

Codebasics resume project challenge



AtliQ Mart Supply Chain Analysis



Dashboard

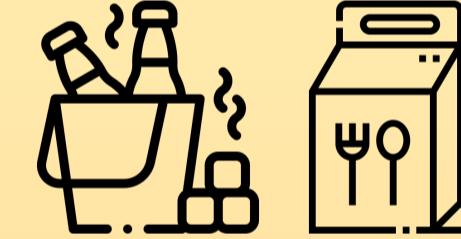


All about Project



Challenge #2: Generate Insights to Solve a Supply Chain

Issue in the FMCG Domain.



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5/22/2023 6:18:05 AM

Abbreviation: OT% = On time Delivery, IF% = In full Delivery, OTIF % = On time In full % , LIFR% = Line fill rate , VOFR% = Volume fill rate , PM= Previous Month



AtliQ Mart Supply Chain Analysis



OT %

59.03%



IF %

52.78%



OTIF %

29.02%



LIFR %

65.96%



VOFR %

96.6%



IF %

OT %

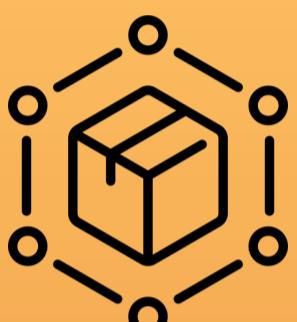
OTIF %

LIFR %

VOFR %



No. of orders by delivery delay



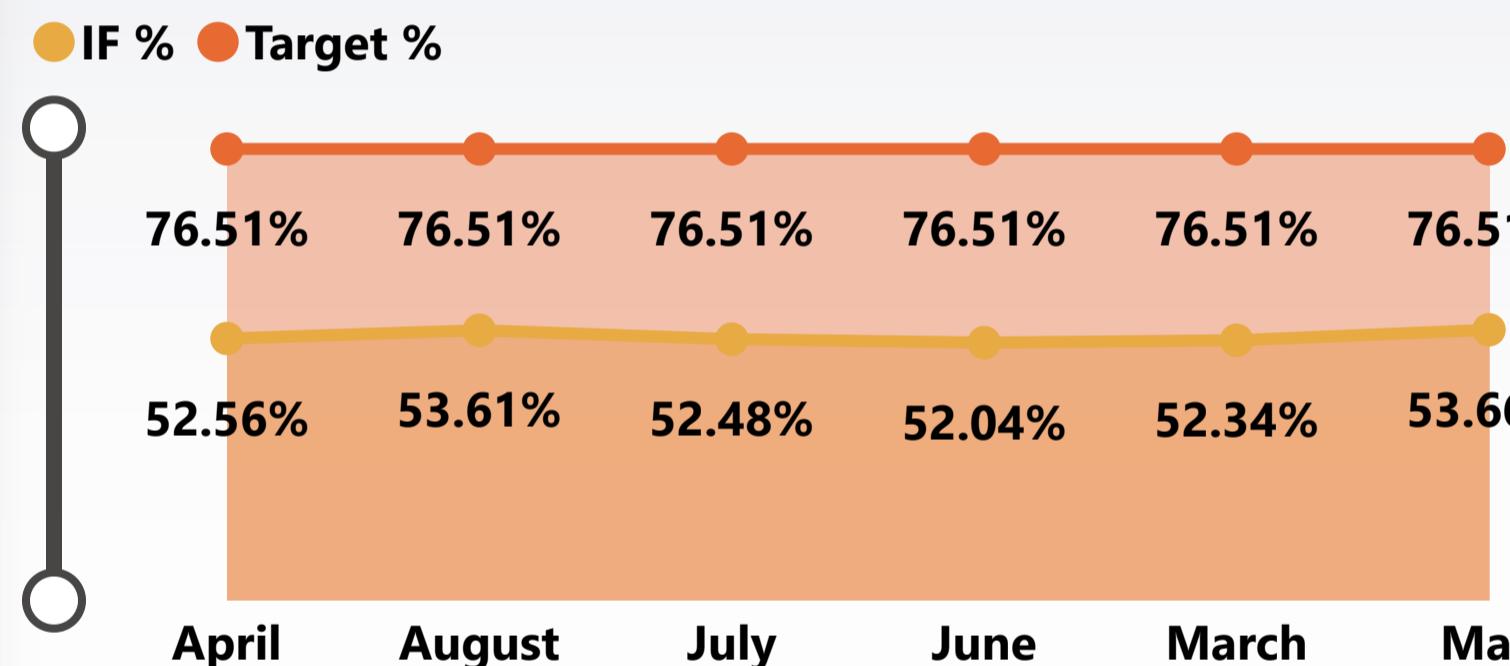
customer_name

All

product_name

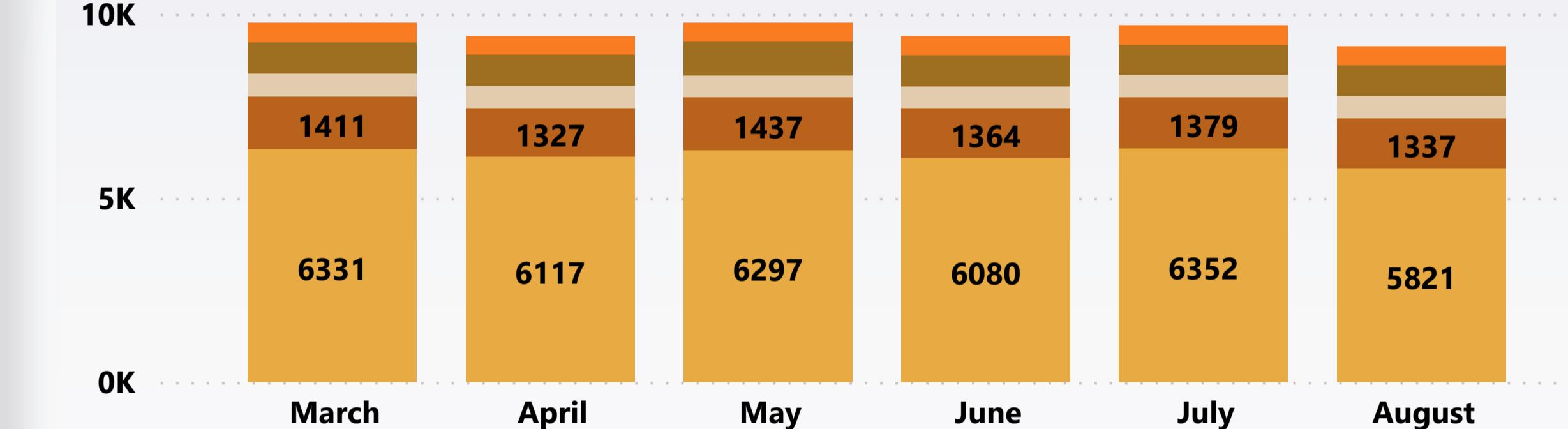
All

Performance Metric Overtime



Delay_days

0 1 -1 2 3



Product, Ordered qty by month

AM Biscuits

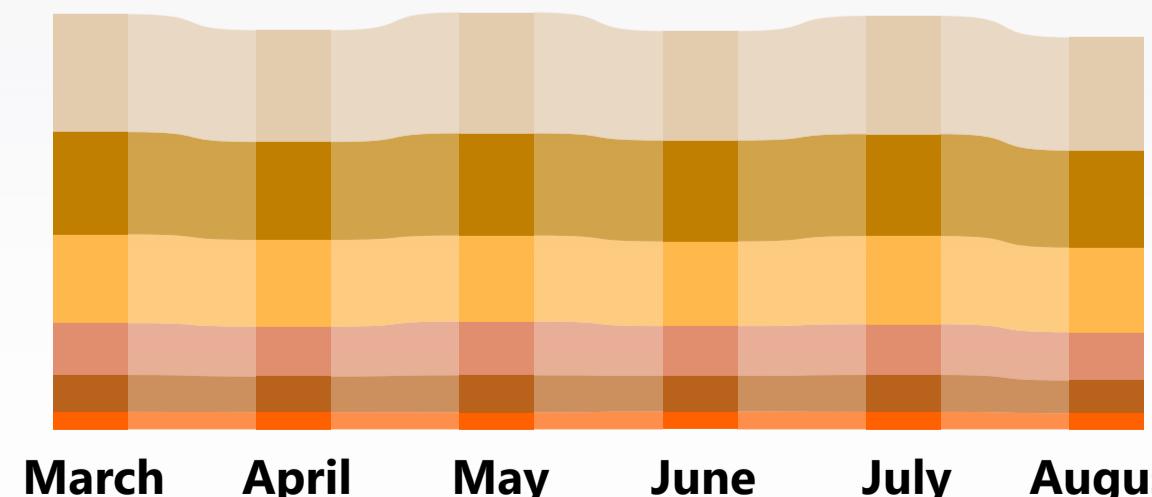
AM Butter

AM Curd

AM Ghee

AM Milk

AM Tea



Ordered qty, delivered qty by month

Ordered_Qty

Delivered_qty

OTIF %

2M

0M

March

April

28.87%

28.67%

May

29.13%

June

28.72%

July

29.35%

August

29.4%

29.2%

29.0%

28.8%

28.6%

29.39%



AtliQ Mart Supply Chain Analysis



Previous month value is not available for selected filter



IF %
52.78% !
Target: 76.51%
(-31.02%)

OT %
59.03% !
Target: 86.09%
(-31.43%)

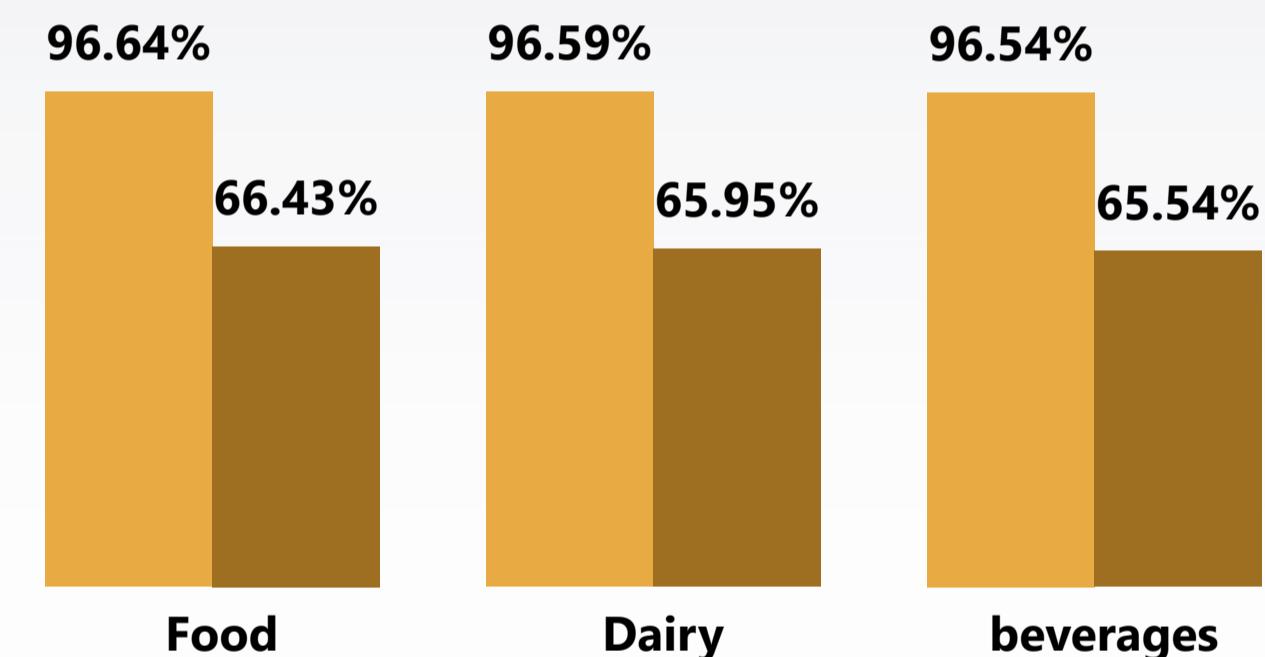
OTIF %
29.02% !
Target: 65.91%
(-55.97%)

Ordered_Qty
13.43M✓
PM : (Blank)
(+Infinity%)

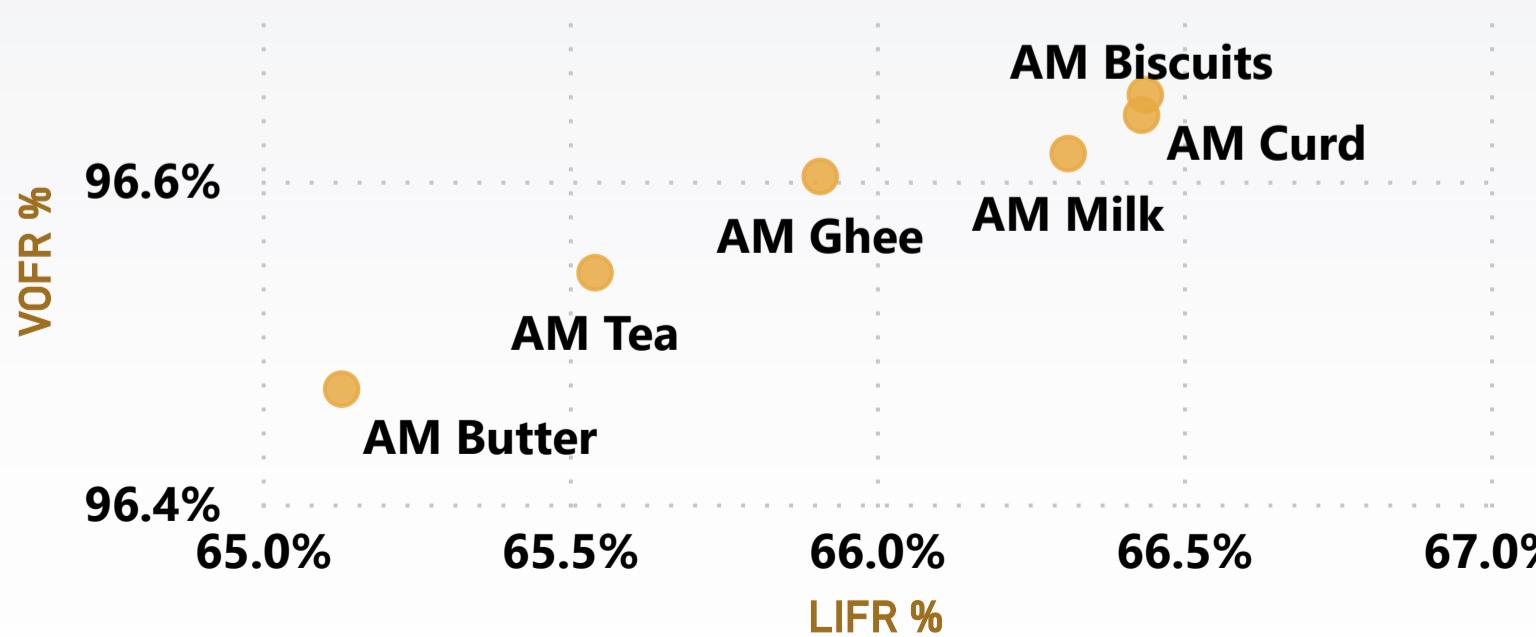
Delivered_Qty
12.97M✓
PM : (Blank)
(+Infinity%)

VOFR% , LIFR% by Category

● VOFR % ● LIFR %



VOFR% , LIFR% by Product



Product Insights

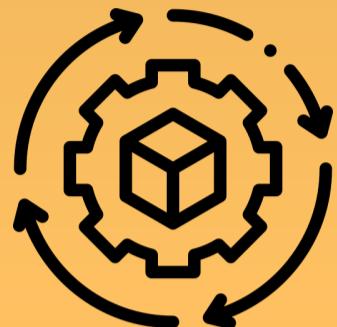
Product_name	LIFR %	LIFR % by month	VOFR %	VOFR % by month	Ordered_Qty
AM Butter 250	63.52%		96.4%		933.11K
AM Biscuits 250	65.16%		96.6%		563.37K
AM Tea 250	65.16%		96.5%		392.46K
AM Butter 500	65.19%		96.5%		983.18K
AM Ghee 250	65.25%		96.5%		191.49K
AM Tea 100	65.32%		96.6%		394.71K
AM Milk 100	65.55%		96.5%		1276.19K
AM Curd 50	65.55%		96.6%		1119.26K
AM Ghee 100	65.75%		96.6%		186.19K
AM Milk 250	65.91%		96.6%		1279.13K
AM Biscuits 500	66.10%		96.5%		558.12K
AM Tea 500	66.14%		96.5%		396.57K
AM Butter 100	66.66%		96.6%		943.48K
AM Ghee 150	66.72%		96.7%		193.52K
AM Curd 100	66.73%		96.6%		1105.34K
AM Curd 250	67.05%		96.7%		1099.40K
AM Milk 500	67.51%		96.7%		1254.42K



AtliQ Mart Supply Chain Analysis



Previous month value is not available for selected filter



product_name

All

Month

All

IF %

52.78% !Target: 76.51%
(-31.02%)

OT %

59.03% !Target: 86.09%
(-31.43%)

OTIF %

29.02% !Target: 65.91%
(-55.97%)

Total_orders

31.73K✓PM : (Blank)
(+Infinity%)

Total_order_line

57.10K✓PM : (Blank)
(+Infinity%)

Top and Bottom 5 by ordered Qty month

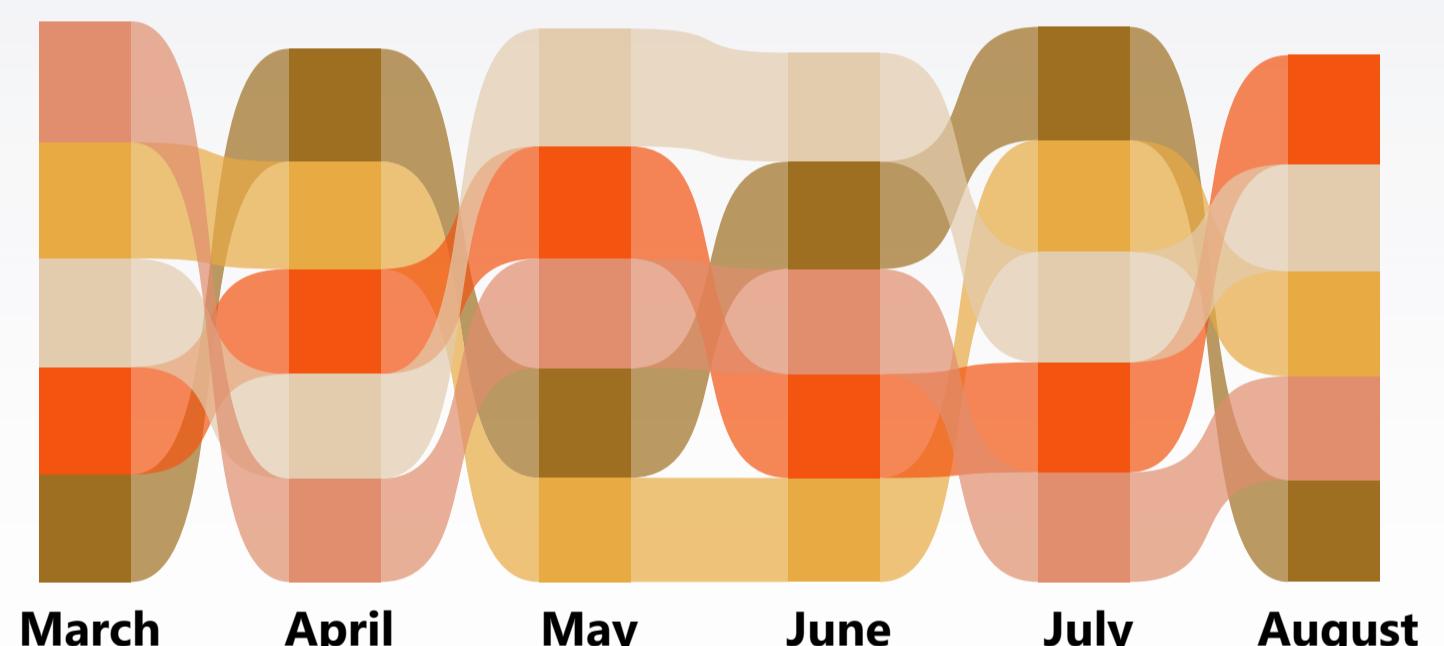
Show Top 5



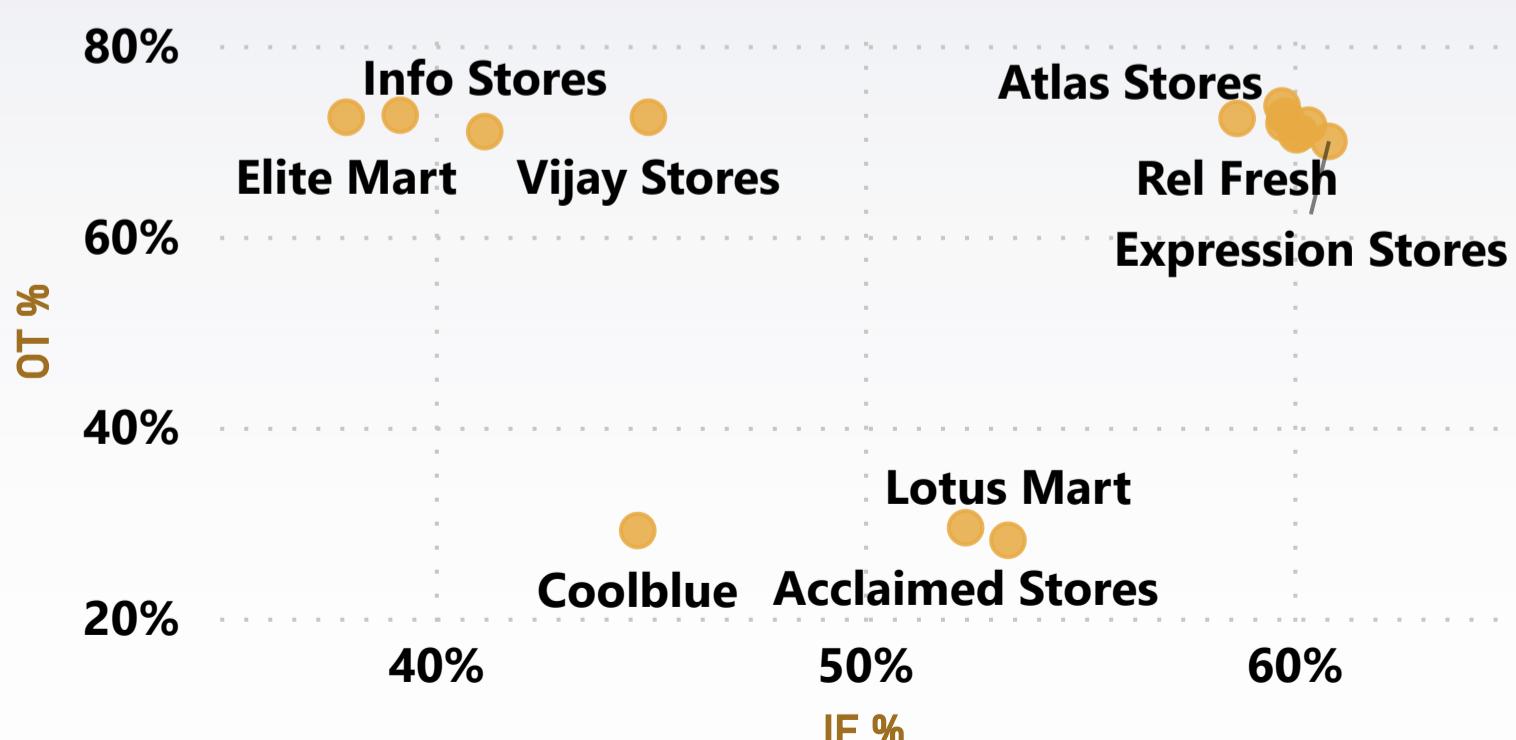
Customer Insights



Atlas St... Chiptec ... Logic St... Sorefoz ... Viveks S...



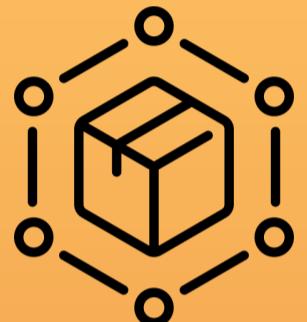
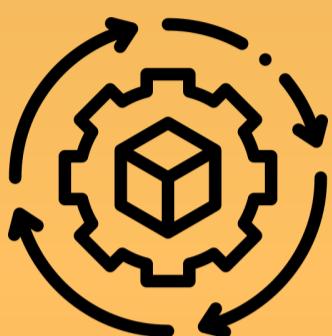
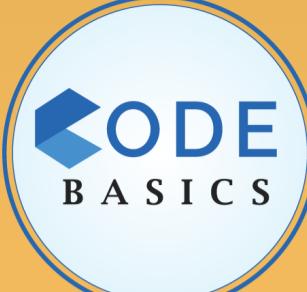
IF % , OT % by customer



Customer_Name	IF %	LIFR %	OTIF %	VOFR %	OT %
Expression Stores	60.83%	75.28%	38.39%	97.54%	69.92%
Chiptec Stores	60.35%	75.61%	38.73%	97.58%	71.62%
Logic Stores	60.14%	74.39%	38.78%	97.45%	70.82%
Viveks Stores	60.07%	75.06%	39.44%	97.57%	70.61%
Expert Mart	59.81%	75.48%	39.11%	97.44%	72.54%
Atlas Stores	59.78%	75.48%	39.55%	97.58%	71.81%
Propel Mart	59.74%	75.62%	40.92%	97.70%	73.64%
Rel Fresh	58.69%	74.54%	38.18%	97.43%	72.32%
Lotus Mart	53.35%	60.08%	16.34%	96.01%	28.11%
Acclaimed Stores	52.36%	58.93%	15.47%	95.85%	29.43%
Vijay Stores	44.98%	59.23%	28.28%	95.87%	72.45%
Coolblue	44.73%	51.53%	13.75%	95.08%	29.13%
Info Stores	41.16%	53.05%	25.52%	95.24%	70.94%
Sorefoz Mart	39.19%	53.40%	25.89%	95.33%	72.67%
Elite Mart	37.94%	52.74%	24.37%	95.29%	72.45%



AtliQ Mart Supply Chain Analysis



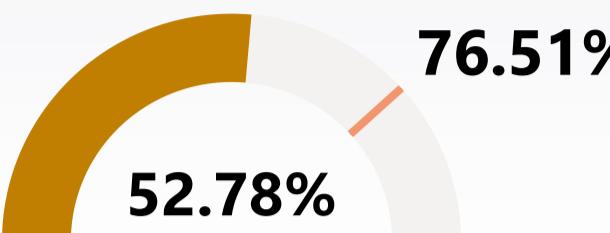
customer_na...

All

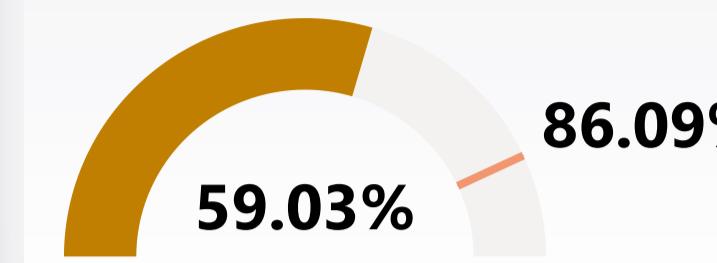
category

All

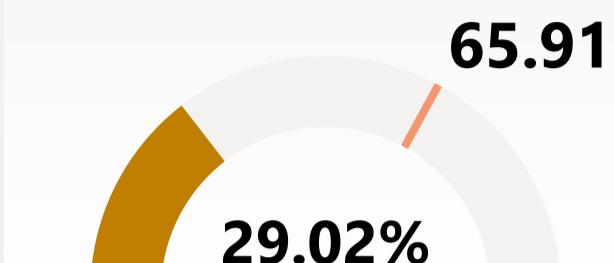
IF %



OT %



OTIF %



Deliverd qty

12.97M



Not_Deliverd qty

458K



Ordered, delivered Qty by city and Category

city	Ordered_Qty	Delivered_qty	Not_delivered
Ahmedabad	4612K	4463K	149K
beverages	409K	396K	13K
Dairy	3634K	3516K	118K
Food	570K	551K	18K
Surat	4190K	4050K	140K
Vadodara	4624K	4456K	168K
beverages	409K	394K	15K
Total	13427K	12969K	458K

IF% , OT%, OTIF% and Target by City

IF %

● OTIF % ● Target

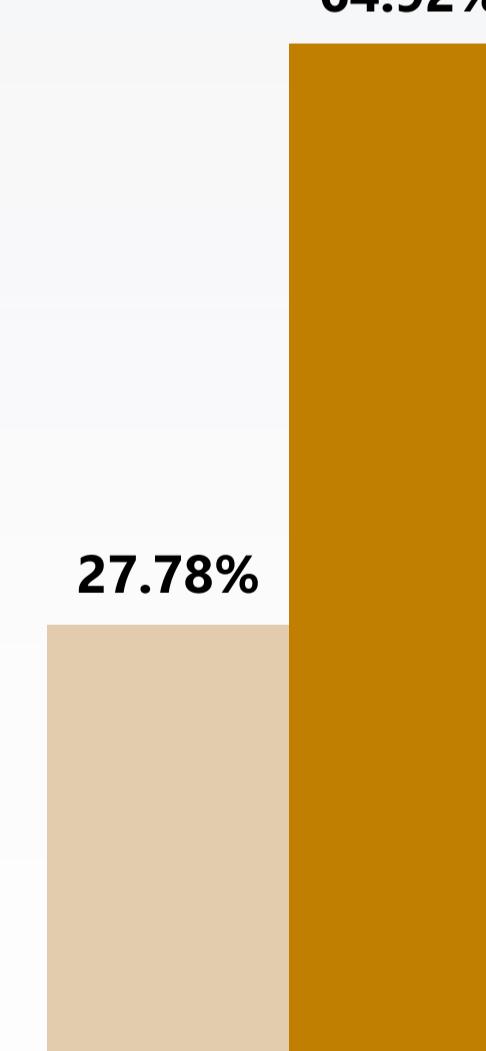
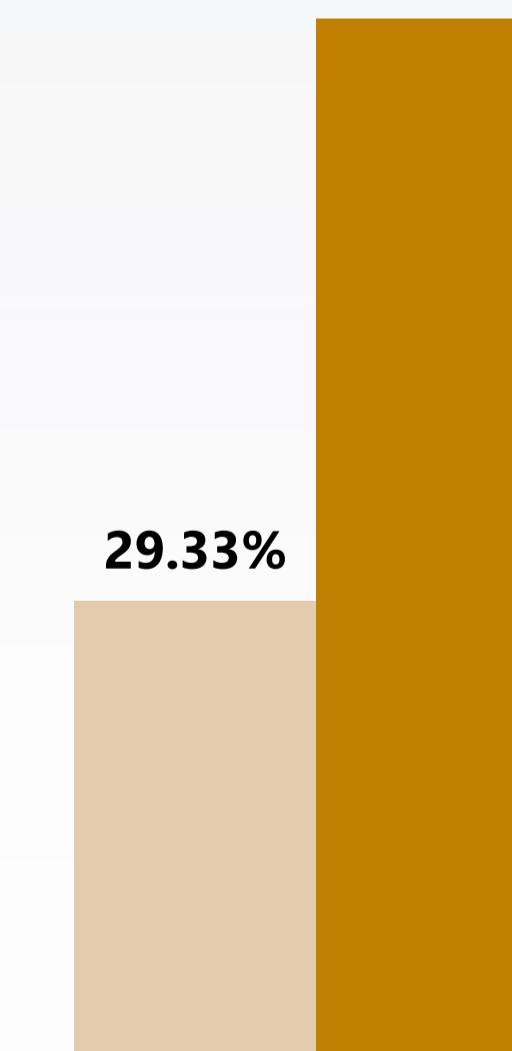
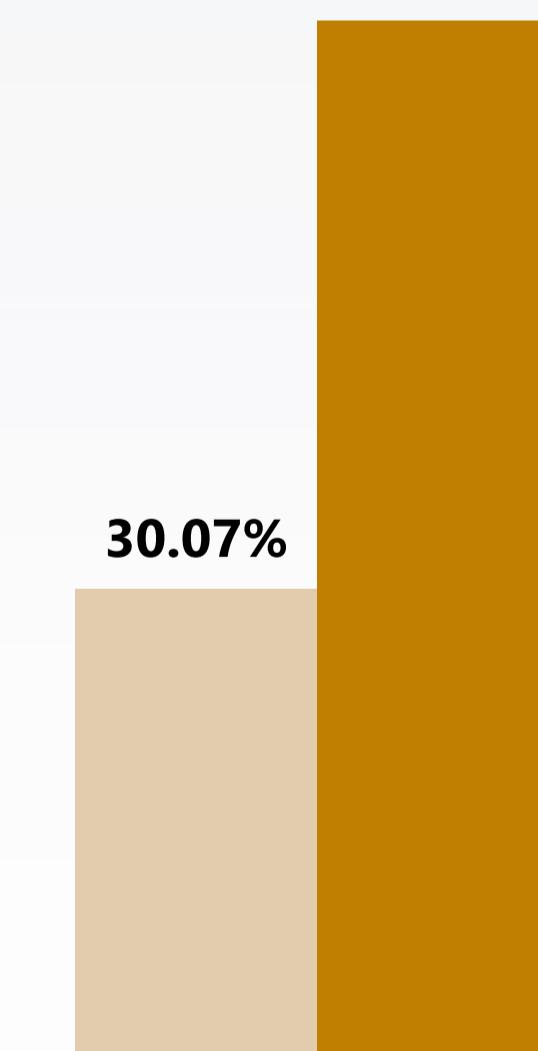
OT %

OTIF %

66.36%

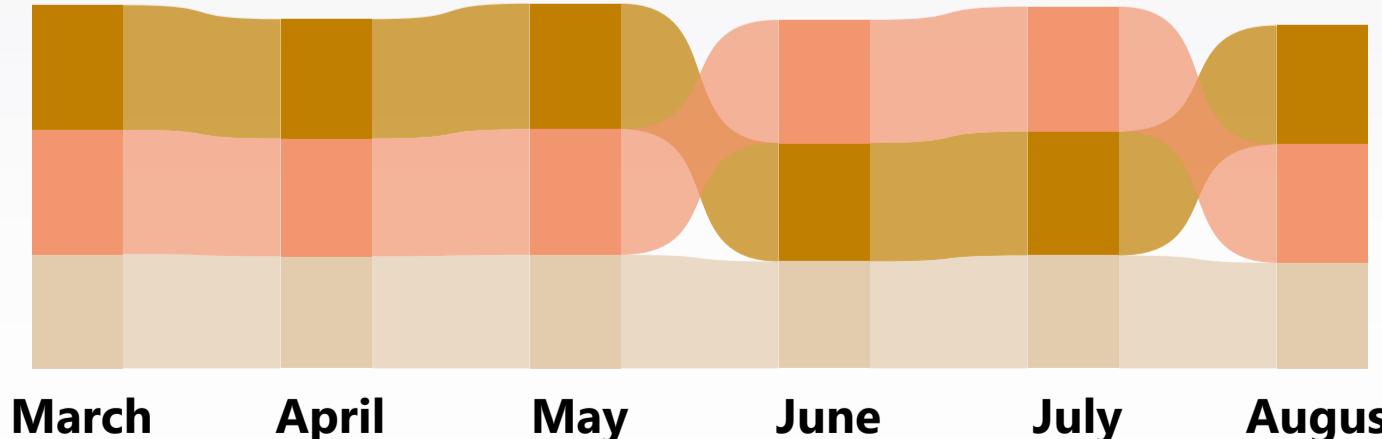
66.50%

64.92%



Ordered Qty by month and city

● Ahmedabad ● Surat ● Vadodara



March April May June July August

169

204

240

275

310

345

380

415

450

485

520

555

590

625

660

695

730

765

800

835

870



Challenge #2: Generate Insights to Solve a Supply Chain Issue in the FMCG Domain.

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.

The Supply Chain team decided to use a standard approach to measure the service level in which they will measure '**On-time delivery (OT) %**', '**In-full delivery (IF) %**', and **OnTime in full (OTIF) %**' of the customer orders daily basis against the target service level set for each customer.





Orders and Lines

- Orders are nothing but a unique request placed by a customer on a given date
- Within an order, a customer could request multiple items.
- Each of these item requested within the order is called an order line

Example: Let's say you order 4 notebooks and 2 pens at Amazon. A unique order ID is generated for all these items. Notebook and Pen is an order line.

Measuring Line Fill Rate & Volume Fill Rate

- **Line Fill Rate** is an important metric for the supply planning team to understand how many lines they shipped out of the total lines ordered. This metric does not consider the delivery time of the order.
- **Volume fill rate** or case fill rate is a similar metric useful for the supply planning team to understand the total quantity they are able to ship for a customer per order or for a given period of time.

Example: In above example let's say Amazon is able to ship you 4 notebooks and 1 pen. The line item pen is failed because you requested 2 nos. So Line Fill Rate for Amazon for your order is order lines fulfilled / lines ordered => $1/2 \Rightarrow 50\%$.
Volume Fill rate will be **total quantity shipped / total quantity ordered** => $5/6 \Rightarrow 83\%$.



Measuring On Time delivery %

- Unlike Line Fill Rate, this measure is measured at the order level. It determines if an order is delivered as per the agreed time with the customer.
- This metric is important for the warehouse & distribution team.
- An order is On Time only when all the line items inside the order is delivered on time.

Measuring In Full delivery %

- Unlike Line Fill Rate, this measure is measured at the order level. It determines if an order is delivered in full as per the requested quantity by the customer.
- This metric is important for the supply planning team.
- An order is In Full only when all the line items inside the order are delivered In Full.

Measuring On Time In Full (OTIF) %

- Unlike Line Fill Rate, this measure is measured at the order level. It determines if an order is delivered BOTH in full and On Time as per the customer order request.
- This metric is important for all the sub functions in the supply chain team.
- An order is OTIF only when all the line items inside the order are delivered In Full and ON Time. This is a hard metric which measures the reliability of an order from customer's point of view.

