

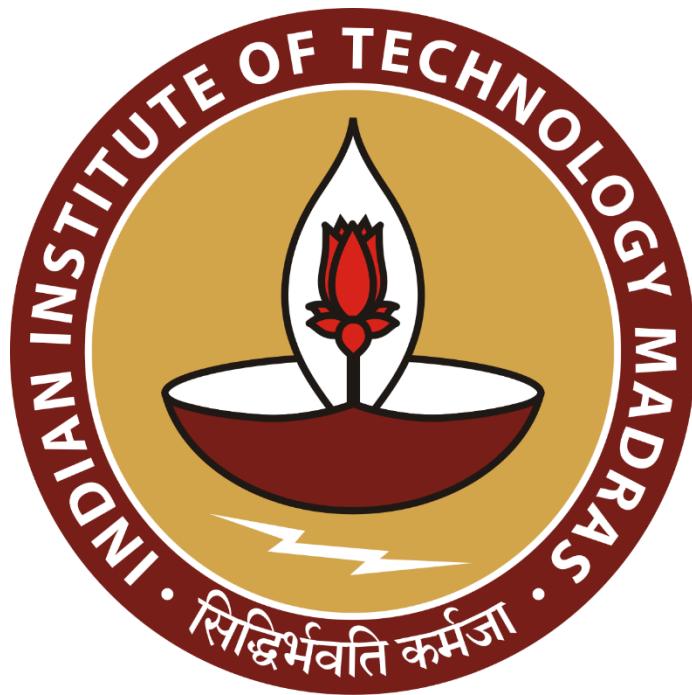
Enhancing Business Efficiency and Customer Experience for Ali's Shawarma
Truck near KIIT University.

Submitted by

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1 Executive Summary and Title

Title : Enhancing Business Efficiency and Customer Experience for Ali's Shawarma Truck near KIIT University.

- Dopamine Dose, Ali's Shawarma Truck, near KIIT University, stands out for its delicious shawarmas and commitment to quality since its establishment in January 2023.
- The provided **proof of originality** includes owner images, a comprehensive data collection methodology letter, and a visual tour video, establishing the authenticity of the enterprise. Data collected and analyzed from October 10, 2023, to December 5, 2023, unveil valuable insights into Dopamine Dose's performance.
- **Descriptive statistics** showcase a revenue range of ₹2410 to ₹6840, with an average of ₹4762.45 over 56 days. The analysis of the number of products sold per day averages at 46.96, with a standard deviation of 10.40. Key findings highlight 'Peri Peri Chicken Shawarma' as the most popular and revenue-generating item, constituting 23.61% of total sales and approximately 19% of total revenue.
- Applying the Pareto principle, it's revealed that 80% of total revenue is driven by 'Peri Peri Chicken Shawarma,' 'Tandoori Chicken Shawarma,' 'Schezwan Chicken Shawarma,' 'BBQ Chicken Shawarma,' and 'Just Chicken Shawarma.' Visual aids, including charts for revenue trends, product distribution, and a Pareto chart, provide a clear overview.
- Dopamine Dose's success is attributed to strategic product focus, and the analysis equips the business with actionable insights for optimizing strategies, ensuring sustained performance, and profitability.

Attachments: Images, Letter from Organization, Video Link, Google Sheet

2 Proof of Originality

Details :

Enterprise name : Dopamine Dose

Owner : Ali Mahfoud

Address : KIIT Square, Koyal Campus, Bhubaneswar - 751024

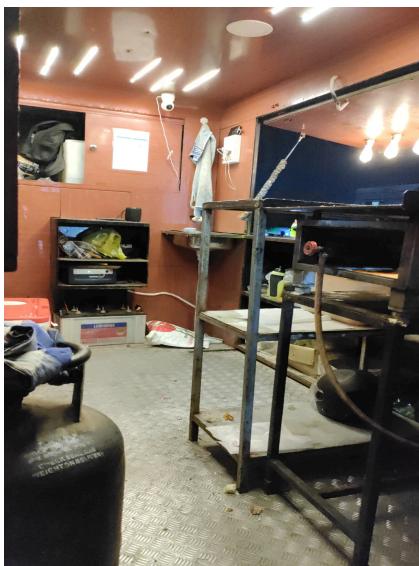
About :

Established in January 2023, Ali's Shawarma Truck has become an integral part of the local food landscape near KIIT University. Renowned for its mouthwatering shawarmas, diverse menu offerings, and personalized service, the truck has garnered a dedicated customer base. Over the years, the business has thrived due to its commitment to quality and innovation.

Images :



IMG 1 : Ali Mahfoud with this truck. Photo taken in February 2023

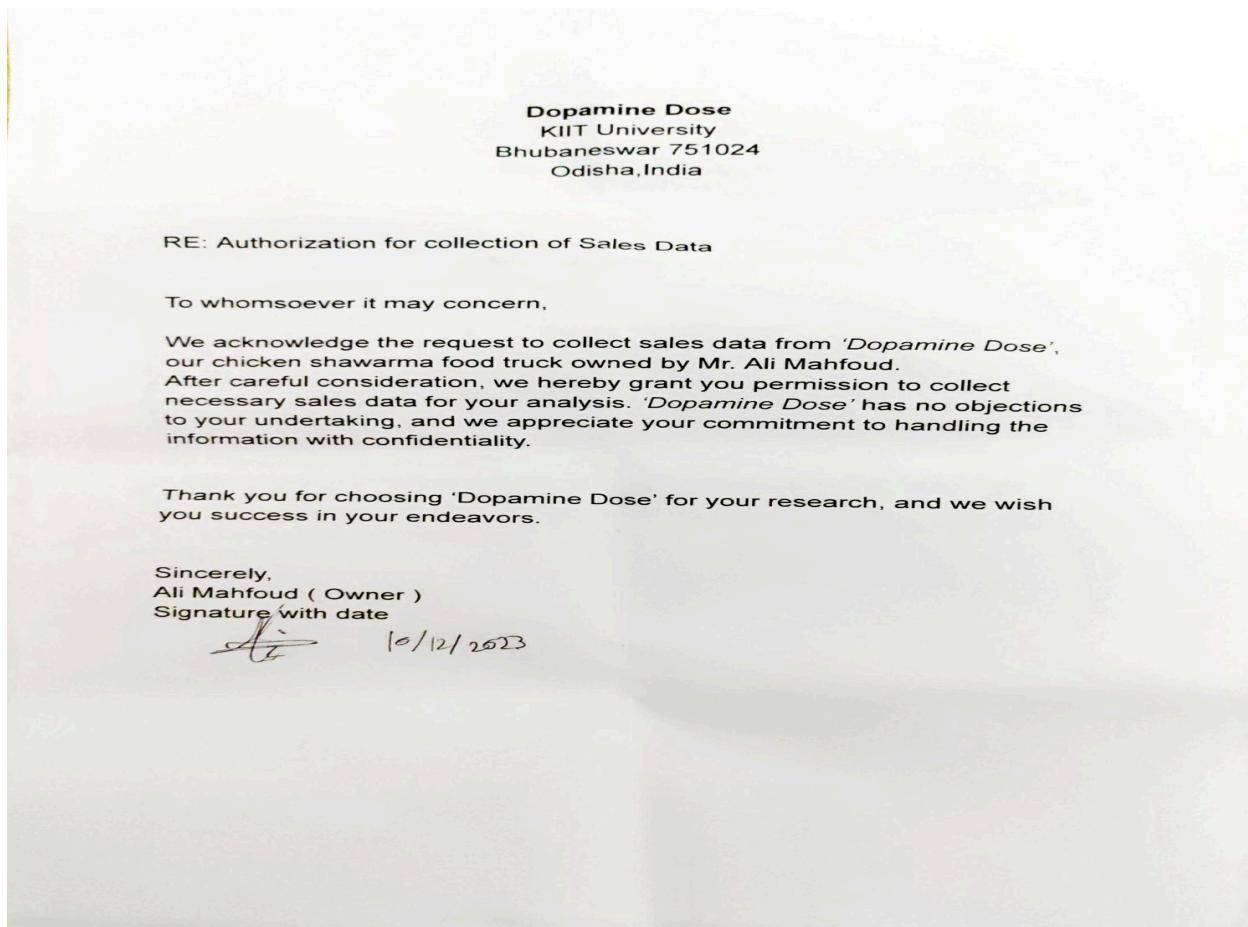


IMG 2 & IMG 3 :
The two images to the left were taken at the end of November. The images show the different views of the truck. In IMG 3, the gas cylinder along with the cooking table can be seen.



IMG 4 : Photograph with the owner (Ali Mahfoud on the left)

Letter from organization :



Video Link :

https://drive.google.com/file/d/1K7pMSNGlsd9T0RFng5l5pY8sRWgjMtny/view?usp=drive_link

3 Metadata

Data collection started from the ***10th of October 2023*** and continued till the ***5th of December 2023***. Data was collected by daily visits to the truck after the period of its business and enquiring the owner about the sales and number of products (shawarmas) sold in each category (variety from the menu). If the sales were good on a particular day, the chicken ran out by 7:30pm. The data was collected for a total of 56 days. Based on the data, descriptive statistics can be found in the following section.

Metadata of the google sheet where the data was laid out :

- Sheet 1 (SALES DATA, SELLING PRICE, INDIVIDUAL REVENUE) :
 - Dimension - 59 x 39 (59 rows, 39 columns)

- Feature columns - Regular, Just Chicken, Tandoori Chicken, BBQ Chicken, Peri peri Chicken, Schezwan Chicken, Salsa Chicken, Special Tandoori, Special BBQ chicken, Special Schezwan Chicken, Special Salsa Chicken, Special Peri peri,
- The SALES DATA section highlights the number of products sold in the feature columns during the span of 56 days.
- The SELLING PRICE section highlights the selling price of each product in the set of feature columns.
- The INDIVIDUAL REVENUE section highlights the individual revenue generated by each of the products in the set of feature columns.
- Sheet 2 (REVENUE PARETO) :
 - Dimension - 13 x 3 (13 rows, 3 columns)
 - Column names - Item name (consists of same items as in feature columns mentioned above), Revenue Generated, Cumulative percentage

Link to google sheet:

 mid-term_submission.xlsx
https://docs.google.com/spreadsheets/d/1zSWlDovkETWPPj8ZJg1h49xLDbNv0ZIc/edit?usp=drive_link&ouid=116009310758544100512&rtpof=true&sd=true

4 Descriptive Statistics

Statistical parameters of revenue generated in 56 days

Statistical Parameter	Value in rupees	Explanation
Maximum	6840	Maximum revenue generated in a day
Minimum	2410	Minimum revenue generate in day
Average	4762.45	Average revenue generated within the span of 56 days
Standard Deviation	1051.81	Dispersion of revenue relative to the average revenue

Statistical parameters of number of products (shawarma wraps) sold / day in 56 days

Statistical Parameter	Number Sold / Day	Explanation
Maximum	68	Maximum number of shawarmas sold in one day.
Minimum	24	Minimum number of shawarmas sold in one day.
Average	46.96	Average number of shawarmas sold within the span of 56 days.
Standard Deviation	10.40	Dispersion of the number of shawarmas sold from the average.

5 Detailed Explanation of Analysis

The chosen analysis process is designed to extract meaningful insights from the collected data efficiently. Each step of the process serves a specific purpose, contributing to a comprehensive understanding of Dopamine Dose's performance.

- Data Collection and Cleaning:

The data collection spanned 56 days and involved daily visits to the truck, ensuring a rich dataset. Cleaning procedures, such as removing whitespaces, addressing missing values, and converting dates to 'date' datatype, were implemented to enhance data accuracy. The absence of significant outliers, particularly in sales data, validated the reliability of the dataset.

- Revenue Calculation:

$$\text{Total Revenue} : \sum_{i=1}^n (\text{Number Sold} / \text{Day}_i \times \text{Selling Price}_i)$$

The revenue calculation method involved multiplying the quantity of each product sold by its respective selling price. This straightforward calculation accurately captured the financial impact of each product on a daily basis.

- Statistical Analysis:

Descriptive statistics, including maximum, minimum, average, and standard deviation, were employed to quantify the central tendencies and variability in both revenue and daily product sales. This statistical approach provides a clear numerical summary of the dataset, aiding in the identification of trends and patterns.

$$\text{Average} : \sum_{i=1}^n \text{Data}_i / n,$$

Standard Deviation: $(\sum_{i=1}^n (Data_i - Average)^2 / n)^{1/2}$

Here, data means both individual revenue and number of shawarmas, 'n' in the former context means total revenue generated and total number of shawarmas sold in 56 days in the latter.

- Pareto Chart Construction:

$$\sum_{i=1}^n Individual\ Contribution_i / Total\ Revenue$$

The Pareto chart was chosen for its ability to visually highlight the significant contributors to overall revenue. By ordering individual product contributions in descending order and overlaying cumulative percentages, the chart serves as a powerful tool for strategic decision-making. The combination of bar and line charts ensures a comprehensive representation of the data distribution.

- Product Popularity Analysis:

Utilizing pie charts and bar charts to depict the proportions and confirm the popularity of specific products provides a multi-dimensional understanding of customer preferences. This visual approach enhances the interpretability of the data, facilitating strategic product positioning.

- Revenue Trend Analysis:

Line charts were used to visualize revenue trends over days and months, offering a representation of Dopamine Dose's financial performance. This graphical representation enhances the communication of trends and fluctuations in revenue, aiding in strategic planning.

- **Justification for Method Choice:**

The chosen analysis process excels in providing a holistic view of Dopamine Dose's performance. It combines robust statistical measures with visually intuitive charts, allowing for a comprehensive and accessible analysis. The methodology is selected based on its efficacy in uncovering patterns, identifying significant contributors, and facilitating data-driven decision-making. This approach aligns with the goal of optimizing business strategies for enhanced performance and profitability.

6 Results and Findings

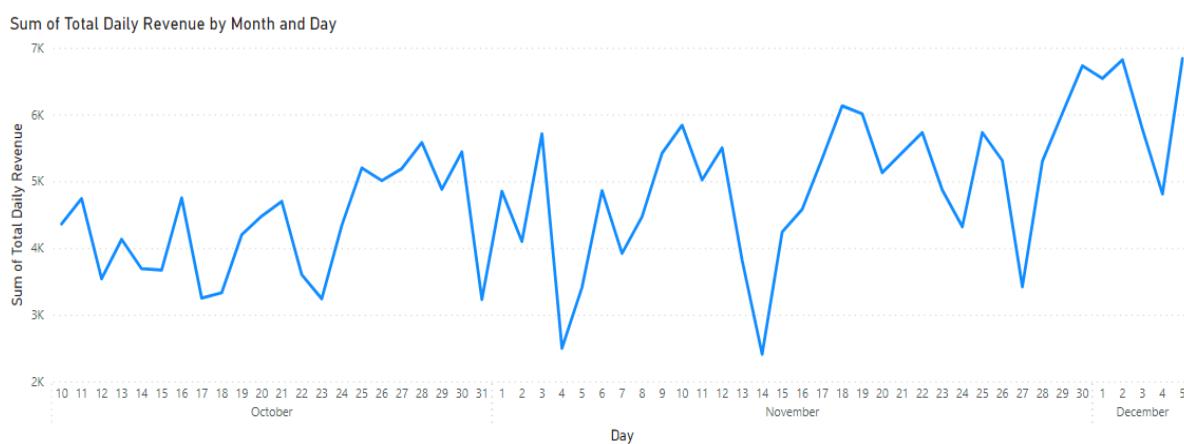


Chart 1 - Total Revenue per day

Unit - Revenue in Rupees, days in number

The Line-chart displays the Total Revenue per day for 56 days. Total Revenue is obtained by summing up the individual revenue generated by each product in the menu.

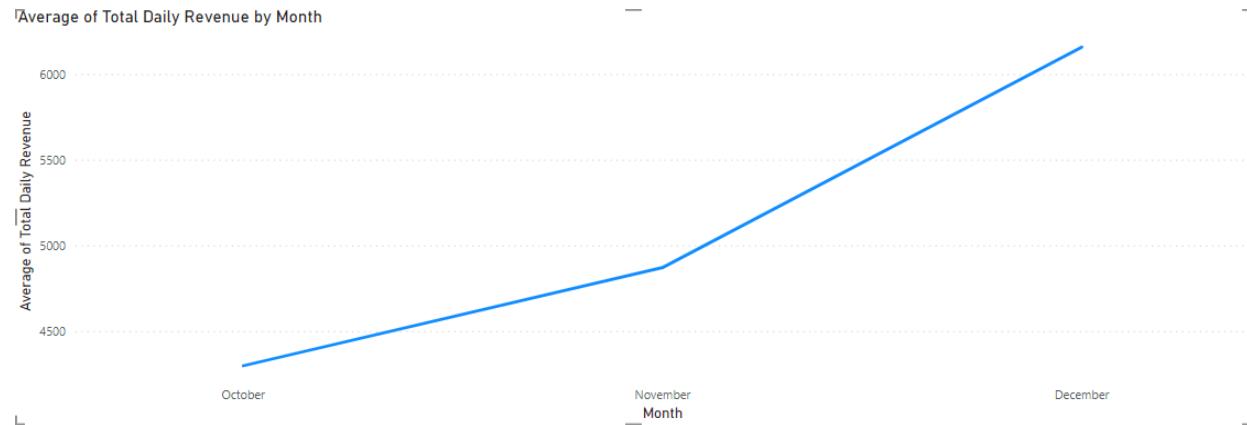


Chart 2 - Revenue trend over the months

Unit - Revenue in Rupees

The Line-chart displays the average revenue recorded in each month. Average revenue is calculated by summing up the revenue of each month and dividing by the number of days in the month.

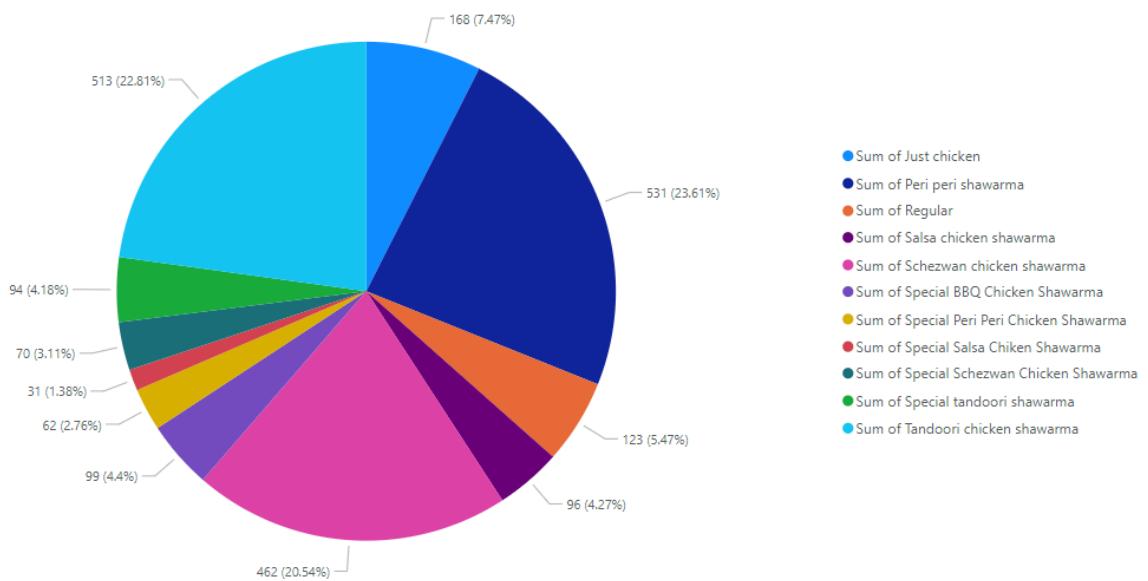


Chart 3- Distribution of different products in the menu based on the total number sold.

The Pie-chart displays the proportion of different products that got sold. Calculations involve dividing the total number of a particular shawarma type sold, by the total number of shawarmas sold.

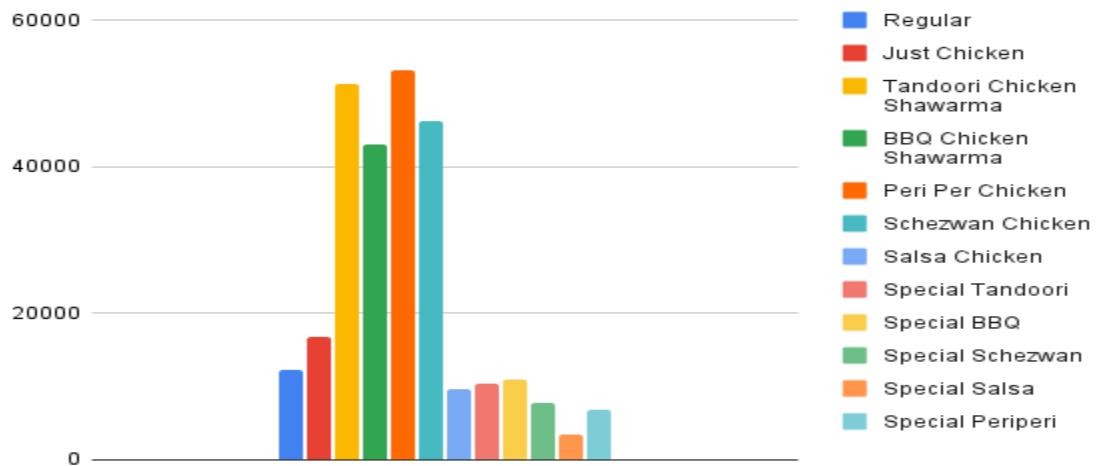


Chart 4 - Individual Revenue Generated by products sold.

The Bar-chart displays the contributions of individual products to the total revenue generated.

Individual Revenue Generated and Cumulative Percentage

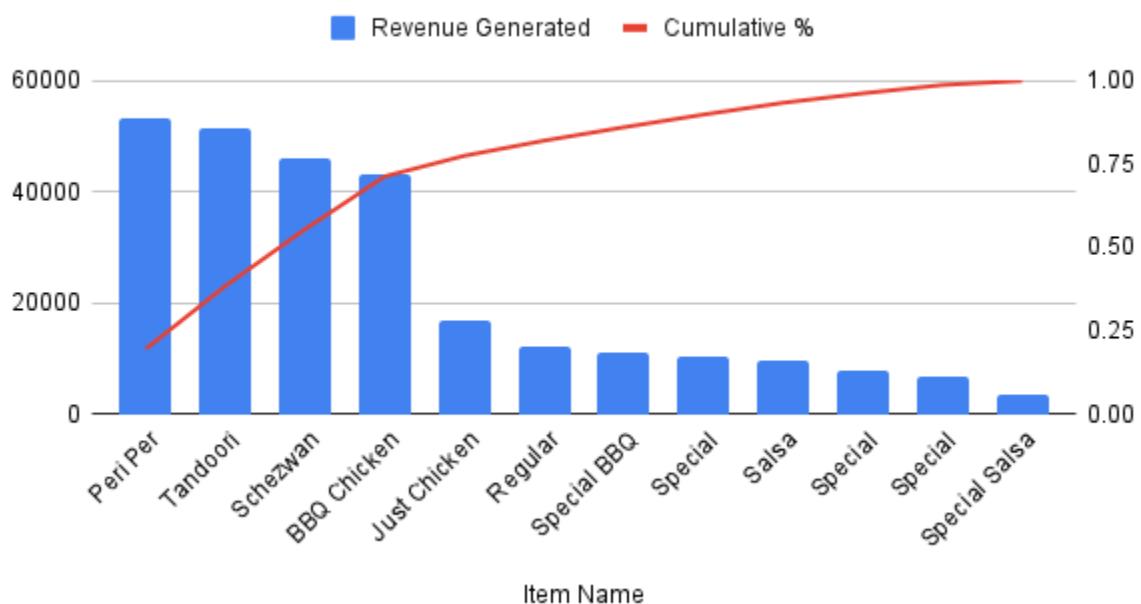


Chart 5 - Pareto Chart of different items sold.

The combo chart of Line and Bar Charts displays relative importance of products based on revenue generated.

Based on the analysis conducted, several key findings helped us achieve the mid-term goals set by us before.

Off all the products that got sold in the past 56 days :

- The ‘Peri peri Chicken Shawarma’ came out on top in terms of popularity with the maximum number and proportion sold. It accounts for 23.61 %, which is precisely 531 of the total number of shawarmas sold.
- The ‘Peri peri Chicken Shawarma’ came out on top in terms of revenue generated as well which was obvious because the prices of regular chicken shawarma were identical. Roughly 19 % percent of total revenue generated was contributed by said product.
- Applying pareto principle to the revenue data revealed that 80 % of the total revenue is generated by :
 - ‘Peri Peri Chicken Shawarma’
 - ‘Tandoori Chicken Shawarma’
 - ‘Schezwan Chicken Shawarma’
 - ‘BBQ Chicken Shawarma’
 - ‘Just Chicken Shawarma’
- ‘Schezwan Chicken Shawarma’ displayed a sudden uptick in popularity during the final stages of data collection. *Speculations include that people tend to eat spicier food as the weather becomes colder to perspire and keep them warm.*