**Problem Statement: Sales Analysis and Customer Insights for a Multi-Department Grocery Chain**

**Background:**

A multi-departmental grocery chain, operating in diverse locations, is looking to enhance its sales analysis and customer insights using data-driven analysis in Microsoft Excel. The company offers a broad range of food categories, departments, and brands, and aims to maximize store sales while improving customer experience and promotional strategies. Company also wants a dashboard which shows insights of the data.

**Objective:**

The objective of this analysis is to help the company to get insights from data and solve following questions. They also want to see a dashboard So, the company can make data driven decisions.

1. What is the total number of records (rows) in the dataset?

2. What are the unique values for the 'promotion\_name' column?

3. Can you provide summary statistics for the 'store\_sales' column, such as mean, median, and standard deviation?

4. How many unique values are there in the 'sales\_country' column, and what are they?

5. What is the most common 'gender' in the dataset?

6. What is the average 'unit\_sales' for all records in the dataset?

7. How many different 'store\_types' are present, and what are they?

8. What is the distribution of 'marital\_status' in the dataset?

9. Are there any missing values in the dataset, and if so, in which columns?

10. What is the range of 'avg\_yearly\_income' values in the dataset?

11. How many unique 'brand\_name' values are there, and what are they?

12. What is the most common 'education' level among customers in the dataset?

13. What is the proportion of 'houseowners' in the dataset?

14. Can you identify any correlations between numerical columns, such as 'store\_sales' and 'avg\_cars\_at\_home'?

15. What is the average 'cost' for the different 'media\_type' values?

16. How many records have 'low\_fat' products, and how many have 'recyclable\_package' products?

17. What is the average 'net\_weight' for products with and without a 'recyclable\_package'?

18. How does the 'store\_sales' vary across different 'food\_departments'?

19. What is the total 'store\_sales' for each 'store\_city'?

20. Can you identify any patterns or trends in 'unit\_sales' over time (if a time dimension is present in the data)?

21. What is the average unit\_sales for different food\_categories or food\_departments?

22. How does the promotional cost (cost associated with promotions) relate to the increase in store\_sales?

23. Is there a difference in store\_sales based on the presence of a coffee\_bar or salad\_bar in the store?

24. What is the correlation between store\_sales and the number of units\_per\_case?

25. How do store\_sales vary across different store\_cities or store\_states?

26. Is there a correlation between the number of total\_children and unit\_sales?

27. Do stores with a video\_store section have higher store\_sales compared to those without?

28. What is the average store\_sales for different levels of frozen\_sqft (frozen section size)?

29. How does the presence of a florist in the store impact store\_sales?

30. Is there a relationship between the media\_type and the cost associated with it in driving store\_sales?

31. What is the average store\_sales for different levels of grocery\_sqft (grocery section size)?

32. How does the net\_weight of products relate to the store\_sales?

33. Is there a difference in store\_sales based on the marital\_status and gender combined?

34. What is the correlation between store\_sales and the average\_cars\_at\_home considering different education levels?

35. How does the distribution of store\_sales change over different occupation types?

36. Is there a significant difference in store\_sales between different SRP ranges (e.g., low, medium, high)?

37. What is the impact of promotional names on unit\_sales for different brands?

38. How do store\_sales vary with the number of prepared\_food sections in a store?

39. Is there a correlation between store\_sales and the presence of a media\_type such as Daily Paper or Radio?

40. What is the relationship between store\_sales and the average yearly income, considering different member\_card statuses?

41. Can you identify any seasonality or trends in store\_sales over time, and how can they be explained?

42. Using machine learning models, can you predict future store\_sales based on the available features? (Not for analyst)

43. What is the customer lifetime value (CLV) for different segments, and how can it be maximized?(not for analyst)

44. Are there any significant interactions or synergies between different promotions that impact store\_sales?

45. Can you identify any outliers or anomalies in store\_sales, and what factors contribute to them?(only first part of this question is for analyst)

46. How do external factors, such as economic indicators or weather conditions, influence store\_sales? (need to know economic conditions)

47. Using clustering techniques, can you identify distinct customer segments with similar purchasing behaviors?(not for analyst)

48. Are there any geographical patterns in customer preferences or store\_sales, and how can they be leveraged?

49. Using time series analysis, can you forecast the impact of future promotions on store\_sales?(not for analyst)

50. What is the optimal pricing strategy for maximizing store\_sales, considering various factors such as brand, product features, and promotions?(not for analyst)

51. How do different store types (e.g., Deluxe Supermarket) perform in terms of store\_sales, and what factors contribute to their success?

52. Using network analysis, can you identify influential customers or brands within the dataset?(not for analyst)

53. What is the impact of education level and occupation on the choice of specific brands or food categories?(not for analyst)

54. How does the competitive landscape (presence of other stores) affect store\_sales in a given location?

55. Can you create a recommendation system for promoting products to customers based on their past purchasing behavior?(not for analyst)

56. What is the elasticity of demand for store\_sales concerning changes in pricing or promotional strategies? (not for analyst)

57. How do macroeconomic factors, such as inflation or unemployment rates, affect store\_sales?(use external data sources to get information about factors and compare)

68. Using geospatial analysis, can you identify potential areas for opening new stores based on customer demographics and store\_sales data?