

Analysis of B&J Biscuits and Bakery Sales Data - 2024

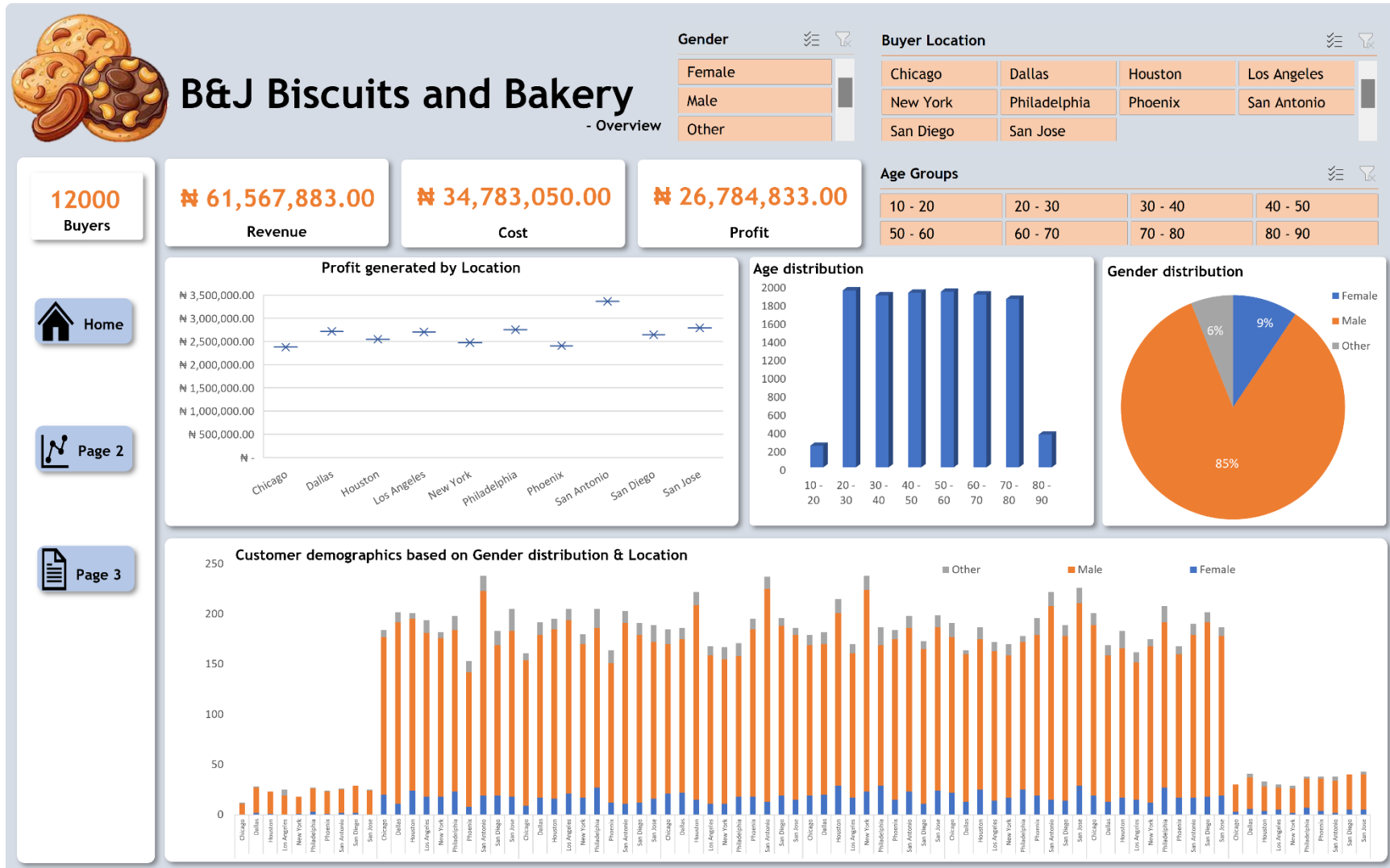
An analysis conducted by

Deborah Omeke

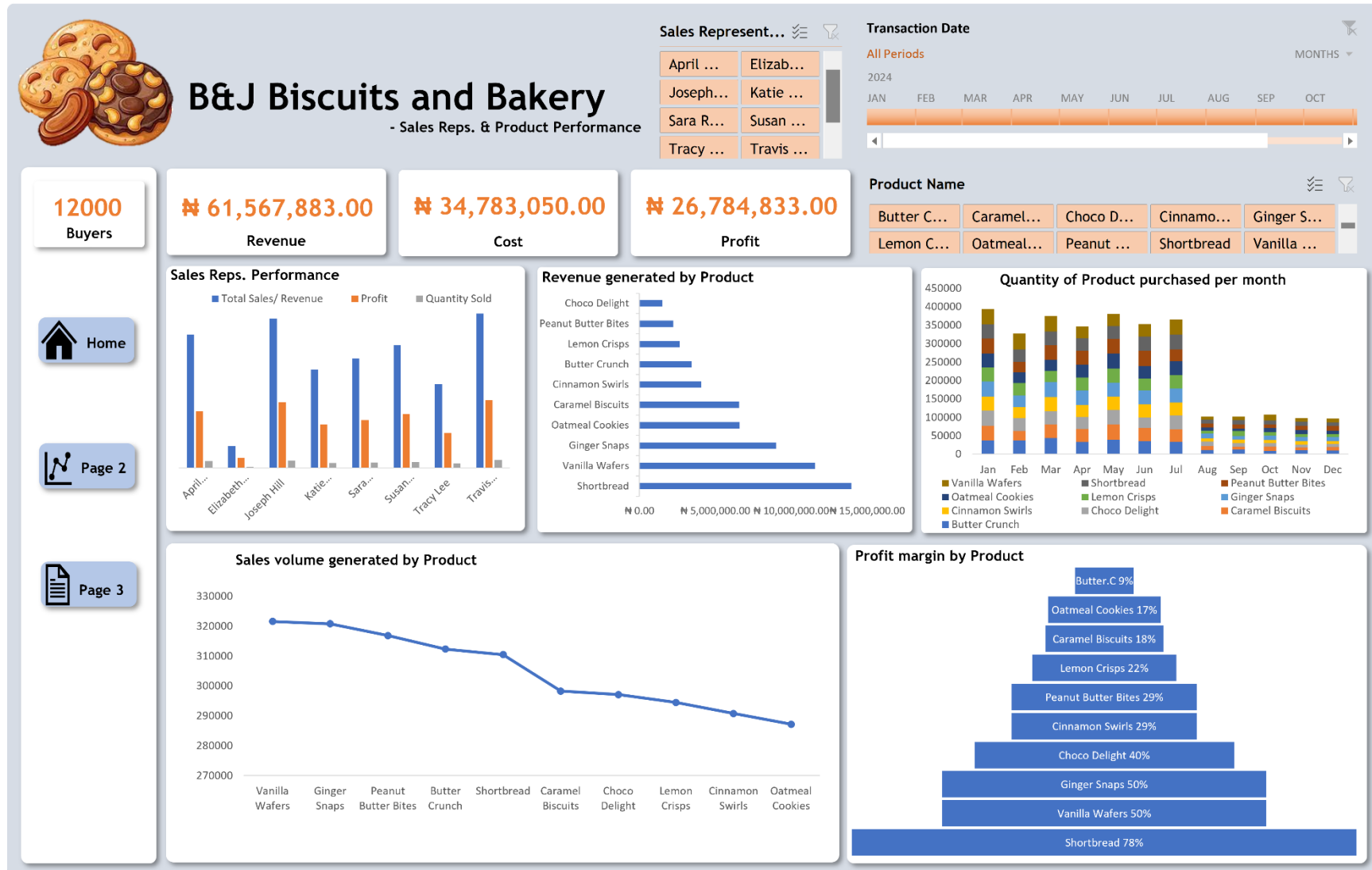
+234 810 777 9376

deborahrobi99@gmail.com | <http://linkedin.com/in/deborah-Omeke-4797321b1>

PAGE 1 (Home Page) - Dashboard showing an overview of sales and overall customer demographics based on Gender distribution, Age groups, and Location during the year.



PAGE 2 (Performance) - Dashboard showing in detail the different product performances and that of the sale representatives over the months in the year.



Introduction

B&J Biscuits and Bakery is renowned for its delicious range of biscuits and cakes. From its iconic Cookies to its indulgent Peanut Butter Bites, B&J Biscuits and Bakery offers a wide variety of treats loved by people worldwide.

In 2024, The company pushed out ten different biscuit brands to Chicago, Dallas, Houston, Los Angeles, New York, Philadelphia, Pheonix, San Anthonio, San Diego, and San Jose to stand out amongst their competitors in the biscuit market. Assigning eight sales representatives to deliver the sales of products in these locations.

This data (Fictional) was provided by Tech Command containing B&J Biscuits and Bakery sales dataset from January to December 2024. Analysis and visualization was done using Microsoft Excel.

Objective

The objective of the analysis is to track the progress of sales, performance of products, and sales representative performances in the year 2024, also to compare each product in terms of profitability and demographic trends. The overall objective is to use track KPIs across all the implementing locations to be able to identify poorly performing products in these regions while also being able to improve performance of products in these same locations by identifying products to promote and regions to target more in subsequent years.

Data Cleaning & Transformation

To ensure proper analysis, I used power query for data cleaning and transformation. Some of the cleaning done includes;

1. Verified and ensure all relevant columns to be used in the analysis contain the right data type and those with the wrong type were duly converted to the appropriate type
2. I used VLOOKUP Function to get my Product name, cost price, and selling price to my datasheet.

3. A new column (Total cost, Total sales/Revenue, Gross profit, and Profit margin) was added to the data to be analyzed. Total cost was added by multiplying the quantity of product purchased by individual cost price, Total sales/ Revenue was also calculated by multiplying the quantity of products purchased by the individual selling price, Gross profit was gotten by subtracting the Revenue from the total cost price, Lastly, Profit margin was gotten from dividing the profit by revenue, multiplied by 100 (in this case I converted to percentage format instead of multiplying all through by 100).
4. Created Age and Age groups: For the analysis, I will love to see the quantity and type of product purchased in relation to the age of the purchasing customers. This is to ascertain if there is a correlation between customers age and their preference to some type of products, I therefore created age by adding a new column via date, calculated total years, and rounded off. and finally created Age groups from the new Age column. 8 age groups were created; those between 10-20, 20-30, 30-40, 40-50, 50-60, 60-70, 70-80, 80-90 years of age.
5. Appropriate data types were applied to all columns used in the analysis and confirmed no values needed to be replaced nor columns removed.

MODELLING, ANALYSIS (FINDINGS) AND VISUALIZATION

This data was analyzed using pivot tables and visualized with pivot charts, and for comprehensive understanding it was visualized as a 2-paged dashboard

Page 1 - Overview: This is also the home / first page of the dashboard, this page gives an overall summary of the findings on customer demographics based on gender distribution, age distribution, and location from the dataset.

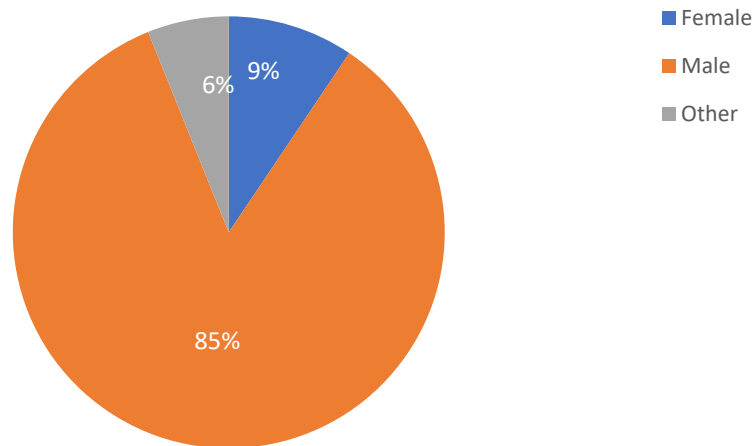
Page 2 - Sales Representative and Product Performance: this is the second page of the dashboard; on this page the data is summarized by the different performances of each sale representative and that of products and further summarizes these by the revenue generated every month of year 2024.

1. Products: 10 products were available for sale to all 10 regions within the year.
2. Customers: 12000 customers recorded of which, 10138 were male, 1131 were female and 731 were others.
3. Sales & Profit: From \$34,783,050, a sale of \$61,567,883 was made and a profit of \$26,784,833 (43.50%) earned.
4. Distribution of Customers by Location: Of the 12000 customers that purchased products in 2024, customers were evenly distributed in locations yielding close ratios of profit.

Buyers	Chicago	Dallas	Houston	Los Angeles	New York	Philadelphia	Phoenix	San Antonio	San Diego	San Jose	Grand Total
	1143	1164	1259	1126	1159	1212	1122	1352	1203	1260	12000
%	9.53%	9.70%	10.49%	9.38%	9.66%	10.10%	9.35%	11.27%	10.03%	10.50%	100.00%

FINDINGS: From the data above, customers were distributed evenly across the 10 regions and there was no noticeable upscale as they were all within the percentage range of 9% - 11%.

5. Distribution of Customers by Gender: Of the 12000 customers recorded, 85% of buyers were male, 9% female, and 6% others.



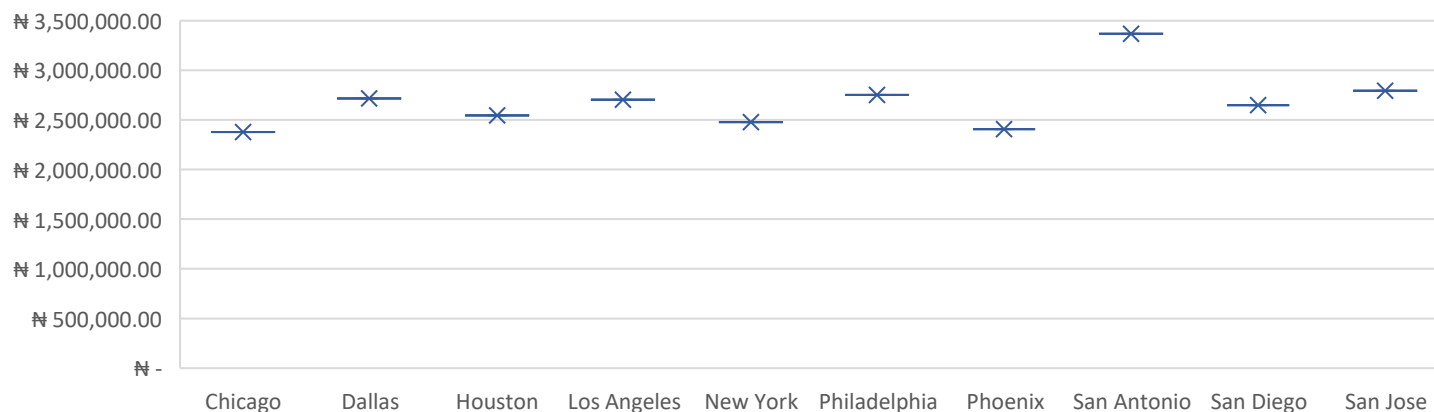
FINDINGS: We found that of every 100 customers, about 85 of them were male, this obviously is not just a random occurrence as it only points to men being more frequent biscuit consumers than women.

6. Distribution of Customers by Age Groups: For this analysis, the customers were grouped into 8 age categories. Age 10-20, 20-30, 30-40, 40-50, 50-60, 60-70, 70-80, 80-90 years.

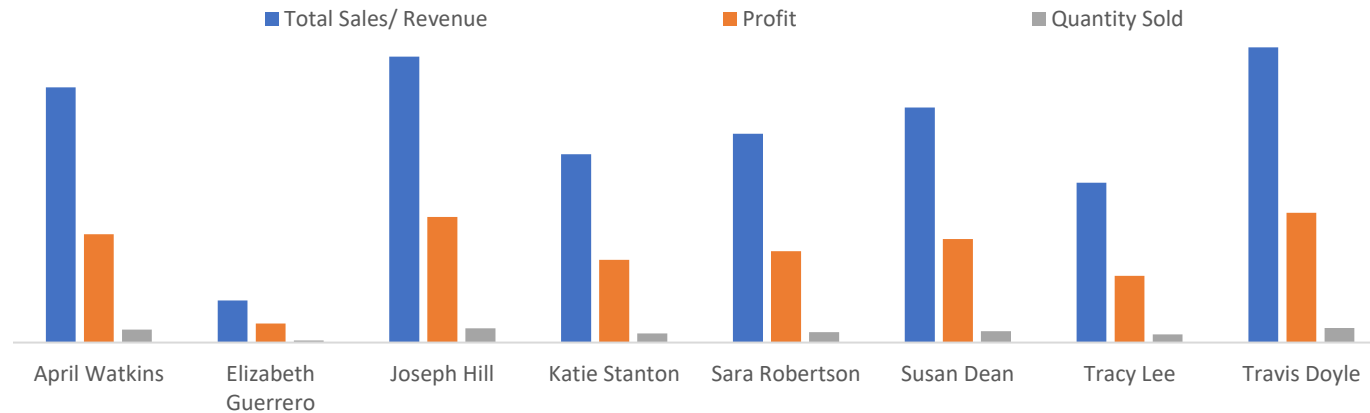
Age Groups	Count of Age	% to total Buyers (12000)
10 - 20	237	1.98%
20 - 30	1940	16.17%
30 - 40	1885	15.71%
40 - 50	1913	15.94%
50 - 60	1925	16.04%
60 - 70	1895	15.79%
70 - 80	1845	15.38%
80 - 90	360	3.00%

FINDINGS: We found that more buyers were within the 20 - 80 Age Group, giving a total of 95.03% of the 12000 customers who purchased products that year.

7. Profit generated by Location: Of the ₦26,784,833.00 profit made in the year 2024, San Antonio has the highest generated profit of ₦3,365,775.00 compared to other regions as seen from the data below.



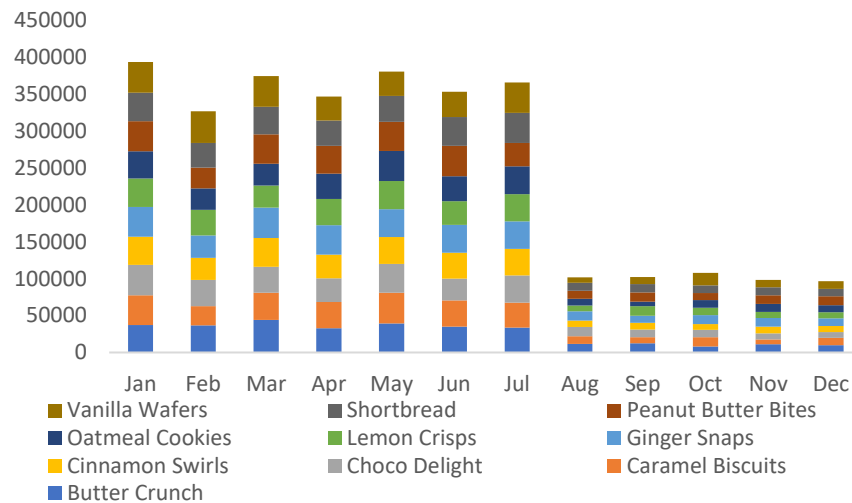
8. Sales Representative Performance: Performance of sales representative assigned to oversee the sales of products in the regions, according to total sales made, profit generated and quantity of products sold.



FINDINGS: From the data, we can see that Travis Doyle and Joseph Hill brought higher profit to the company than other sale representatives, while, Elizabeth Guerrero had the lowest profit generated.

9. Product Performance: We found that Vanilla Wafers had the highest sales volume of 321645, while, Oatmeal Cookies had the lowest of 287231.

Row Labels	Quantity Purchased
Vanilla Wafers	321645
Ginger Snaps	320845
Peanut Butter Bites	316890
Butter Crunch	312371
Shortbread	310528
Caramel Biscuits	298310
Choco Delight	297163
Lemon Crisps	294516
Cinnamon Swirls	290810
Oatmeal Cookies	287231



From this data, we found an increase in demand for all products in general from January to July, and then a sudden fall from August to December.

CHALLENGES

A major challenge encountered while analyzing this data is that, while in reality a healthy profit margin for a product typically falls between 50-60%, especially when considering wider business costs like marketing and rent. This dataset records profit margin of products as low as 9%. It must also be stated that this challenge did not in any way negatively influence the accuracy or reliability of the result.

SUMMARY

From our analysis, B&J Biscuits and Bakery had a total profit of 43.50% in year 2024 and an even sale across all 10 regions. Although, San Antonio had the highest sales/customers of 11.27% and Pheonix with 9.35% the lowest, but both with little margin difference (9-11%) compared to other regions.

There was also a high sale volume on Vanilla wafers, Ginger Snaps, Peanut Butter bites, Butter Crunch and Shortbread, While, a noticeable low sale volume was experienced with Oatmeal Cookies, Cinnamon Swirls,

Lemon Crips, and Choco Delight. With 321645 Vanilla wafers being the highest quantity purchased and 287231 Oatmeal Cookies the lowest.

Shortbread had the highest profit margin of 78%, and Butter Crunch had the lowest of 9%.

About 85% of buyers were male, and most buyers were within the age group of 20 - 80 years.

Elizabeth Guerrero had the lowest performance in the year, with Travis Doyle being the highest performing sales representative.

January - July are peak periods for high sale, while, there was recorded decline in sales from August - December.

Recommendations:

- A profit of 43.50% was made this 2024 which can be better in subsequent years, if considerations are taken into the profit margins of some products that has below 50% margin, such as Butter Crunch, Oatmeal Cookies, and others. With Butter Crunch's decent demand by customers, it generated little to no profit due to its low profit margin of 9%.
- Oatmeal Cookies, Cinnamon Swirls, Lemon Crips, and Choco Delight should be promoted more at all regions, especially during August to December periods.
- August to December periods can be used to run bonus/discount promotions on all products, so as to attract more purchasing customers.
- Females and others should be targeted more during promotions.
- Surveys should be pushed out to sales representatives quarterly to get feedbacks and insights on their experiences on field. Trainers can be brought in to train sales representatives in order to increase customer service and sales in the long run.