

AtliQ Mart

Supply Chain Analysis

Provide Insights to Solve a Supply Chain Issue in the FMCG domain

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Problem Statement

- ◆ AtliQ Mart is a growing FMCG manufacturer headquartered in Gujarat, India. It is currently operational in three cities Surat, Ahmedabad and Vadodara. They want to expand to other metros/Tier 1 cities in the next 2 years.
- ◆ AtliQ Mart is currently facing a problem where a few key customers did not extend their annual contracts due to service issues. It is speculated that some of the essential products were either not delivered on time or not delivered in full over a continued period, which could have resulted in bad customer service. Management wants to fix this issue before expanding to other cities and requested their supply chain analytics team to track the 'On time' and 'In Full' delivery service level for all the customers daily basis so that they can respond swiftly to these issues.



Objective

- ❖ The objective of this project is to measure the service levels of Atliq Mart's supply chain operations using a standardized approach.
- ❖ Specifically, we focused on three key metrics: "On-Time Delivery (%)," "In-Full Delivery (%)," and "On-Time In Full (%)" for customer orders on a daily basis. These metrics were compared against the target service levels established for each customer.



Business-related terms

- ❖ Order Lines
- ❖ OT % - On time delivery percentage
- ❖ IF % - In Full delivery percentage
- ❖ OTIF % - On time and In Full delivery percentage
- ❖ LIFR - Line Fill Rate
- ❖ VOFR - Volume Fill Rate



Data Information

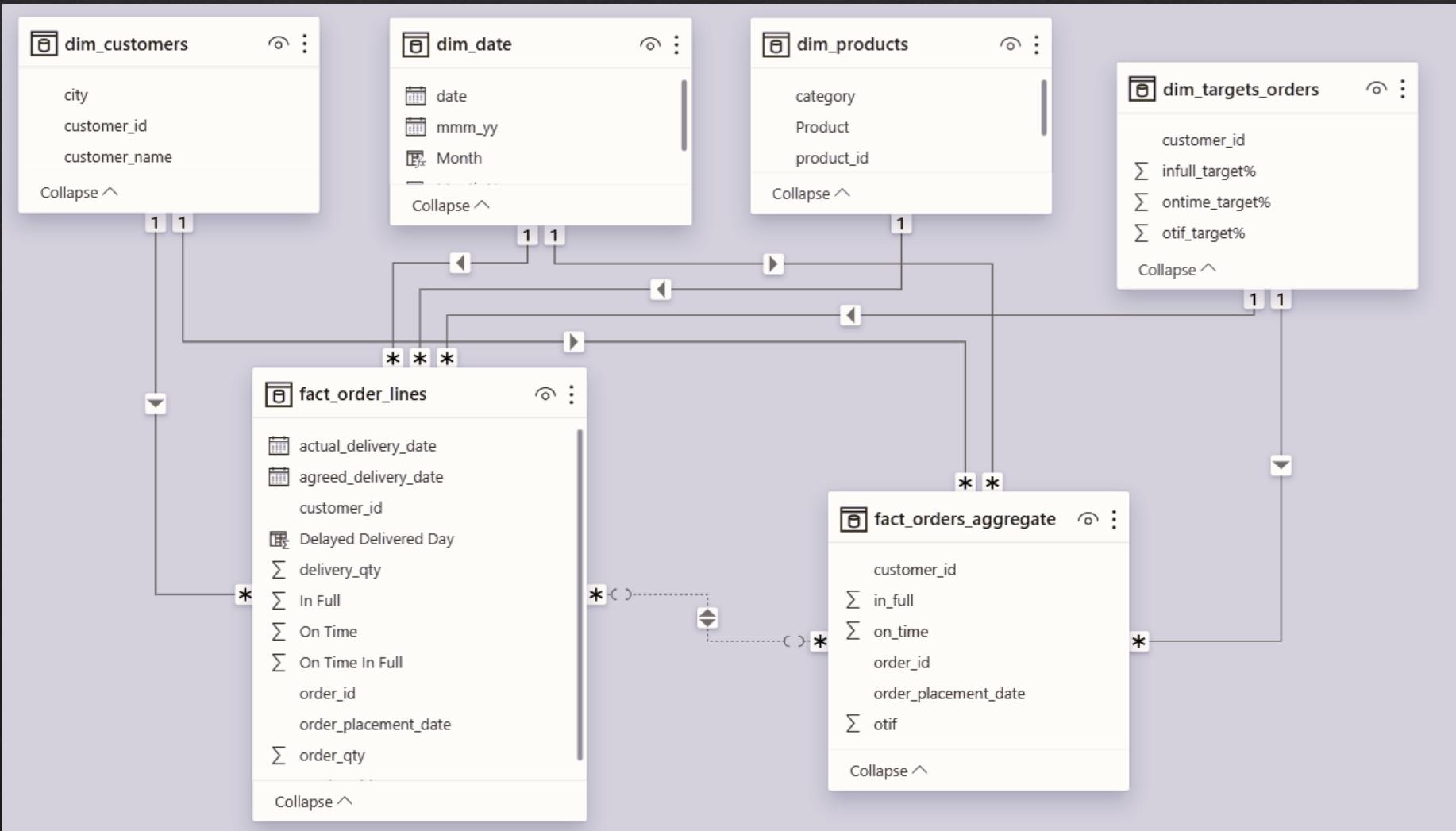
we have 6 CSV files:

- ❖ 1. dim_customers.csv
- ❖ 2. dim_products.csv
- ❖ 3. dim_date
- ❖ 4. dim_targets_orders
- ❖ 5. fact_order_lines.csv
- ❖ 6. fact_orders_aggregate.csv



To download the files please click the link here (Codebasics resume project challenge #2) : <https://codebasics.io/challenge/codebasics-resume-project-challenge>

Data Model





DashBoard

Live Dashboard Link:
<https://www.novypro.com/project/atli-q-mart-supply-chain-analysis-6>



CITY

- Ahmedabad
- Surat
- Vadodara

March

April

May

June

July

August

CATEGORY

- Beverages
- Dairy
- Food

PRODUCT

CUSTOMER

WEEK NO.

Total Orders

31.73K

Total Quantity Ordered

13.43M

Total Quantity Delivered

12.97M

Total Customers

15

Category ● Beverages ● Dairy ● Food

15K

2951

8763

3011

Ahmedabad

13K

2742

7728

2630

Surat

15K

2970

8669

2981

Vadodara

City ● Ahmedabad ● Surat ● Vadodara

25160

8669

7728

8763

Dairy

8663

2970

2742

2951

Food

8622

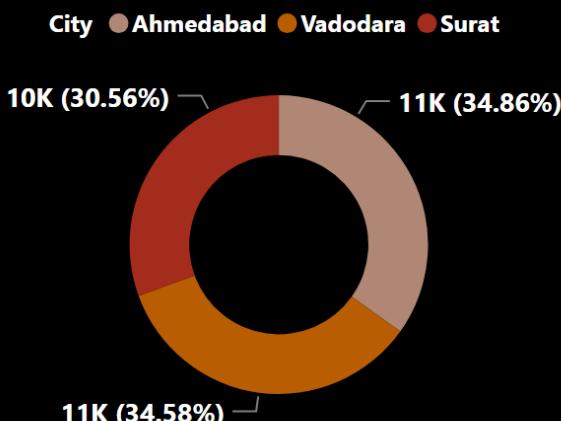
2981

2630

3011

Beverages

Customer





CITY

- Ahmedabad
- Surat
- Vadodara

March

April

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August

CATEGORY

- Beverages
- Dairy
- Food

PRODUCT

CUSTOMER

WEEK NO.

Total Orders

31.73K

Total Orders delivered On Time

18.73K

Total Orders delivered In Full

16.75K

Total Orders delivered On Time & In Full

9.21K

Total Order Lines

57.10K

Total Order lines Shipped in Full Quantity

37.66K

LIFR %

65.96%

VOFR %

96.59%

OT %

59.03%**-31.43% vs Target**

IF %

52.78%**-31.02% vs Target**

OTIF %

29.02%**-55.97% vs Target**

Ahmedabad

58.16%

Surat

61.21%

Vadodara

57.98%

Ahmedabad

54.20%

Surat

52.55%

Vadodara

51.56%

Ahmedabad

29.33%

Surat

30.07%

Vadodara

27.78%

0%

50%

OT %

0%

50%

IF %

0%

20%

OTIF %



CITY

- Ahmedabad
- Surat
- Vadodara

March

April

May

June

July

August

Total Orders

31.73K

Total Orders Delayed

13.00K

Orders Delayed %

40.97%

OT - On Time delivery

IF - In Full delivery

OTIF - On Time and In Full delivery

LIFR - Line Fill Rate

VORF - Volume Fill Rate

ADDD - Average Delayed Delivered Days

PRODUCT

CUSTOMER

WEEK NO.

Customer	Total Orders	OT %	IF %	OTIF %	LIFR %	VORF %	ADDD
Coolblue	2437	29.13%	44.73%	13.75%	51.53%	95.1%	1.83
Lotus Mart	3550	28.11%	53.35%	16.34%	60.08%	96.0%	1.82
Acclaimed Stores	3510	29.43%	52.36%	15.47%	58.93%	95.8%	1.81
Viveks Stores	1633	70.61%	60.07%	39.44%	75.06%	97.6%	1.57
Expression Stores	1662	69.92%	60.83%	38.39%	75.28%	97.5%	1.56
Info Stores	1669	70.94%	41.16%	25.52%	53.05%	95.2%	1.55
Logic Stores	1676	70.82%	60.14%	38.78%	74.39%	97.5%	1.52
Rel Fresh	2457	72.32%	58.69%	38.18%	74.54%	97.4%	1.52
Vijay Stores	2468	72.45%	44.98%	28.28%	59.23%	95.9%	1.50
Atlas Stores	1646	71.81%	59.78%	39.55%	75.48%	97.6%	1.49
Expert Mart	1657	72.54%	59.81%	39.11%	75.48%	97.4%	1.48
Sorefoz Mart	1661	72.67%	39.19%	25.89%	53.40%	95.3%	1.48
Elite Mart	1637	72.45%	37.94%	24.37%	52.74%	95.3%	1.47
Chiptec Stores	1642	71.62%	60.35%	38.73%	75.61%	97.6%	1.46
Propel Mart	2424	73.64%	59.74%	40.92%	75.62%	97.7%	1.45
Total	31729	59.03%	52.78%	29.02%	65.96%	96.6%	1.69

● Ahmedabad ● Surat ● Vadodara

8763

7728

8669

2951

2742

2970

3011

2630

2981

Dairy

Food

Beverages

3 2.61K

2 4.00K

1 6.39K

0 15.41K

-1 3.32K

-1: Delivered one day before,
0: On time delivery
1: One day delayed delivery
2: Two day delayed delivery
3: Three-day delayed delivery



CITY

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CATEGORY

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- Dairy
- Food

OT %

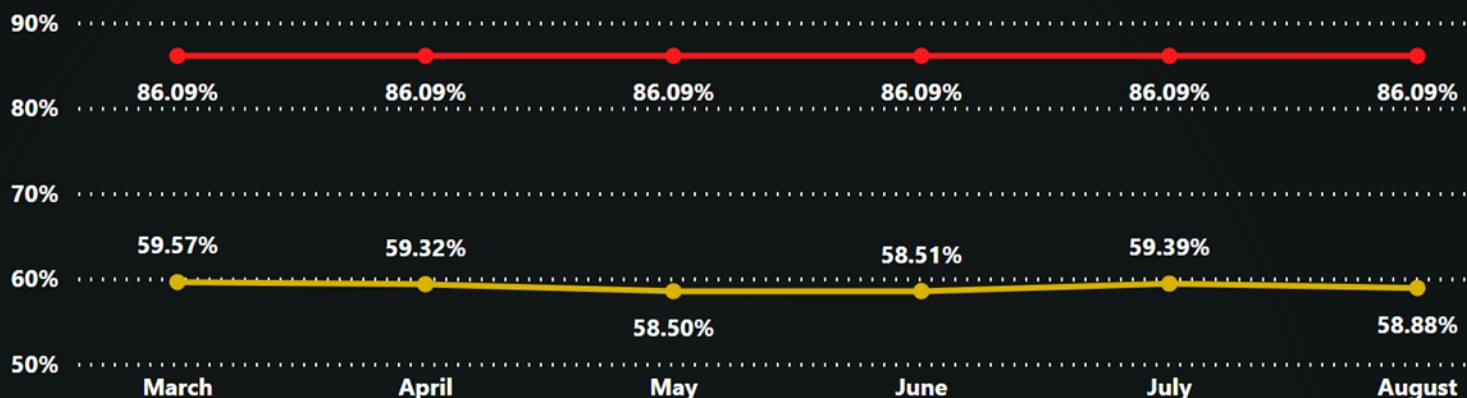
IF %

OTIF %

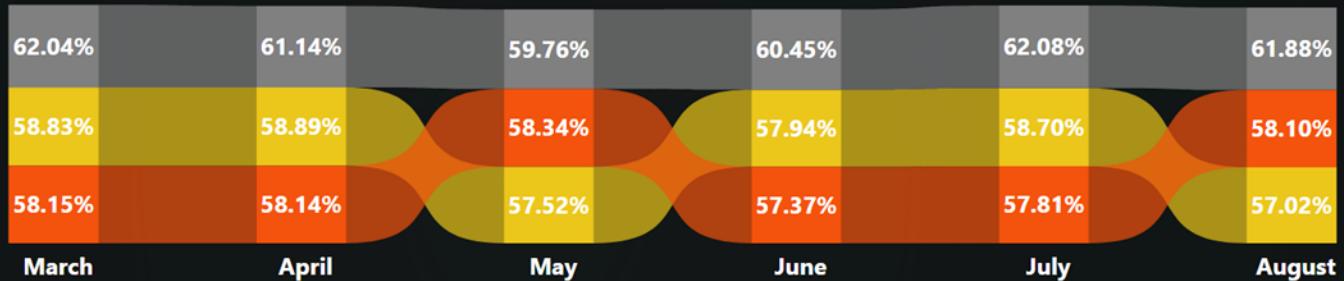
LIFR %

VOFR %

OT % Trend

● On Time Target ● On Time Delivery % (OT %)


OT % City Trend

● Ahmedabad ● Surat ● Vadodara




CITY

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March

April

May

June

July

August

CATEGORY

- Beverages
- Dairy
- Food

OT %

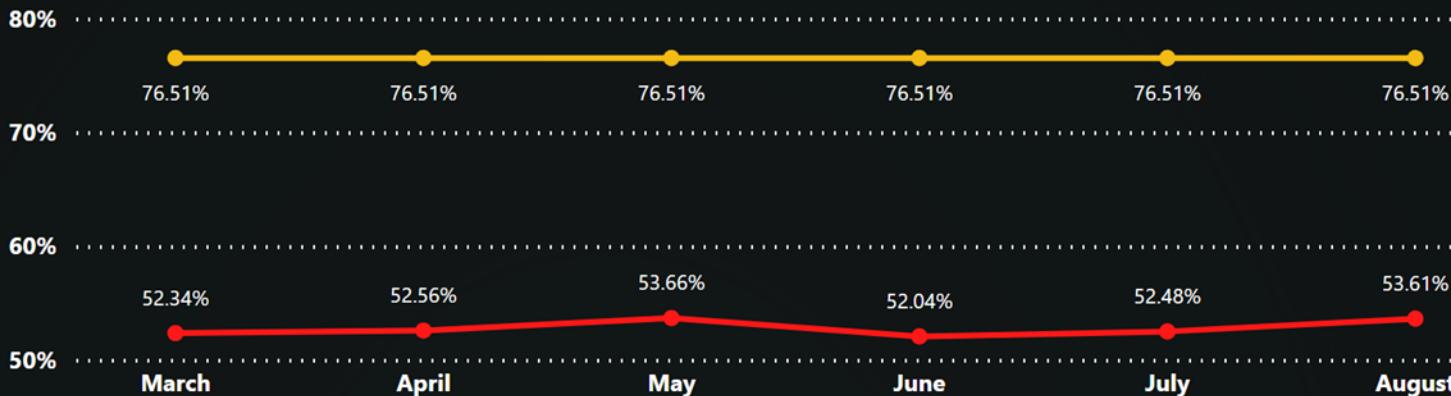
IF %

OTIF %

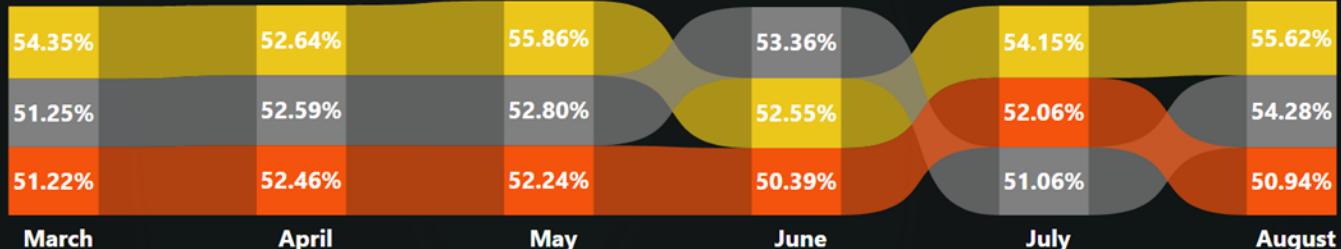
LIFR %

VOFR %

IF % Trend

● In Full Target
 ● In Full Delivery % (IF %)
 

IF % City Trend

● Ahmedabad
 ● Surat
 ● Vadodara
 



CITY

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CATEGORY

- Beverages
- Dairy
- Food

OT %

IF %

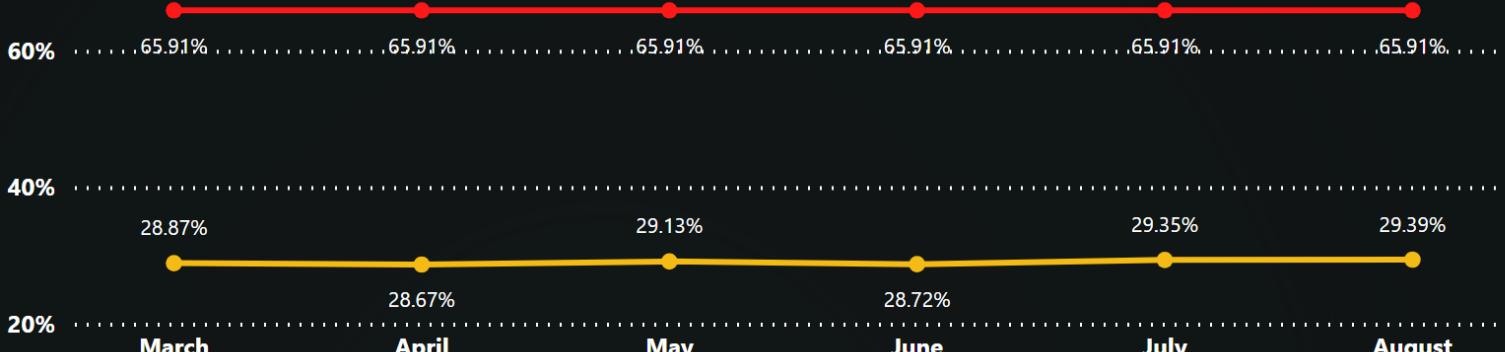
OTIF %

LIFR %

VOFR %

OTIF % Trend

● On Time In Full % (OTIF %) ● On Time In Full Target



CUSTOMER

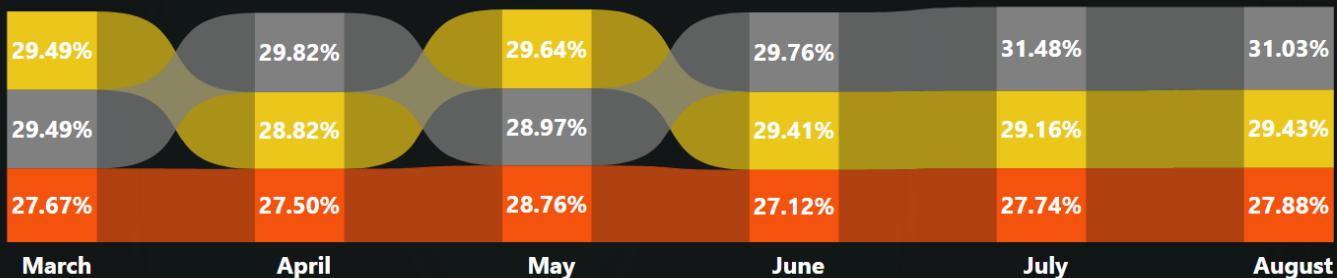
- All

WEEK NO.

- All

OTIF % City Trend

● Ahmedabad ● Surat ● Vadodara





CITY

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- Surat
- Vadodara

March

April

May

June

July

August

CATEGORY

- Beverages
- Dairy
- Food

OT %

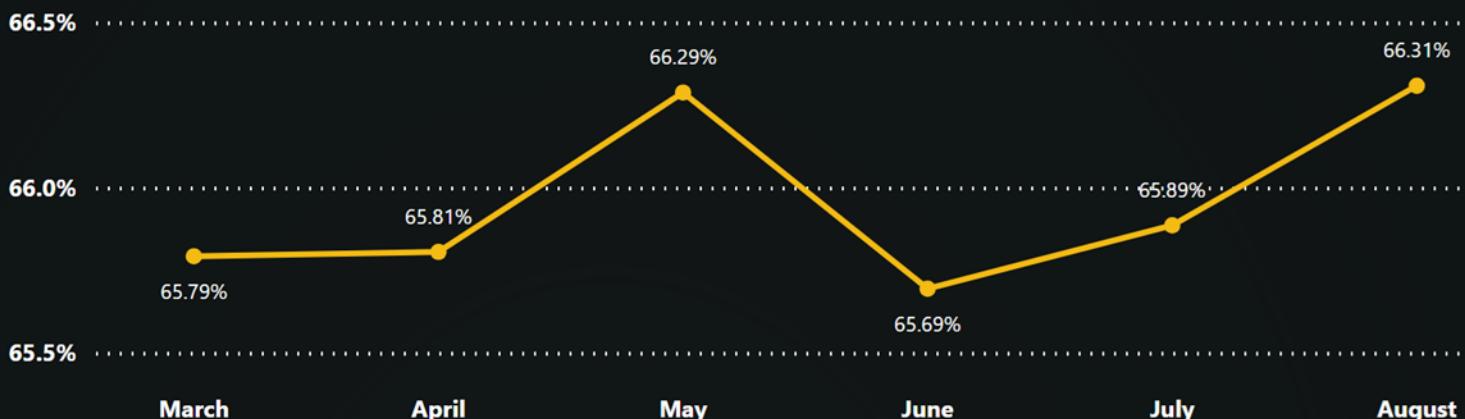
IF %

OTIF %

LIFR %

VOFR %

LIFR % Trend



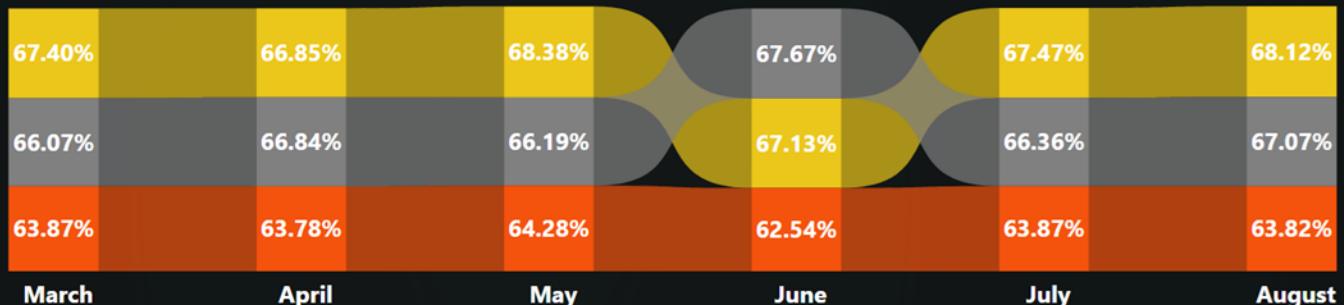
CUSTOMER

- All

WEEK NO.

- All

LIFR % City Trend

● Ahmedabad
 ● Surat
 ● Vadodara
 



CITY

- Ahmedabad
- Surat
- Vadodara

March

April

May

June

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August

CATEGORY

- Beverages
- Dairy
- Food

OT %

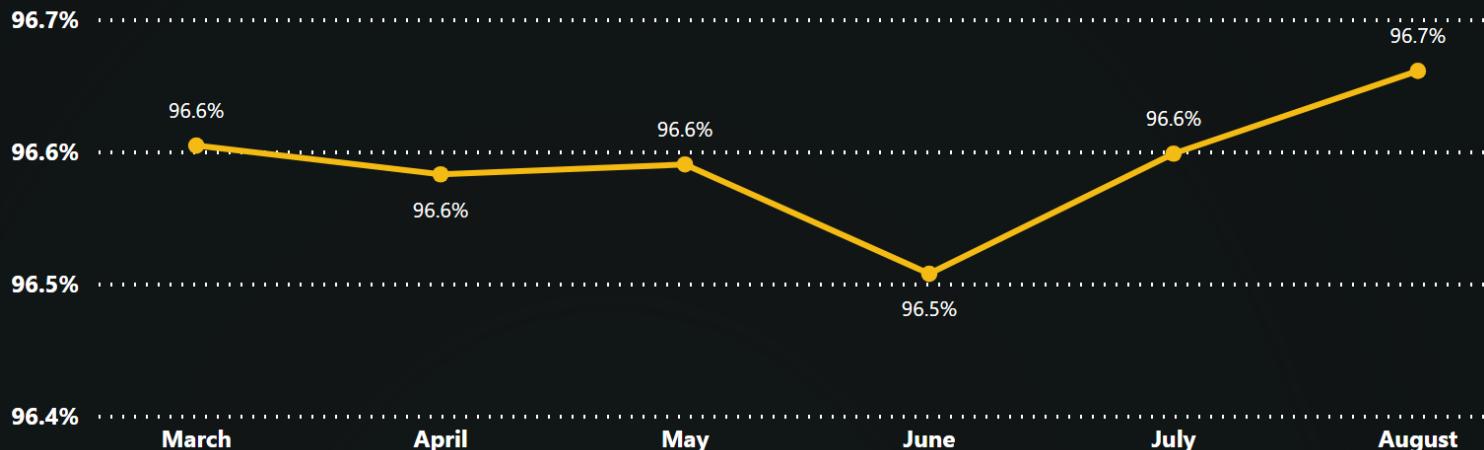
IF %

OTIF %

LIFR %

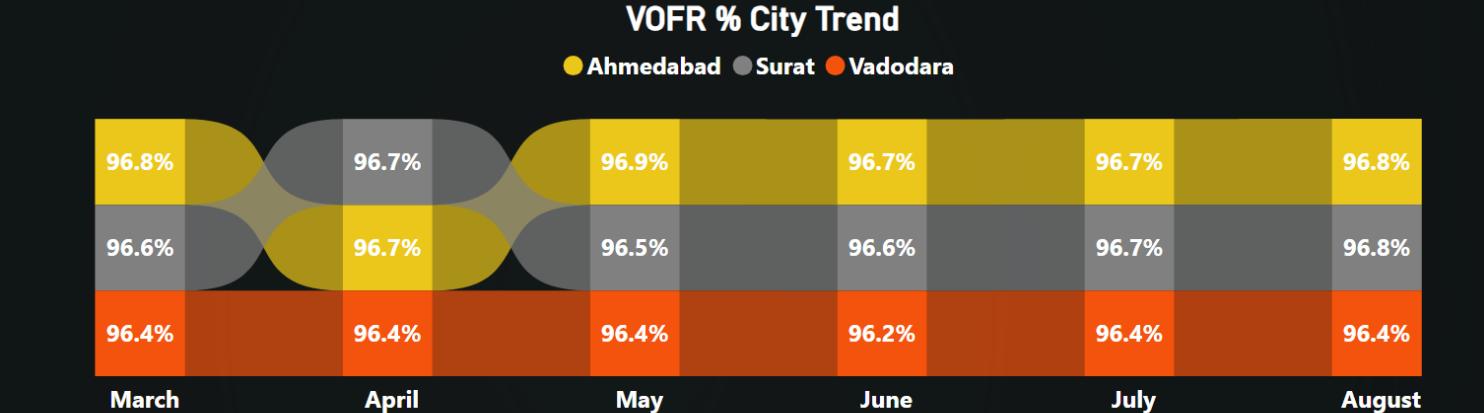
VOFR %

VOFR % Trend



WEEK NO.

- All





CITY

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- Surat
- Vadodara

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CATEGORY

- Beverages
- Dairy
- Food

PRODUCT

All

CUSTOMER

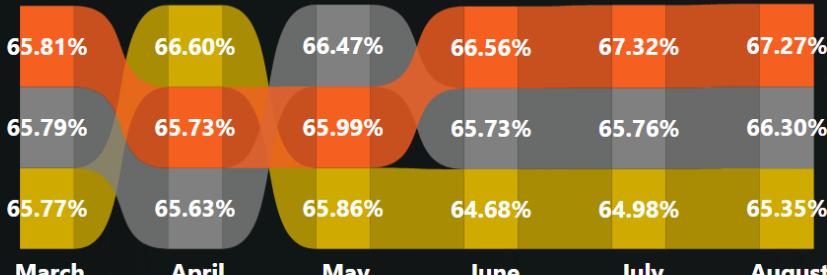
All

WEEK NO.

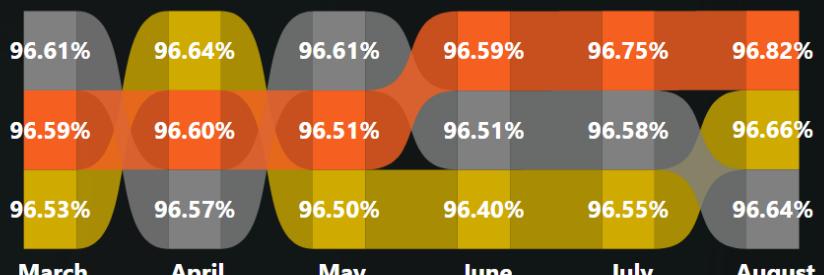
All

Category	Product Name	Total Quantity Ordered	Total Quantity shipped	LIFR %	LIFR % by Month	VOFR %	VOFR % by Month	ADDD
Beverages	AM Tea 100	395K	381K	65.32%		96.6%		1.66
Beverages	AM Tea 250	392K	379K	65.16%		96.5%		1.67
Beverages	AM Tea 500	397K	383K	66.14%		96.5%		1.68
Dairy	AM Butter 100	943K	911K	66.66%		96.6%		1.71
Dairy	AM Butter 250	933K	899K	63.52%		96.4%		1.70
Dairy	AM Butter 500	983K	948K	65.19%		96.5%		1.68
Dairy	AM Curd 100	1105K	1068K	66.73%		96.6%		1.72
Dairy	AM Curd 250	1099K	1063K	67.05%		96.7%		1.68
Dairy	AM Curd 50	1119K	1081K	65.55%		96.6%		1.70
Dairy	AM Ghee 100	186K	180K	65.75%		96.6%		1.72
Dairy	AM Ghee 150	194K	187K	66.72%		96.7%		1.67
Dairy	AM Ghee 250	191K	185K	65.25%		96.5%		1.66
Dairy	AM Milk 100	1276K	1232K	65.55%		96.5%		1.69
Dairy	AM Milk 250	1279K	1236K	65.91%		96.6%		1.71
Dairy	AM Milk 500	1254K	1213K	67.51%		96.7%		1.66
Food	AM Biscuits 250	563K	544K	65.16%		96.6%		1.71
Food	AM Biscuits 500	558K	539K	66.10%		96.5%		1.69
Food	AM Biscuits 750	557K	539K	68.05%		96.9%		1.68
Total		13427K	12969K	65.96%		96.6%		1.69

LIFR % Trend

● Beverages
● Dairy
● Food


VOFR % Trend

● Beverages
● Dairy
● Food


Insights



- ❖ **AtliQ Marts** product demand is almost equally distributed in all three cities, i.e., **Vadodara, Surat and Ahmedabad**.
- ❖ There are **6 Customers** name- **Acclaimed Stores, Lotus Mart, Vijay Stores, Rel Fresh, Cool Blue & Propel Mart** out of 15 customers, are constituting **53% of Total orders** & seems to be key customers.
- ❖ **Diary products** orders are 2 times more than the **Food and Beverages orders** Category.
- ❖ All the Key Metrics (**OT%**, **IF%**, **OTIF%**) are far behind the target.
- ❖ **OT%** is lagging by almost **31%** each month, with being **highest in March at 59.57%**.
- ❖ **IF%** is lagging by almost **30%** each month, with being **highest in July at 53.66%**.
- ❖ **OTIF%** lags by **53%** each month, with the **highest** being in **August at 29.39%**.
- ❖ There is no noticeable improvements in any of the key metrics in the last few months.



Insights



- ❖ **Ahmedabad City** has the highest product orders with almost **11K orders**, follows by **Vadodara City** with **10.97K Orders**.
- ❖ Based on orders delivery delayed, **Vadodara city** has the highest orders delayed with **42.02%** of their total orders followed by **Ahmedabad city** with **41.84%**.
- ❖ Dairy products orders (**37.74% of the total dairy products i.e. 9.50K**) are most delayed to deliver by **29.93% of the total orders**.
- ❖ **40.97% of the total products** i.e. 13K have been delivered late by **1, 2 or 3 days**.
- ❖ Approx. **13K orders** had been delayed to deliver on an **average of 1.69 days** from the agreed delivery date.
- ❖ For **Acclaimed Stores , Cool Blue & Lotus Mart**, more than **70%** of their orders are being delivered late on an average of **1.82 days** from the agreed delivery date.



Recommendations



- ❖ Strengthen relationships with key customers: Acclaimed Stores, Lotus Mart, Vijay Stores, Rel Fresh, Cool Blue, and Propel Mart.
- ❖ Allocate additional resources and attention to dairy products category due to consistently higher orders.
- ❖ Develop strategies to improve key metrics (OT%, IF%, OTIF%) with a focus on consistency and performance analysis.
- ❖ Establish a robust monitoring system for real-time tracking and proactive issue resolution.
- ❖ Tailor city-specific strategies for Ahmedabad and Vadodara, the top cities in terms of orders.
- ❖ Investigate reasons behind high order delays, especially in Vadodara and Ahmedabad, and implement corrective actions.
- ❖ Optimize logistics and supply chain processes for dairy products to reduce delays.
- ❖ Develop strategies to reduce overall late deliveries (40.97%) by refining schedules and improving warehouse efficiency.
- ❖ Work closely with customers like Acclaimed Stores, Cool Blue, and Lotus Mart to understand and address specific challenges.
- ❖ Foster a continuous improvement culture within the organization to refine processes and enhance overall performance.