Freshco Hypermarket Capstone – Project Report

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Contents

Introduction

The following report presents a comprehensive analysis of the Freshco Hypermarket data sheet. The analysis is divided into four key sections, each focusing on different aspects of the data to extract valuable insights and answer specific questions.
The four sections are as follows:

- o Order-Level Analysis
- o Completion Rate Analysis
- o Customer-Level Analysis
- o Delivery Analysis.

Order-level Analysis

1) Order distribution at slot and delivery area level.
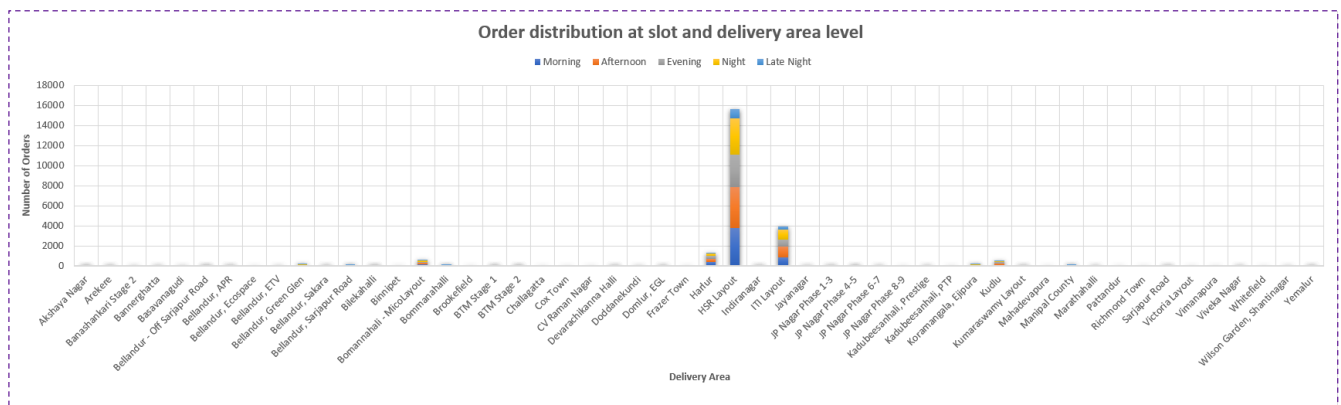
The above chart represents the distribution of orders across different regions and time slots, categorized into Morning, Afternoon, Evening, Night, and Late Night.

- **Highest Overall Orders**:
    - ✓ HSR Layout is the most active region, with a staggering 15,657 orders overall. Most orders are distributed across all time slots, with Afternoon (4,085) and Morning (3,749) being the peak periods.
    - ✓ Some regions like Bellandur, Green Glen and Bellandur, Off Sarjapur Road, JP Nagar Phase and Kadubeesanhali, PTP have minimal orders, indicating low demand or service in those areas.

- **Other High-Volume Areas:**
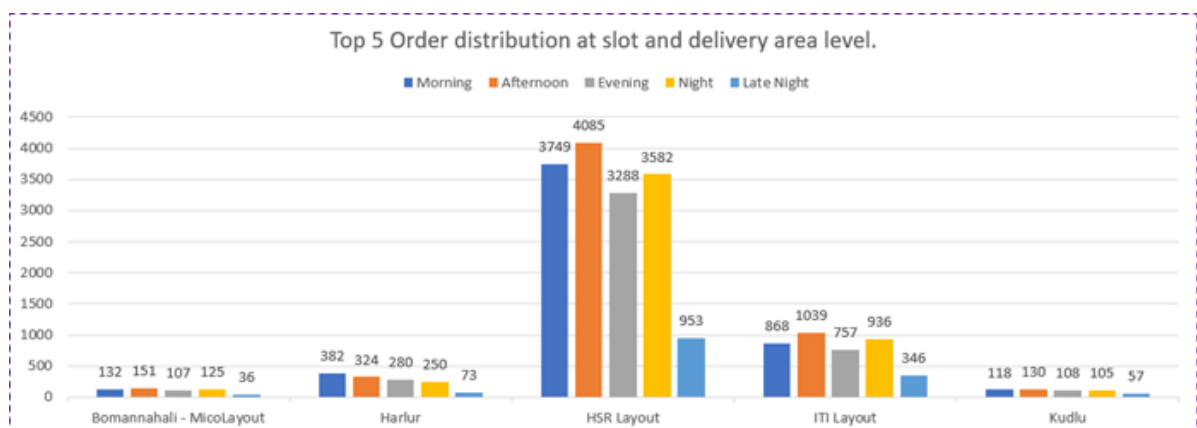
- ✓ ITI Layout follows with 3,946 orders, showing consistent activity throughout the day, with Afternoon (1,039) and Night (936) being the busiest time slot.
- ✓ Harlur also sees significant order volume, totaling 1,309 orders, with Morning (382) and Afternoon (324) being the most active periods.
- ✓ Bomannahali - MicoLayout records 551 orders, primarily during Afternoon (151) and Morning (132).
- ✓ Kudlu - Records 518 orders, primarily during Afternoon (130) and Morning (118).

- **Time Slot Analysis:**
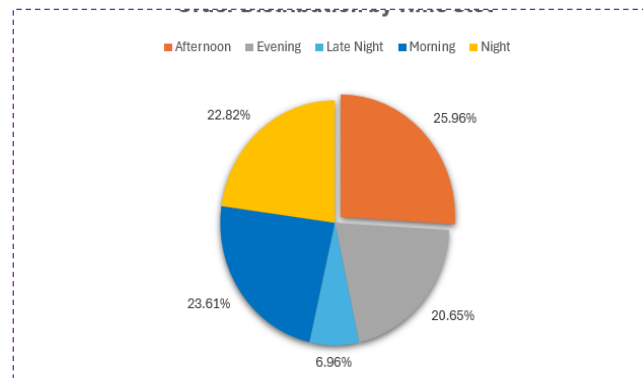
- ✓ Afternoon is generally the busiest time slot across most regions, with a total of 5,924 orders.
- ✓ Morning and Night also see substantial activity, with 5,389 and 5,209 orders respectively.
- ✓ Late Night has the least number of orders (1,589), but it is still a significant period for areas like Bellandur, Sarjapur Road and Koramangala, Ejipura.

2) Areas having the highest increase in monthly orders (from Jan to Sep) in absolute orders.
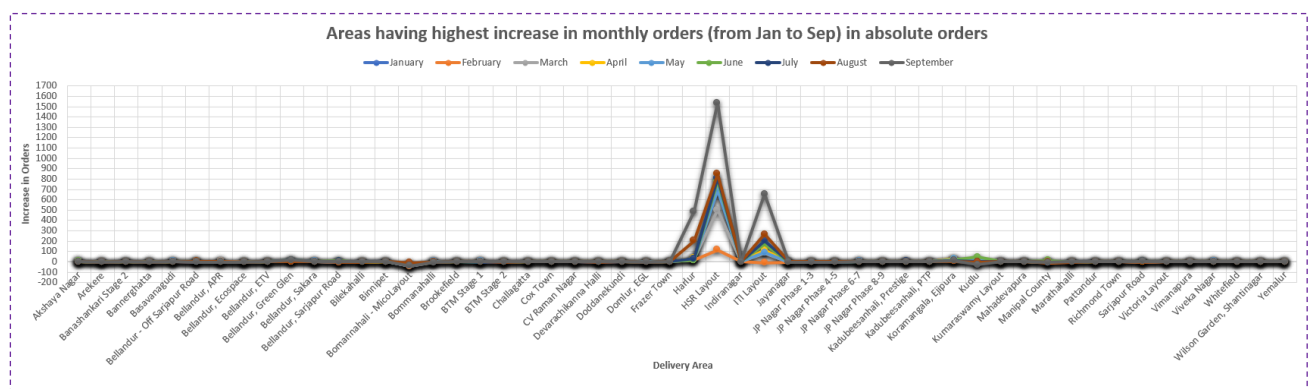
- HSR Layout shows a strong and steady increase in orders, rising from 1,072 in January to 2,606 in September, the highest absolute growth (1534) among all areas.
- ITI Layout also experiences consistent growth, with orders increasing from 264 in January to 917 in September.

- Harlur sees a sharp rise in orders, particularly between August (254 orders) and September (539 orders).
- Bomannahali - MicoLayout, Kudlu, and Koramangala, Ejipura exhibit moderate fluctuations in order volumes, but these changes are less significant compared to other areas.
- Jayanagar, Marathahalli, Basavanagudi, and Richmond Town show minimal changes in monthly orders throughout the period.

3) Delivery charges as a percentage of product amount at slot and month level.
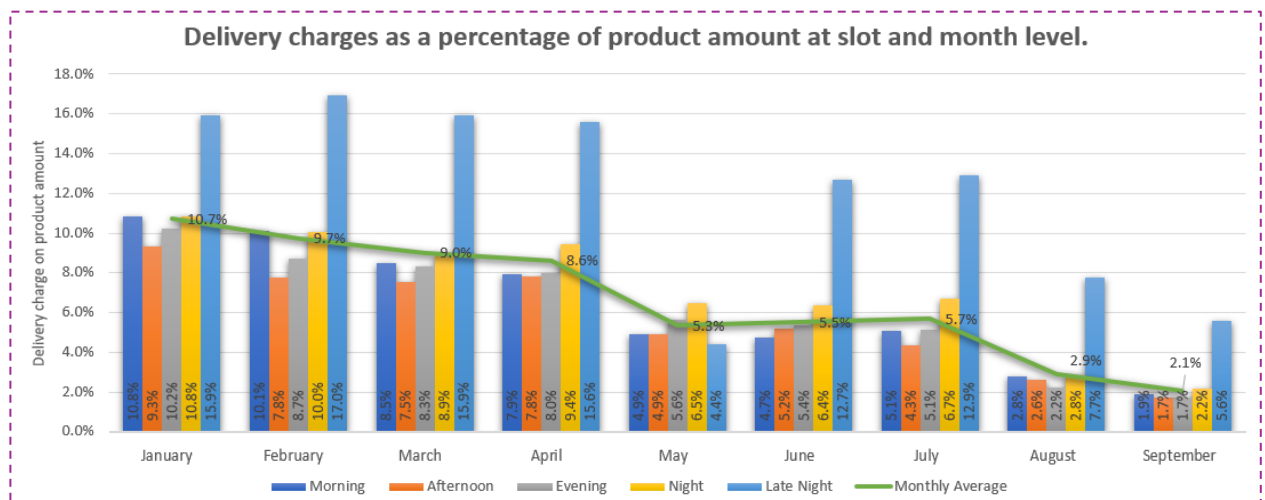
- In January, the delivery percentages are relatively higher across most time slots, with an average of 10.7%. In contrast, September shows the lowest percentages, averaging 2.1% across all slots, indicating a significant reduction in delivery charges relative to product amounts compared to earlier months.
- In May, there is a notable drop of 3.3% in the average delivery percentage. However, this rate increases again in June and July, largely due to a significant rise in Late Night delivery percentages, reaching 12.7% and 12.9%, respectively.
- August and September experience substantial declines in delivery percentages, especially during Late Night, with percentages of 7.7% and 5.6%, respectively. This reflects lower delivery charges relative to product amounts in the later months of the year.
- Late Night consistently shows the highest delivery percentages, peaking at 17.0% in February and maintaining an average of 12.3% across the months.

Months	Morning	Afternoon	Evening	Night	Late Night
Average	5.3%	5.1%	5.4%	6.4%	12.3%

(Avg. months by slot)

4) Discount as a percentage of product amount at slot and month level.

Discount as a percentage of product amount at slot and month level.

Legend: Morning, Afternoon, Evening, Night, Late Night, Grand Total

Values (by month):
- January: 0.9%, 1.0%, 1.2%, 1.0%, 0.7% — Grand Total 1.0%
- February: 1.1%, 0.4%, 0.8%, 0.6% — Grand Total 0.7%
- March: 0.6%, 0.9%, 0.6%, 0.6% — Grand Total 0.7%
- April: 0.7%, 1.0%, 0.6%, 0.9%, 0.6% — Grand Total 0.8%
- May: 4.1%, 4.8%, 4.5%, 5.1%, 3.4% — Grand Total 4.6%
- June: 1.7%, 2.4%, 1.6%, 1.9%, 1.3% — Grand Total 2.0%
- July: 4.6%, 4.8%, 5.9%, 6.7%, 3.3% — Grand Total 5.3%
- August: 20.8%, 21.5%, 20.6%, 22.1%, 12.8% — Grand Total 20.8%
- September: 11.0%, 10.5%, 11.5%, 9.8%, 5.1% — Grand Total 10.4%

- August stands out with the highest discount percentages across all time slots, averaging 20.82%, indicating a period of aggressive discounting.
- February has the lowest overall discount percentage, averaging 0.65%, with the lowest in the Afternoon slot at 0.37%.
- The Late Night slot consistently has lower discount percentages compared to other time slots, except in August when it spikes to 12.77%.

5) Discount as a percentage of product amount at drop area and slot level.

Discount as a percentage of product amount at drop area and slot level

Legend: Morning, Afternoon, Evening, Night, Late Night
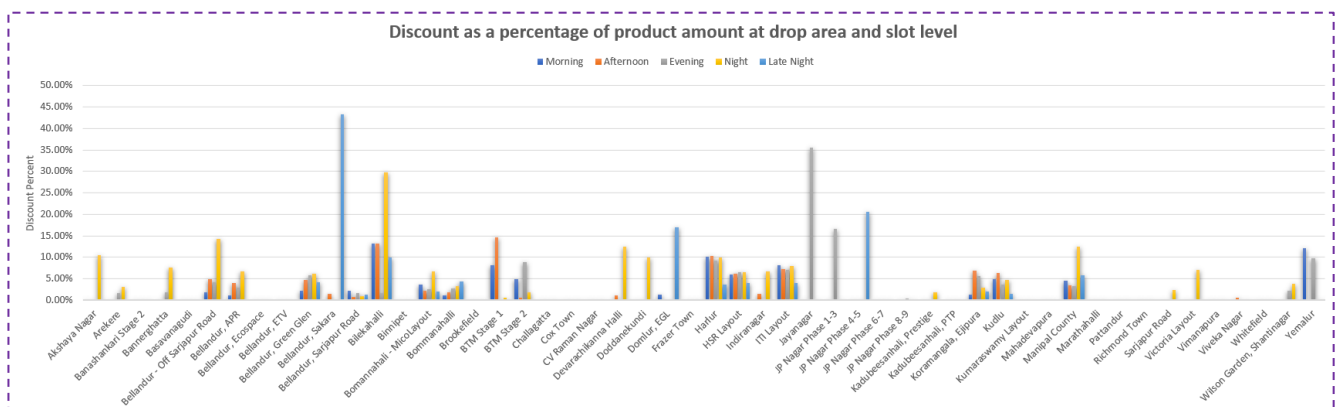
- Bilekahalli shows the highest average discount of 7.77% overall, with a peak of 29.73% during the Night slot.
- Bellandur - Off Sarjapur Road and Bellandur, Green Glen also have substantial discounts, averaging 7.46% and 4.65% respectively, with a notable peak during the Night slot in Bellandur - Off Sarjapur Road at 14.23%.
- 20 areas have a 0% discount across all time slots
- Late Night often features the highest discount percentages in specific areas, such as Bellandur, Sakara with a peak of 43.23%, and BTM Stage 1 showing a significant 14.69% in the Afternoon slot.
- Morning and Afternoon slots generally show lower discount percentages, with exceptions in regions like Bilekahalli and Bellandur areas.

Completion Rate Analysis

## 6) Completion rate at slot vs day of the week (Sunday to Saturday) level.
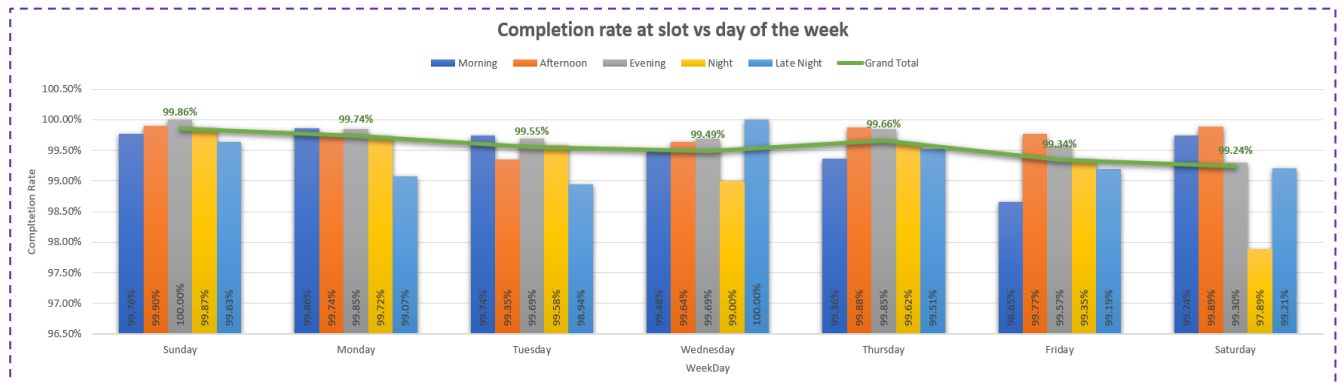
- Sunday shows the highest completion rate overall at 99.86%, with all-time slots maintaining close to or above 99.63%. Similarly, Monday and Thursday also exhibit strong performance, with averages of 99.74% and 99.66%, respectively.
- Friday and Saturday, while still performing well, show slightly lower completion rates, particularly on Friday morning at 98.65% and Saturday night at 97.89%. These may indicate potential areas for improvement in service consistency.
- The afternoon slot consistently delivers the highest completion rate throughout the week, averaging 99.75%.

7) Completion rate at delivery area level.
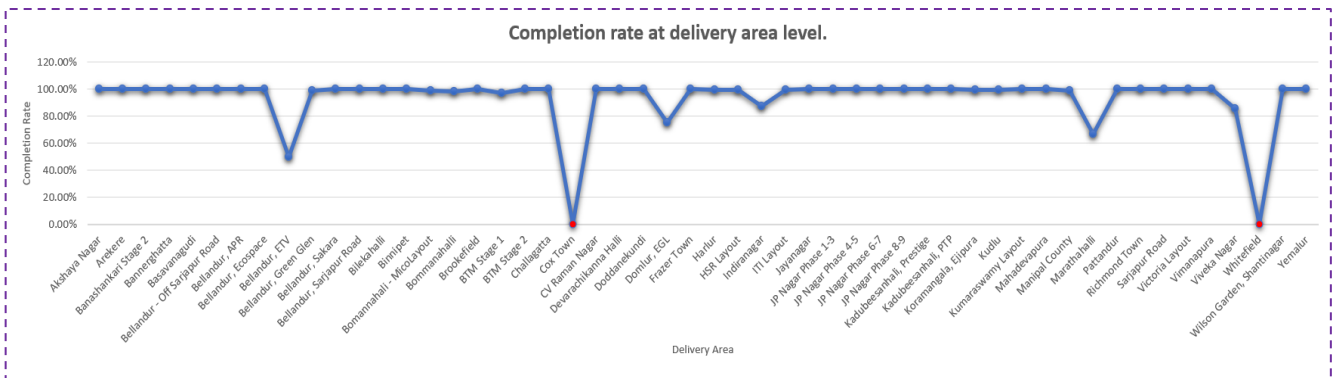
- Cox Town and Whitefield stand out with a 0% completion rate, highlighting potential issues that need attention.
- Bellandur, ETV, Domlur, EGL, Marathahalli, Indiranagar, and Viveka Nagar show relatively lower completion rates suggesting some inconsistencies in these regions.

8) Completion rate at number of products ordered level.
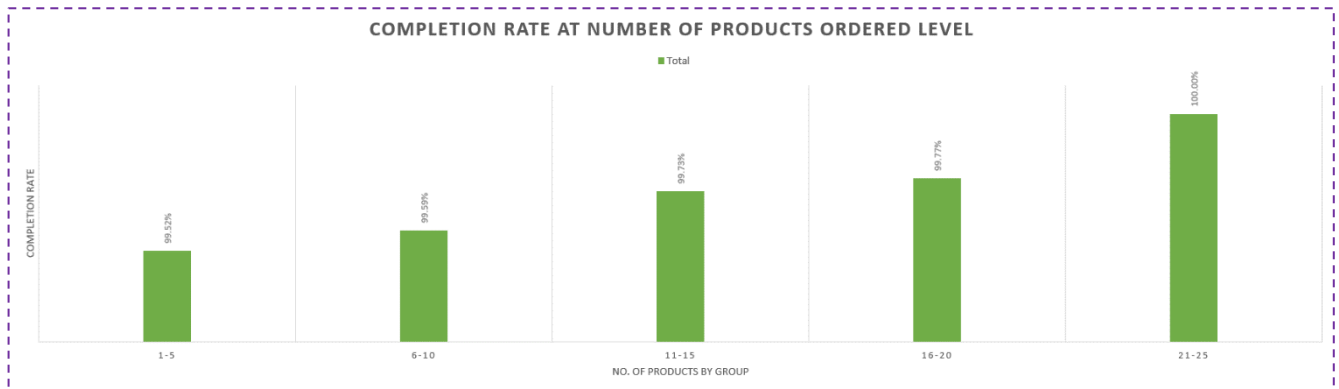
- The 21-25 category has a 100% completion rate, while the 1-5 category shows the lowest rate at 99.52%. More products lead to a higher completion rate, while fewer products result in a lower completion rate.

9) Analysis of the pattern observed in the completion rate.

Observation on Q-6
1) Sunday: Highest overall completion rate at 99.86%, with the Evening slot at 100% and the Late Night slot at 99.63%. **2) Saturday:** Lowest overall completion rate at 99.24%, with Afternoon at 99.89% and Night at 97.89%, the lowest across all slots. **3) Friday and Saturday:** Lower completion rates, particularly in the Morning and Night slots. **4) Afternoon Slot**: Highest with a 99.75% completion rate. **5) Night Slot:** Lowest completion rate at 99.29%, especially on Saturday with 97.89%

| Observation on Q-7 |
|---|
| 1) Cox Town and Whitefield has 0% completion rate.
2) Bellandur, ETV, Domlur, EGL, Marathahalli, Indiranagar, and Viveka Nagar show relatively lower completion rates compared to other locations |

| Observation on Q-8 |
|---|
| 1) The 21-25 category has a 100% completion rate, while the 1-5 category shows the lowest rate at 99.52%. More products lead to a higher completion rate, while fewer products result in a lower completion rate. |

Customer-level Analysis
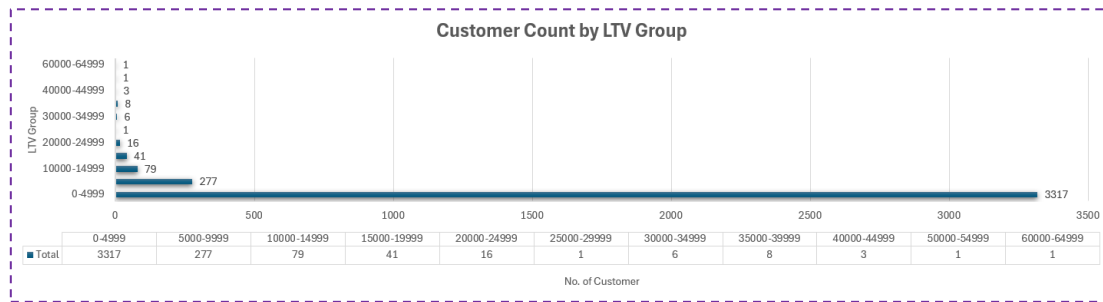
10)   Completion rate at source level.
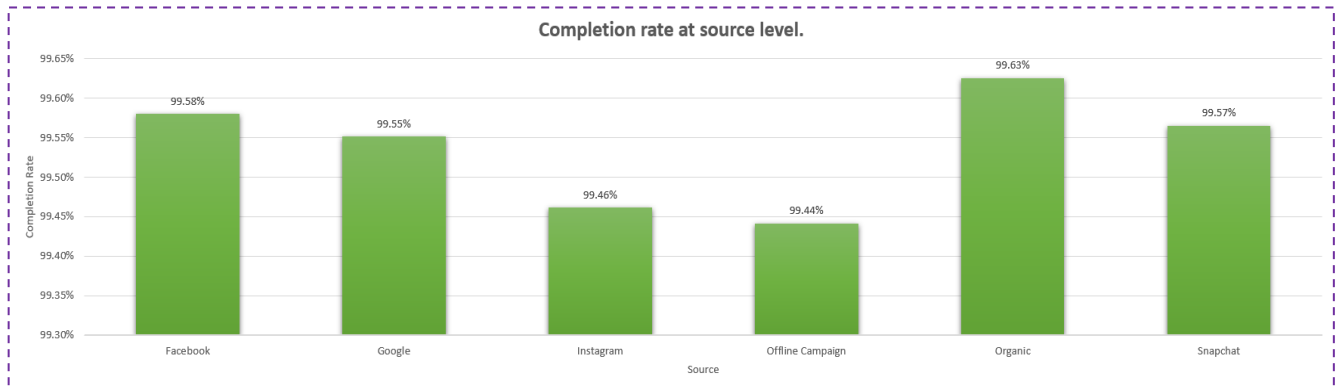
- The Organic channel leads with the highest completion rate of 99.63%, showcasing its exceptional effectiveness in achieving desired outcomes through organic efforts.
- Digital platforms also demonstrate strong performance, with Facebook, Google, Instagram, and Snapchat all maintaining high completion rates, reflecting their efficiency in meeting campaign objectives.
- In comparison, the Offline Campaign shows a slightly lower completion rate of 99.44%. Despite this, it remains a highly effective channel, just marginally behind the top-performing channels.

11)   LTV for every customer.
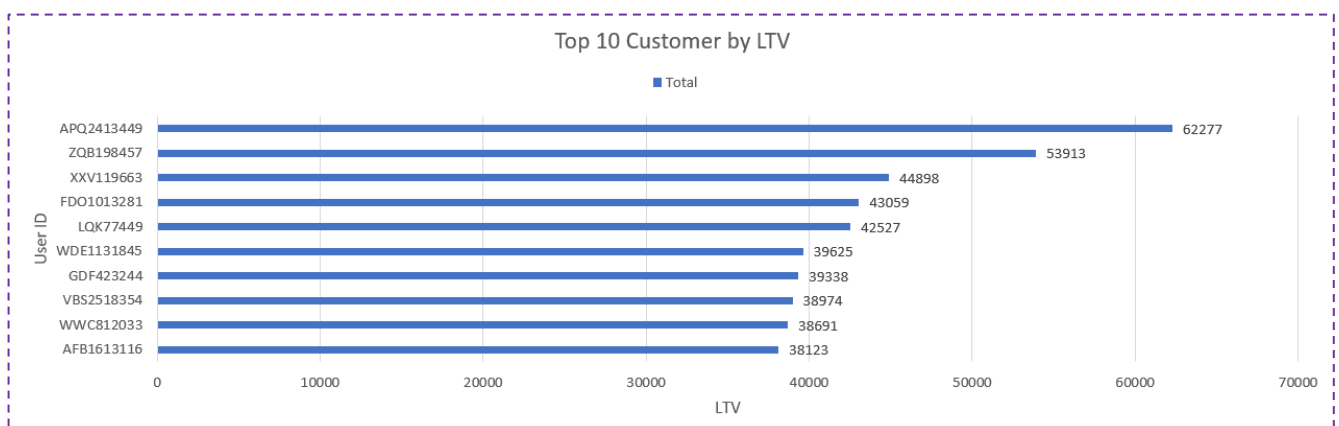
- The highest Lifetime Value (LTV) identified is 62,277 attributed to customer "APQ2413449".
- The average LTV across all customers is 4,256.50.

Customer Count by LTV Group

	0-4999	5000-9999	10000-14999	15000-19999	20000-24999	25000-29999	30000-34999	35000-39999	40000-44999	50000-54999	60000-64999
Total	3317	277	79	41	16	1	6	8	3	1	1

- The "0-4999" LTV Group dominates with 3,317 customers, indicating the majority of customers have low lifetime values, while higher LTV brackets see a sharp decline in customer count.

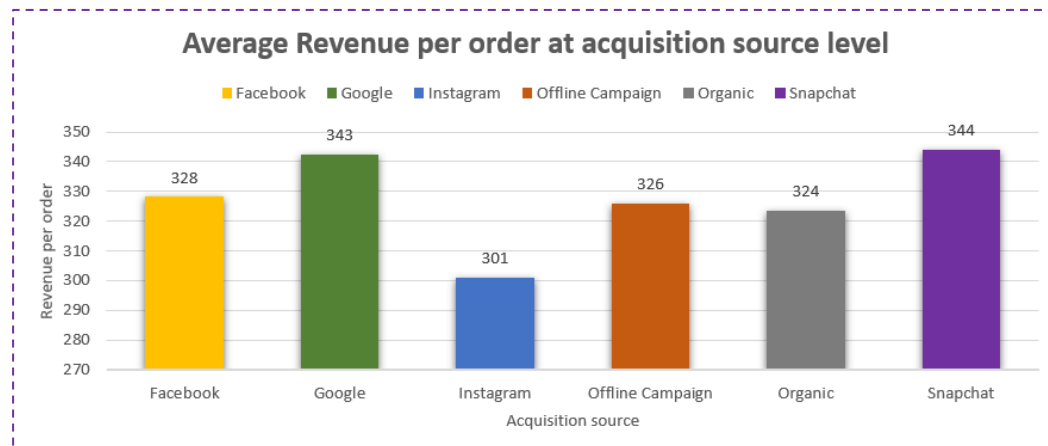## 12)   Aggregated LTV at customer acquisition source level.
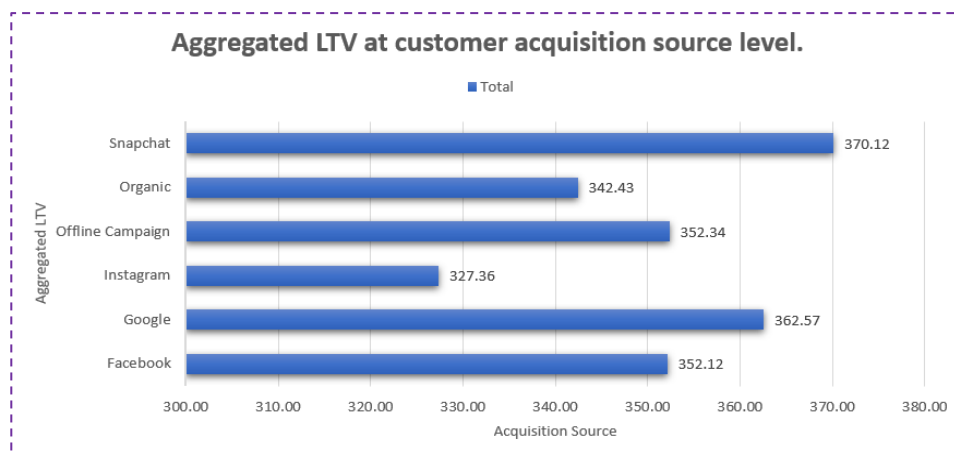
- Snapchat yields the highest aggregated LTV at 370.12, while Instagram has the lowest at 327.36.

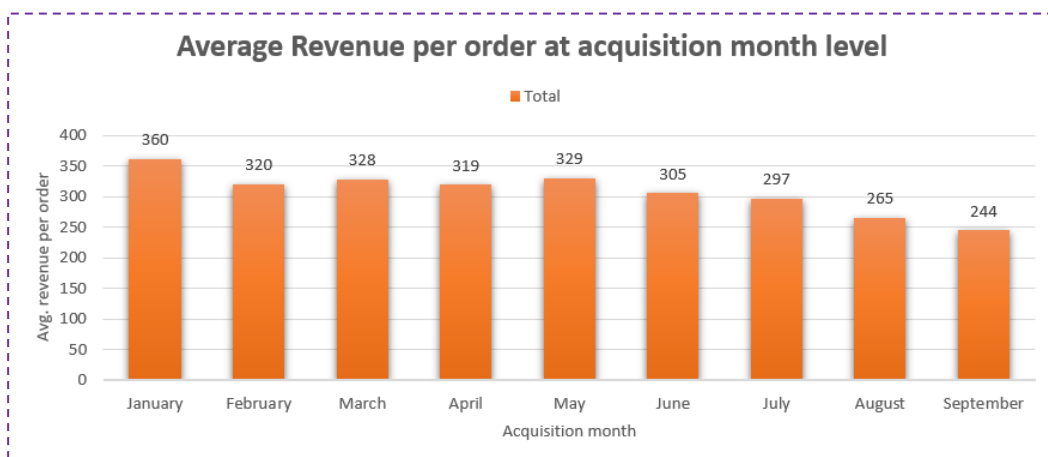## 13)   Aggregated LTV at acquisition month level.
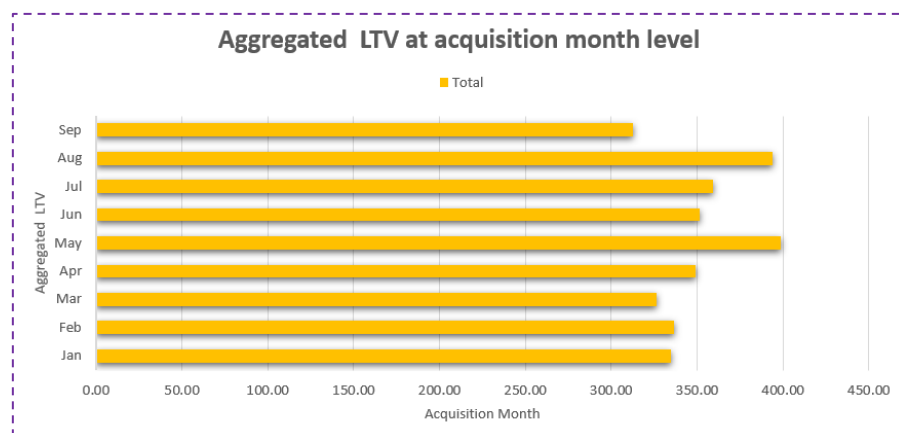
- The aggregated LTV peaks in May and August, at 398.82 and 393.86 respectively, and drops to 312.57 in September.

14) Average Revenue per order at different customer acquisition source level.

Average Revenue per order at acquisition source level

Legend: Facebook, Google, Instagram, Offline Campaign, Organic, Snapchat

- Facebook: 328
- Google: 343
- Instagram: 301
- Offline Campaign: 326
- Organic: 324
- Snapchat: 344

Revenue per order (y-axis) / Acquisition source (x-axis)

- The average revenue per order is highest for Snapchat and Google at 344 and 343, respectively, and lowest for Instagram at 301.

15) Average Revenue per order at acquisition month level

Average Revenue per order at acquisition month level

Legend: Total

- January: 360
- February: 320
- March: 328
- April: 319
- May: 329
- June: 305
- July: 297
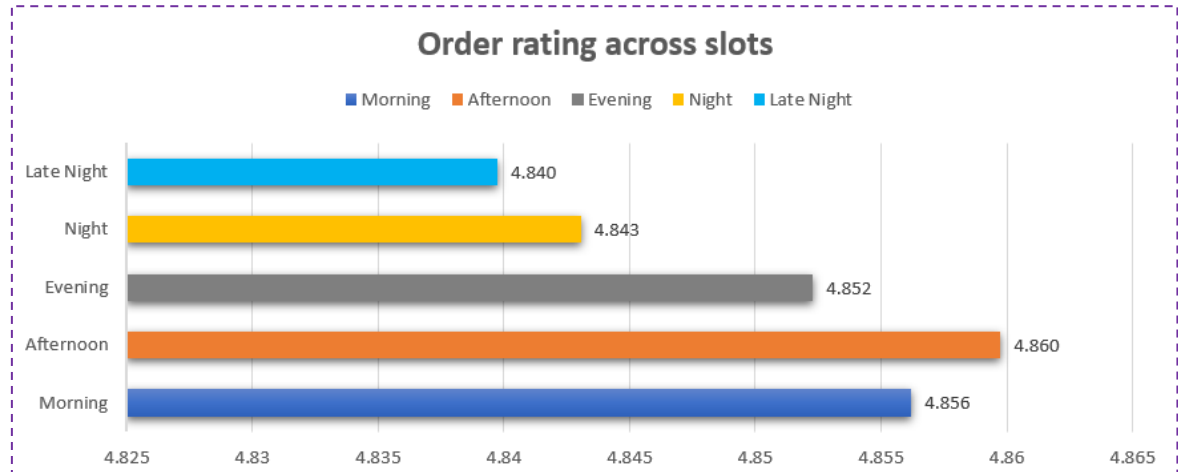- August: 265
- September: 244

Avg. revenue per order (y-axis) / Acquisition month (x-axis)

- The average revenue steadily declined from 360 in January to 244 in September, indicating a significant drop over the months.
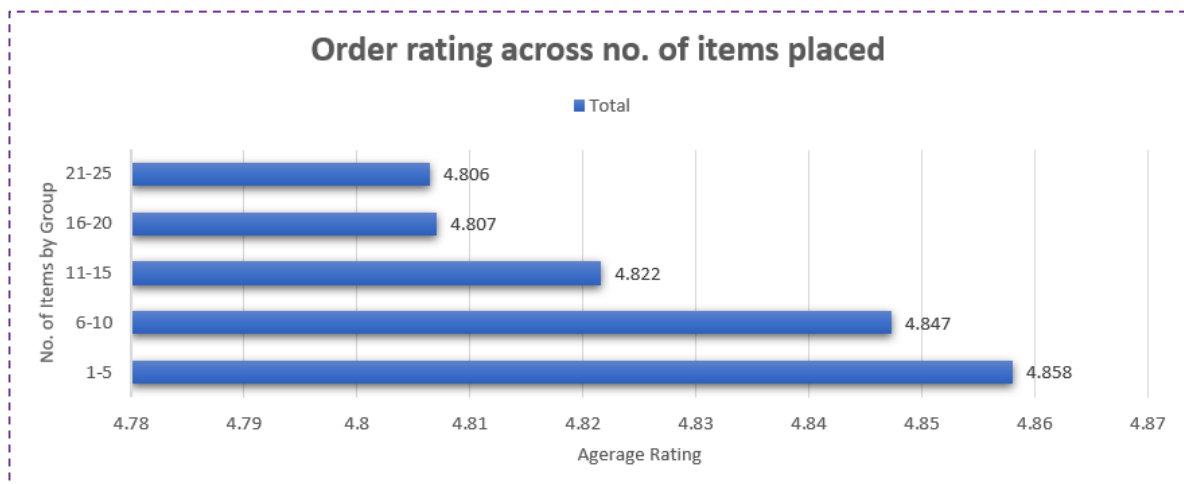
16) Analysis of order rating across slots, number of items placed, delivery charges and discounts.

o **Order rating across slots:**

Order rating across slots

Legend: ■ Morning ■ Afternoon ■ Evening ■ Night ■ Late Night

| Slot	Rating
Late Night	4.840
Night	4.843
Evening	4.852
Afternoon	4.860
Morning	4.856

- Average order ratings are consistently high across all time slots, with the morning and afternoon slots leading at 4.86, while late night has the lowest average rating at 4.84.

o **Order rating across no. of items placed.**

Order rating across no. of items placed

Legend: ■ Total

No. of Items by Group / Agerage Rating

No. of Items by Group	Average Rating
21-25	4.806
16-20	4.807
11-15	4.822
6-10	4.847
1-5	4.858

- Order ratings slightly decrease as the number of items placed increases, with the highest average rating of 4.86 for orders containing 1-5 items and the lowest rating of 4.81 for orders with 21-25 items.

o **Order rating across Delivery Charges**
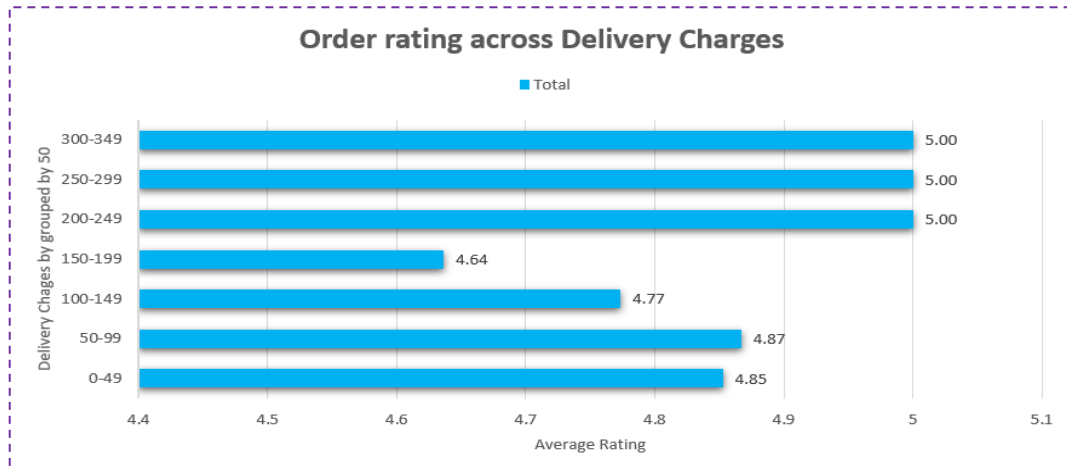
- Order ratings increased with higher delivery charges, reaching a maximum rating of 5.0 for delivery charges in the 200-349 range, and showing lower ratings of 4.64 for charges between 0-149.
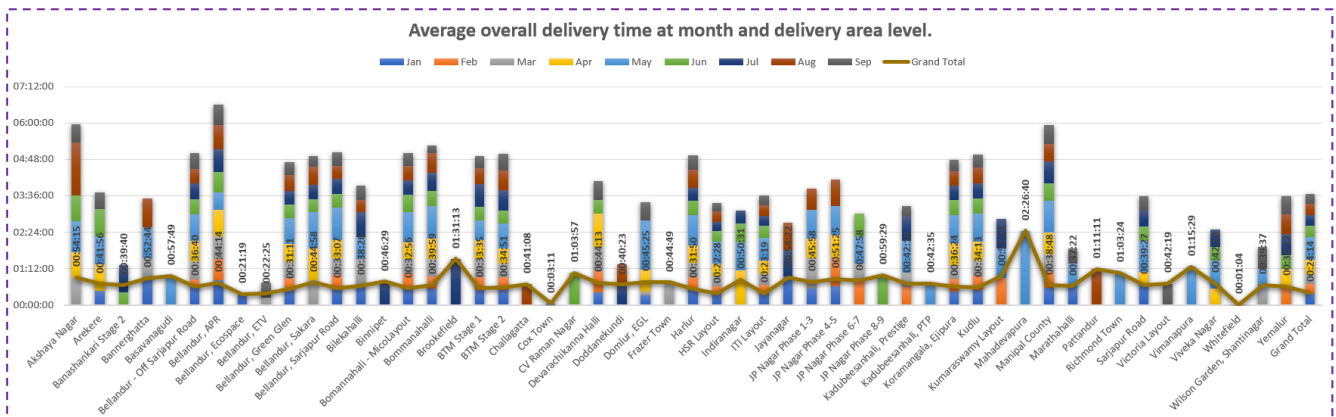
o **Order rating across discount**

- Order ratings tend to improve with higher discount ranges, peaking at 5.0 for discounts between 301-750, while lower ratings are observed for discounts below 1 and in ranges like 201-250.

Delivery Analysis

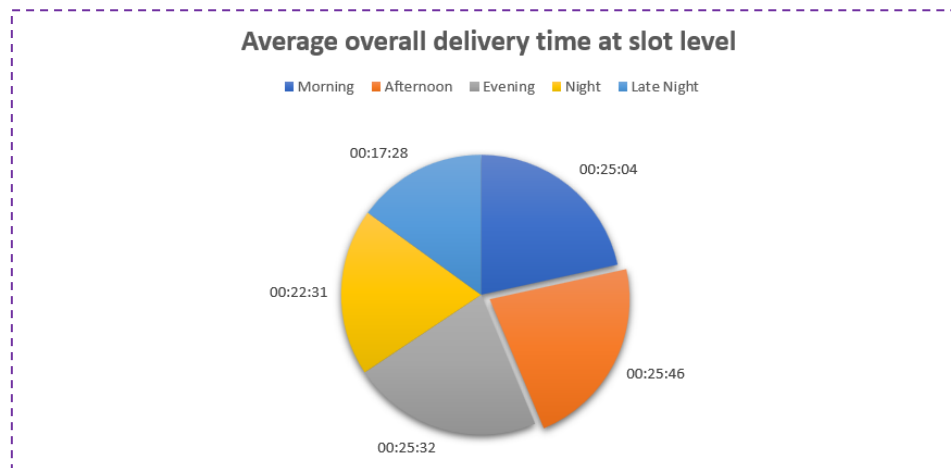## 17) Average overall delivery time at month and delivery area level.

- Mahadevapura recorded the longest average delivery time, clocking in at 2 hours 26 minutes. Other areas with significantly longer times include Brookefield (1 hour 31 minutes) and Vimanapura (1 hour 15 minutes).
- The month of May had the highest average delivery time, at 44 minutes 35 seconds.
- The month of February registered the shortest average delivery time, at 19 minutes 21 seconds.

## 18) Average overall delivery time at month and weekday/weekend level.
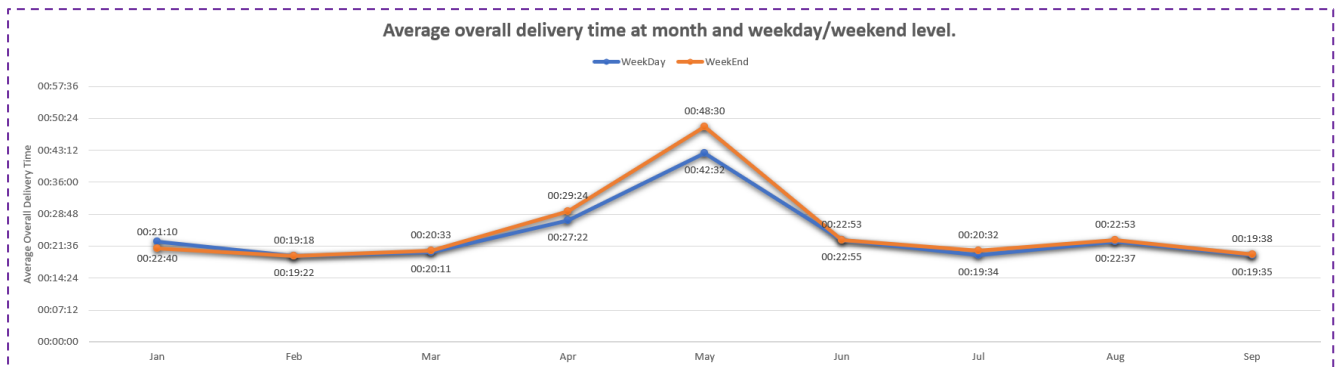
- For weekdays, "May" has the highest average delivery time at 00:42:32, while "July" has the lowest average time at 00:19:34.
- For weekends, "May" shows the highest average delivery time at 00:48:30, whereas "February" has the lowest average time at 00:19:18.
- WeekEnd deliveries consistently took longer than WeekDay deliveries, with a grand total average of 25 minutes 14 seconds compared to 23 minutes 48 seconds.

## 19) Average overall delivery time at slot level.

- The average overall delivery time is shortest during the late night at 00:17:28 and longest during the afternoon at 00:25:46.
- The average delivery time is 00:24:14 across all slots.

20) Delivery charges with slot and delivery area.
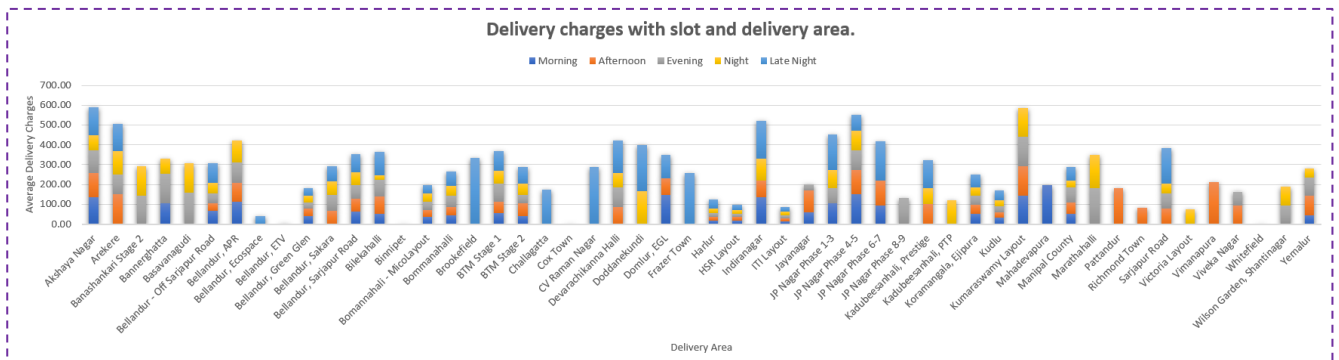
- The highest average delivery charge across all time slots is recorded in Brookefield at 332.00
- The time slot with the highest average delivery charge is Late Night at 32.09, and the lowest is Morning at 18.90.
- The overall average delivery charge across all time slots is 20.55.

21) Delivery area wise overall delivery time
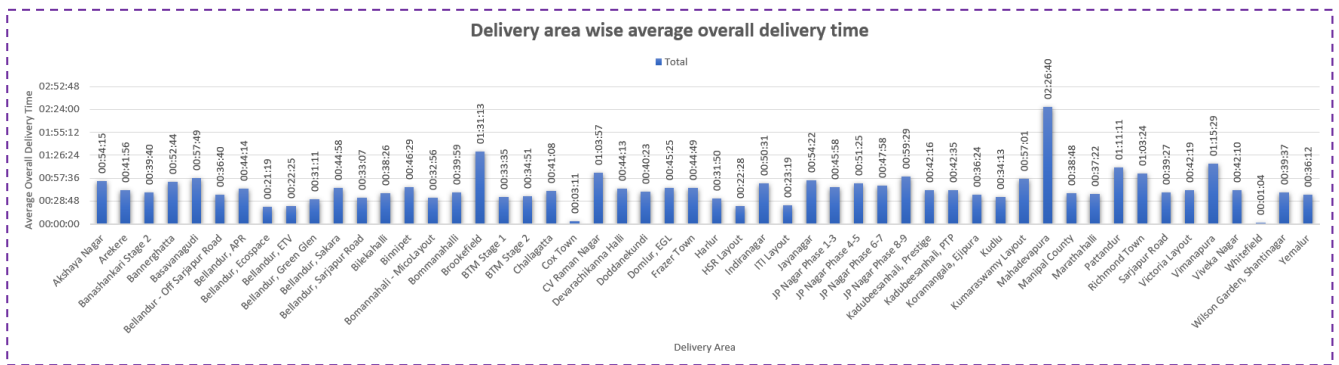
- **Areas with Extremely Short Delivery Times:**
  - ✓ Whitefield (00:01:04) and Bellandur, Ecospace (00:21:19) have notably short delivery times.
  - ✓ **Possible Reason:** These areas might have higher density of delivery operations or proximity to the central distribution hub, allowing for faster processing and delivery.
- **Areas with Very Long Delivery Times:**
  - ✓ Mahadevapura (02:26:40) and Brookefield (01:31:13) have the longest average delivery times.
  - ✓ **Possible Reason:** These areas may be located farther from the distribution centers, have less efficient logistics, or face traffic congestion issues, leading to prolonged delivery times.
- **Consistency in Delivery Times:**
  - ✓ Areas like Bellandur - Off Sarjapur Road (00:36:40), Koramangala, Ejipura (00:36:24), and Yemalur (00:36:12) have relatively consistent but moderate delivery times.
  - ✓ **Possible Reason:** These areas might have average distance from the delivery centers with reasonable logistical operations.
- **Impact of Area Size and Population Density:**
  - ✓ Larger or densely populated areas might experience longer delivery times due to traffic congestion or higher delivery volume.
  - ✓ Smaller or less densely populated areas could have shorter delivery times because of lower delivery volume and less congestion.
- **Special Cases:**
  - ✓ Brookefield and Mahadevapura have exceptionally high delivery times, suggesting potential issues such as road infrastructure, traffic management, or delivery routing inefficiencies.

Conclusion

The detailed analysis of the Freshco Hypermarket Data has provided valuable insights into various aspects of the business, including order distribution, completion rates, customer behavior, and delivery efficiency. These insights are instrumental in making data-driven decisions and implementing strategies for improving overall performance. Targeted strategies should be developed to address observed patterns and enhance customer satisfaction, delivery efficiency, and order completion rates.