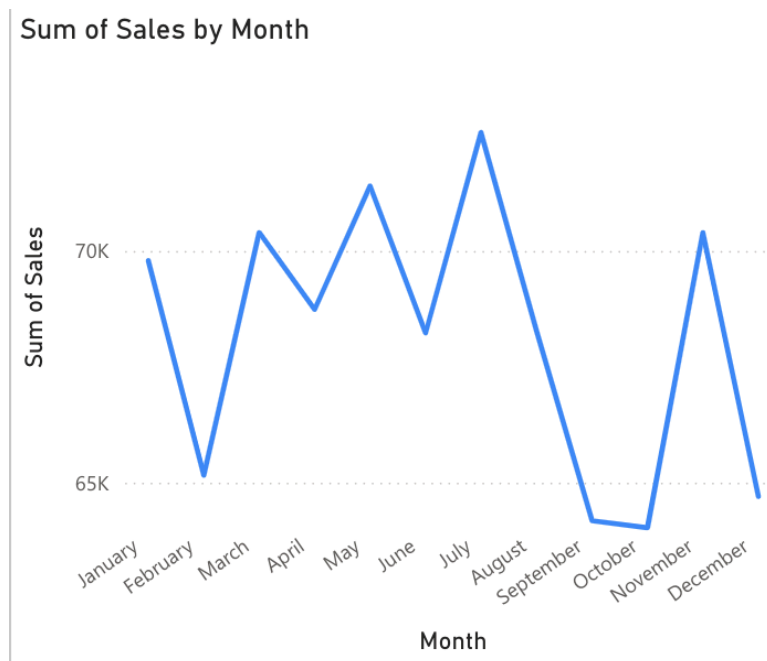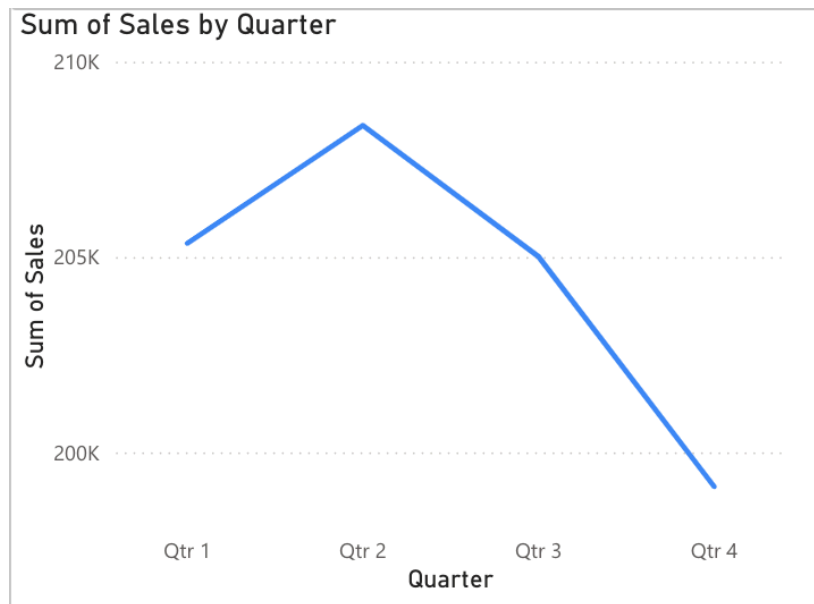## 1. Sales Trend Analysis:

The visualisation shows that in 2015, the sales of the company witnessed a positive trend from Quarter 1 to reach a peak of roughly 210K totally in Quarter 2 before dropping significantly for the rest of the year.
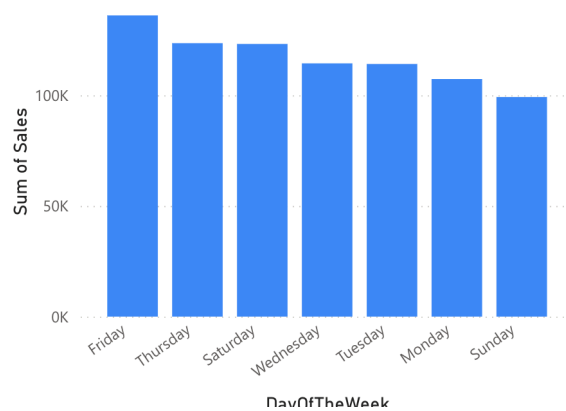

Sum of Sales by Quarter

Sum of Sales by Month

In terms of the monthly sales, some fluctuations were recorded in the line chart, with the most dramatic fall was from July to August and September, followed by the bottom at approximately 64K in October 2015.

Oppositely, the total sales was attributed equally for all days of the week, including weekdays and weekend, with each proportion around 15%. In contrast, there were some peak hours contributed to the sales, that are 12PM and 1PM, and 6PM and

7PM. The reason for that is because these are the lunch time and dinner time. A very little amount of sales was recorded from 10PM onwards.
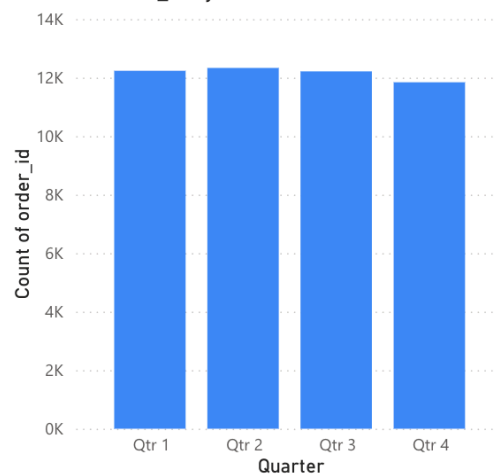
Sum of Sales by DayOfTheWeek


Sum of Sales by HourOfTHEdAY
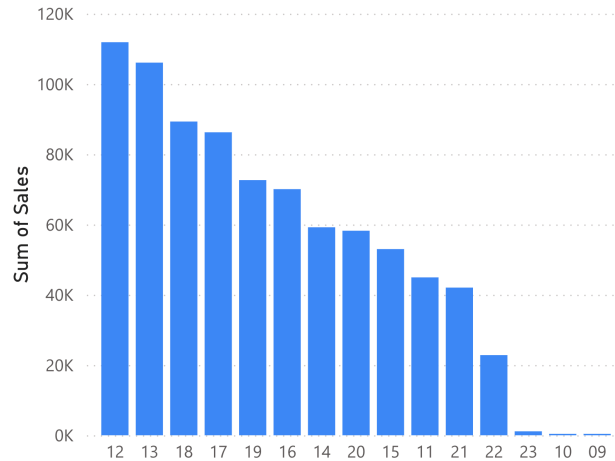
Count of order_id by Quarter

A significant sales drop was in Quarter 3 of 2015, though the number of orders were similar between all quarters (at around 12K orders). It is potentially because the average price per order for Quarter 3 and 4 were much lower than that of Quarter 2, therefore leading to a sales drop in these quarters.

Average of price by Quarter
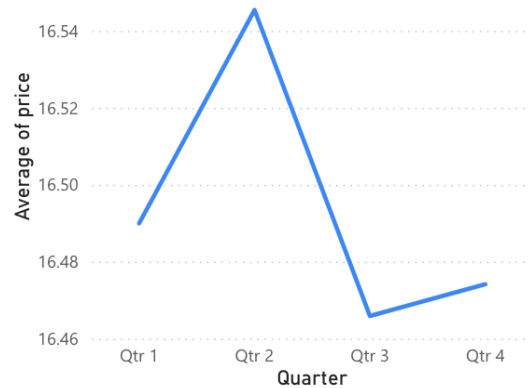
2. Product Performance:

Looking at the funnel chart, we could see that the Classic category was ranked first in terms of the sales at around 220K, followed by 208K,196K,193K of Supreme, Chicken, and Veggie respectively. The same pattern was recorded in the figure for the number of quantity, with the number of quantity for Classic category (around 15K) far exceeding that of Supreme, Chicken, Veggie (all at roughly 11K).

Sum of Sales by category
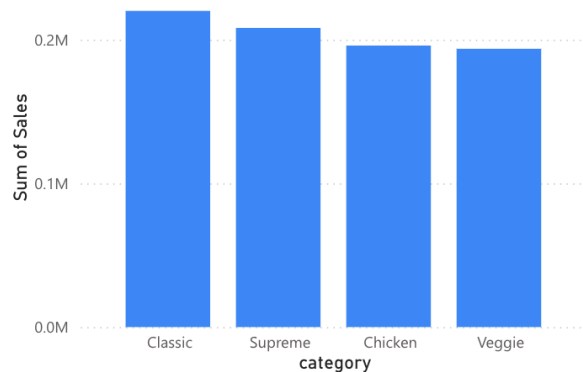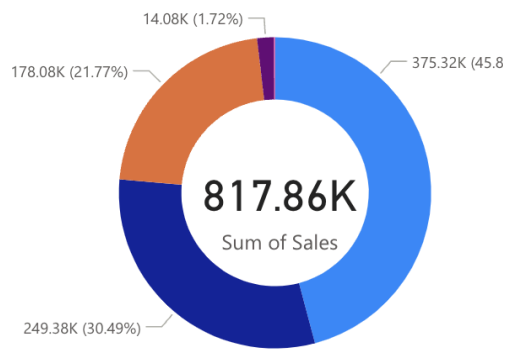

Sum of quantity by category
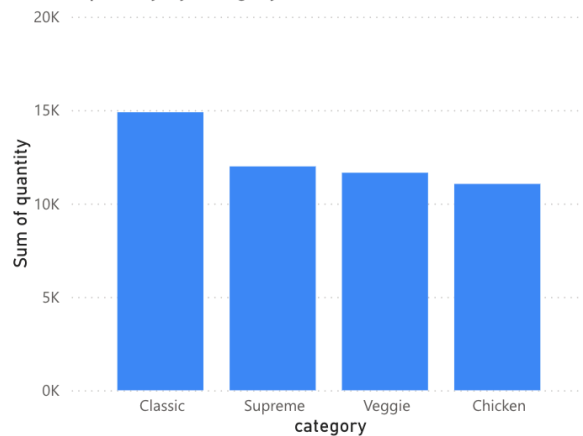
In terms of quantity, the top 5 performing pizza is The Classic Deluxe, The Barbeque Chicken, The Hawaiian, The Peperoni, The Thai Chicken, opposite to the bottom 5, which is The Soppressata, The Spinach Supreme, The Calabrese, The Mediterranean, The Brie Carre. Meanwhile, in terms of sales, the top 5 performing pizza is The Thai Chicken, The Barbeque Chicken, The California Chicken, The Classic Deluxe, The Spicy Italian, opposite to the bottom 5, which is The Spinach Pesto, The Mediterranean, The Spinach Supreme, The Green Garden, The Brie Carre.

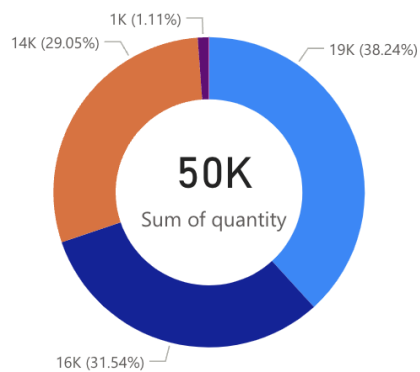Top 5 Popular Pizzas

Top 5 Best-Selling Pizzas
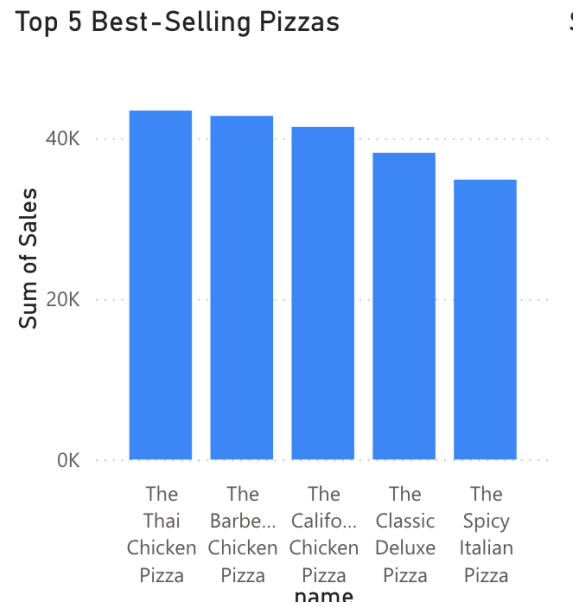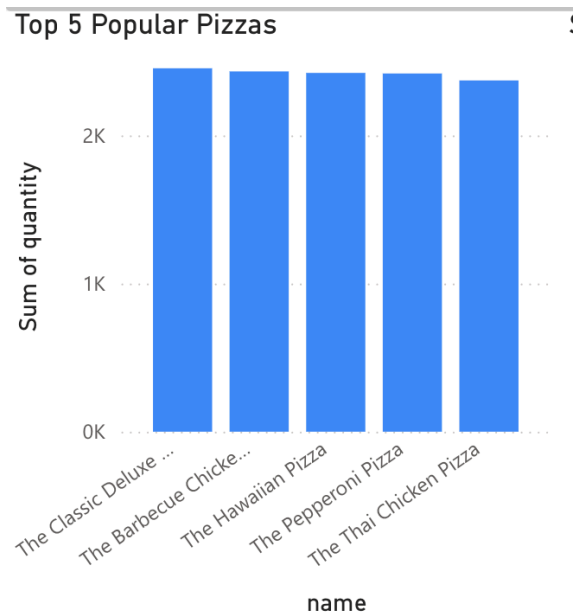
It can be seen from the graph, a majority of sales and quantity were contributed by the L size (46% of sales and 38% of quantity), followed by the M size by the S size (30% for sales and quantity). Very little sales and quantity was recorded by XL and XXL size.

Sum of Sales by size

14.08K (1.72%)

178.08K (21.77%)

375.32K (45.8

817.86K
Sum of Sales

249.38K (30.49%)

Sum of quantity by size

1K (1.11%)

14K (29.05%)

19K (38.24%)

50K
Sum of quantity

16K (31.54%)

3. Customer Purchase Patterns:

From the graph we could see that Large was the most popular size for all categories, except for Classic (at roughly 40-45%), with Small is the most popular size for Classic category (41% of the number of orders).

Count of order_id by size

0.54K

14.14K   (1.12%)

(29.08%)

18.53K
(38.1%)

size
● L
● M
● S
● XL
● XXL

15.39K (31.64%)
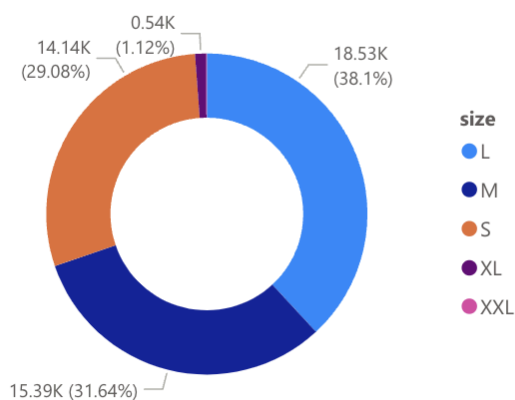
Moreover, the number of multi-item orders far exceeded that of single item orders (with 40K of multi-item orders versus less than 10K of single-item orders). We could also see that the sales were mostly contributed by the multi-item orders, as the average sales was much higher than the sales of single-item orders.
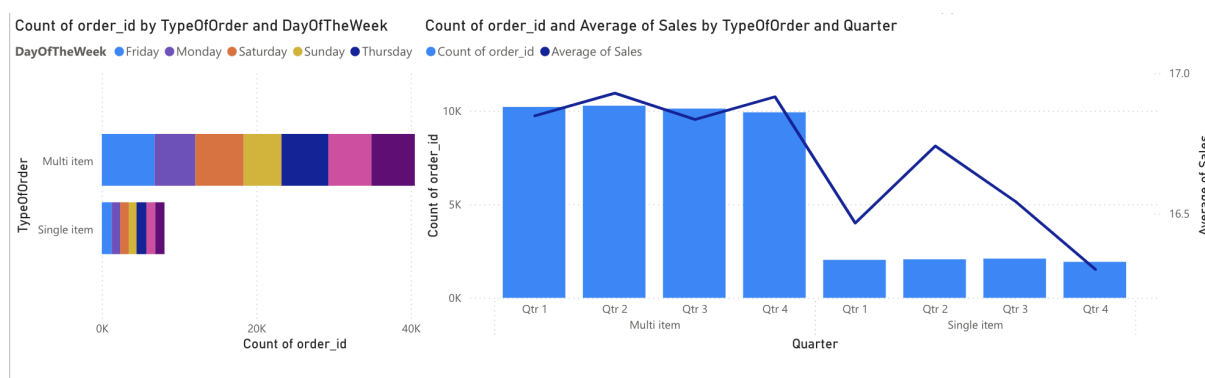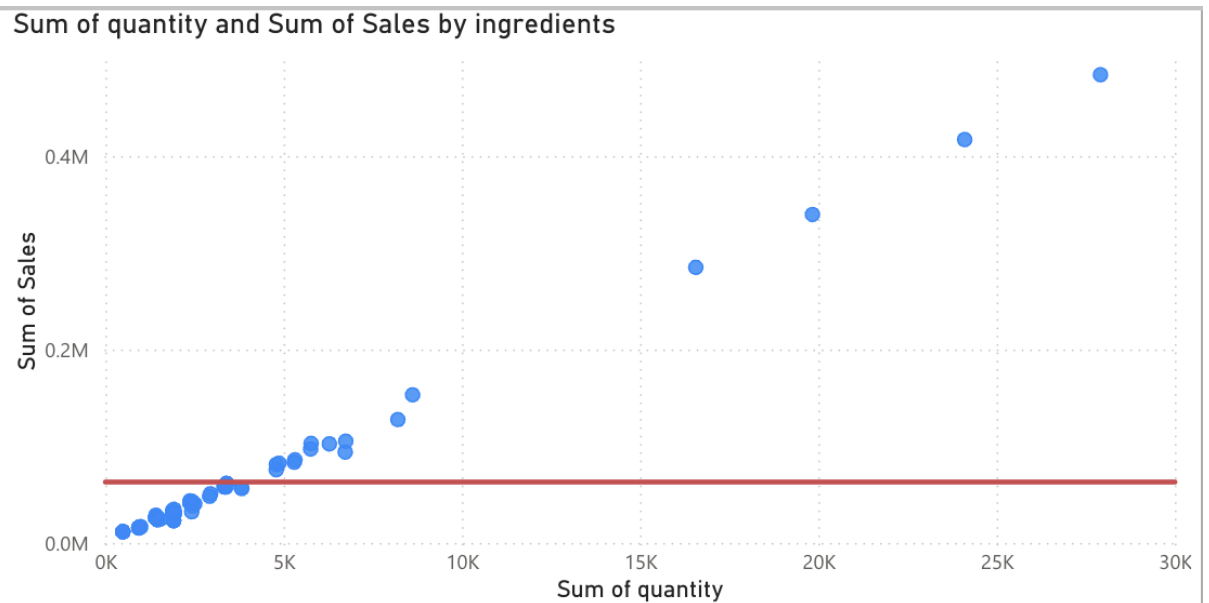

4. Ingredient Analysis:

In terms of the frequency, we could see that Garlic, Tomatoes and Red Onion are among the most frequently used ingredients among pizzas, with 27K, 23K, and 20K times used respectively. In contrast, with 480 times used, Prosciutto, Thyme, and Brie Carre Cheese are the least popular ingredients for all pizzas. Moreover, garlic is the most popular ingredient for all categories, with an exception for Chicken, which had Tomatoes as the most popular ones.
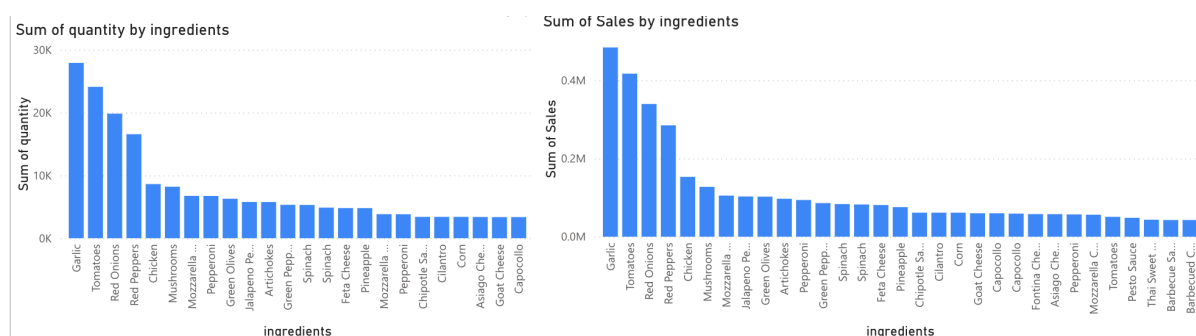

On the other hand, Brie Carre Cheese is the least used ingredient for all kinds of pizza, except for Supreme (Plum Tomatoes is the least used).

In terms of correlation, we could see that the total sales were attributed to the most popular ingredients, thereby the sales of pizzas having these ingredients are much higher than the average sales.

Sum of quantity and Sum of Sales by ingredients

The similar pattern was recorded for that of the quantity, as most-used ingredients such as Garlic, Tomatoes, and Red Onions witnessed a better performance compared to others, contributing a large amount to the total quantity.


Sum of quantity by ingredients
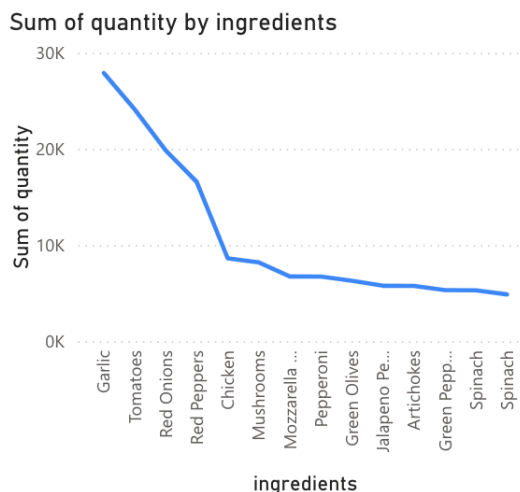
5. Other analysis:

From the scatter plot, we could see that there is not a strong relationship between pizza prices and sales volume. To be more specific, the pizza that accounted for the largest amount of total sales had a price of 20.75, with the sales far exceeding others. Also, those that had prices ranging from $9.00 to $14.00 had worse performance than others, deriving from the sales being much lower than the average line.

Sum of quantity by price
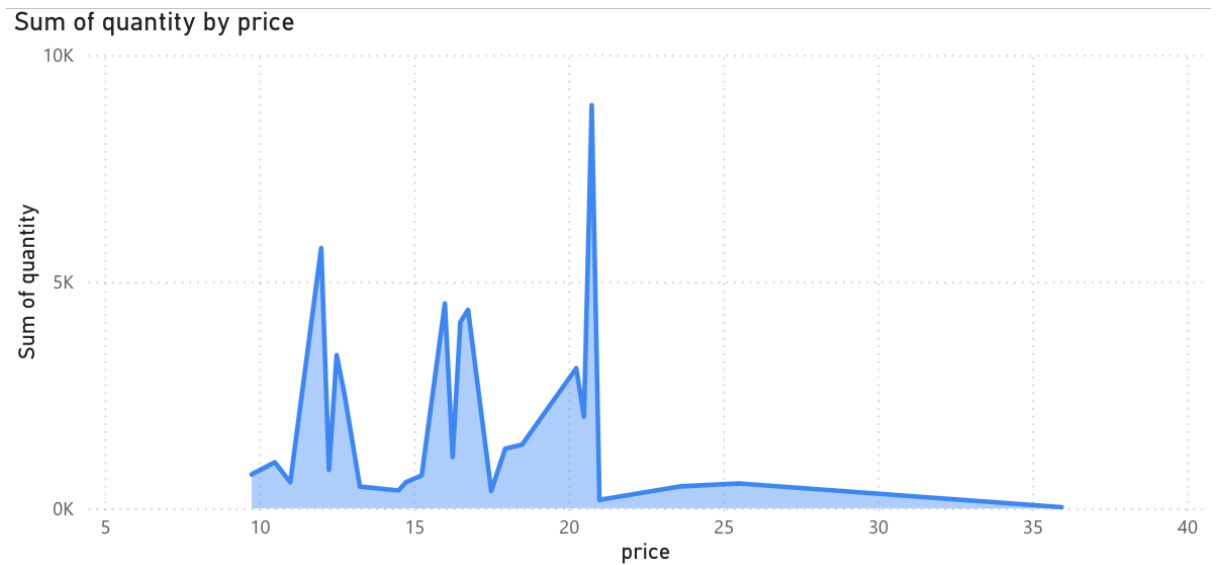
From this dashboard, we could also see that the Time Interval between orders showed a downward trend, starting at around 7.07 hours in Quarter 1, before dropping dramatically to bottom up at 7.00 in Quarter 4 of 2015. On average, the time interval between orders was 7.02 hours over the period shown.

Average of TimeDifferenceInHour by Quarter
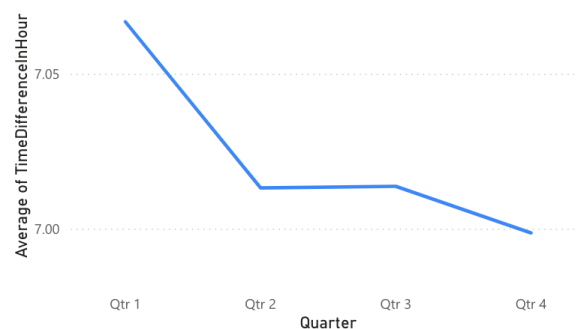
7.02

Average of TimeDifferenceInHour

6. Suggestion:

It is suggested that the company develops some campaigns and promotions for some period during the year that has worse performance, especially from July to October (Quarter 3). This is because these months have witnessed a dramatic drop in sales and quantity sold. The same approach should be done with the night time, as a very little number of orders was recorded from 10PM onwards. In terms of pizzas, the sales of some unpopular pizzas such as: The Mediterranean, The Spinach Supreme, The Brie Carre could be improved by combining them with the most popular ones and discounts as those accounted for a very small amount compared to others. Otherwise, those should be removed to focus on primary pizzas.