**Freshco Hypermarket Capstone  
Project Report**

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**Project Description**

This project involves analyzing data from the Freshco Hypermarket data dataset to find patterns that determine price and profitability. The data set needs to be studied to simplify the processes of segregating different aspects of goods delivery to identify the best methods and actions that need to be taken to attain maximum efficiency according to the conditions that need to be analyzed.

**Approach**

The project was quite interesting to undertake as it was challenging yet we were able to complete data analysis based on the challenges provided with utmost dedication and attention to detail. The project was completed with the following steps in the process to get the most accurate data.

Step 1) Defining the question.

Step 2) Collecting the data.

Step 3) Cleaning the data.

Step 4) Analyzing the data.

Step 5) Sharing your results.

Step 6) Summary.

**Tech Stack**

The software used in the completion of the project is

Microsoft® Excel® 2021 MSO (Version 2310 Build 16.0.16924.20054) 64-bit

We chose the software because it was the easiest and most efficient data computational software that could work on the volume of data provided.

**Data Analytics Tasks**

**Order Level Analysis**

1. Identify order distribution at slot and delivery area levels.

**EXCEL RESULTS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Count of order slot** | **Column Labels** |  |  |  |  |  |
| **Row Labels** | **Afternoon** | **Morning** | **Night** | **Evening** | **Late Night** | **Grand Total** |
| HSR Layout | 4085 | 3749 | 3582 | 3288 | 953 | 15657 |
| ITI Layout | 1039 | 868 | 936 | 757 | 346 | 3946 |
| Harlur | 324 | 382 | 250 | 280 | 73 | 1309 |
| Bomannahali - MicoLayout | 151 | 132 | 125 | 107 | 36 | 551 |
| Kudlu | 130 | 118 | 105 | 108 | 57 | 518 |
| Koramangala, Ejipura | 33 | 25 | 37 | 30 | 35 | 160 |
| Bellandur, Green Glen | 32 | 27 | 36 | 27 | 12 | 134 |
| Bellandur, Sarjapur Road | 20 | 11 | 39 | 13 | 15 | 98 |
| Manipal County | 20 | 18 | 13 | 16 | 13 | 80 |
| Bommanahalli | 13 | 10 | 10 | 13 | 6 | 52 |
| Bellandur - Off Sarjapur Road | 9 | 7 | 15 | 11 | 2 | 44 |
| BTM Stage 1 | 11 | 3 | 11 | 3 | 7 | 35 |
| BTM Stage 2 | 6 | 7 | 8 | 6 | 5 | 32 |
| Bellandur, APR | 8 | 6 | 1 | 14 |  | 29 |
| Akshaya Nagar | 3 | 6 | 4 | 4 | 4 | 21 |
| Sarjapur Road | 6 |  | 10 | 3 | 1 | 20 |
| Bilekahalli | 2 | 2 | 1 | 5 | 1 | 11 |
| Bellandur, Sakara | 7 |  | 1 | 2 | 1 | 11 |
| Kadubeesanhali, Prestige | 1 |  | 2 |  | 6 | 9 |
| Devarachikanna Halli | 1 |  | 3 | 3 | 1 | 8 |
| Domlur, EGL | 3 | 3 | 1 |  | 1 | 8 |
| Indiranagar | 3 | 1 | 2 |  | 2 | 8 |
| Viveka Nagar | 4 |  |  | 2 | 1 | 7 |
| Yemalur | 1 | 1 | 1 | 4 |  | 7 |
| JP Nagar Phase 4-5 | 2 | 2 | 1 | 1 | 1 | 7 |
| Arekere | 1 |  | 2 | 1 | 2 | 6 |
| JP Nagar Phase 6-7 | 3 | 2 |  |  | 1 | 6 |
| Bannerghatta |  | 1 | 2 | 2 |  | 5 |
| JP Nagar Phase 1-3 |  | 1 | 1 | 2 | 1 | 5 |
| Kumaraswamy Layout | 1 | 1 | 1 | 1 |  | 4 |
| Wilson Garden, Shantinagar |  |  | 2 | 2 |  | 4 |
| Jayanagar | 1 | 1 |  | 1 |  | 3 |
| Marathahalli |  | 1 | 1 | 1 |  | 3 |
| Basavanagudi |  |  | 1 | 2 |  | 3 |
| Richmond Town | 2 |  |  |  |  | 2 |
| Doddanekundi |  |  | 1 |  | 1 | 2 |
| Banashankari Stage 2 |  |  | 1 | 1 |  | 2 |
| Bellandur, ETV |  | 1 | 1 |  |  | 2 |
| Cox Town |  | 1 |  |  |  | 1 |
| Whitefield |  |  |  | 1 |  | 1 |
| Vimanapura | 1 |  |  |  |  | 1 |
| Challagatta |  |  |  |  | 1 | 1 |
| Kadubeesanhali, PTP |  |  | 1 |  |  | 1 |
| Mahadevapura |  | 1 |  |  |  | 1 |
| Victoria Layout |  |  | 1 |  |  | 1 |
| JP Nagar Phase 8-9 |  |  |  | 1 |  | 1 |
| Bellandur, Ecospace |  |  |  |  | 1 | 1 |
| CV Raman Nagar |  |  |  |  | 1 | 1 |
| Binnipet |  | 1 |  |  |  | 1 |
| Pattandur | 1 |  |  |  |  | 1 |
| Brookefield |  |  |  |  | 1 | 1 |
| Frazer Town |  |  |  |  | 1 | 1 |
| **Grand Total** | **5924** | **5389** | **5209** | **4712** | **1589** | **22823** |

An important analysis that was formed while analyzing the slot and delivery area distribution is that the HSR Layout tops the greatest number of orders in the time frame from January 2021 and September 2022 at 15657 net orders followed by ITI Layout at 3946 net orders, the slot wise maximum net orders also peak at these drop locations

2.    Identify the areas having the highest increase in monthly orders (from Jan to Sep) in absolute orders.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Count of Order Drop Geo** | **Column Labels** |  |  |  |  |  |  |  |  |  |
| **Row Labels** | **January** | **February** | **March** | **April** | **May** | **June** | **July** | **August** | **September** | **Grand Total** |
| HSR Layout | 1072 | 1186 | 1573 | 1794 | 1768 | 1855 | 1882 | 1921 | 2606 | 15657 |
| ITI Layout | 264 | 253 | 351 | 374 | 354 | 438 | 467 | 528 | 917 | 3946 |
| Harlur | 53 | 70 | 88 | 86 | 68 | 67 | 84 | 254 | 539 | 1309 |

**EXCEL RESULTS**

Out of this data, if we consider the top 3, we can see that Harlur’s orders have dramatically increased compared to the top 2 with a net growth of 1000+% from data of January to September

3.    Calculate delivery charges as a percentage of product amount at slot and month level.

**EXCEL RESULTS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sum of delivery/productamt** | **Column Labels** |  |  |  |  |  |
| **Row Labels** | **Afternoon** | **Evening** | **Late Night** | **Morning** | **Night** | **Grand Total** |
| January | 9.33% | 10.22% | 15.91% | 10.82% | 10.82% | 10.72% |
| February | 7.77% | 8.69% | 16.95% | 10.10% | 10.04% | 9.74% |
| March | 7.53% | 8.35% | 15.92% | 8.51% | 8.89% | 8.99% |
| April | 7.81% | 7.99% | 15.61% | 7.91% | 9.44% | 8.60% |
| May | 4.89% | 5.64% | 4.42% | 4.92% | 6.50% | 5.34% |
| June | 5.16% | 5.38% | 12.68% | 4.73% | 6.37% | 5.50% |
| July | 4.33% | 5.14% | 12.92% | 5.06% | 6.69% | 5.69% |
| August | 2.59% | 2.22% | 7.73% | 2.78% | 2.83% | 2.90% |
| September | 1.73% | 1.71% | 5.59% | 1.89% | 2.17% | 2.08% |
| **Grand Total** | **5.09%** | **5.38%** | **12.26%** | **5.29%** | **6.43%** | **5.86%** |

The analysis of delivery charges as a percentage of product amount at slot as well as month level shows us that the delivery charges were the highest in January while gradually declining and becoming the lowest at the end of the data time frame, this shows us the efficiency has increased to not charge the customers with hefty delivery charges as the client base and delivery partner networks have been built through the months. The data analysis also shows us that the most delivery charge is incurred from the customer side when the orders are placed in late-night slots.

4.    Calculate discount as a percentage of product amount at slot and month level.

**EXCEL RESULTS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sum of dicount/productamt** | **Column Labels** |  |  |  |  |  |
| **Row Labels** | **Afternoon** | **Evening** | **Late Night** | **Morning** | **Night** | **Grand Total** |
| January | 1.04% | 1.23% | 0.72% | 0.93% | 1.00% | 1.02% |
| February | 0.37% | 0.43% | 0.59% | 1.13% | 0.80% | 0.65% |
| March | 0.89% | 0.60% | 0.63% | 0.56% | 0.59% | 0.67% |
| April | 1.02% | 0.61% | 0.59% | 0.68% | 0.90% | 0.81% |
| May | 4.78% | 4.54% | 3.39% | 4.15% | 5.07% | 4.59% |
| June | 2.35% | 1.86% | 1.93% | 1.70% | 1.89% | 1.96% |
| July | 4.84% | 5.90% | 3.29% | 4.64% | 6.74% | 5.34% |
| August | 21.50% | 20.60% | 12.77% | 20.86% | 22.11% | 20.82% |
| September | 10.46% | 11.46% | 5.10% | 10.96% | 9.76% | 10.36% |
| **Grand Total** | **6.37%** | **6.49%** | **3.73%** | **6.45%** | **6.82%** | **6.37%** |

from the discounts and product amount analysis, it is clear that the discount has increased tremendously with a sharp decline in September, further analysis shows us that the minimum per cent of discount was given to late-night customers leveraging necessity and the highest discounted month was august.

5.    Calculate discount as a percentage of product amount at drop area and slot level.

**EXCEL RESULTS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sum of dicount/productamt** | **Column Labels** |  |  |  |  |  |
| **Row Labels** | **Afternoon** | **Evening** | **Late Night** | **Morning** | **Night** | **Grand Total** |
| Harlur | 10.31% | 9.24% | 3.70% | 10.17% | 9.90% | 9.70% |
| Bilekahalli | 13.25% | 1.66% | 10.00% | 13.15% | 29.73% | 7.77% |
| Bellandur - Off Sarjapur Road | 5.01% | 4.18% | 0.00% | 1.80% | 14.23% | 7.46% |
| ITI Layout | 7.21% | 7.09% | 4.12% | 8.21% | 7.97% | 7.36% |
| Victoria Layout | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 7.07% | 7.07% |
| Yemalur | 0.00% | 9.88% | #DIV/0! | 12.18% | 0.00% | 6.91% |
| BTM Stage 1 | 14.69% | 0.00% | 0.00% | 8.21% | 0.68% | 6.52% |
| JP Nagar Phase 1-3 | #DIV/0! | 16.69% | 0.00% | 0.00% | 0.00% | 6.35% |
| HSR Layout | 6.21% | 6.53% | 3.96% | 6.01% | 6.52% | 6.20% |
| Devarachikanna Halli | 1.16% | 0.00% | 0.00% | #DIV/0! | 12.42% | 6.19% |
| Jayanagar | 0.00% | 35.61% | #DIV/0! | 0.00% | #DIV/0! | 5.56% |
| Manipal County | 3.53% | 3.32% | 5.86% | 4.57% | 12.42% | 4.88% |
| Kudlu | 6.36% | 3.66% | 1.44% | 4.87% | 4.69% | 4.76% |
| Bellandur, Green Glen | 4.67% | 5.83% | 4.22% | 2.23% | 6.14% | 4.65% |
| Koramangala, Ejipura | 6.88% | 5.74% | 2.05% | 1.31% | 3.01% | 4.18% |
| BTM Stage 2 | 0.53% | 8.83% | 0.00% | 4.88% | 1.84% | 4.13% |
| Bomannahali - MicoLayout | 2.15% | 2.67% | 2.11% | 3.73% | 6.82% | 3.51% |
| Domlur, EGL | 0.00% | #DIV/0! | 17.09% | 1.31% | #DIV/0! | 3.35% |
| Doddanekundi | #DIV/0! | #DIV/0! | 0.00% | #DIV/0! | 10.00% | 3.33% |
| Bellandur, Sakara | 1.49% | 0.00% | 43.23% | #DIV/0! | 0.00% | 3.13% |
| Wilson Garden, Shantinagar | #DIV/0! | 2.25% | #DIV/0! | #DIV/0! | 3.81% | 3.09% |
| Bellandur, APR | 4.09% | 2.96% | #DIV/0! | 1.09% | 6.67% | 2.94% |
| Indiranagar | 1.58% | #DIV/0! | 0.00% | 0.00% | 6.76% | 2.84% |
| Bannerghatta | #DIV/0! | 1.95% | #DIV/0! | 0.00% | 7.72% | 2.57% |
| Bommanahalli | 1.90% | 2.86% | 4.43% | 1.22% | 3.33% | 2.31% |
| JP Nagar Phase 4-5 | 0.00% | 0.00% | 20.67% | 0.27% | 0.00% | 1.81% |
| Akshaya Nagar | 0.29% | 0.25% | 0.00% | 0.18% | 10.48% | 1.49% |
| Bellandur, Sarjapur Road | 0.71% | 1.74% | 1.25% | 2.28% | 0.99% | 1.14% |
| Sarjapur Road | 0.13% | 0.00% | 0.00% | #DIV/0! | 2.35% | 1.09% |
| Arekere | 0.00% | 1.69% | 0.00% | #DIV/0! | 3.06% | 0.82% |
| Viveka Nagar | 0.58% | 0.30% | #DIV/0! | #DIV/0! | #DIV/0! | 0.46% |
| JP Nagar Phase 8-9 | #DIV/0! | 0.41% | #DIV/0! | #DIV/0! | #DIV/0! | 0.41% |
| Kadubeesanhali, Prestige | 0.00% | #DIV/0! | 0.00% | #DIV/0! | 1.93% | 0.25% |
| JP Nagar Phase 6-7 | 0.00% | #DIV/0! | 0.00% | 0.20% | #DIV/0! | 0.14% |
| Banashankari Stage 2 | #DIV/0! | 0.00% | #DIV/0! | #DIV/0! | 0.00% | 0.00% |
| Pattandur | 0.00% | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0.00% |
| Mahadevapura | #DIV/0! | #DIV/0! | #DIV/0! | 0.00% | #DIV/0! | 0.00% |
| CV Raman Nagar | #DIV/0! | #DIV/0! | 0.00% | #DIV/0! | #DIV/0! | 0.00% |
| Bellandur, Ecospace | #DIV/0! | #DIV/0! | 0.00% | #DIV/0! | #DIV/0! | 0.00% |
| Marathahalli | #DIV/0! | 0.00% | #DIV/0! | #DIV/0! | 0.00% | 0.00% |
| Kadubeesanhali, PTP | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0.00% | 0.00% |
| Richmond Town | 0.00% | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0.00% |
| Challagatta | #DIV/0! | #DIV/0! | 0.00% | #DIV/0! | #DIV/0! | 0.00% |
| Bellandur, ETV | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0.00% | 0.00% |
| Vimanapura | 0.00% | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0.00% |
| Brookefield | #DIV/0! | #DIV/0! | 0.00% | #DIV/0! | #DIV/0! | 0.00% |
| Kumaraswamy Layout | 0.00% | 0.00% | #DIV/0! | 0.00% | 0.00% | 0.00% |
| Basavanagudi | #DIV/0! | 0.00% | #DIV/0! | #DIV/0! | 0.00% | 0.00% |
| Binnipet | #DIV/0! | #DIV/0! | #DIV/0! | 0.00% | #DIV/0! | 0.00% |
| Frazer Town | #DIV/0! | #DIV/0! | 0.00% | #DIV/0! | #DIV/0! | 0.00% |
| Whitefield | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| Cox Town | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| **Grand Total** | **6.37%** | **6.49%** | **3.73%** | **6.45%** | **6.82%** | **#DIV/0!** |

A careful analysis of discounts as a percentage of product amount at the drop area and slot level shows us that the Harlur area has the most benefit to the customer in terms of discount and late-night customers seem the least discounted while all other slots are more or less similarly discounted

**Completion Level Analysis**

6.    Identify the Completion rate at slot vs day of the week (**Sunday to Saturday**) level. Can you spot some patterns in the data?

**EXCEL RESULTS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Average of COMPLETION RATE** | **Column Labels** |  |  |  |  |  |
| **Row Labels** | **Afternoon** | **Evening** | **Late Night** | **Morning** | **Night** | **Grand Total** |
| Sunday | 99.90% | 100.00% | 99.63% | 99.76% | 99.87% | 99.86% |
| Monday | 99.74% | 99.85% | 99.07% | 99.86% | 99.72% | 99.74% |
| Tuesday | 99.35% | 99.69% | 98.94% | 99.74% | 99.58% | 99.55% |
| Wednesday | 99.64% | 99.69% | 100.00% | 99.48% | 99.00% | 99.49% |
| Thursday | 99.88% | 99.85% | 99.51% | 99.36% | 99.62% | 99.66% |
| Friday | 99.77% | 99.57% | 99.19% | 98.65% | 99.35% | 99.34% |
| Saturday | 99.89% | 99.30% | 99.21% | 99.74% | 97.89% | 99.24% |
| **Grand Total** | **99.75%** | **99.70%** | **99.37%** | **99.52%** | **99.29%** | **99.55%** |

The completion rate both at the day of the week as well as slot level remains almost at 100% which dictates the efficiency of the delivery partners. Therefore, it seems that there is not necessarily any trend

7.    Calculate completion rate at drop area level.

**EXCEL RESULTS**

|  |  |
| --- | --- |
| **Row Labels** | **Average of COMPLETION RATE** |
| Whitefield | 0.00% |
| Cox Town | 0.00% |
| Bellandur, ETV | 50.00% |
| Marathahalli | 66.67% |
| Domlur, EGL | 75.00% |
| Viveka Nagar | 85.71% |
| Indiranagar | 87.50% |
| BTM Stage 1 | 97.14% |
| Bommanahalli | 98.08% |
| Manipal County | 98.75% |
| Bellandur, Green Glen | 99.25% |
| Bomannahali - MicoLayout | 99.27% |
| Koramangala, Ejipura | 99.38% |
| Kudlu | 99.42% |
| ITI Layout | 99.59% |
| HSR Layout | 99.60% |
| Harlur | 99.69% |
| Frazer Town | 100.00% |
| JP Nagar Phase 8-9 | 100.00% |
| Kadubeesanhali, Prestige | 100.00% |
| Challagatta | 100.00% |
| Kadubeesanhali, PTP | 100.00% |
| CV Raman Nagar | 100.00% |
| Bilekahalli | 100.00% |
| Doddanekundi | 100.00% |
| Binnipet | 100.00% |
| Akshaya Nagar | 100.00% |
| Kumaraswamy Layout | 100.00% |
| Banashankari Stage 2 | 100.00% |
| Mahadevapura | 100.00% |
| Bellandur, Sarjapur Road | 100.00% |
| Bannerghatta | 100.00% |
| JP Nagar Phase 1-3 | 100.00% |
| Basavanagudi | 100.00% |
| JP Nagar Phase 6-7 | 100.00% |
| Pattandur | 100.00% |
| Bellandur, APR | 100.00% |
| Richmond Town | 100.00% |
| Bellandur, Ecospace | 100.00% |
| Sarjapur Road | 100.00% |
| Bellandur, Sakara | 100.00% |
| Victoria Layout | 100.00% |
| JP Nagar Phase 4-5 | 100.00% |
| Vimanapura | 100.00% |
| Devarachikanna Halli | 100.00% |
| Brookefield | 100.00% |
| Jayanagar | 100.00% |
| Bellandur - Off Sarjapur Road | 100.00% |
| Arekere | 100.00% |
| Wilson Garden, Shantinagar | 100.00% |
| BTM Stage 2 | 100.00% |
| Yemalur | 100.00% |
| **Grand Total** | **99.55%** |

The completion rate seems critically low at Whitefield and Cox Town at 0% delivery rate. The delivery strategist needs to look into the subject to understand the issue better and increase delivery accuracy in this area

8.    Completion rate at number of products ordered level. For this first, you need to create a column having a number of products against every order.

**EXCEL RESULTS**

|  |  |
| --- | --- |
| **Row Labels** | **Average of COMPLETION RATE** |
| 1 | 99.27% |
| 2 | 99.73% |
| 3 | 99.41% |
| 4 | 99.56% |
| 5 | 99.75% |
| 6 | 99.40% |
| 7 | 99.66% |
| 8 | 99.79% |
| 9 | 99.46% |
| 10 | 99.82% |
| 11 | 99.33% |
| 12 | 100.00% |
| 13 | 100.00% |
| 14 | 99.57% |
| 15 | 100.00% |
| 16 | 99.25% |
| 17 | 100.00% |
| 18 | 100.00% |
| 19 | 100.00% |
| 20 | 100.00% |
| 21 | 100.00% |
| 22 | 100.00% |
| 23 | 100.00% |
| 24 | 100.00% |
| 25 | 100.00% |
| **Grand Total** | **99.55%** |

From the data, it is evident that the completion rate and the number of items does not have a significant correlation between them.

The number of orders seems to not affect the completion rate as there is an overall 99.5% chance of delivery

9.    Give you analysis on the any pattern you observe in the completion rate.

The overall analysis of the completion rate has led us to the conclusion that the delivery part of the business is one of the key factors that need not much improvement as over many conditions we checked there are only minor improvements that need care.

**Customer Level Analysis**

10.    Identify Completion rate at source level.

**EXCEL RESULTS**

|  |  |
| --- | --- |
| **Row Labels** | **Average of COMPLETION RATE** |
| Facebook | 99.58% |
| Google | 99.55% |
| Instagram | 99.46% |
| Offline Campaign | 99.44% |
| Organic | 99.63% |
| Snapchat | 99.57% |
| **Grand Total** | **99.55%** |

The completion rates like the previous analysis seem to be on track and are almost at 100%. As per our last analysis too it was more or less the same results.

11.    Calculate LTV for every customer.

**EXCEL RESULTS**

|  |  |
| --- | --- |
| **Row Labels** | **Sum of Product Amount** |
| APQ2413449 | 62277 |
| ZQB198457 | 53913 |
| XXV119663 | 44898 |
| FDO1013281 | 43059 |
| LQK77449 | 42527 |
| WDE1131845 | 39625 |
| GDF423244 | 39338 |
| VBS2518354 | 38974 |
| WWC812033 | 38691 |
| AFB1613116 | 38123 |
| SGN1921789 | 36843 |

The LTV of the top 10 customers and their user ID is given above, for the complete list of LTV of every customer can be accessed in the customer level analysis sheet in the Excel

12.    Calculate aggregated LTV at customer acquisition source level. Refer to aggregated LTV example.

**EXCEL RESULTS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Row Labels** | **Sum of Product Amount** | **Count of source** | aggregated LTV at the source level |
| Facebook | 921772 | 2618 | 352.0901451 |
| Google | 1939010 | 5348 | 362.5673149 |
| Instagram | 911379 | 2784 | 327.3631466 |
| Offline Campaign | 1008411 | 2862 | 352.3448637 |
| Organic | 2287431 | 6680 | 342.4297904 |
| Snapchat | 936767 | 2531 | 370.1173449 |
| **Grand Total** | **8004770** | **22823** | #REF! |

The aggregated LTV at the source level is as referred to above , the aggregated LTV seems more or less the same overall customer base at the acquisition source level

13.    Calculate aggregated  LTV at acquisition month level. Refer to aggregated LTV example.

**EXCEL RESULTS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Row Labels** | **Sum of Product Amount** | **Count of month** | aggregated LTV at the customer acquisition source level |
| January | 537543 | 1606 | 334.7092154 |
| February | 559899 | 1663 | 336.6800962 |
| March | 713119 | 2185 | 326.3702517 |
| April | 864243 | 2477 | 348.9071457 |
| May | 983096 | 2465 | 398.8219067 |
| June | 930572 | 2647 | 351.5572346 |
| July | 950147 | 2645 | 359.2238185 |
| August | 1143759 | 2904 | 393.856405 |
| September | 1322392 | 4231 | 312.5483337 |
| **Grand Total** | **8004770** | **22823** |  |

The aggregated LTV at the month level is as referenced above. The aggregated LTV is more or less the same for every month.

14.    What is the average Revenue(Product amount after discount) per order at different customer acquisition source level?

**EXCEL RESULTS**

|  |  |
| --- | --- |
| **Row Labels** | **Average of REVENUE** |
| Organic | 2161368 |
| Google | 1831956 |
| Offline Campaign | 933051 |
| Snapchat | 871070 |
| Facebook | 858897 |
| Instagram | 838265 |
| **Grand Total** | **7494607** |

The average revenue at the source level is as shown above. by analysis the highest revenue generated organically followed not far behind by Google.

15.    What is the average Revenue(Product amount after discount) per order at acquisition month level?

**EXCEL RESULTS**

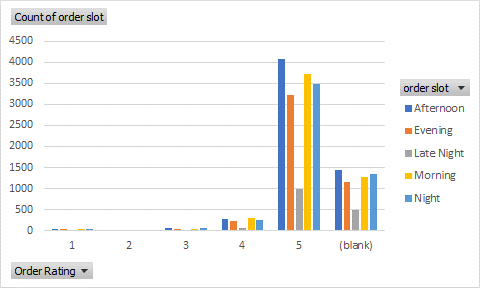
|  |  |
| --- | --- |
| **Row Labels** | **Average of REVENUE** |
| January | 532070 |
| February | 556234 |
| March | 708340 |
| April | 857257 |
| May | 937973 |
| June | 912287 |
| July | 899412 |
| August | 905596 |
| September | 1185438 |
| **Grand Total** | **7494607** |

The average revenue generated through the months data is displayed above and it is evident that the September revenue is the highest and the trajectory is smooth and growing

16.    Is there any pattern in order rating across slots, number of items placed, delivery charges, discount. For example, there might be an insight from the data that orders placed during

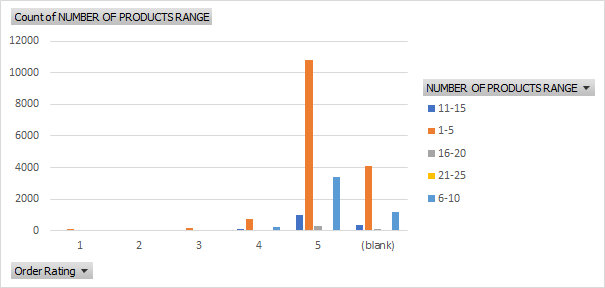
**EXCEL RESULTS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| RATING ACROSS SLOTS |  |  |  |  |  |  |
| **Count of order slot** | **Column Labels** |  |  |  |  |  |
| **Row Labels** | **Afternoon** | **Evening** | **Late Night** | **Morning** | **Night** | **Grand Total** |
| 1 | 35 | 39 | 15 | 37 | 45 | 171 |
| 2 | 19 | 13 | 7 | 17 | 17 | 73 |
| 3 | 74 | 49 | 19 | 51 | 55 | 248 |
| 4 | 284 | 233 | 56 | 290 | 264 | 1127 |
| 5 | 4073 | 3227 | 994 | 3715 | 3474 | 15483 |
| (blank) | 1439 | 1151 | 498 | 1279 | 1354 | 5721 |
| **Grand Total** | **5924** | **4712** | **1589** | **5389** | **5209** | **22823** |



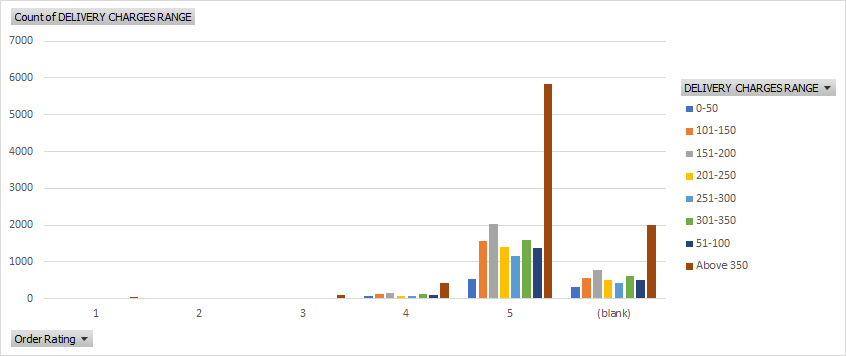
Analysis of the rating by slots shows us that the majority of the customers have given a 5-star rating over all slot periods.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| RATING ACROSS NUMBER OF ITEMS |  |  |  |  |  |  |
| **Count of NUMBER OF PRODUCTS RANGE** | **Column Labels** |  |  |  |  |  |
| **Row Labels** | **11-15** | **1-5** | **16-20** | **21-25** | **6-10** | **Grand Total** |
| 1 | 12 | 123 | 5 | 1 | 30 | 171 |
| 2 | 6 | 39 |  |  | 28 | 73 |
| 3 | 18 | 168 | 7 |  | 55 | 248 |
| 4 | 96 | 745 | 26 | 2 | 258 | 1127 |
| 5 | 978 | 10829 | 273 | 28 | 3375 | 15483 |
| (blank) | 362 | 4065 | 133 | 8 | 1153 | 5721 |
| **Grand Total** | **1472** | **15969** | **444** | **39** | **4899** | **22823** |



By number, products range to rating graph shows us that the out of the majority which is 5 star the people who ordered 1 to 5 items are the most satisfied customers.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RATING ACROSS DELIVERY CHARGE |  |  |  |  |  |  |  |  |  |
| **Count of DELIVERY CHARGES RANGE** | **Column Labels** |  |  |  |  |  |  |  |  |
| **Row Labels** | **0-50** | **101-150** | **151-200** | **201-250** | **251-300** | **301-350** | **51-100** | **Above 350** | **Grand Total** |
| 1 | 15 | 23 | 20 | 12 | 8 | 15 | 24 | 54 | 171 |
| 2 |  | 6 | 5 | 5 | 6 | 14 | 8 | 29 | 73 |
| 3 | 15 | 29 | 29 | 18 | 18 | 19 | 25 | 95 | 248 |
| 4 | 67 | 115 | 147 | 84 | 73 | 123 | 99 | 419 | 1127 |
| 5 | 545 | 1568 | 2029 | 1395 | 1170 | 1586 | 1370 | 5820 | 15483 |
| (blank) | 309 | 559 | 772 | 505 | 431 | 627 | 515 | 2003 | 5721 |
| **Grand Total** | **951** | **2300** | **3002** | **2019** | **1706** | **2384** | **2041** | **8420** | **22823** |



Rating across the delivery charges shows us that the bracket which has the average delivery charges above 350 Rs are the happiest customers who have given 5-star rating

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RATING ACROSS DISCOUNT |  |  |  |  |  |  |  |  |  |  |
| **Count of DISCOUNT RANGE** | **Column Labels** |  |  |  |  |  |  |  |  |  |
| **Row Labels** | **0-100** | **101-200** | **201-300** | **301-400** | **401-500** | **501-600** | **601-700** | **701-800** | **Above 800** | **Grand Total** |
| 1 | 163 | 8 |  |  |  |  |  |  |  | 171 |
| 2 | 66 | 6 | 1 |  |  |  |  |  |  | 73 |
| 3 | 234 | 12 | 1 |  |  |  |  | 1 |  | 248 |
| 4 | 1058 | 57 | 6 |  | 1 | 2 | 2 | 1 |  | 1127 |
| 5 | 14660 | 688 | 49 | 9 | 1 | 12 | 39 | 25 |  | 15483 |
| (blank) | 5382 | 276 | 25 | 8 | 1 | 3 | 17 | 8 | 1 | 5721 |
| **Grand Total** | **21563** | **1047** | **82** | **17** | **3** | **17** | **58** | **35** | **1** | **22823** |

By analysis, it is evident that the customers who got discounts in the range of 0-100 are the happiest customers

17.    Calculate average overall delivery time at month and delivery area level.

**EXCEL RESULTS**

|  |  |
| --- | --- |
| **Row Labels** | **Average of DELIVERY TIME** |
| **Mahadevapura** | **2:26:40** |
| **Brookefield** | **1:31:14** |
| **Vimanapura** | **1:15:28** |
| **Pattandur** | **1:11:12** |
| **CV Raman Nagar** | **1:03:57** |
| **Richmond Town** | **1:03:23** |
| **JP Nagar Phase 8-9** | **0:59:29** |
| **Domlur, EGL** | **0:59:03** |
| **Basavanagudi** | **0:57:49** |
| **Kumaraswamy Layout** | **0:57:01** |
| **Indiranagar** | **0:56:38** |
| **Jayanagar** | **0:54:22** |
| **Akshaya Nagar** | **0:54:15** |
| **Bannerghatta** | **0:52:44** |
| **JP Nagar Phase 4-5** | **0:51:25** |
| **JP Nagar Phase 6-7** | **0:47:58** |
| **Binnipet** | **0:46:30** |
| **JP Nagar Phase 1-3** | **0:45:58** |
| **Bellandur, Sakara** | **0:44:59** |
| **Frazer Town** | **0:44:49** |
| **Viveka Nagar** | **0:44:37** |
| **Bellandur, APR** | **0:44:14** |
| **Devarachikanna Halli** | **0:44:13** |
| **Kadubeesanhali, PTP** | **0:42:34** |
| **Victoria Layout** | **0:42:19** |
| **Kadubeesanhali, Prestige** | **0:42:16** |
| **Arekere** | **0:41:56** |
| **Marathahalli** | **0:41:12** |
| **Challagatta** | **0:41:08** |
| **Bommanahalli** | **0:40:38** |
| **Doddanekundi** | **0:40:22** |
| **Banashankari Stage 2** | **0:39:39** |
| **Wilson Garden, Shantinagar** | **0:39:37** |
| **Sarjapur Road** | **0:39:27** |
| **Manipal County** | **0:39:13** |
| **Bilekahalli** | **0:38:26** |
| **Bellandur - Off Sarjapur Road** | **0:36:40** |
| **Koramangala, Ejipura** | **0:36:31** |
| **Yemalur** | **0:36:13** |
| **BTM Stage 2** | **0:34:51** |
| **BTM Stage 1** | **0:34:24** |
| **Kudlu** | **0:34:21** |
| **Bellandur, Sarjapur Road** | **0:33:07** |
| **Bomannahali - MicoLayout** | **0:32:56** |
| **Harlur** | **0:31:53** |
| **Bellandur, Green Glen** | **0:31:25** |
| **Bellandur, ETV** | **0:29:37** |
| **ITI Layout** | **0:23:18** |
| **HSR Layout** | **0:22:29** |
| **Bellandur, Ecospace** | **0:21:19** |
| **Grand Total** | **0:24:15** |

The most time taken for a delivery by any month on average is to deliver in Mahadevapura therefore measures need to be taken in order to increase the efficiency of delivering to Mahabalipuram

Note: The month is visible as a dropdown from the original data sheet

18.    Calculate average overall delivery time at month and weekday/weekend level. You might need to create a column which will tag every date to either weekday or weekend.

**EXCEL RESULTS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Average of DELIVERY TIME** | **Column Labels** |  |  |
| **Row Labels** | **Weekday** | **Weekend** | **Grand Total** |
| January | 0:22:33 | 0:21:11 | 0:22:06 |
| February | 0:19:25 | 0:19:19 | 0:19:23 |
| March | 0:20:19 | 0:20:31 | 0:20:22 |
| April | 0:27:21 | 0:29:29 | 0:27:56 |
| May | 0:42:31 | 0:48:30 | 0:44:34 |
| June | 0:22:55 | 0:22:54 | 0:22:54 |
| July | 0:19:30 | 0:20:35 | 0:19:50 |
| August | 0:22:37 | 0:22:54 | 0:22:42 |
| September | 0:19:37 | 0:19:44 | 0:19:39 |
| **Grand Total** | **0:23:49** | **0:25:16** | **0:24:15** |

19.    Calculate average overall delivery time at slot level. Refer to the definition of slot.

**EXCEL RESULTS**

|  |  |
| --- | --- |
| **Row Labels** | **Average of DELIVERY TIME** |
| Afternoon | 0:25:47 |
| Evening | 0:25:34 |
| Late Night | 0:17:29 |
| Morning | 0:25:07 |
| Night | 0:22:30 |
| **Grand Total** | **0:24:15** |

it can be deduced from above that the average delivery time remains the same almost except for the late night delivery.

20.    Do you see any pattern in delivery charges with slot or delivery area.

**EXCEL RESULTS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Average of Delivery Charges** | **Column Labels** |  |  |  |  |  |
| **Row Labels** | **Afternoon** | **Evening** | **Late Night** | **Morning** | **Night** | **Grand Total** |
| Brookefield |  |  | 332 |  |  | 332 |
| CV Raman Nagar |  |  | 287 |  |  | 287 |
| Frazer Town |  |  | 259 |  |  | 259 |
| Vimanapura | 210 |  |  |  |  | 210 |
| Doddanekundi |  |  | 232 |  | 165 | 198.5 |
| Mahadevapura |  |  |  | 195 |  | 195 |
| Pattandur | 180 |  |  |  |  | 180 |
| Marathahalli |  | 180 |  |  | 170 | 175 |
| Challagatta |  |  | 172 |  |  | 172 |
| Basavanagudi |  | 157.5 |  |  | 150 | 155 |
| Kumaraswamy Layout | 145 | 150 |  | 145 | 145 | 146.25 |
| Banashankari Stage 2 |  | 145 |  |  | 145 | 145 |
| Indiranagar | 127.5 |  | 192 | 135 | 110 | 142 |
| Domlur, EGL | 125 |  | 117 | 148.3333333 |  | 135.3333333 |
| JP Nagar Phase 8-9 |  | 130 |  |  |  | 130 |
| Arekere | 150 | 100 | 136 |  | 120 | 127 |
| JP Nagar Phase 6-7 | 125 |  | 199 | 92.5 |  | 126.5 |
| Kadubeesanhali, Prestige | 100 |  | 139 |  | 82.5 | 122.1111111 |
| Kadubeesanhali, PTP |  |  |  |  | 120 | 120 |
| Akshaya Nagar | 123.3333333 | 116.25 | 140.75 | 133.6666667 | 76.25 | 119.2857143 |
| JP Nagar Phase 4-5 | 120 | 100 | 78 | 152.5 | 100 | 117.5714286 |
| Bannerghatta |  | 147.5 |  | 105 | 77.5 | 111 |
| JP Nagar Phase 1-3 |  | 77.5 | 179 | 105 | 90 | 105.8 |
| Bellandur, APR | 98.125 | 100.3571429 |  | 111.6666667 | 110 | 102.4137931 |
| Devarachikanna Halli | 85 | 101.6666667 | 166 |  | 70 | 95.75 |
| Wilson Garden, Shantinagar |  | 95 |  |  | 95 | 95 |
| Viveka Nagar | 95 | 67.5 |  |  |  | 85.83333333 |
| Richmond Town | 82.5 |  |  |  |  | 82.5 |
| Yemalur | 100 | 88.75 |  | 45 | 45 | 77.85714286 |
| Bilekahalli | 87.5 | 87 | 119 | 50 | 20 | 77.18181818 |
| Victoria Layout |  |  |  |  | 75 | 75 |
| BTM Stage 1 | 59.09090909 | 90 | 96.14285714 | 55 | 72.7 | 73.08823529 |
| Bellandur, Sakara | 67.14285714 | 80 | 73 |  | 70 | 70.27272727 |
| Bellandur, Sarjapur Road | 66.25 | 67.30769231 | 92.86666667 | 62.72727273 | 64.94871795 | 69.55102041 |
| Sarjapur Road | 80 | 75.33333333 | 180 |  | 49.5 | 69.05 |
| Jayanagar | 110 | 30 |  | 60 |  | 66.66666667 |
| Manipal County | 57.4 | 75.5625 | 69 | 54.82352941 | 36.15384615 | 58.93670886 |
| BTM Stage 2 | 65.83333333 | 41.66666667 | 84.6 | 39.28571429 | 55.625 | 55.875 |
| Bellandur - Off Sarjapur Road | 40 | 50.18181818 | 99 | 65.42857143 | 52.33333333 | 53.47727273 |
| Bommanahalli | 38.84615385 | 62.91666667 | 73.66666667 | 45.5 | 48.5 | 51.80392157 |
| Koramangala, Ejipura | 48.03030303 | 45.16666667 | 64.37142857 | 51.08 | 42.36111111 | 50.28301887 |
| Bellandur, Ecospace |  |  | 39 |  |  | 39 |
| Bomannahali - MicoLayout | 36.28476821 | 40.84761905 | 44.75 | 36.14503817 | 41.03225806 | 38.76051188 |
| Bellandur, Green Glen | 37.8125 | 30.14814815 | 40.5 | 40.44444444 | 34.6 | 36.18796992 |
| Kudlu | 30.3875969 | 29.02777778 | 49.26315789 | 30.6440678 | 31.19417476 | 32.41165049 |
| Harlur | 20.03095975 | 18.35842294 | 46.67123288 | 15.74015748 | 22.86746988 | 20.45210728 |
| HSR Layout | 17.14646712 | 17.78926502 | 24.76793249 | 17.66559399 | 18.61240528 | 18.20397563 |
| ITI Layout | 15.21022179 | 15.40422721 | 24.64619883 | 14.98732719 | 17.90820734 | 16.65521628 |
| Bellandur, ETV |  |  |  |  | 0 | 0 |
| Cox Town |  |  |  |  |  |  |
| Binnipet |  |  |  | 0 |  | 0 |
| Whitefield |  |  |  |  |  |  |
| **Grand Total** | **19.24758842** | **19.98595147** | **32.28942369** | **18.99552489** | **20.97061098** | **20.63932045** |

The average delivery charge is the highest in the Brookfield location

21.    Do you see any pattern in delivery time and delivery area. If yes then find out logical reason.

**EXCEL RESULTS**

The areas including ITI layout and Bomannahalli area has the most delivery traffic over all delivery times with ITI leading by a huge margin.