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Abstract

Report consisting of insights and observations from analysis done for Freshco Hypermarket transaction data.

Freshco Hypermarket Capstone

Assessment Report

**ORDER LEVEL ANALYSIS**

**Task 1: Identify order distribution at slot and delivery area level.**

* The order distribution is majorly concentrated in the delivery areas **HSR Layout, ITI Layout, Harlur, Bomannahali-MicoLayout and Kudlu** contributing to 96.31% of the total orders.
* Maximum orders have been delivered in **HSR Layout delivery area**.
* The orders are almost equally distributed along the first four time slots of the day, viz, Morning, Afternoon, Evening and Night. However, **afternoon** time slot tends to have **marginally high** orders delivered. Also, there are less orders placed in the **late night time slot** as compared to the other time slots.



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

* **HSR Layout, ITI Layout and Harlur** exhibit highest increase in monthly orders.



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

* Delivery charges (in proportion to the product amount) gradually decline as the months progress (from January to September) and are the **lowest** (in proportion to the product amount) during the month of **September**.
* Moreover, the delivery charges (in proportion to the product amount) are significantly high in the late night time slot. This pattern is consistently observed in all the months, except for May, where delivery charges (in proportion to the product amount) of different time slots are similar.

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

* Discount (in proportion to the product amount) exhibited **increase** from **May to September** as compared to the previous months. Moreover, **August** month observed the **highest** discount (in proportion to the product amount).
* Discount (as a comparative extent of product amount) was similar across the various time slots of the day. However, it was the **lowest** in the **late night** time slot.

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

* Discount (in proportion to the product amount) was considerably **high** in **Harlur, Bilekahalli and ITI Layout** delivery area across the various time slots of the day.
* However, other delivery areas were either having very low or no discount (in proportion to the product amount).
* Four delivery areas (as outliers), viz, **Bilekahalli, Jayanagar, Belandur (Sakara) and J P Nagar (Phase 4-5)** were offered **>20%** discount (in proportion to the product amount) during the evening, night and late night time slot. Also, it was observed that the **late night** time slot exhibited the **lowest** discount (as a comparative extent of product amount).
* Late night time slot at Ballandur had highest Discount (in proportion to the product amount) at 43.23% followed by evening time slot Jaynagar at 35.61%.



**Analysis of patterns observed**

-**Large number of orders** from few delivery areas might be because of their **close proximity to the pickup area**, customer hotspots for home delivery services and high-density residential areas.

-**Orders slightly higher** during **afternoon** due to customer availability and **lower** during **late night** due to limited customer activity at that time slot.

-**Areas exhibiting highest growth rate** in monthly orders may be due to expanding population, digital adoption or targeted campaigns.

-**Gradual decline** in **delivery charges** over the months might be due to **seasonal pricing adjustments** or **competitive pricing strategies**.

-**Late night delivery charges** are **high** due to **operational costs** (fewer drivers, safety concerns).

-**Discount increasing over months** may be due to **seasonal promotions and increased competition**.

**-Late night offering lower discount** because of **low demand** reducing the need for promotion.

**COMPLETION RATE ANALYSIS**

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

* Completion rate is **highest** on **Sunday** followed by Monday and **lowest** on **Saturday**.
* Across the time slots, **night** time slot exhibits the **lowest** completion rate and **afternoon** exhibits the **maximum** completion rate.
* Night time slot of Saturday has the lowest completion rate and evening time slot of Sunday exhibits 100% completion rate.

**Task 7. Calculate completion rate at drop area level.**

* Completion rate at **86.5%** of the drop areas is **>90%**.
* Seven drop areas, viz, **Bellandur (ETV), Coxtown, Domlur (EGL), Indiranagar, Marathahalli, Vivekanagar and Whitefield** had completion rate <90%.

**Task 8. Completion rate at number of products ordered level.**

* As the product count per order increases, the completion rate increases, being the **highest** (100%) for **20-25 product counts per order**.

**Task 9. Give your analysis on any pattern you observe in completion rate.**

* Low completion rate on Saturday may be due to the large number of orders placed rendering inefficiency in order completion. Also, logistical constraints such as traffic and low workforce may also cause lower completion rates. Comparatively, Sunday and Monday show higher completion rate which may be because of manageable number of orders placed, focus on clearing backlogs to prepare for the coming week and post-weekend renewed efficiency.
* Limited workforce may be responsible for lower completion rates during night time slot. Afternoon time slot shows highest completion rate potentially due to peak operational efficiency and less logistical constraints such as low traffic and customer availability.
* The variation in completion rate among the drop areas might be possible due to proximity from the pickup area as well as logistical restrictions such as traffic congestion and high residential density. Moreover, the drop areas with low completion rate are also the ones with very few orders, therefore not given priority.
* Completion rate increasing with the product count increase suggests that larger orders are prioritized and assigned to experienced workforce as well as customers placing large order are more prepared to receive the order, ensuring higher success in completion.

**CUSTOMER LEVEL ANALYSIS**

**Task 10. Identify completion rate at source level.**

* Customers acquired **organically** as well as through Facebook, Google and Snapchat show **higher completion rate** as compared to the customers acquired through Instagram and Offline campaign.

**Task 11. Calculate LTV for every customer.**

* The range of LTV across customers is from Rs. 15.00 to Rs. 64062.00.
* There are 17 customers having Rs.0.00 LTV.

**Task 12. Calculate aggregated LTV at customer acquisition source level.**

* The aggregated LTV is **highest** for the customers acquired **organically** followed by google as an acquisition source.

**Task 13. Calculate aggregated LTV at acquisition month level.**

* The aggregated LTV declines as the customer acquisition month progresses from January to September with **January** bearing the **highest** aggregated LTV and **September** exhibiting the **lowest** aggregated LTV.

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

* The average revenue per order is **highest** for two customer acquisition sources, viz, **Google and Snapchat**; whereas lowest for Instagram.

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

* The average revenue per order declines as the customer acquisition month progresses from January to September.

**Task 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 late night are generally rated high. While orders placed in early morning are not rated high. OR orders having more than 5 items are generally rated high.**

* Order rating distribution pattern is similar across time slots as majority of the orders are either rated **5** or **not rated**. However, orders placed during **night** time slot are relatively **less rated**.

* With respect to the number of items placed, product count <15 was more likely to be given any rating as compared to the range of product count between 15 – 25. Also, **majority** of the orders (irrespective of product count) were either rated **5** or **not rated** at all.
* With respect to the delivery charges, majority (95.36 % of total orders placed) of the orders that were rated were under the delivery charge range of Rs. 0 – 49. Moreover, majority of the orders **(68.14%)** were rated **5**, followed by **not rated** (**24.73%**).



* Across discounts offered, the order ratings are mostly either **5** or **not rated** at all. Also, orders that are rated fall under the discount range of **Rs. 0 – 99**.



**Analysis of patterns observed**

-Customers acquired **organically** and via **Google/Facebook/Snapchat** exhibit **higher completion rates**, while Instagram/Offline campaigns show lower completion rates due to less engaged audiences.

-Aggregated LTV is **highest** for **organic customers** and declines progressively from January to September indicating better **retention rate**.

-Average revenue per order is **highest** for **Google/Snapchat** customers and lowest for Instagram, **declining monthly** due to **seasonal effects** and **less engaged customers**.

-Night-time orders are **less rated** compared to other slots, likely due to **lower engagement** at night.

-Orders with **<15 items** are **more likely** to be rated, as larger orders may **overwhelm customers** or **reduce feedback**.

-**Delivery charges of ₹0–₹49** lead to the **highest-rated** orders, suggesting **low fees positively impact customer satisfaction**.

-**Discounts between ₹0–₹99** correspond to **higher ratings**, as **moderate discounts balance value perception**

-Orders across time slots and product counts are primarily rated 5 or not rated, indicating **polarized feedback behavior.**

**Delivery Analysis**

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

* During the month of **May**, the overall delivery time was the **highest**.
* Delivery areas with lower overall delivery time were the ones with high number of orders and were comparatively nearer to the pickup location.



**Task 18. Calculate average overall delivery time at month and weekday/weekend level.**

* Overall delivery time is **less** during **weekdays** as compared to weekend in most of the months.
* **May** exhibits **higher overall delivery time** as well as the difference between overall delivery time of weekday and weekend is significantly larger.

**Task 19. Calculate average overall delivery time at slot level.**

* The average overall delivery time is significantly **less** during the **late night** time slot as compared to the other time slots.

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

* The delivery charges are lower in drop areas that are in close proximity to the pickup area and bear large number of orders.
* As the day progresses, the delivery charges increase, being the highest in the late night time slot.



**Task 21. Do you see any pattern in delivery time and delivery area?**

* Delivery areas with less overall delivery time suggest close proximity to the pickup area and having large number of orders, thus, being prioritized.
* It is also observed that on average the majority of the deliveries are completed in less than an hour.

**Analysis of patterns observed**

-**May** exhibits the **highest delivery time**, with a significant **difference between weekdays and weekends**, likely due **to increased demand or inefficiencies**.

-**Delivery areas** with **lower delivery times** have more orders and are closer to the pickup location, indicating **proximity-based prioritization**.

-**Weekdays** have **lower** delivery times compared to **weekends** across most months due to reduced weekend congestion or higher weekday operational efficiency.

-**Late-night slots** show the **lowest delivery time**, as fewer orders likely **improve delivery efficiency**.

-**Delivery charges** are **lower** in nearby drop areas with high order volumes, likely due to **reduced logistics costs**.

-**Delivery charges** increase throughout the day, peaking in the **late-night slot** due to **higher operational costs**.

-**Delivery areas** with **low delivery times** and **high order volumes** are prioritized for efficiency.

-The **majority of deliveries** are completed within an **hour**, reflecting **overall operational efficiency**.

**Overall Patterns & Observations**

* **Order Patterns**: HSR Layout, ITI Layout, and Harlur are top contributors (96.31% of orders) and show the highest monthly growth. Orders peak in the afternoon slot and decline at night. Delivery charges are highest late at night but decline progressively through the months, being lowest in September.
* **Completion Rates**: Higher on Sunday/Monday due to manageable orders; lowest on Saturday due to logistical constraints. Afternoon slots exhibit maximum completion rates, while night slots are the lowest. Higher product counts lead to higher completion rates, likely due to better planning and prioritization.
* **Customer Behavior**: Customers acquired organically, via Google, and Snapchat show higher completion rates and LTV compared to Instagram/Offline campaigns. Aggregated LTV and average revenue per order decline from January to September, with January being the highest.
* **Delivery Insights**: Proximity to pick-up areas and higher order volumes reduce delivery times and charges, with most deliveries completed in under an hour. Delivery times are lower during weekdays and late-night slots but peak in May and weekends.
* **Rating Trends**: Orders are mostly rated 5 or not rated, with ratings more common for smaller orders (<15 items) and lower delivery charges (₹0–₹49). Night orders and higher discounts (₹99+) see fewer ratings.
* **Discount Trends:** Discounts increased from Q1 to Q2, peaking in August, and dropped in September. Variations in discount levels across areas reflect targeted promotions.

**RECOMMENDATIONS**

* **Optimize Night Operations:** Improve workforce allocation and delivery efficiency to boost completion rates and ratings at night.
* **Focus on Proximity-Based Areas**: Prioritize high-order, nearby areas to sustain low delivery times and high customer satisfaction.
* **Enhance Acquisition Strategies**: Invest more in organic, Google, and Snapchat campaigns while refining Instagram and offline efforts to target more engaged customers.
* **Adjust Discounts Strategically:** Offer consistent, moderate discounts to maintain satisfaction without compromising profitability.
* **Increase Engagement for Large Orders:** Encourage feedback for larger product counts and late-night slots through incentives or follow-up.
* **Address Seasonal Bottlenecks:** Prepare for peak months like May with better planning to reduce delivery times and manage order surges efficiently.