Executive Summary

1. Executive Summary - Task 1: Nature of Data

1.1 Results and Assumptions

Data Group	Columns	Summary	Limitations and Biases
Geodemographic Mapping	Area and population details.	Provides demographic details for product placement.	overlooking fluctuations due to temporary residents.
Nutritional Diversity	statistical measures such as standard deviations, and confidence intervals.	Highlights the variability of nutritional intake across communities.	May not fully capture individual dietary habits, like shared meals or non-food uses.
Market Penetration Insight	Market representativeness indicators	Insight into Tesco's market reach and potential growth areas.	Reflects Tesco's corporate perspective, potentially missing broader market dynamics.
Product Preference & Public Health	Food categories and nutrition content.	Analyzes consumer choices against nutritional values to gauge community health profiles.	May not fully capture individual dietary habits, like shared meals or non-food uses.
Transaction Behavior Analysis	num_transactions, transaction_days, man_day	Measures consumer engagement through transaction volumes.	Might not encompass the entire market spectrum, especially non-loyalty program members

2. Executive Summary - Task 2: Seasonal Dietary Choices and Area Preferences

2.1 Results and Assumption of Seasonal Dietary Choices: In the summer season, fibre consumption was recorded to be high, while in the winter season, it was low, signifying the possibility of most likely consuming fibre-rich foods through targeting marketing in colder seasons. Beverage sales show a surge during the holidays and a drastic drop in January, corresponding with 'Dry January'. It is considered an ideal time to launch premium non-alcoholic offerings during this time frame. Where the consumption of ready-made meals, sweets, and sauces goes up in the festive month of December, it is followed by a decreasing number indicating where room remains for healthy options to be added alongside the season's festive mood to keep fit. Such dips in animal product consumption in December and rebounding in January open opportunities for using promotion to inform better and healthier choices of animal product consumption before and after the festive season.

2.2 PCA and Clustering Analysis Distinguish Three Consumer Clusters (Area Preferences):

1. Cluster 1's meat lover has a strong preference for the animal products and a much lower tendency for products like vegetables and fruits; hence, it offers an opportunity for combinations of meat products with healthy products.
2. Cluster 2's fast-paced lifestyle consumers favour convenience, suggesting a strategic focus on healthy, quick meal options.
3. Cluster 3's health-conscious consumers, with a predilection for quality produce and fine wines. the door is opened for very carefully curated marketing campaigns in the direction of wellness.

2.3 Conclusion: These seasonality insights in the consumption trend and consumer segmentation indicate strategic marketing initiatives. By building product offerings around these patterns, businesses can ensure the highest level of efficiency concerning marketing and inventory management that will help cope with the dynamic changes in needs that different groups of consumers will invariably exhibit.

3. Executive Summary - Task 3: Income and Dietary Choices Analysis

3.1 Review of the Income Dataset: The gross earnings data are derived from the Annual Survey of Hours and Earnings (ASHE), which is further used to provide an understanding of the income distribution for the years 1999 to 2022 for London Boroughs.

3.2 Literature Review: the SHoPPER Study focuses on income's impacts on nutritional quality. These studies provide a context and reference to making sense of the scenario about the framework of the various economic factors influencing dietary habits.

3.3 Results: Results: A moderate positive correlation ($r = 0.4589$) between income and fibre consumption would suggest that high-income households can access, and afford, a more healthful diet. On the other side, a weak negative correlation ($r = -0.3335$) could mean that sweet products at low prices are mostly consumed by low-income families. But in the present study, the negative correlation was not statistically significant ($p = 0.0579$). It gives a sign that other variables might intervene to affect sweet intake.

3.4 Literature Comparison: Our results lie with the SHoPPER study on the aspect of the establishment that higher income is related positively to dietary quality in terms of raising fibre intake. However, the increase in sweets consumption among low-income households concurs with the SHoPPER study but the result is statistically insignificant.

3.5 Conclusion: There is a positive correlation between income and fibre consumption and the outcome lies with the SHoPPER literature. It is more likely due to high-income households having access to various fruits and vegetables as healthy foods are considered expensive for low-income households. However, the result shows a negative correlation between income and sweets consumption. This could be due to the fact that low-income homes could have more consumption of energy-dense foods that are less costly, including sweets. Most high-sugary foods are cheap and affordable, and thus are consumed mostly by households based in town areas.

References

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