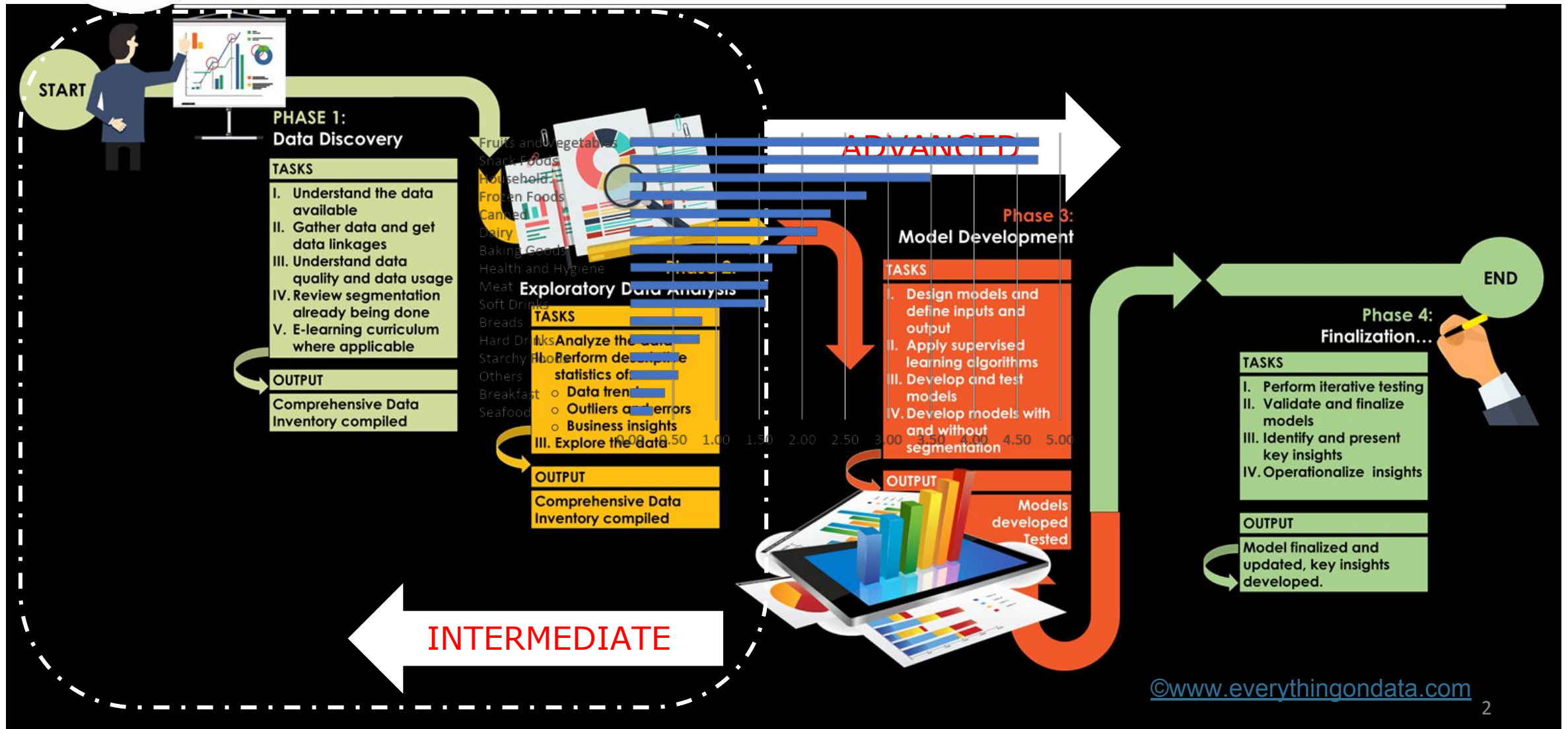DATA-1-ACADEMY

Descriptive Analysis

Module1:
Data Discovery & Data Exploration

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OUR ROADMAP- The 4 Phased Approach to Advanced Analytics

START

PHASE 1:
Data Discovery

TASKS

I. Understand the data available
II. Gather data and get data linkages
III. Understand data quality and data usage
IV. Review segmentation already being done
V. E-learning curriculum where applicable

OUTPUT

Comprehensive Data Inventory compiled

ADVANCED

Fruits and vegetables
Snack Foods
Household
Frozen Foods
Canned
Dairy
Baking Goods
Health and Hygiene
Meat
Soft Drinks
Breads
Hard Drinks
Starchy Foods
Others
Breakfast
Seafood

Phase 2:
Exploratory Data Analysis

TASKS

I. Analyze the data
II. Perform descriptive statistics of
   ○ Data trends
   ○ Outliers and errors
   ○ Business insights
III. Explore the data

OUTPUT

Comprehensive Data Inventory compiled

Phase 3:
Model Development

TASKS

I. Design models and define inputs and output
II. Apply supervised learning algorithms
III. Develop and test models
IV. Develop models with and without segmentation

OUTPUT

Models developed Tested

END

Phase 4:
Finalization...

TASKS

I. Perform iterative testing
II. Validate and finalize models
III. Identify and present key insights
IV. Operationalize insights

OUTPUT

Model finalized and updated, key insights developed.

INTERMEDIATE

2

ASSESSMENT 1: DATA EXPLORATION

If you are reading this, that means that you have completed the Beginners Class and are on the Intermediate Journey.

CONGRATULATIONS!!!

Next is the Core of Descriptive Analysis: **DATA DISCOVERY AND DATA EXPLORATION**

EXERCISE:

- You are expected to explore the Sample Sales data on Mr Chukwudi Stores with knowledge & wisdom (insights) narratives on discoveries.
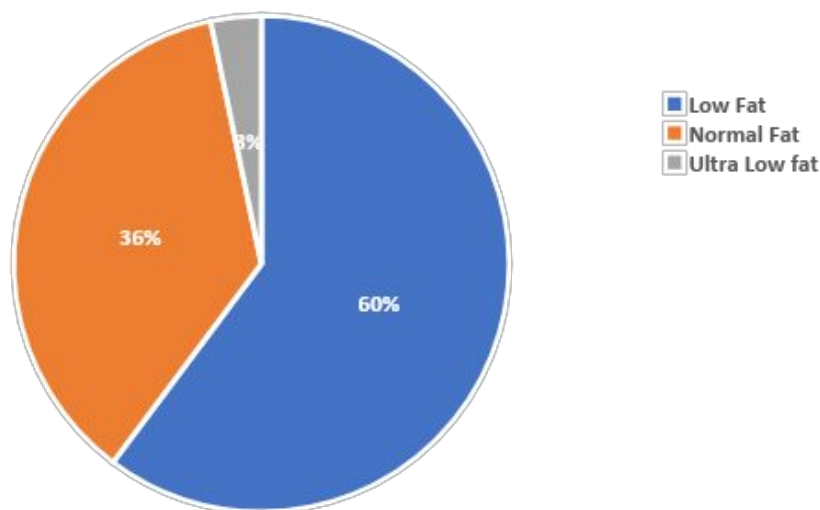- Use your excel sheets to plot your charts and post same on this slide.

Minimum no of pages: 10
Maximum no of pages:20

GOODLUCK!

Sales of Product by Fat Content

Reason for Analysis: To evaluate consumer's attitude to diet as an insight to determine appropriate product type of focus.

Insight: Total revenue from the Supermarket shows that 60% were from sales of low fat product type.

A review of the dataset shows that the price of low fat product is higher than ultra fat and normal fat content. And despite the higher price, demand is impressive.
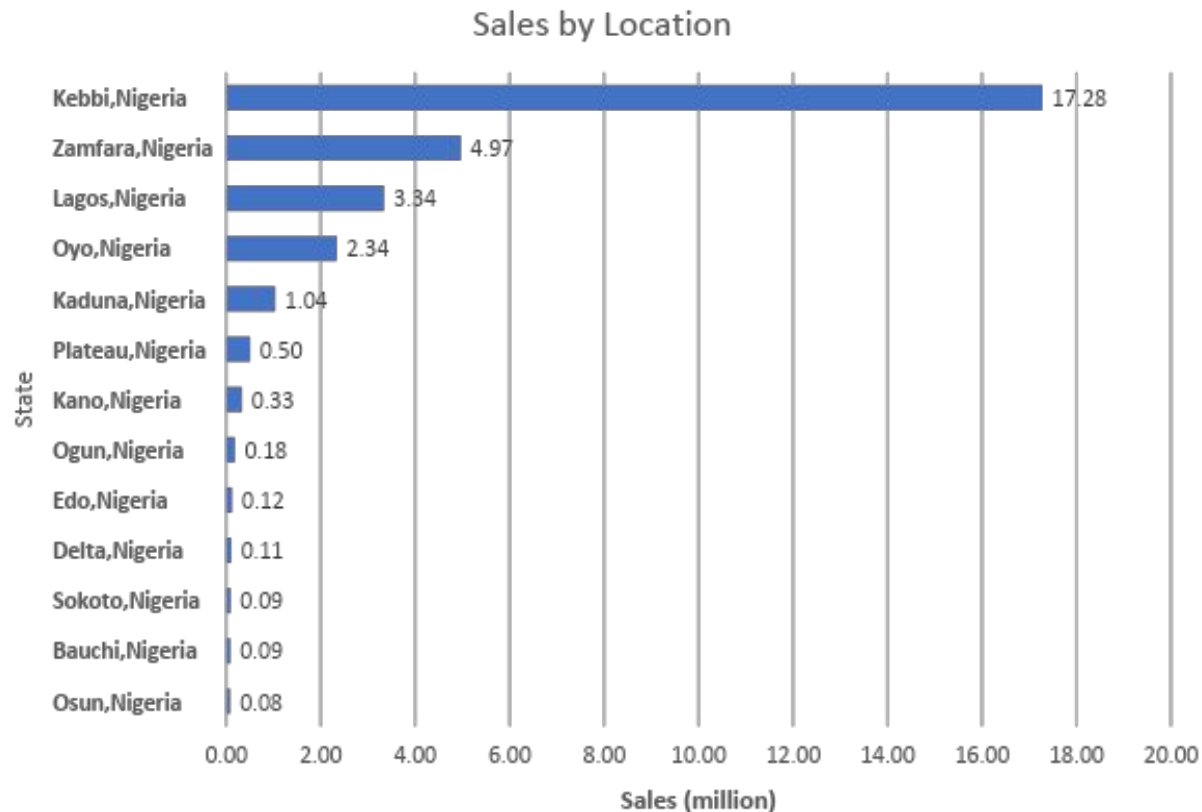A low fat content is more balanced in measurement than the ultra and normal fat.

The customer's preference for product with low fat may be attributed to their attitude toward health and balance diet.

- Low Fat
- Normal Fat
- Ultra Low fat

36%

60%

3%

Recommendation: In expanding the supermarket, important should be given to stock orders for low content to ensure its always available to meet consumer's demand.

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TITLE: Sales Amount by Location

Reason for Analysis: To determine the destination place for a supermarket expansion.

Sales by Location

State	Sales (million)
Kebbi,Nigeria	17.28
Zamfara,Nigeria	4.97
Lagos,Nigeria	3.34
Oyo,Nigeria	2.34
Kaduna,Nigeria	1.04
Plateau,Nigeria	0.50
Kano,Nigeria	0.33
Ogun,Nigeria	0.18
Edo,Nigeria	0.12
Delta,Nigeria	0.11
Sokoto,Nigeria	0.09
Bauchi,Nigeria	0.09
Osun,Nigeria	0.08

Insight: 57% of the total supermarket sales is generated from Kebbi State.

A look at the supermarket data shows that over 51% of customer visiting Kebbi supermarkets are Entrepreneurs and they often buy Fruit and Vegetables mostly from the Supermarket type 1 in the state.
The above may indicate that due to large number of business men and women, there are many business outlet and hub. Fast food and fruit are always in high demand in such an area.
Because is also a business hub, most people around the location may afford to buy from the supermarket

Recommendation: Kebbi can be considered a destination of expansion based on the presence of market and purchasing power of this class of market

Sales by Product Type

Reason for Analysis: To determine how best to manage supermarket inventory to increase revenue
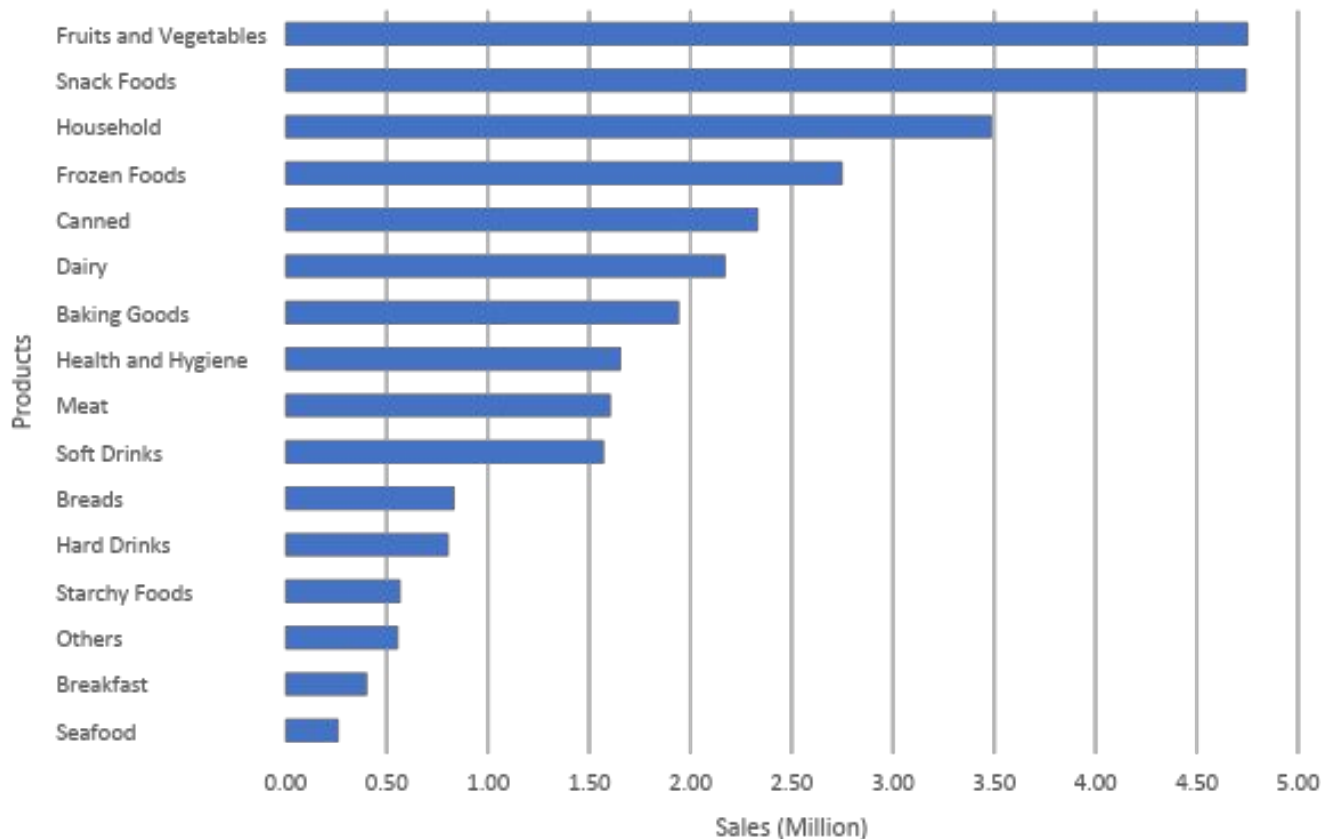
Insight: Over 30% of product sold is snack , fruit and vegetables. Following these item are household goods and frozen food.
Based on the dataset, the high sales of these product is occasioned by it availability in the supermarket stores and high shelf visibility compared to the other product.

Recommendation: Effective Inventory management for expansion consideration should optimize amount of stock and re-ordering by ensuring that high demand items are always in stock and are placed at visible locations in the supermarket. This will increase potential revenue

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ount of Sales by Visit to Supermarket Location

Reason of Analysis: To determine supermarket location model for expansion
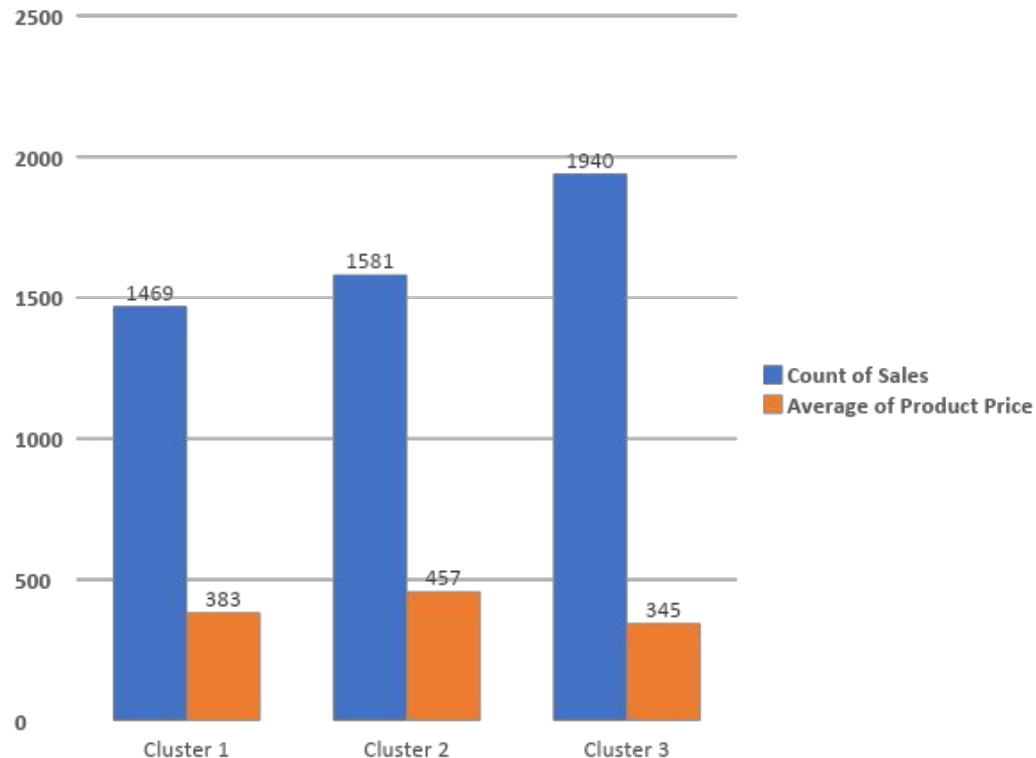
Insight: 40% of the supermarket sales in count occurred in cluster 3 supermarket location.

The review of the supermarket data shows that product price of the cluster 3 is lesser than that of cluster 1 and 2.
That may mean that price sensitive customers prefer to visit cluster 3 more with the believe that product are relatively cheaper and thus translating to more sales for the supermarket. Also, the cluster may have been located in areas of large population or business hub

Recommendation: Mr Chukwudi should consider the model of supermarket in cluster 3 location in it expansion plan.
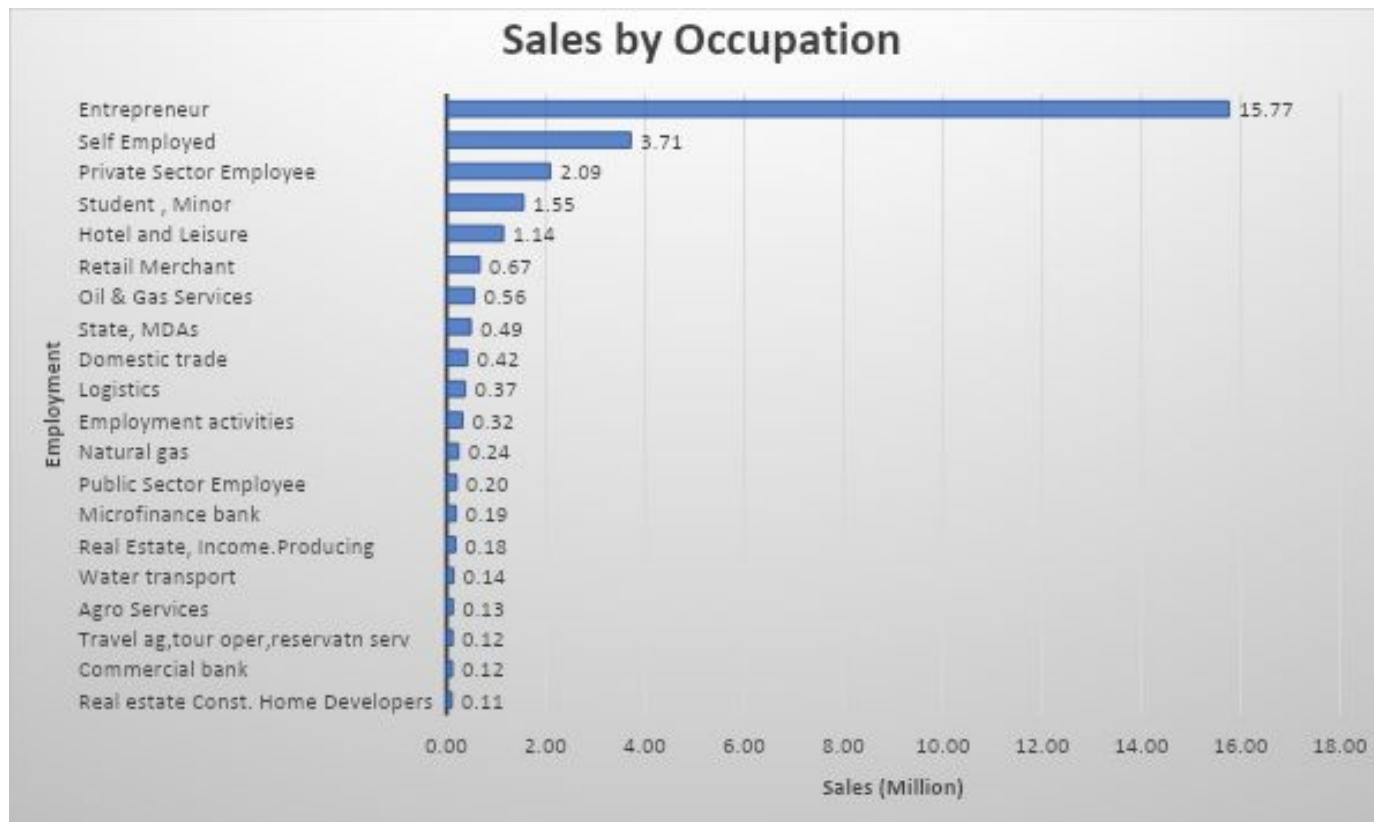
Reason of Analysis: Evaluation of how an understanding of the customer can enhance sales

Insight: 55% of the supermarket sales constitute purchase by majorly by entrepreneur.

The dataset further shows these entrepreneurs mostly men with age distribution between middle and young population (teenagers). They purchase more of ready to eat items such as snack, fruit and vegetables.

Recommendation: A different service delivery could be introduced to such customer such that most time they purchased can be delivered to them in offices.

Sales by Occupation

Employment	Sales (Million)
Entrepreneur	15.77
Self Employed	3.71
Private Sector Employee	2.09
Student , Minor	1.55
Hotel and Leisure	1.14
Retail Merchant	0.67
Oil & Gas Services	0.56
State, MDAs	0.49
Domestic trade	0.42
Logistics	0.37
Employment activities	0.32
Natural gas	0.24
Public Sector Employee	0.20
Microfinance bank	0.19
Real Estate, Income.Producing	0.18
Water transport	0.14
Agro Services	0.13
Travel ag,tour oper,reservatn serv	0.12
Commercial bank	0.12
Real estate Const. Home Developers	0.11

Supermarket Sales by Age

Reason of Analysis: To determine the demography of major shoppers

Sales by Age

30-29	9.74
10_19	7.19
40-49	6.96
60-69	2.82
50-59	2.56
20-29	1.20
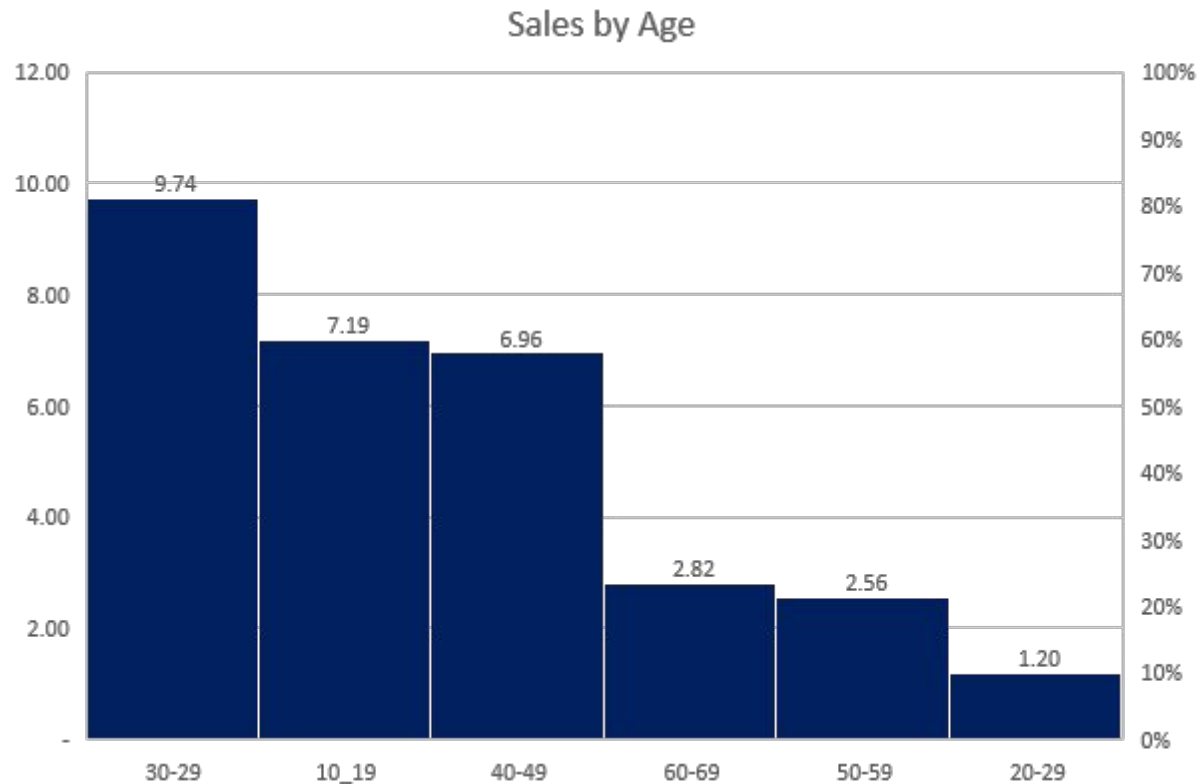
Insight: 60% of supermarket sales are done by mostly the young to middle age generation within the age bracket of 10-49.
These group are young, active and constitute a larger part of the income earning population. Asides they spend more than the older population who has got so much to cater for.

Recommendation: In expanding, it is important to adopt method that will capture and engage the young population. Upscaling sales via e-commerce is one of such ways to improve sales. The young population are oriented to this platform.

Sales by type of Supermarket

Reason of Analysis: To determine type of supermarket type to adopt for expansion

Insight: 66% of supermarket sales took place in supermarket type 1.

This type of supermarket is mostly seen in Kebbi State. The increase could be attributed to availability of all product type in this type of store.

Recommendation: A supermarket type 1 should be adopted in the new destination of expansion.

Count of sales by Supermarket Type

15%
9%
10%
66%

■ Grocery Store
■ Supermarket Type1
■ Supermarket Type2
■ Supermarket Type3