



# Alitq Mart Delivery Analysis





## Cities



**Vadodara**

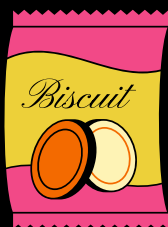


**Surat**

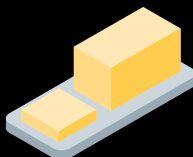


**Ahmedabad**

## Products



**Biscuits**



**Diary**



**Beverages**



## Problem Statement

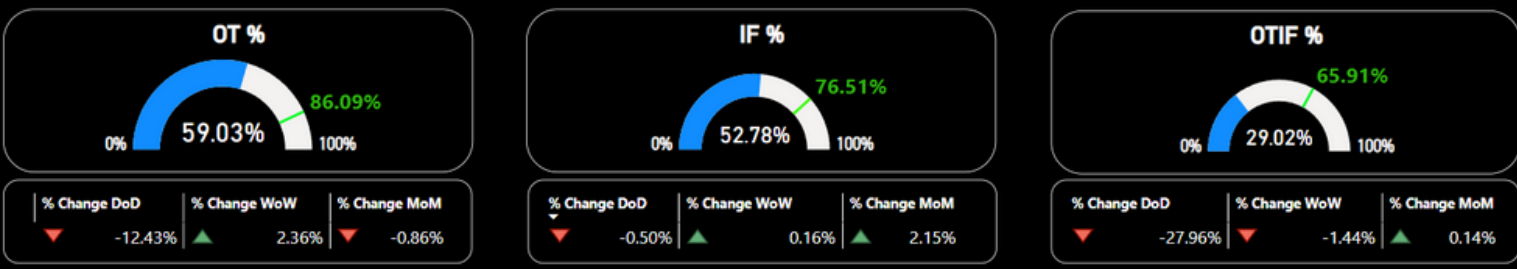
- ATLIQ MART is an FMCG manufacturer supplying its goods to customers in Vadodara, Surat and Ahmedabad.
- The Company wants to expand its business by going to other cities.
- Recently, it is observed that some of the customers stopped placing the orders. It is claimed that the orders are either not being delivered on time or in full quantity.
- Peter Pandey, a junior analyst in the company is tasked to identify the customers and products that require attention.

## Key metrics to track for:

- On-Time-Delivery (OT%) =  $(\text{Total Orders delivered on time}) / (\text{Total number of orders})$
- In-Full-Delivery (IF%) =  $(\text{Total Orders delivered in full quantity}) / (\text{Total number of orders})$
- On-Time-In-Full Delivery (OTIF%) =  $(\text{Total number of orders delivered completely on time}) / (\text{Total number of orders})$
- Line Fill Rate (LIFR%) =  $(\text{Total number of lines delivered in full quantity}) / (\text{Total lines})$
- Volume fill Rate (VOFR%) =  $(\text{Total lines delivered}) / (\text{Total lines ordered})$

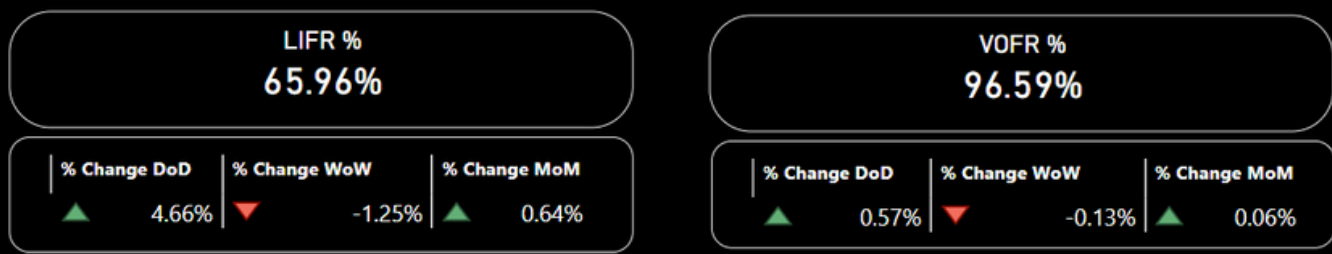


# OT, IF, OTIF with respect to the targets



- We can see that the metrics like OT, IF, OTIF are below the target values
- There is also some drop in Day-on-Day, Week-on-week, Month-on-month change for some metrics

# Line Fill Rate and Volume Fill Rate:



- Line Fill Rate is 65.96% and Volume Fill rate is 96.59%.
- While there is an increase in day-on-day and month-on-month change, there is a decline in week-on-week change.



## City wise split of the metrics:

| City      | OT %   | IF %   | OTIF % | LIFR   | VOFR   |
|-----------|--------|--------|--------|--------|--------|
| Vadodara  | 57.98% | 51.56% | 27.78% | 63.69% | 96.37% |
| Surat     | 61.21% | 52.55% | 30.07% | 66.69% | 96.65% |
| Ahmedabad | 58.16% | 54.20% | 29.33% | 67.56% | 96.76% |

- OT%, OTIF% are far away from the targets in Vadodara, Ahmedabad.
- IF% is far away from target in Surat

## Examining the customers of each cities:

### Vadodara:

| Customer Name     | OT %   | IF %   | OTIF % | LIFR   | VOFR   |
|-------------------|--------|--------|--------|--------|--------|
| Acclaimed Stores  | 29.08% | 66.97% | 19.92% | 73.51% | 97.37% |
| Coolblue          | 28.65% | 22.25% | 7.14%  | 29.19% | 92.83% |
| Elite Mart        | 72.20% | 16.61% | 9.72%  | 29.74% | 92.92% |
| Expert Mart       | 72.04% | 60.45% | 39.90% | 75.44% | 97.45% |
| Expression Stores | 70.49% | 63.54% | 41.59% | 77.36% | 97.70% |
| Info Stores       | 71.14% | 62.59% | 41.33% | 76.23% | 97.59% |
| Lotus Mart        | 27.83% | 67.29% | 19.69% | 74.05% | 97.27% |
| Propel Mart       | 74.08% | 61.31% | 42.48% | 76.03% | 97.71% |
| Rel Fresh         | 71.33% | 58.43% | 36.99% | 74.14% | 97.39% |
| Sorefoz Mart      | 73.70% | 60.80% | 41.13% | 75.88% | 97.69% |
| Vijay Stores      | 74.97% | 17.91% | 10.55% | 29.89% | 93.05% |
| Viveks Stores     | 70.21% | 60.32% | 39.32% | 75.27% | 97.63% |

- Coolblue, Elite Mart, Vijay Stores, Lotus Mart and Acclaimed Stores have comparably low values of OT, IF, OTIF.
- Among those Acclaimed Stores, Coolblue, Lotus Mart have values of OT% much below the target.



# Examining the delay time(days) for each customer and Line

| Customer Name    | -1    | 0      | 1      | 2      | 3      |
|------------------|-------|--------|--------|--------|--------|
| Acclaimed Stores | 6.89% | 18.97% | 31.93% | 24.98% | 17.22% |
| Coolblue         | 7.10% | 19.52% | 29.55% | 27.40% | 16.42% |
| Lotus Mart       | 7.92% | 17.84% | 30.94% | 26.70% | 16.59% |

- Analyzing the number of days delayed for each of these stores, we can see that only 24-30 percent of lines are being delivered on or before time for each store.
- We can also observe that only 25-27% of lines of each category are delivery on or before time.

## Surat:

| Customer Name     | OT %   | IF %   | OTIF % | LIFR   | VOFR   |
|-------------------|--------|--------|--------|--------|--------|
| Acclaimed Stores  | 29.84% | 22.38% | 6.93%  | 29.37% | 92.77% |
| Atlas Stores      | 72.34% | 59.57% | 39.80% | 75.69% | 97.61% |
| Chiptec Stores    | 70.84% | 60.48% | 38.92% | 75.58% | 97.56% |
| Expression Stores | 69.36% | 58.19% | 35.27% | 73.27% | 97.38% |
| Info Stores       | 70.74% | 19.35% | 9.43%  | 30.06% | 92.84% |
| Logic Stores      | 70.48% | 59.52% | 37.98% | 74.11% | 97.32% |
| Lotus Mart        | 28.18% | 68.74% | 21.28% | 74.83% | 97.44% |
| Propel Mart       | 72.84% | 58.77% | 39.63% | 75.05% | 97.65% |
| Rel Fresh         | 72.58% | 56.89% | 37.12% | 74.74% | 97.52% |
| Vijay Stores      | 72.59% | 58.34% | 38.12% | 74.42% | 97.34% |
| Viveks Stores     | 71.01% | 59.83% | 39.56% | 74.84% | 97.50% |

- Acclaimed stores, Info Stores, Lotus Mart have metrics far away from targets.
- Here Acclaimed Stores and Lotus Mart have values of OT much below the target values.

Delayed days notation:

-1 - Delivered 1 day early | 0 - Delivered on time | 1 - Delivered 1 day late | 2- Deleviered 2 days late | 3 - Delivered 3 days late



# Examining the delay time(days) for each customer and Line

| Customer Name    | -1    | 0      | 1      | 2      | 3      |
|------------------|-------|--------|--------|--------|--------|
| Acclaimed Stores | 7.54% | 20.63% | 30.33% | 25.73% | 15.77% |
| Lotus Mart       | 6.91% | 18.26% | 30.75% | 26.49% | 17.60% |

- Examining Customer wise and line wise distribution of delay times we observe a similar thing. i.e, 25-27 % of lines are delivered on or before time to the stores, Dairy products have comparably more delays.

## Ahmedabad:

| Customer Name    | OT %   | IF %   | OTIF % | LIFR   | VOFR   |
|------------------|--------|--------|--------|--------|--------|
| Acclaimed Stores | 29.40% | 66.08% | 19.10% | 73.01% | 97.28% |
| Atlas Stores     | 71.31% | 59.98% | 39.32% | 75.26% | 97.54% |
| Chiptec Stores   | 72.41% | 60.22% | 38.55% | 75.64% | 97.61% |
| Coolblue         | 29.61% | 67.19% | 20.34% | 74.02% | 97.39% |
| Elite Mart       | 72.69% | 58.98% | 38.83% | 75.72% | 97.63% |
| Expert Mart      | 73.05% | 59.15% | 38.29% | 75.52% | 97.42% |
| Logic Stores     | 71.17% | 60.77% | 39.59% | 74.68% | 97.58% |
| Lotus Mart       | 28.33% | 23.83% | 7.97%  | 30.77% | 93.22% |
| Propel Mart      | 74.00% | 59.17% | 40.70% | 75.80% | 97.76% |
| Rel Fresh        | 73.07% | 60.62% | 40.33% | 74.73% | 97.37% |
| Sorefoz Mart     | 71.63% | 17.67% | 10.70% | 30.87% | 92.99% |
| Vijay Stores     | 69.83% | 58.29% | 35.94% | 73.70% | 97.29% |

- Acclaimed stores, Lotus Mart, Sorefroz Mart have values of the metrics way below the target.
- Other Stores like Cool blue also need improvement to match their target OT value.



| Customer Name    | -1    | 0      | 1      | 2      | 3      |
|------------------|-------|--------|--------|--------|--------|
| Acclaimed Stores | 6.98% | 19.71% | 29.25% | 27.17% | 16.89% |
| Coolblue         | 6.73% | 20.26% | 28.68% | 27.24% | 17.08% |
| Lotus Mart       | 6.43% | 19.85% | 29.96% | 25.53% | 18.23% |

- Upon examining the distribution of days delayed for each customer we see a behavior similar to Vadodara. i.e, only 25-30 % of the lines are being delivered on or before time.
- While in most of the line categories, 25-27 % are delivered on or before time, Diary products comparably have greater number of delays.





# LIFR and VOFR for Customers and Lines

| City      | OT %   | IF %   | OTIF % | LIFR   | VOFR   |
|-----------|--------|--------|--------|--------|--------|
| Vadodara  | 57.98% | 51.56% | 27.78% | 63.69% | 96.37% |
| Surat     | 61.21% | 52.55% | 30.07% | 66.69% | 96.65% |
| Ahmedabad | 58.16% | 54.20% | 29.33% | 67.56% | 96.76% |

- Each of the city has LIFR of greater than 63% and VOFR greater than 96%. This implies that very few number of lines are not being delivered as per the demand.

## Vadodara:

| Customer Name     | OT %   | IF %   | OTIF % | LIFR   | VOFR   |
|-------------------|--------|--------|--------|--------|--------|
| Acclaimed Stores  | 29.08% | 66.97% | 19.92% | 73.51% | 97.37% |
| Coolblue          | 28.65% | 22.25% | 7.14%  | 29.19% | 92.83% |
| Elite Mart        | 72.20% | 16.61% | 9.72%  | 29.74% | 92.92% |
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| Vijay Stores      | 74.97% | 17.91% | 10.55% | 29.89% | 93.05% |
| Viveks Stores     | 70.21% | 60.32% | 39.32% | 75.27% | 97.63% |

- CoolBlue, Elite Mart and Vijay Stores have very low value of LIFR, while each of them have VOFR greater than 92%.
- For Vijay Stores and Elite Mart, Beverages have least value of LIFR and diary products have least value for Cool blue stores.



# Surat:

| Customer Name      | OT %   | IF %   | OTIF % | LIFR   | VOFR   |
|--------------------|--------|--------|--------|--------|--------|
| ▲ Acclaimed Stores | 29.84% | 22.38% | 6.93%  | 29.37% | 92.77% |
| Atlas Stores       | 72.34% | 59.57% | 39.80% | 75.69% | 97.61% |
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| Viveks Stores      | 71.01% | 59.83% | 39.56% | 74.84% | 97.50% |

- Acclaimed Stores and Info Stores have least values of LIFR, while VOFR for each is greater than 92%.
- Among the line categories, Food and Dairy have comparably least LIFR.

# Ahmedabad:

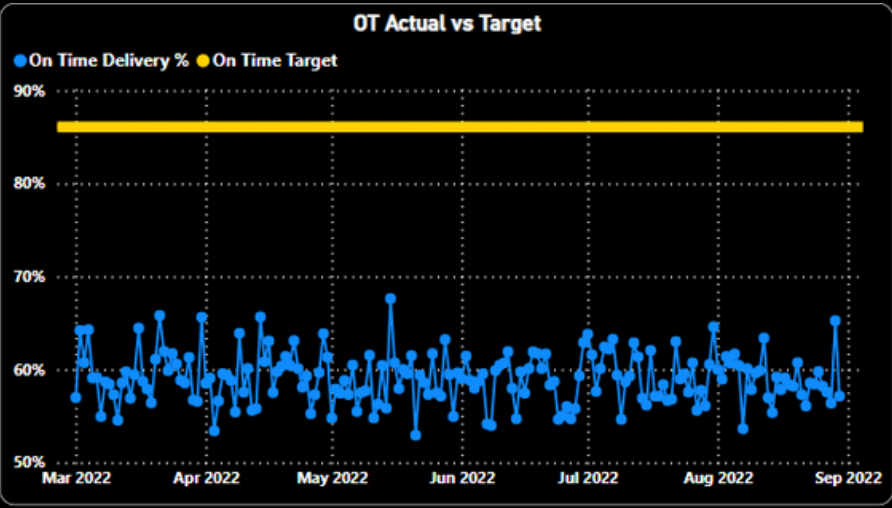
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| Vijay Stores       | 69.83% | 58.29% | 35.94% | 73.70% | 97.29% |

- Lotus Mart and Sorefoz Mart have least values of LIFR, while VOFR for each is greater than 92%.
- Among the line categories while all of them have similar values of LIFR, Food category has comparably the least value of LIFR.

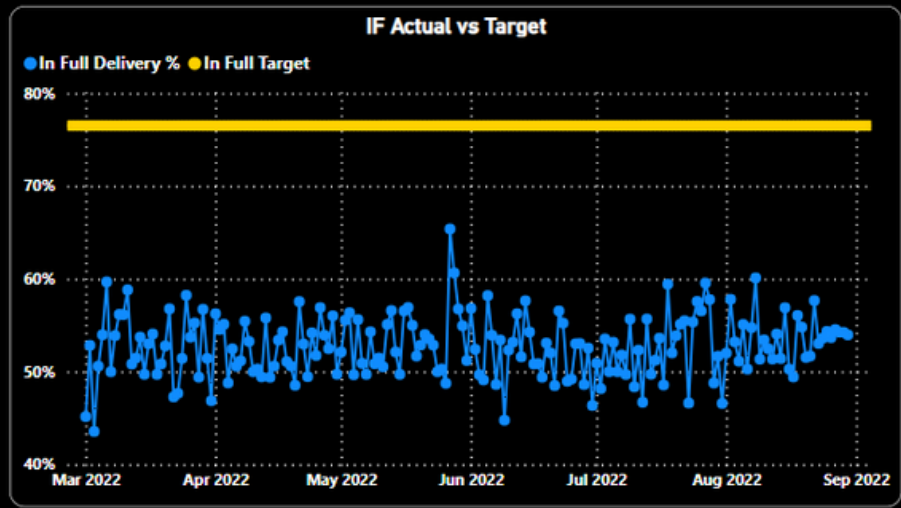


# Timely variation

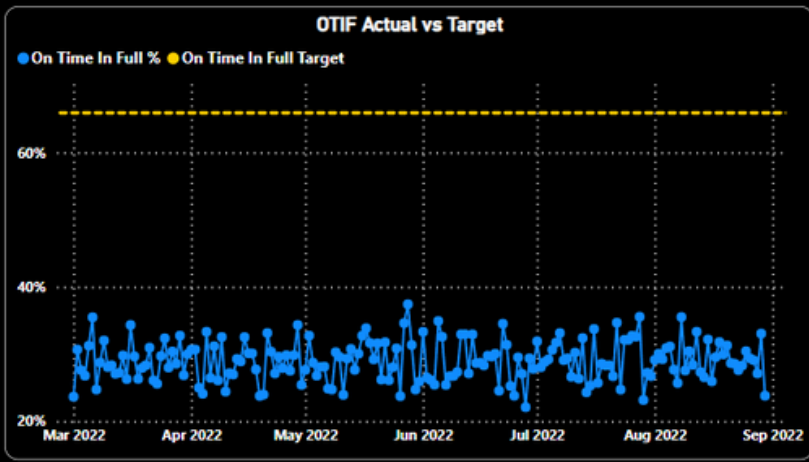
## OT% and Target over time



## IF% and Target over time

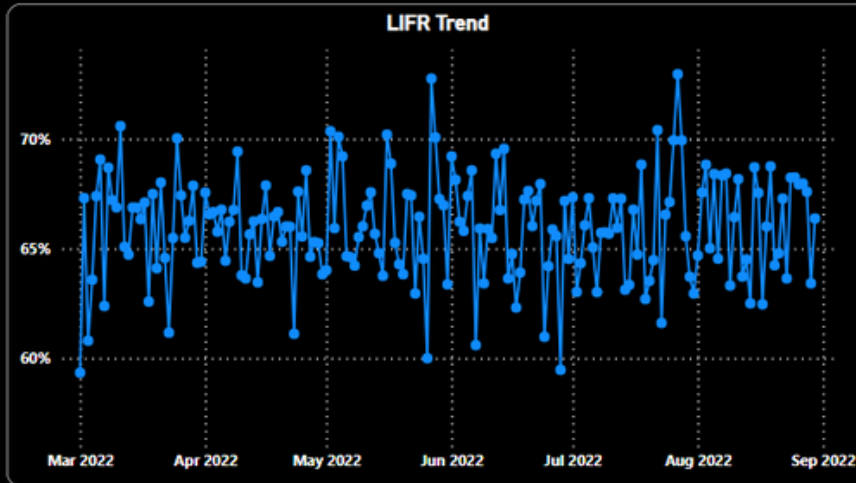


## OTIF% and Target over time

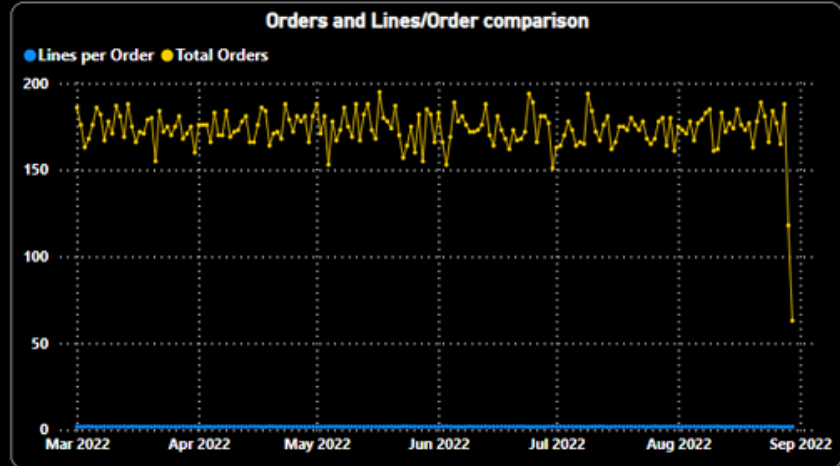




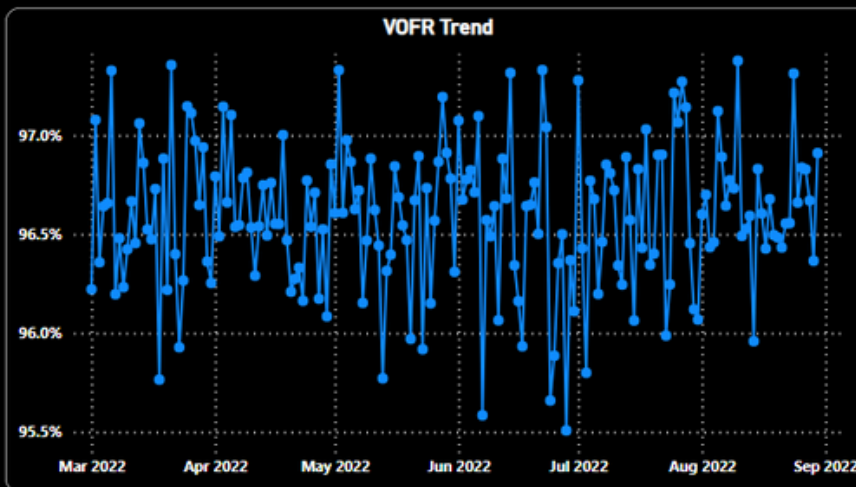
## LIFR% over time



## Total Orders and Lines/Order over time



## VOFR% over time



- Examining the overall trend of IF, OT, OTIF, we see that the target value is never reached.
- This can be attributed to stores like Acclaimed stores, Cool blue, ELite Mart, Info Stores, Lotus Mart, Sorefroz Mart and Vijay Stores which have the values much below their respective targets.



## Insights:

- Acclaimed Stores, Coolblue, EliteMart, Info Stores, Lotus Mart, Sorefroz Mart, Vijay Stores needs to be focused as they have comparably least values of OT%, IF%, OTIF%.
- Among the customers having OT% far less than target, most of the orders are delayed by 1 or 2 days.
- As the VOFR% is above 90 % for all the cities and most of the customers, the quantity unable to be delivered is less than order quantity.
- Among the customers having least LIFR, diary products have comparatively least value, so the inventory needs to be optimized according to the demand of diary products.
- Irrespective of the number of orders in any month, the average number of lines per each order is around two. i.e customers order 2 categories of products on average.