5741, followed by branch C and then branch A
* In February and March branch C championed the gross income with 5646 and 6016 for the two consecutive months. Although there was a general market fall in all 3 branches
* Branch A has been losing momentum over the course of the 3 months with approximately 5572, 5446, 5083 in January, February and March consecutively.
* The percent decrease from march to february for branch A,B and C are 2.28%, 5.7% and 0.06% respectively
* The percentage increase in branch C from february to March is about 6.5%

**RECOMMENDATIONS**

* The supermarket should focus on increasing its marketing strategy for sales of health and beauty products especially in Lagos which has a high potential yield rate if implemented.
* In order for the Branch at port harcourt to do better the sales management should work on generating more income through sports and travel, home, and lifestyle commodities.
* More efforts need to be put in the Lagos fashion accessory fraction.
* Relative to Lagos and Port Harcourt Abuja branch hasn't been doing well sales wise as regards the yield in sales for the food, beverage, home, lifestyle, health and beauty hence more attention should be given to these areas
* Market/sales analysis should be carried on branch A to improve its monthly gross income, a way to go about this based on the active product lines could be improving sales on home and beauty and fashion accessories which are currently low through branding of products or other other means required after sales analysis is carried out in the branch.

**REFERENCES**

<https://seaborn.pydata.org/>

<https://github.com/bleso-a/Data-Analysis-Project>