Data Report

* Introduction
  + Company background

Divine Foods Inc is a company that distributes a variety of cookies to buyers. The data I’ve analysed suggests that there are five companies that order the cookies in large quantities for resale.

* + Current position

My current position is a data analysis.

* + Company objectives

The senior managers at Divine Foods Inc. would like to better understand the sales figures, products, and customers so they can improve their processes and sales.

* Executive summary
  + The problem

Following 5 months of selling cookies, Divine Foods Inc would like to increase profits and establish the best/worst sellers.

* + The analysis's goal.

The goal for my analysis was to find trends in cookie sales alongside trends with the buyers.

* + The data and techniques employed.

I was provided with a dataset spanning 3 full months and 2 half months, using Excel and Power BI I cleaned and manipulated the data using a variety of tools including PivotTables, Forecast sheets and a variety of graphs. Firstly, I conducted an exploratory analysis, then an excel based analysis, a statistical analysis and lastly a power BI dashboard.

* + Brief interpretation of results.

During my analysis I discovered that fortune cookies are falling behind in orders and are the least profitable. Chocolate chips had zero sales in February. ACME Bites and ABC Groceries had zero sales in October and February respectively. Snickerdoodle made the most profit. Park and Shop Convenience Stores had the highest average order total and highest quantity sold to in January, also being the highest overall in sales. Possibly discontinue fortune cookies or reevaluate the production or advertisement.

* Main body
  + Summary of errors in data

1. Filled in missing values in specific cells by filtering each column and corrected values in CookieID and BuyerID columns.
2. Eliminated irrelevant columns such as buyer name, phone, address, state, zip, and notes.
3. Corrected date formats to display accurately.
4. Deleted empty rows to clean up the data.
5. Removed duplicate entries from October 15th and 16th.
6. Formatted price per cookie and cost per cookie columns as currency.
7. Added spaces for clarity in columns like cost per cookie, order total, and Cookie name.
8. Adjusted column widths to accommodate text appropriately.
9. Renamed columns for clarity, such as removing CookieID and BuyerID in favor of more relevant information like Cookie name and company name.
10. Removed redundant information like City since each company is in a separate city.
11. Formatted the order total column as currency for consistency.
    * Details on how the analysis process was compliant with regulations and laws.

In compliance with legal requirements such as GDPR and respecting the rights of data subjects as outlined in the Data Protection Act (DPA), I ensured only relevant information was used in my analysis. I removed names and personal information, using only the company name. I ensured the data wasn’t shared outside of the organisation. I sought permission from data subjects and relevant company departments.

* + Hypothesis

H0: Theres no relationship between cookies sold and the month they were sold by.

H1: Cookie sales increase due to seasonal trends.

* + Findings of analysis (summaries, calculations, pivot tables, charts, etc)

Using a variety of charts, I was able to better visualise key data points. I created a new column (profit) and used calculations to fill the column with the appropriate data. With every analysis I used a pivot table then a suitable graph and lastly written insights detailing my findings.

* + Written insights explaining the outcome/results of each analysis and response to hypothesis.

Order Total by month indicated January as having the highest order total. Oct and Feb are outliers as are not full months. Therefor the month with the least order total was December disproving the hypothesis that there were seasonal trends with cookie sales.

I used a forecast sheet to predict future profit. Due to only 3 out of 5 months of complete data this was inconclusive. More data would be needed to make an accurate forecast and to prove/disprove the hypothesis.

Park & Shop Convenience Stores had the highest company total spend, with ABC and ACME with similar total spend and Tres Delicious with significantly lower total spend.

ABC, ACME and Park & shop have similar average order total. Tres Delicous and Wholesome Foods comparably had lower average order totals.

ACME didn’t buy any products in October although had the highest quantity sold in November. Park & Shop had the highest total quantity sold overall and particularly in January.

The Cookie with the most profit was Snickerdoodle with the least being White Chocolate Macadamia Nut. Fortune cookies made the least profit by order total whilst White Chocolate Macadamia Nut had the highest.

* Conclusion
  + Overall summary of **key/most important** trends/findings

**Product Performance**: Snickerdoodle emerged as the most profitable cookie, while fortune cookies lagged in orders and profitability.

**Buyer Insights**: Park & Shop Convenience Stores stood out with the highest average order total and quantity sold, indicating a strong partnership potential.

**Seasonal Trends**: Contrary to the hypothesis, there were no clear seasonal trends in cookie sales. January had the highest order total, while December had the least, suggesting other factors besides seasonality influencing sales.

**Company Spending**: ABC, ACME, and Park & Shop showed similar total spend patterns, with Tres Delicious having significantly lower spending.

**Forecasting**: Forecasting future profits using the available data was inconclusive due to limited months of complete data; more data is needed for accurate predictions.

* Recommendations for action

**Product Strategy**: Consider discontinuing or reevaluating the production and marketing strategy for fortune cookies to improve profitability.

**Partnership Focus**: Strengthen the partnership with Park & Shop Convenience Stores due to their high average order total and quantity sold.

**Data Collection**: Continue collecting sales data to improve forecasting accuracy and identify long-term trends.

**Market Expansion**: Explore opportunities to increase sales with other high-potential buyers or by diversifying product offerings.

**Operational Efficiency**: Streamline processes based on buyer insights to optimize sales and production.

Implementing these recommendations can help Divine Foods Inc. enhance its competitive edge, drive sales growth, and achieve its objectives of improving processes and profitability.