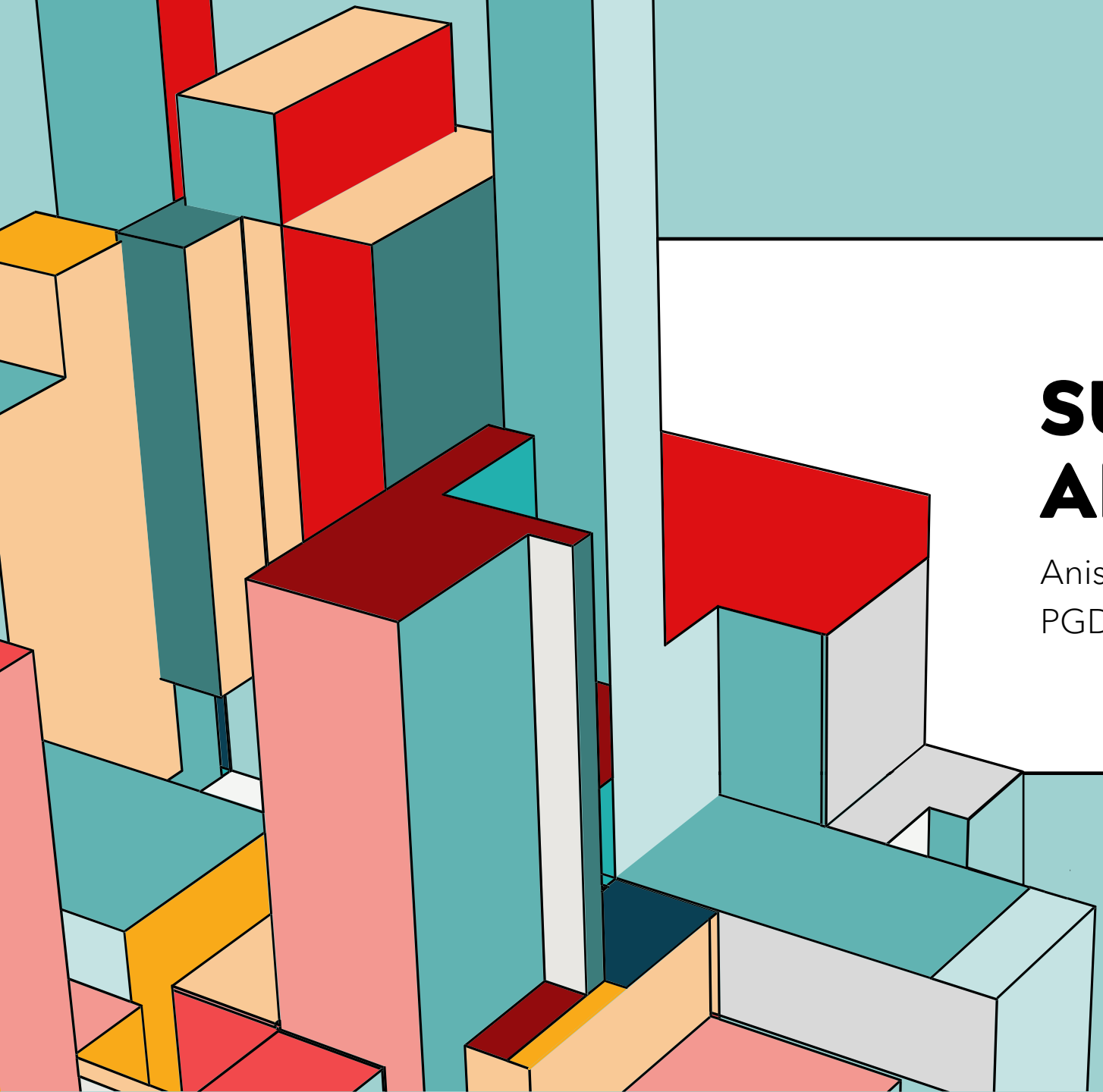
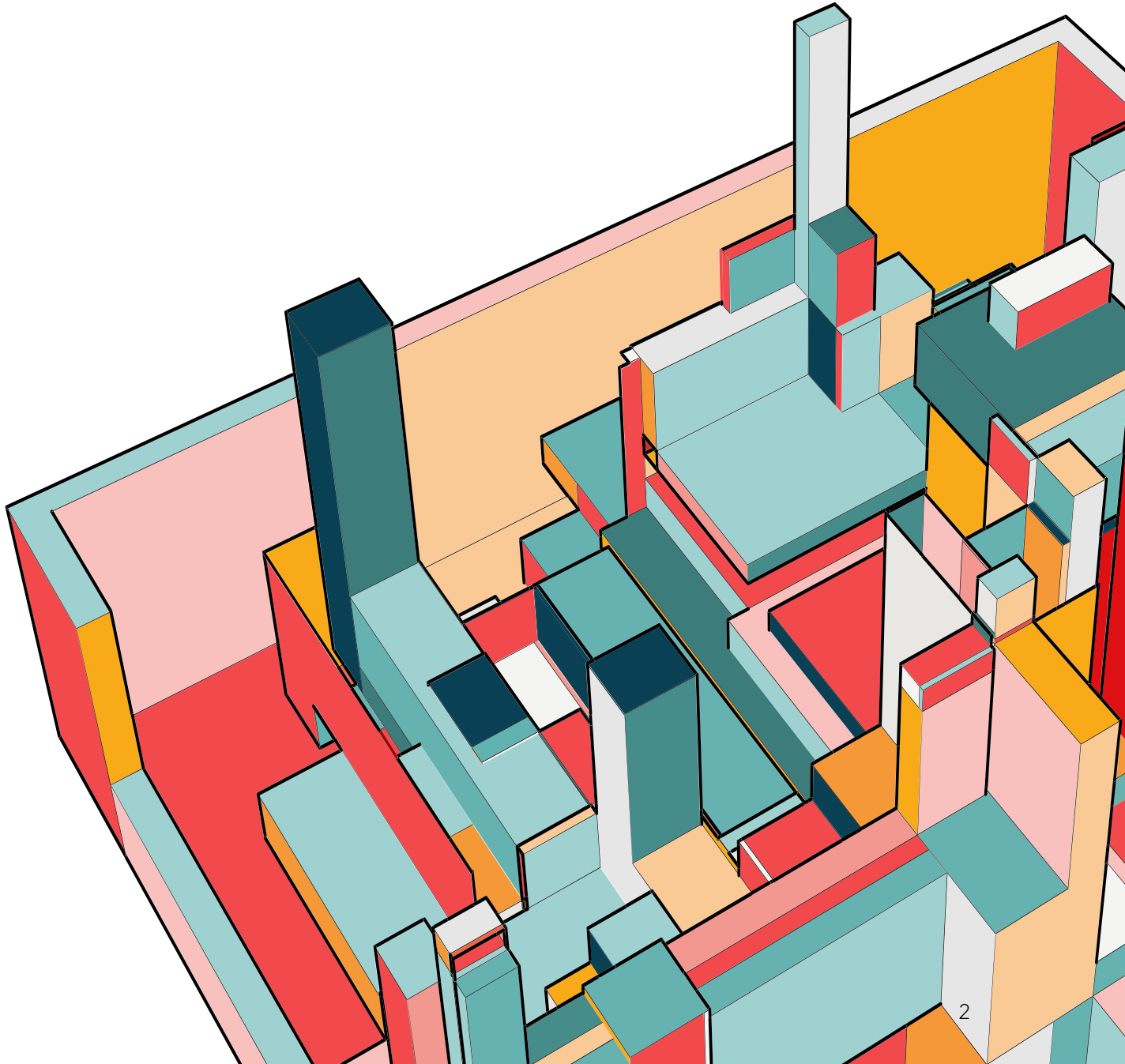


SUPPLY CHAIN ANALYSIS

Anish Chougule
PGD22DS01

OVERVIEW

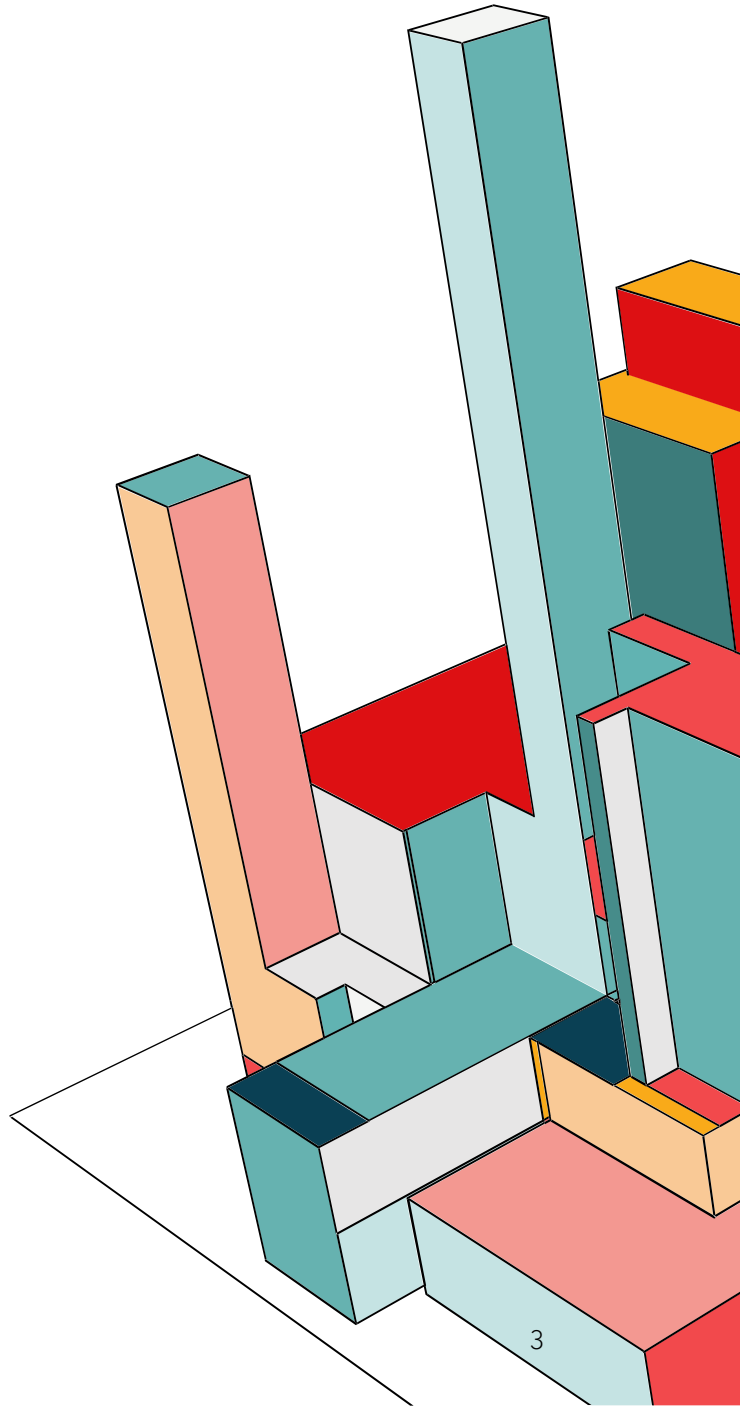


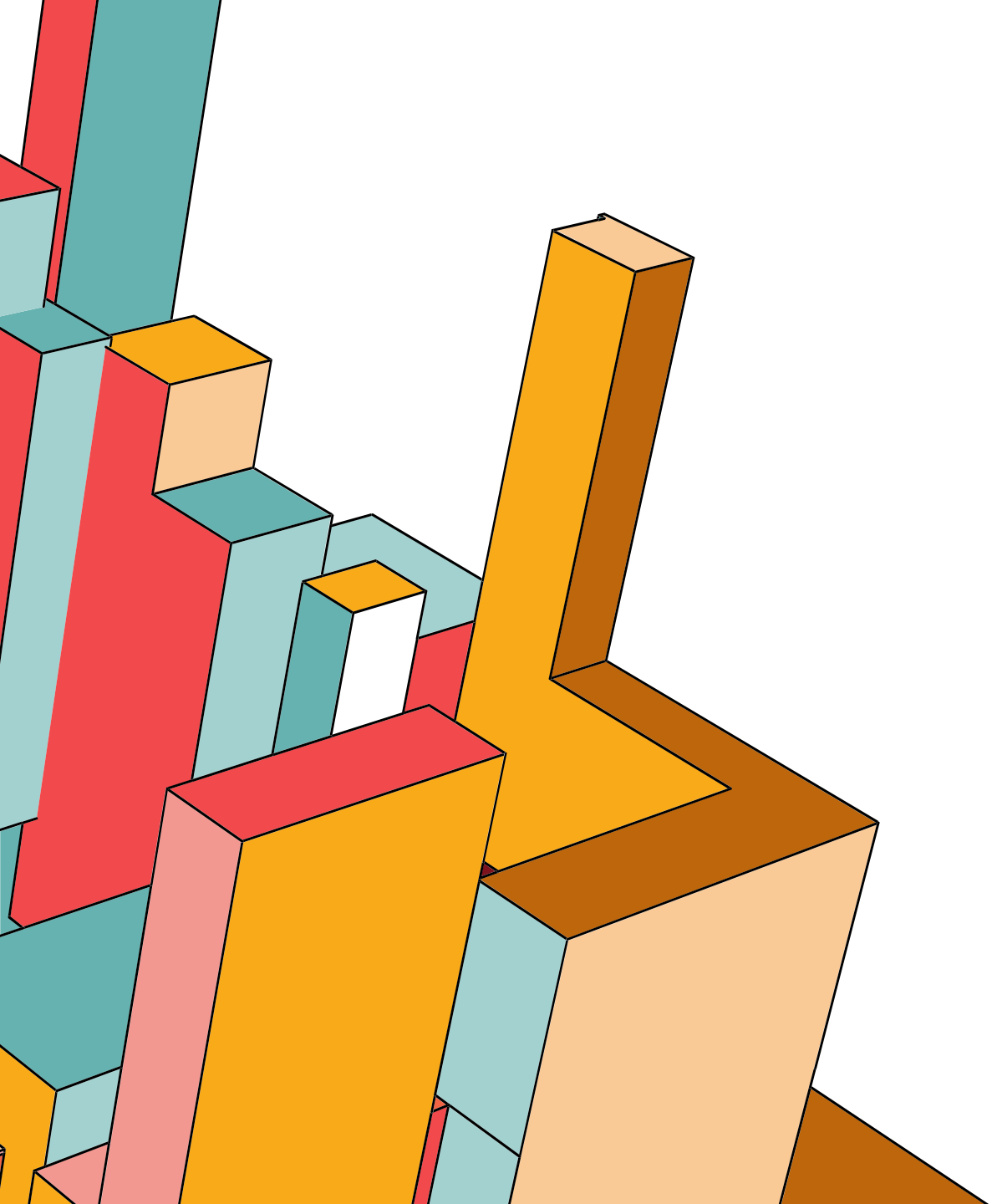
PROBLEM

AtliQ Mart is currently facing a problem where several important clients of AtliQ Mart chose not to renew their annual contracts because of service problems.

Some of the key products may not have been supplied on schedule or in full over an extended period of time, which may have led to poor customer service.

In order to quickly address this problem before expanding to additional locations, management asked their supply chain analytics team to track the "On time" and "In Full" delivery service levels for all clients on a daily basis.

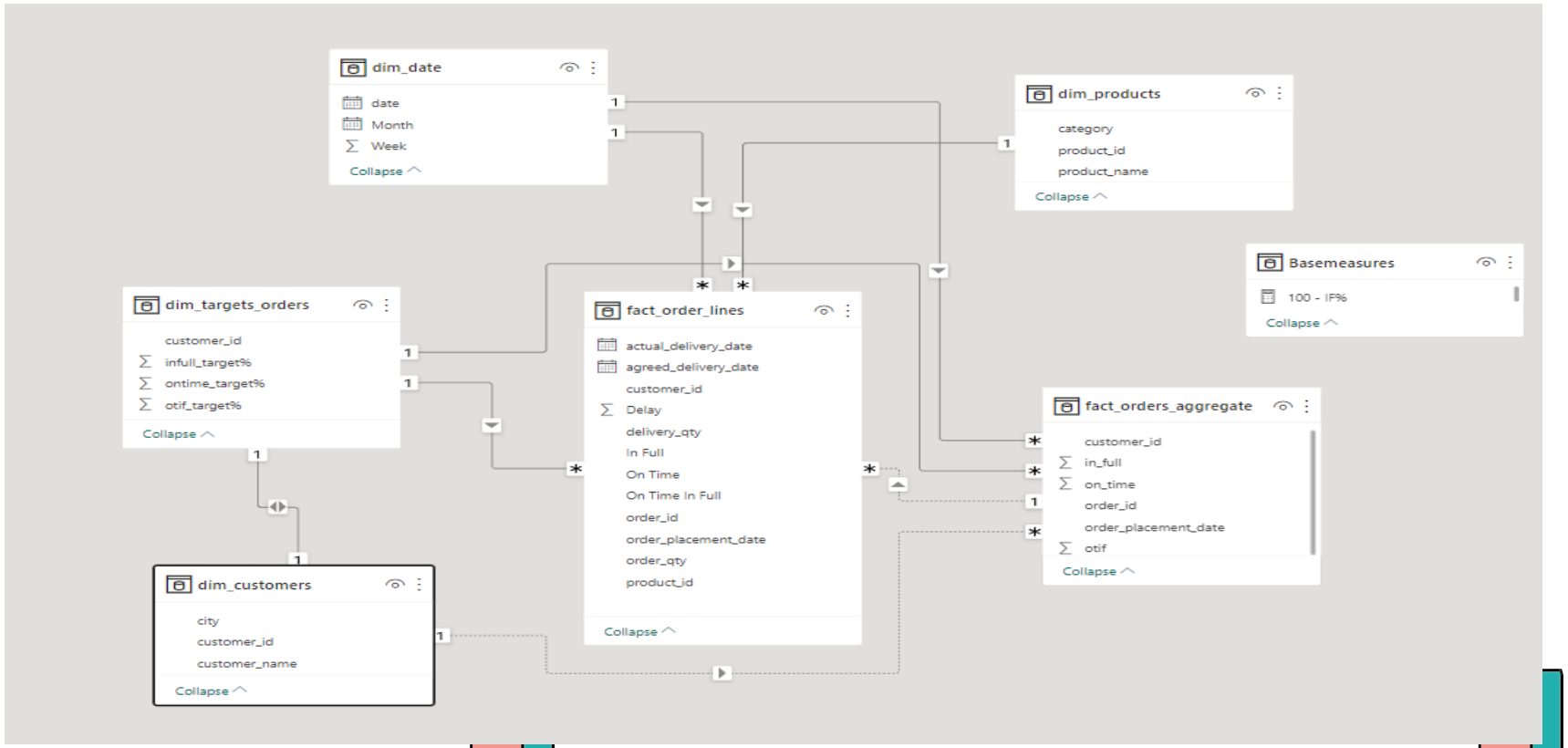




SOLUTION

This Dashboard compare the daily percentages of customer orders that are delivered on-time, in-full, and on-time in full (OTIF) against the goal service level set for each customer by city and products with targets

DATA MODEL


dim_date
date
Month
Week
Collapse
dim_products
category
product_id
product_name
Collapse
Basemeasures
100 - IF%
Collapse
dim_targets_orders
customer_id
infull_target%
ontime_target%
otif_target%
Collapse
fact_order_lines
actual_delivery_date
agreed_delivery_date
customer_id
Delay
delivery_qty
In Full
On Time
On Time In Full
order_id
order_placement_date
order_qty
product_id
Collapse
fact_orders_aggregate
customer_id
in_full
on_time
order_id
order_placement_date
otif
Collapse
dim_customers
city
customer_id
customer_name
Collapse

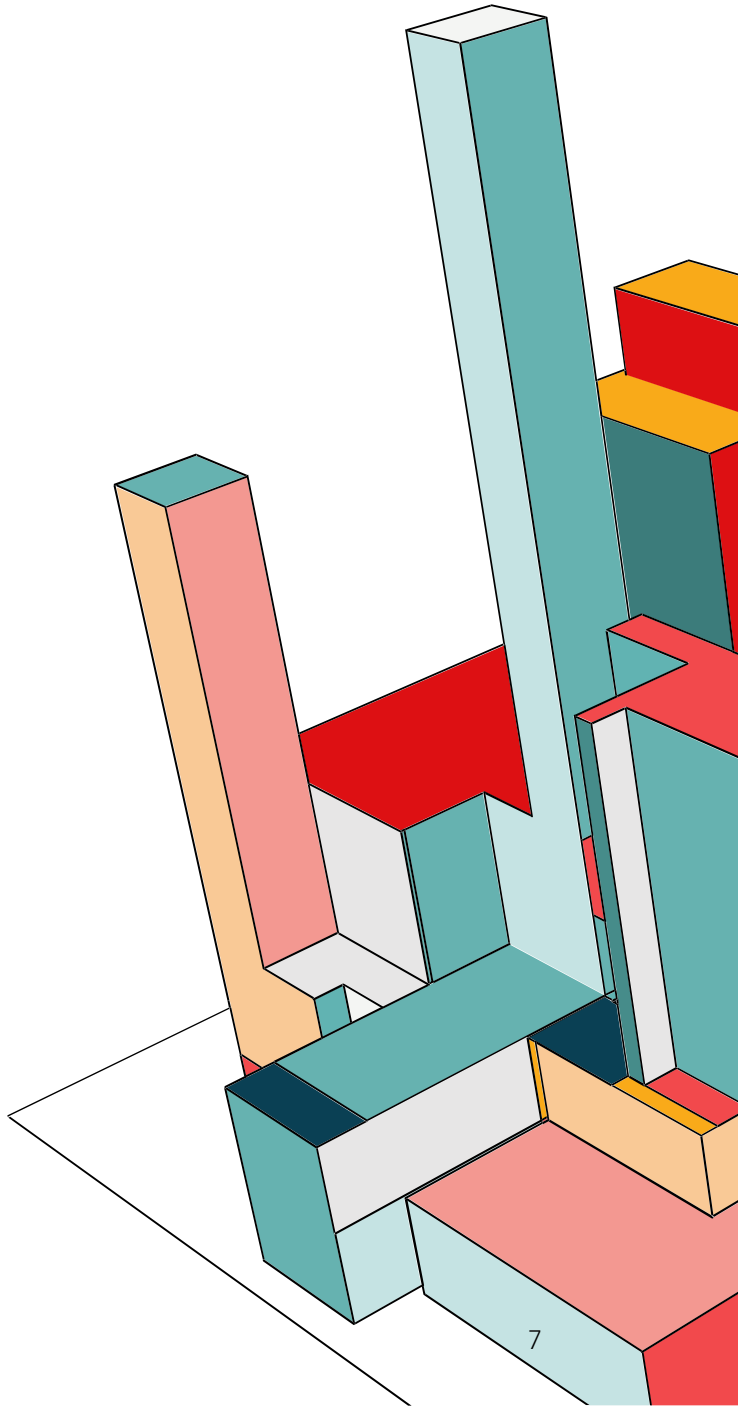
KEY METRICS

Key Metrics

- Orders and Lines
- Measuring Line Fill Rate & Volume Fill Rate
- Measuring On Time delivery %
- Measuring In Full delivery %
- Measuring On Time In Full (OTIF) %

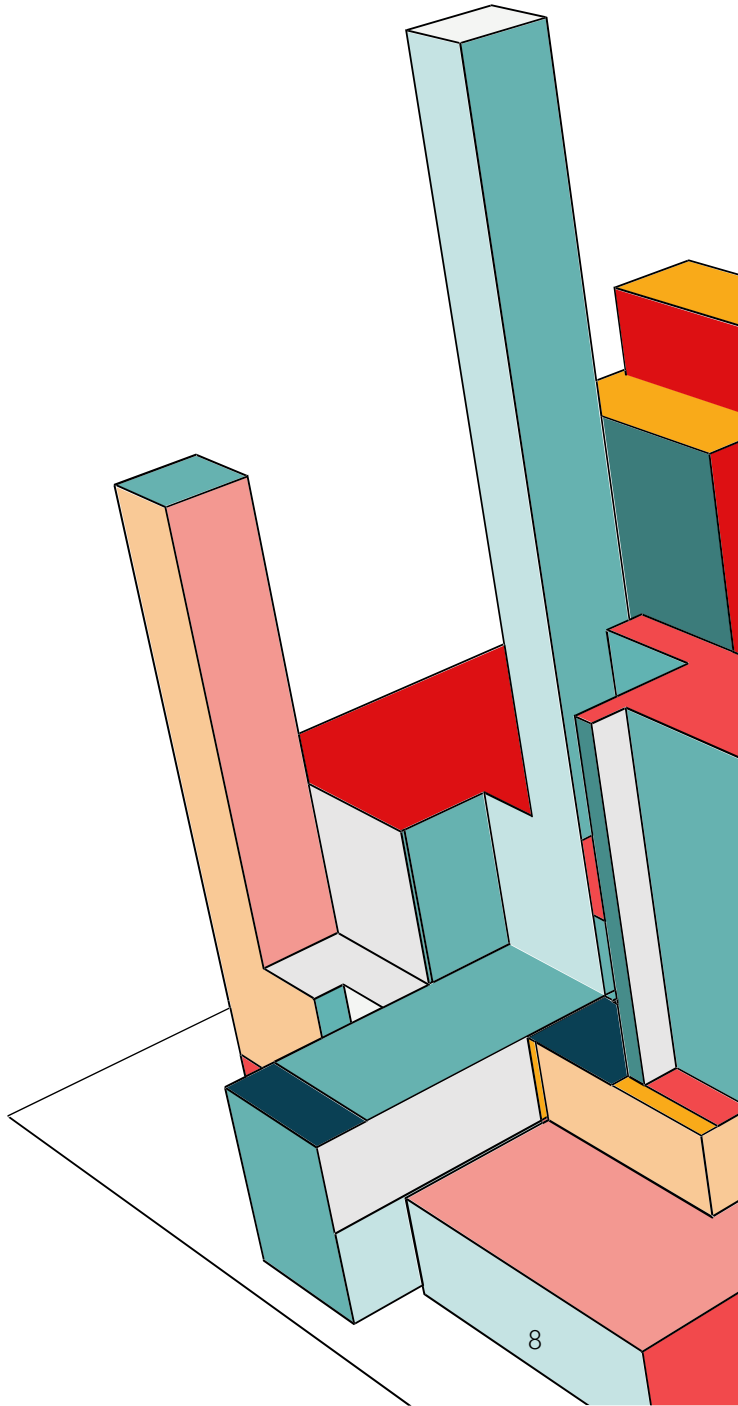
REQUIREMENTS

- Key Metrics for each Month and Day
- Key metrics change by previous month and day
- Key metrics with respect to their targets
- Key metrics by customers table
- Key metrics with the targets with their targets
- Total orders and total quantity metrics
- Delayed orders and Undelivered orders
- Total orders, delayed orders with average delayed time
- Key metrics by products table and spark line
- Key metrics trend over time period



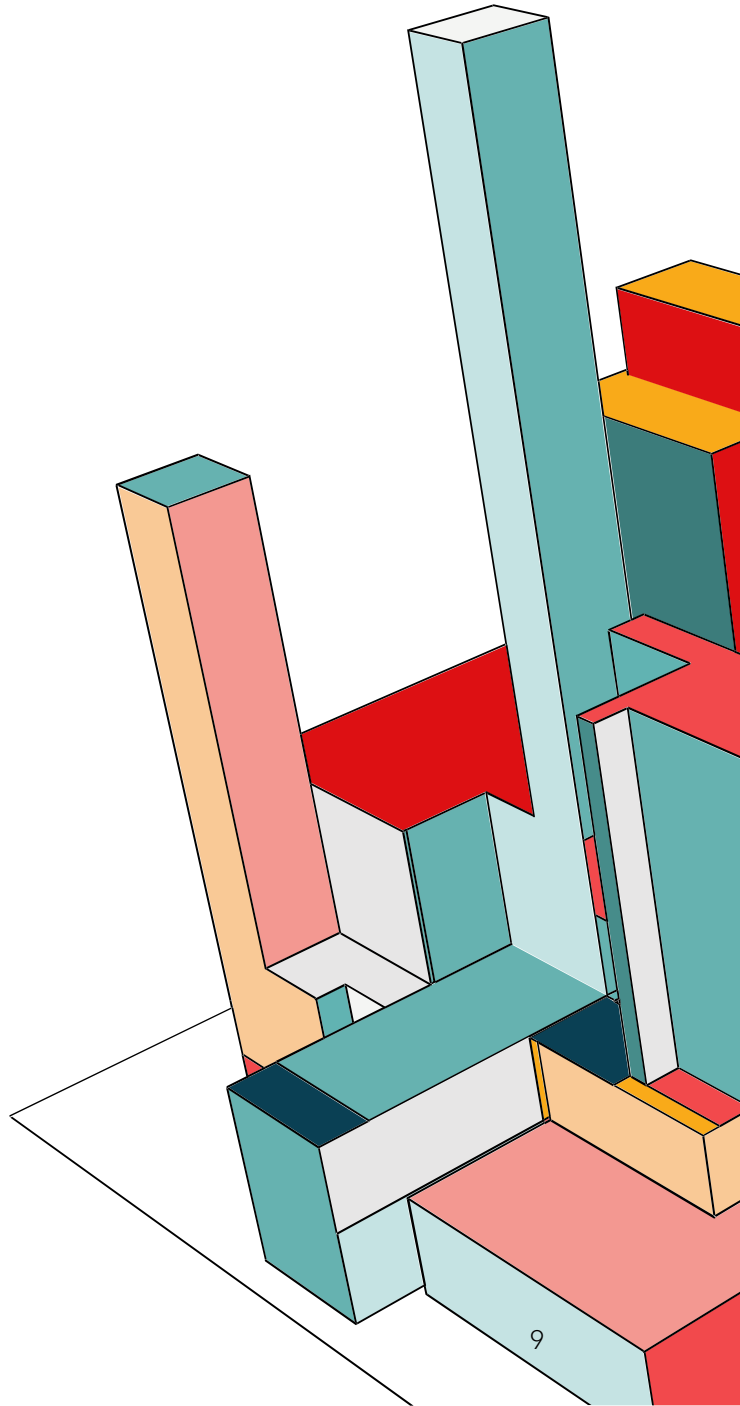
MEASURES

1. In Full % =
   DIVIDE(SUM(fact_orders_aggregate[in_full]),
   [Total Orders])
2. On Time % =
   DIVIDE(SUM(fact_orders_aggregate[on_time]),
   [Total Orders])
3. On Time In Full % =
   DIVIDE(SUM(fact_orders_aggregate[otif]),[To
   tal Orders])
4. Volume Fill Rate % =
   DIVIDE(SUM(fact_order_lines[delivery_qty]),
   (SUM(fact_order_lines[order_qty])))
5. Total Orders =
   COUNT(fact_orders_aggregate[order_id])
6. Total Order Lines =
   COUNT(fact_order_lines[order_id])



MEASURES

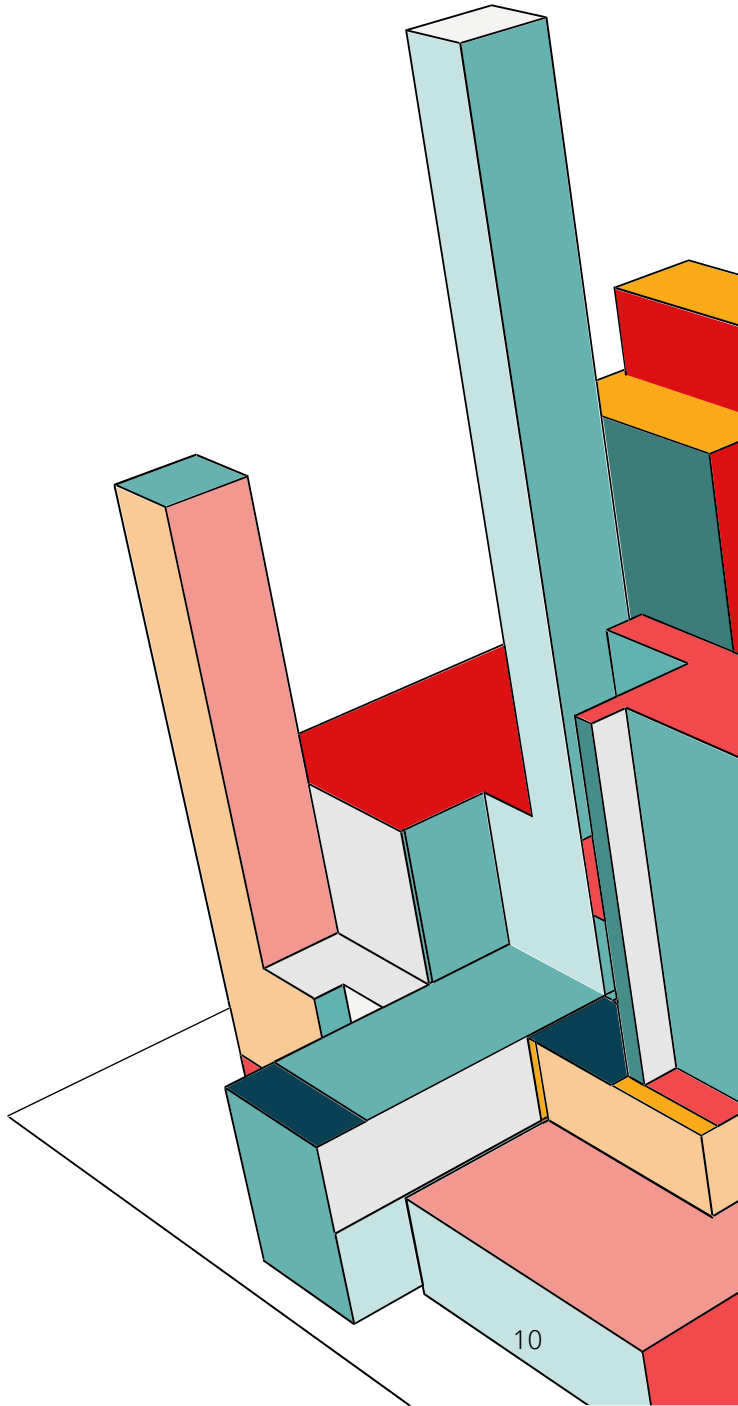
```
7. Delay Card = "The Average Delay was " &  FORMAT([Avg.
       Delay],"0") & " Hours for     " & FORMAT([Delayed
       Orders],"0,.0K") &     " Delayed Orders"


8. Line Fill Rate % = DIVIDE((SUM(fact_order_lines[In
       Full])),[Total Order Lines])


9. IF% DOD Icon =
       VAR IconPositive = UNICHAR(8593)
       VAR IconNegative = UNICHAR(8595)
       VAR Result =
       IF([DoD IF% Growth] > 0 ,IconPositive,IconNegative)
       Return
       Result
```



MEASURES

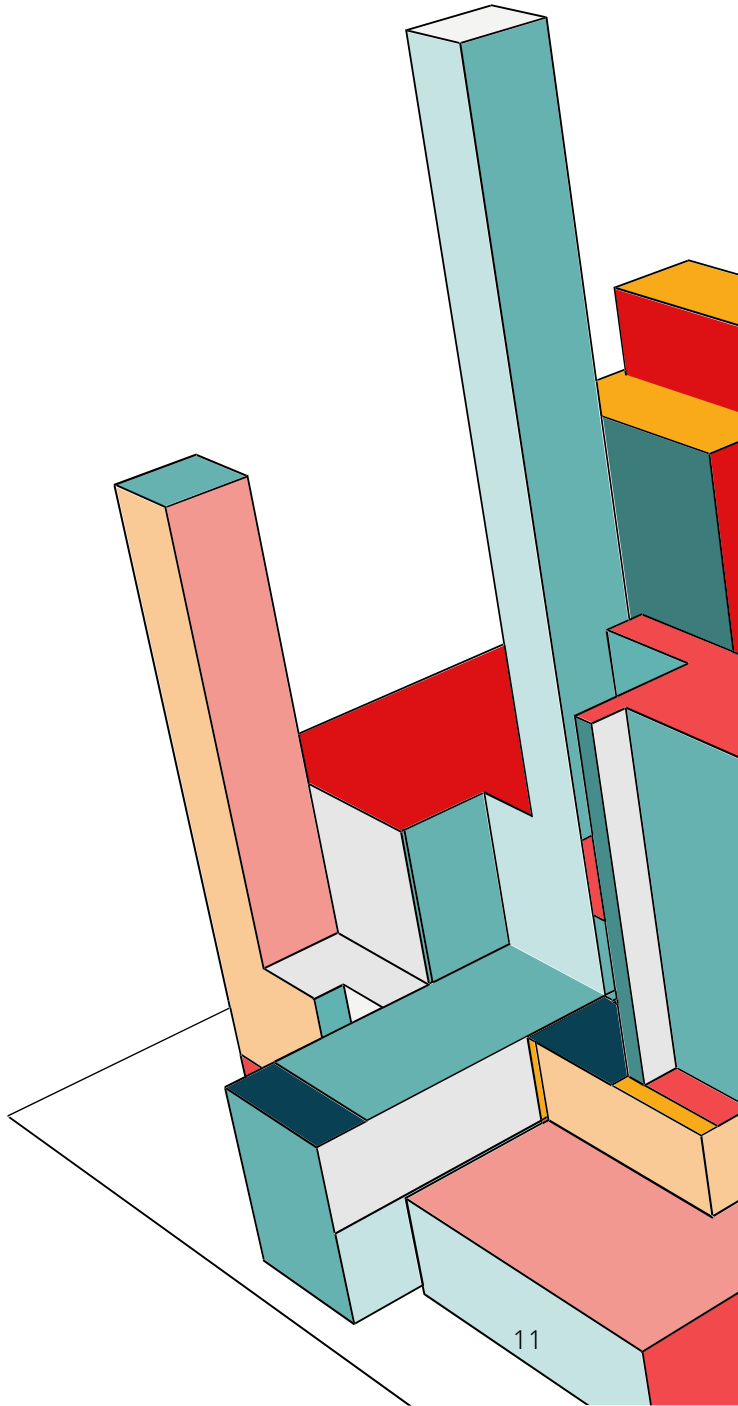
10. Delayed Orders = [Total Orders] - [Total On Time Deliveries]
11. DoD IF% Growth = [In Full %] - [PreviousDay InFull%]
12. IF Target card = "Target " & FORMAT([In Full Target],"0.00%")
13. IF% Kpi DOD Card = FORMAT([DoD IF% Growth],"0.000%") & " Vs. PD“
14. IF% Kpi MOM Card = FORMAT([MoM IF% growth],"0.000%") & " Vs. PM“
15. IF% MOM Icon =
    VAR IconPositive = UNICHAR(8593)
    VAR IconNegative = UNICHAR(8595)
    VAR Result =
    IF([MoM IF% growth] > 0 ,IconPositive,IconNegative)
    Return

    Result



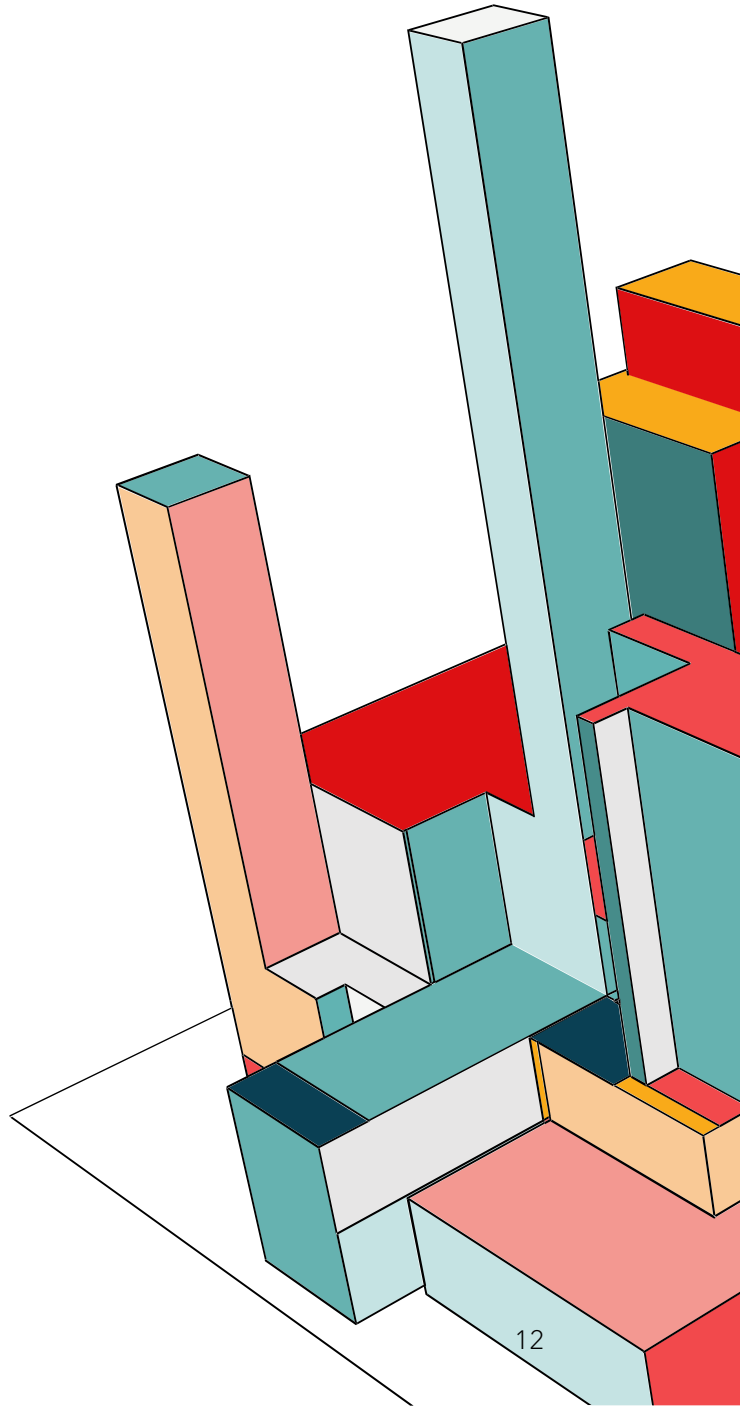
MEASURES

```
16. Previous Month InFull% = CALCULATE([In Full
        %],PREVIOUSDAY(dim_date[date].[Date]))

17. PreviousDay InFull% = CALCULATE([In Full
        %],PREVIOUSDAY(dim_date[date].[Date]))

18. Undelivered Quantity Card = "Undelivered Quantity " &
        FORMAT([Undelivered Quantity],"0,K") & " For " &
        FORMAT([Total Not Full Deliveries],"0,K") & " Not
        Full Orders“

19. OTIF DOD Kpi Card = FORMAT([DOD OTIF% Growth],"0.000%")
        & " Vs. PD“

20. OTIF MOM Kpi Card = FORMAT([MoM OTIF% Growth],"0.000%")
        & " Vs. " & "PM"
```



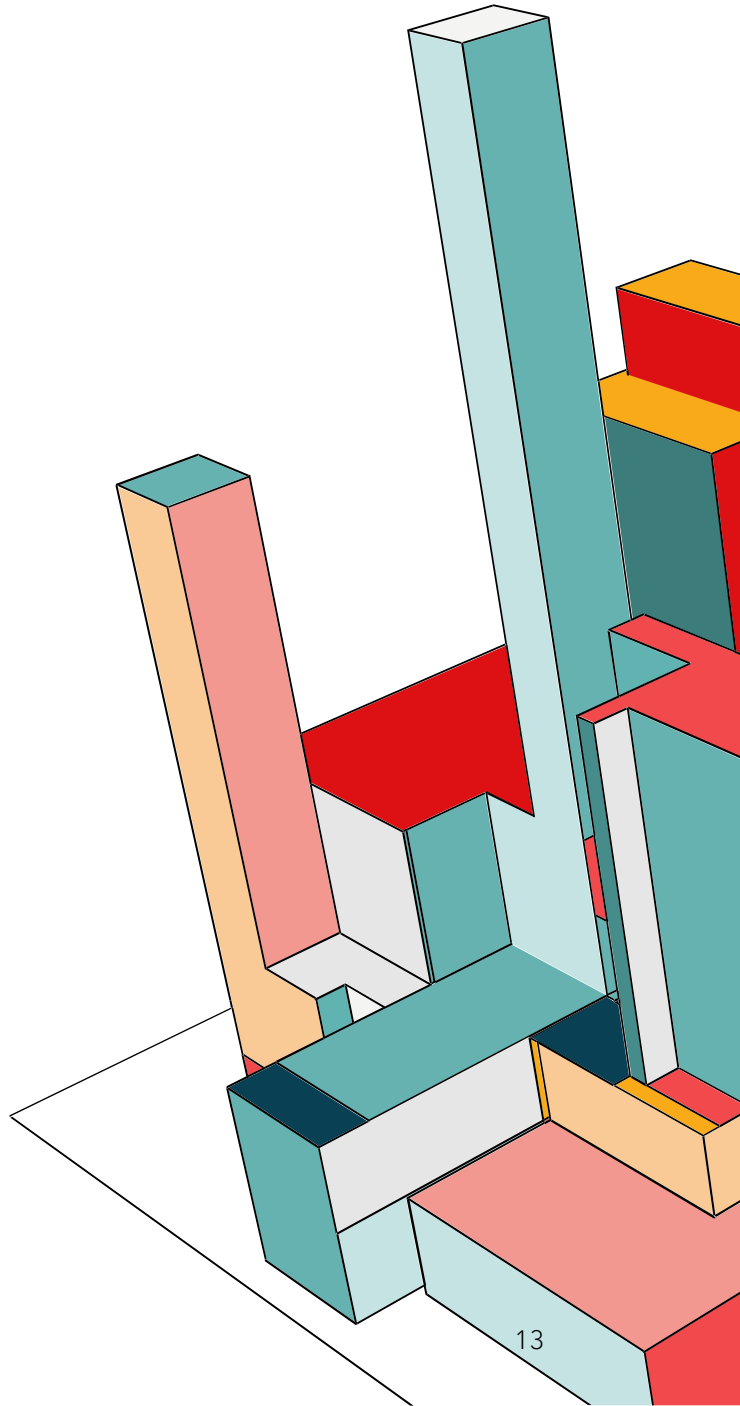
MEASURES

```
21. OT% DOD Icon =
        VAR IconPositive = UNICHAR(8593)
        VAR IconNegative = UNICHAR(8595)
        VAR Result =
        IF([DoD OT% Growth] > 0 ,IconPositive,IconNegative)
        Return
        Result

22. OT% Kpi DOD Card = FORMAT([DoD OT%
        Growth],"0.000%") & " Vs. PD“

23. Previous Day OnTime% = (CALCULATE([On Time
        %],PREVIOUSDAY(dim_date[date].[Date])))

24. Previous Month OnTime% = (CALCULATE([On Time
        %],PREVIOUSMONTH(dim_date[date].[Date])))
```

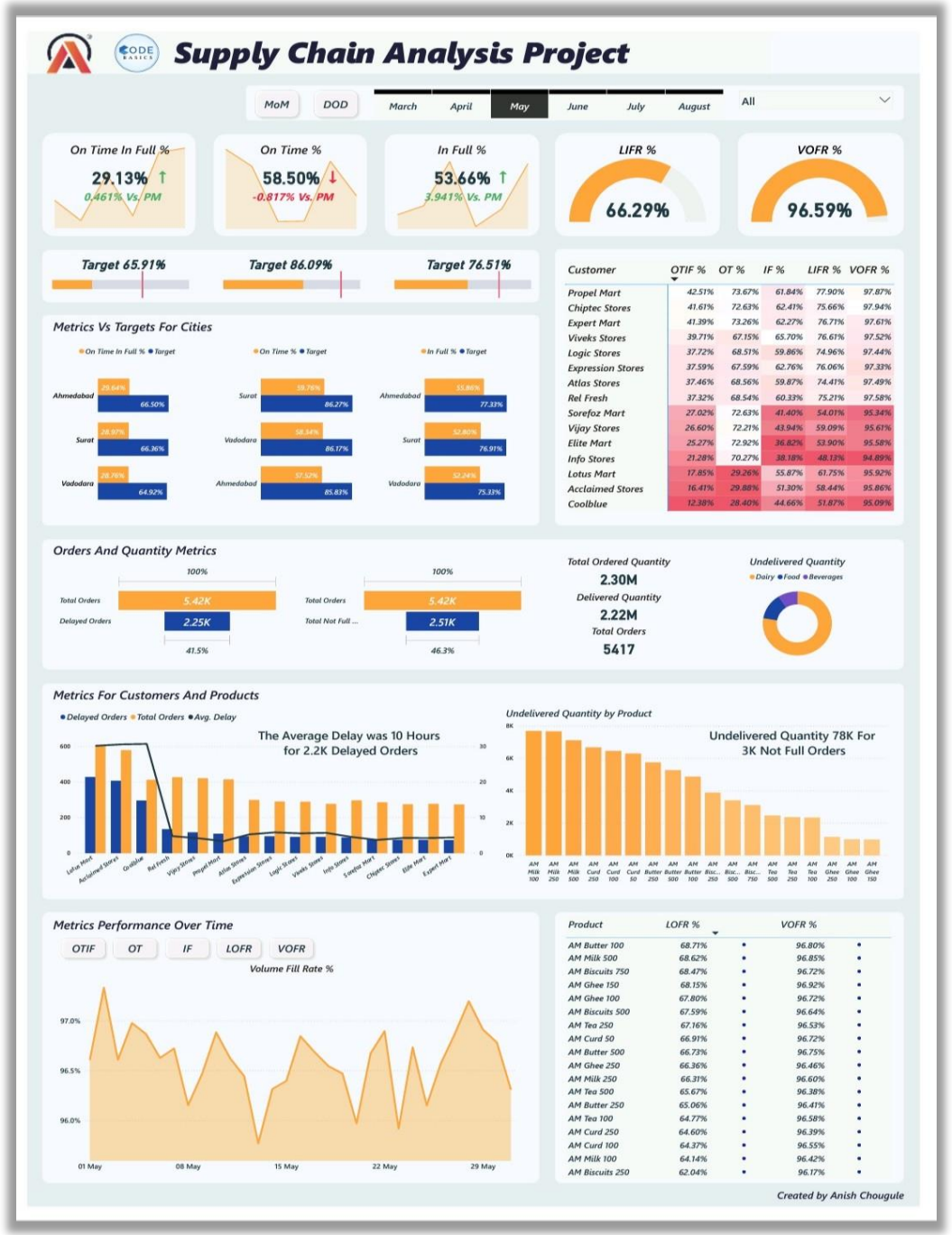


MEASURES

```
25. OTIF Target card = "Target " & FORMAT([On Time In Full
        Target],"0.00%")

26. Total OTIF Deliveries = SUM(fact_orders_aggregate[otif])

27. OTIF MOM Kpi Card = FORMAT([MoM OTIF% Growth],"0.000%")
        & " Vs. " & "PM“

28. OTIF DOD Kpi Card = FORMAT([DOD OTIF% Growth],"0.000%")
        & " Vs. PD“

29. OTIF% DOD Icon =
        VAR IconPositive = UNICHAR(8593)
        VAR IconNegative = UNICHAR(8595)
        VAR Result =
        IF([DOD OTIF% Growth] > 0 ,IconPositive,IconNegative)
        Return
        Result

30. On Time In Full Target =
        AVERAGE(dim_targets_orders[otif_target%])
```

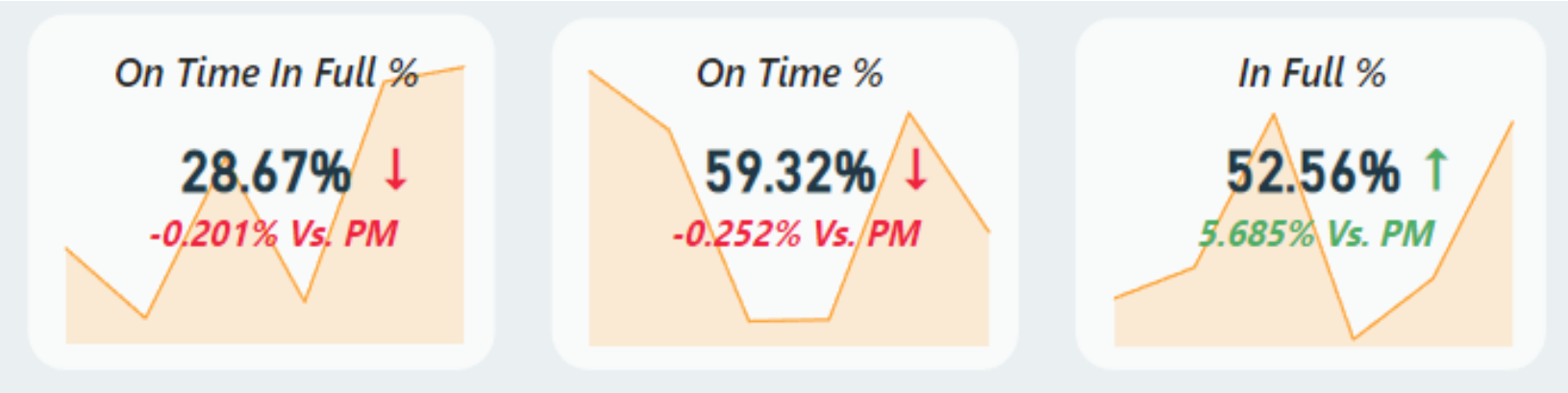


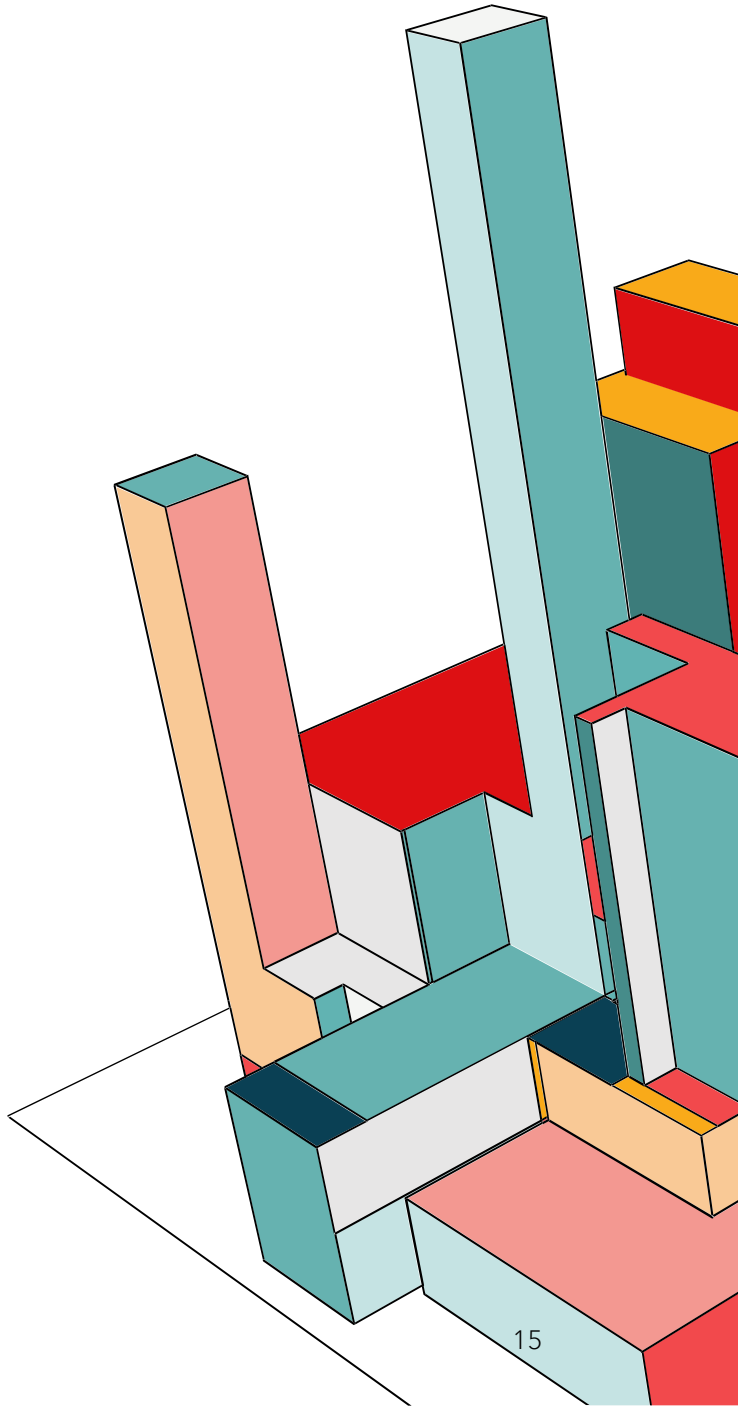
VISUAL


Supply Chain Analysis Project
MoM
DOD
March
April
May
June
July
August
All
On Time In Full %
29.13%
0.461% Vs. PM
On Time %
58.50%
-0.817% Vs. PM
In Full %
53.66%
3.941% Vs. PM
LIFR %
66.29%
VOFR %
96.59%
Target 65.91%
Target 86.09%
Target 76.51%
Metrics Vs Targets For Cities
Customer
OTIF %
OT %
IF %
LIFR %
VOFR %
Propel Mart 42.51% 73.67% 61.84% 77.90% 97.87%
Chiptec Stores 41.61% 72.63% 62.41% 75.66% 97.94%
Expert Mart 41.39% 73.26% 62.27% 76.71% 97.61%
Viveks Stores 39.71% 67.15% 65.70% 76.61% 97.52%
Logic Stores 37.72% 68.51% 59.86% 74.96% 97.44%
Expression Stores 37.59% 67.59% 62.76% 76.06% 97.33%
Atlas Stores 37.46% 68.56% 59.87% 74.41% 97.49%
Rel Fresh 37.32% 68.54% 60.33% 75.21% 97.58%
Sorefoz Mart 27.02% 72.63% 41.40% 54.01% 95.34%
Vijay Stores 26.60% 72.21% 43.94% 59.09% 95.61%
Elite Mart 25.27% 72.92% 36.82% 53.90% 95.58%
Info Stores 21.28% 70.27% 38.18% 48.13% 94.89%
Lotus Mart 17.85% 29.26% 55.87% 61.75% 95.92%
Acclaimed Stores 16.41% 29.88% 51.30% 58.44% 95.86%
Coolblue 12.38% 28.40% 44.66% 51.87% 95.09%
Orders And Quantity Metrics
Total Ordered Quantity
2.30M
Delivered Quantity
2.22M
Total Orders
5417
Undelivered Quantity
Metrics For Customers And Products
The Average Delay was 10 Hours for 2.2K Delayed Orders
Undelivered Quantity by Product
Undelivered Quantity 78K For 3K Not Full Orders
Metrics Performance Over Time
OTIF
OT
IF
LOFR
VOFR
Volume Fill Rate %
Product
LOFR %
VOFR %
AM Butter 100 68.71% 96.80%
AM Milk 500 68.62% 96.85%
AM Biscuits 750 68.47% 96.72%
AM Ghee 150 68.15% 96.92%
AM Ghee 100 67.80% 96.72%
AM Biscuits 500 67.59% 96.64%
AM Tea 250 67.16% 96.53%
AM Curd 50 66.91% 96.72%
AM Butter 500 66.73% 96.75%
AM Ghee 250 66.36% 96.46%
AM Milk 250 66.31% 96.60%
AM Tea 500 65.67% 96.38%
AM Butter 250 65.06% 96.41%
AM Tea 100 64.77% 96.58%
AM Curd 250 64.60% 96.39%
AM Curd 100 64.37% 96.55%
AM Milk 100 64.14% 96.42%
AM Biscuits 250 62.04% 96.17%
Created by Anish Chougule

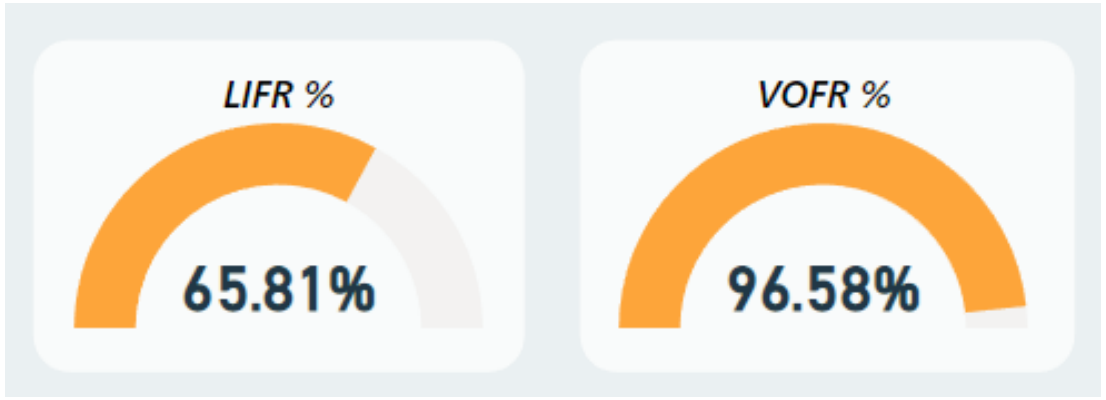
VISUAL

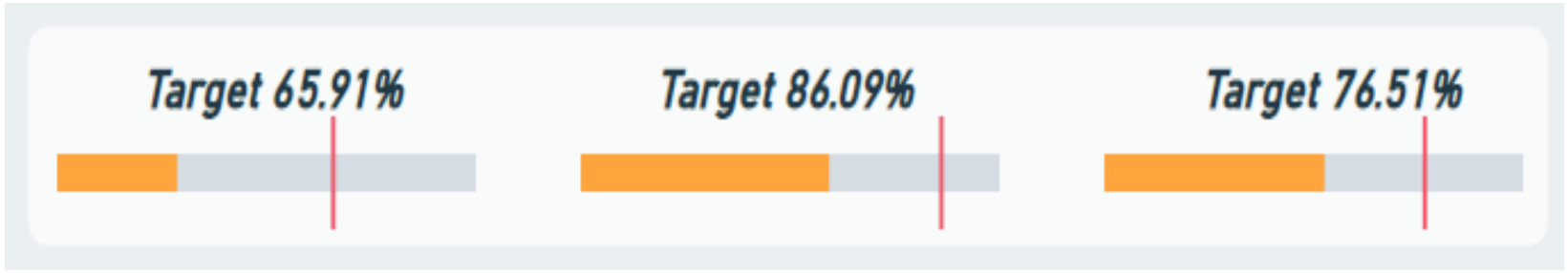

MoM
DOD
March
April
May
June
July
August
All

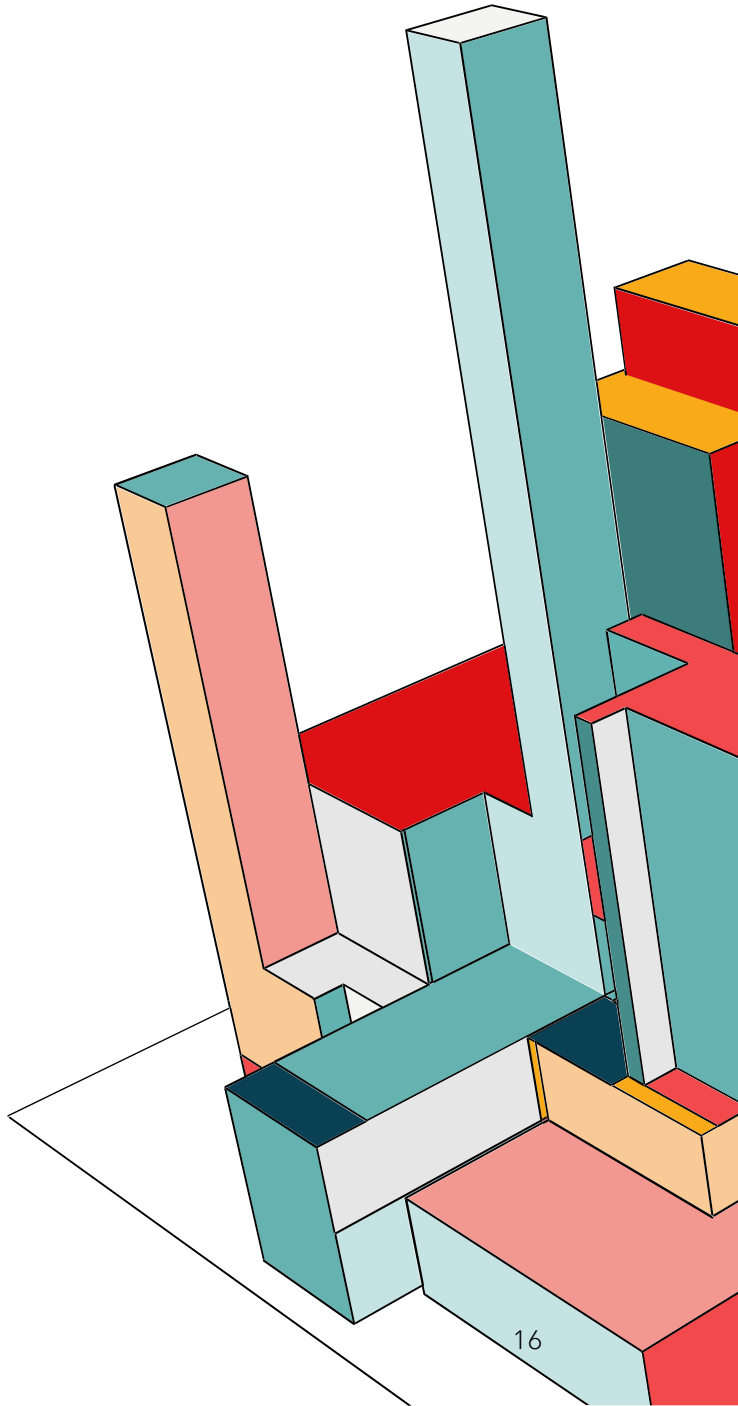

On Time In Full %
28.67%
-0.201% Vs. PM
On Time %
59.32%
-0.252% Vs. PM
In Full %
52.56%
5.685% Vs. PM



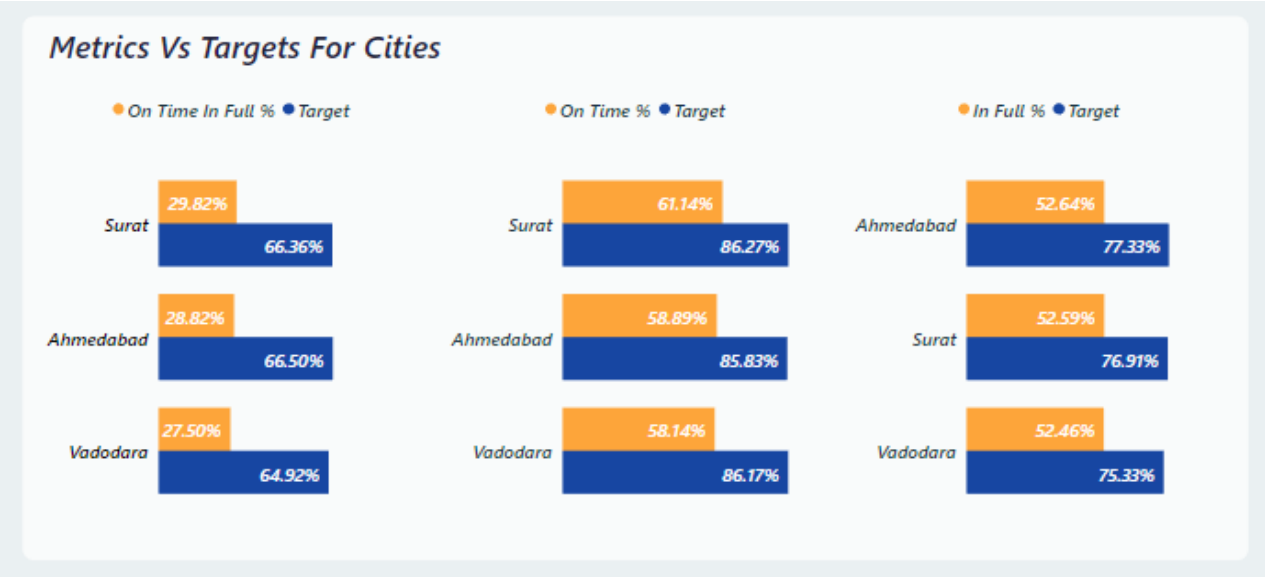
VISUAL





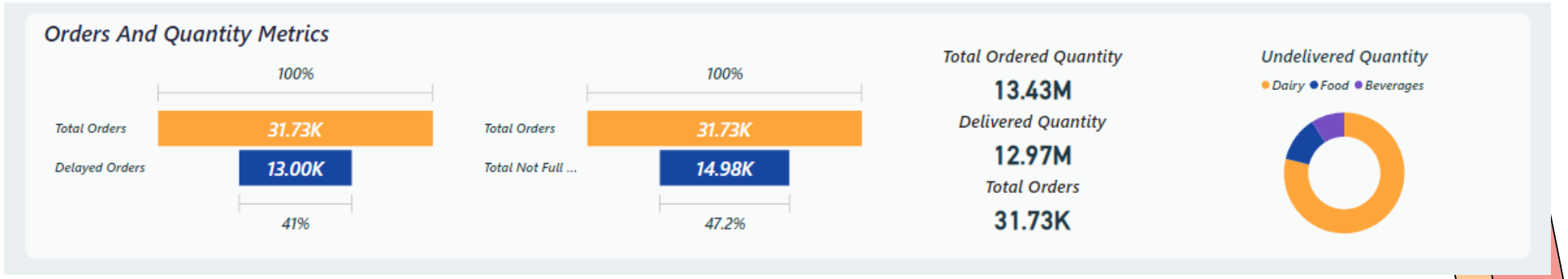


VISUAL



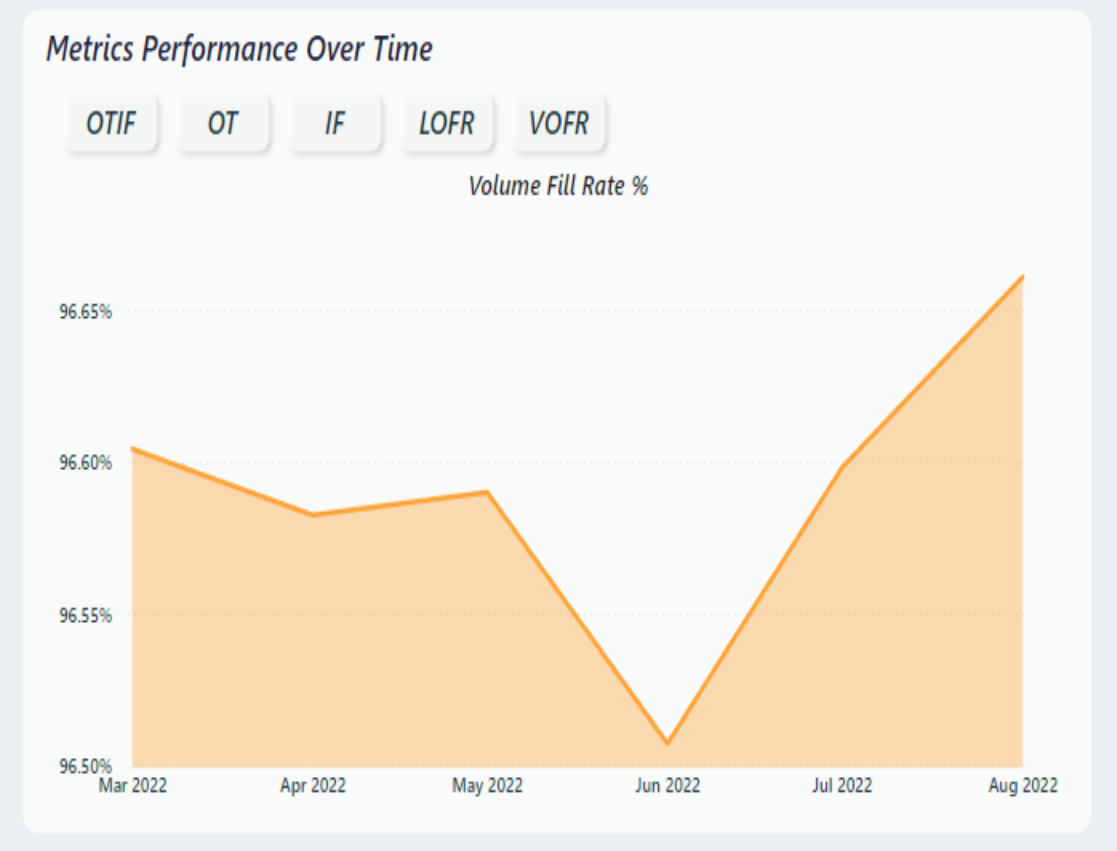
Customer	OTIF %	OT %	IF %	LIFR %	VOFR %
Rel Fresh	33.59%	74.81%	53.44%	71.38%	97.20%
Chiptec Stores	39.53%	74.31%	57.71%	75.34%	97.80%
Vijay Stores	29.52%	74.05%	45.71%	59.22%	95.89%
Elite Mart	22.68%	73.98%	36.06%	51.70%	95.06%
Propel Mart	39.56%	72.48%	58.97%	74.63%	97.67%
Viveks Stores	41.70%	72.32%	60.89%	74.66%	97.53%
Atlas Stores	41.64%	71.53%	62.28%	77.24%	97.71%
Info Stores	28.00%	71.27%	44.36%	54.08%	95.11%
Sorefoz Mart	23.36%	71.17%	37.59%	54.97%	95.68%
Expert Mart	37.05%	70.86%	57.91%	73.44%	97.19%
Expression Stores	36.96%	68.84%	60.87%	76.06%	97.91%
Logic Stores	39.07%	68.46%	62.37%	74.23%	97.26%
Coolblue	12.10%	30.12%	41.73%	50.56%	95.09%
Lotus Mart	17.78%	29.74%	53.68%	60.03%	95.86%
Acclaimed Stores	15.33%	28.45%	55.37%	60.64%	95.86%

VISUAL

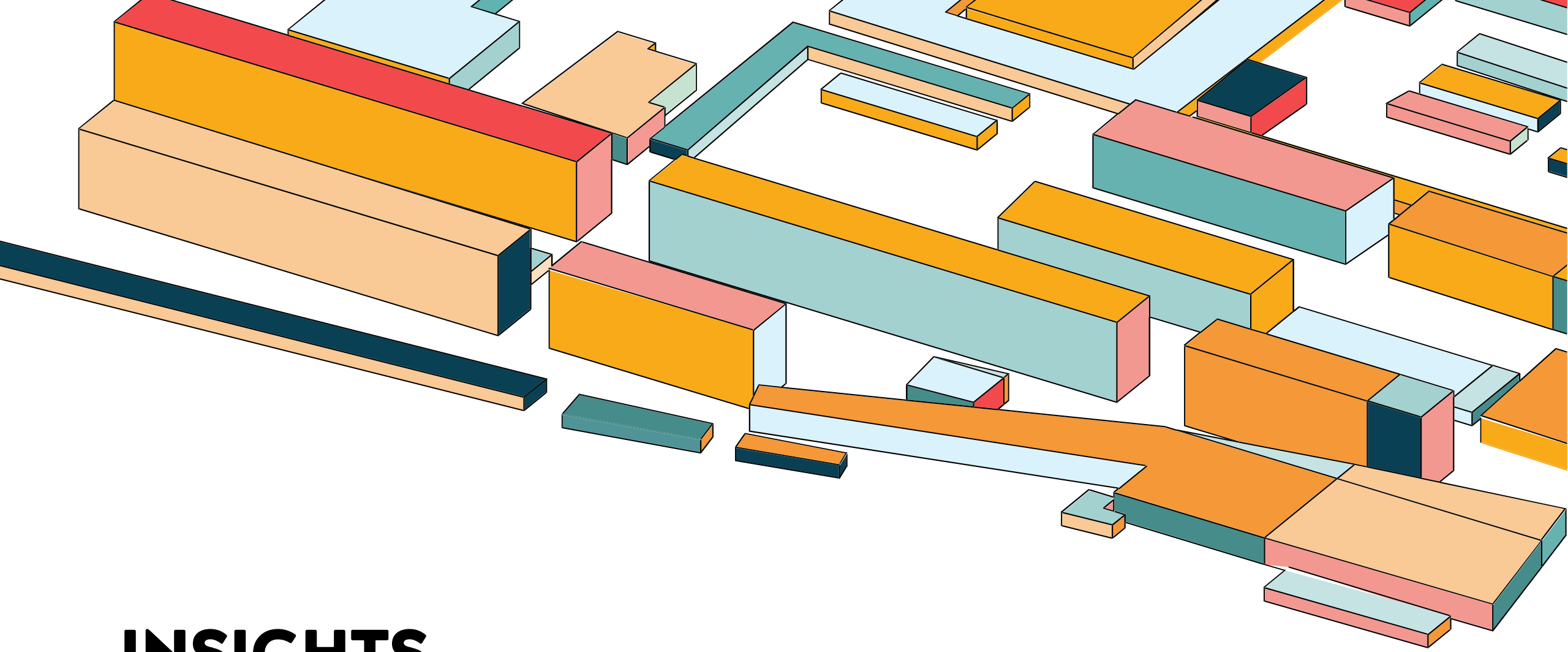

Orders And Quantity Metrics
100%
Total Orders
31.73K
Delayed Orders
13.00K
41%
100%
Total Orders
31.73K
Total Not Full ...
14.98K
47.2%
Total Ordered Quantity
13.43M
Delivered Quantity
12.97M
Total Orders
31.73K
Undelivered Quantity
Dairy
Food
Beverages


Metrics For Customers And Products
Delayed Orders
Total Orders
Avg. Delay
The Average Delay was 10 Hours
for 13.0K Delayed Orders
4K
3K
2K
1K
0K
30
20
10
0
Lotus Mart
Acclaimed Stores
Coolblue
Rel Fresh
Vijay Stores
Propel Mart
Expression Stores
Logic Stores
Info Stores
Viveks Stores
Chiptec Stores
Atlas Stores
Expert Mart
Sorefox Mart
Elite Mart
Undelivered Quantity by Product
Undelivered Quantity 458K For
15K Not Full Orders
40K
30K
20K
10K
0K
AM Milk 100
AM Milk 250
AM Milk 500
AM Curd 50
AM Curd 100
AM Curd 250
AM Butter 500
AM Butter 250
AM Butter 100
AM Bisc... 500
AM Bisc... 250
AM Bisc... 750
AM Tea 500
AM Tea 250
AM Tea 100
AM Ghee 250
AM Ghee 150
AM Ghee 100

VISUAL



Product	LOFR %	VOFR %
AM Biscuits 750	68.05%	96.85%
AM Milk 500	67.51%	96.71%
AM Curd 250	67.05%	96.72%
AM Curd 100	66.73%	96.62%
AM Ghee 150	66.72%	96.69%
AM Butter 100	66.66%	96.59%
AM Tea 500	66.14%	96.52%
AM Biscuits 500	66.10%	96.49%
AM Milk 250	65.91%	96.61%
AM Ghee 100	65.75%	96.59%
AM Curd 50	65.55%	96.62%
AM Milk 100	65.55%	96.54%
AM Tea 100	65.32%	96.59%
AM Ghee 250	65.25%	96.53%
AM Butter 500	65.19%	96.46%
AM Tea 250	65.16%	96.52%
AM Biscuits 250	65.16%	96.58%
AM Butter 250	63.52%	96.36%



INSIGHTS

• Surat has a lower In full% than Ahmedabad but has a 30% OTIF rate. Out of 9.7k orders, 3.7k are delayed orders and 4.6k were incomplete orders. Acclaimed stores, info stores, and Lotus Mart were the customers who performed very low on key metrics in Surat. OTIF levels of 9% and 6% for info stores and acclaimed stores need critical attention.

• Ahmedabad accounted for 11k orders and has a 29% OTIF with a greater In Full rate than other cities. In terms of critical metrics, Lotus Mart, Sorefoz Mart, Acclaimed Stores, and Coolblue were the customers for performed very low in Ahmedabad. OTIF levels of 10% and 7% for Lotus Mart and Sorefoz Mart need critical attention.

• Vadodara has 27% OTIF deliveries and performs worse than other cities. Coolblue, Elite Mart, Vijay Stores, Lotus Mart, and Acclaimed Stores were the customers who had very low levels for important metrics. OTIF levels of 10%, 9%, and 7%, for Coolblue, Elite Mart, and Vijay Stores need critical attention.

- The key customers, who account for 50% of the orders, are Lotus Mart, Acclaimed Stores, Coolblue, Vijay Stores, Propeller Mart, and Rel Fresh. The customers most likely to not renew their contracts are Lotus Mart, Acclaimed Stores, and Coolblue. Vijay Stores, Propeller Mart, and Rel Fresh are the next most likely to do so. Lotus Mart, Acclaimed Stores, and Coolblue have the lowest Otif%. The average delay for these customers was 30 hours for 6.8k delayed orders out of 9.5k total orders, and 4.6k orders were incomplete out of 9.5k total orders.
- Key performance indicators like On Time In Full, In Full, and On Time don't meet the goals over time.

THANK YOU