

ATLIQ MART

SUPPLY CHAIN DATA ANALYSIS

PERSONAL PROJECT

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BUSINESS PROBLEM



Problem Statement

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.

Goals

1. Identify Problematic Customers and Products
2. Analyze Factors Contributing to Delivery Service Issues
3. Provide Recommendations

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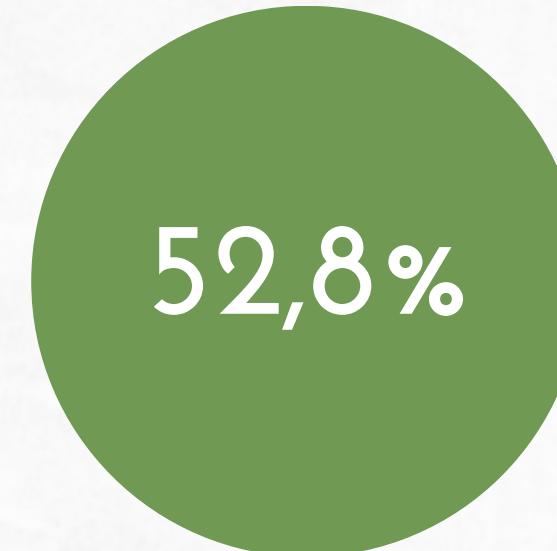
KEY PERFORMANCE INDICATOR



59,0%

On Time
Delivery (OT %)

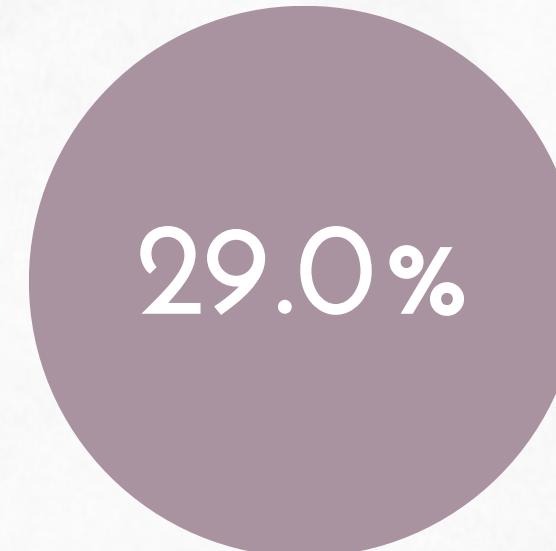
Number of orders
delivered On Time / Total
Number of Orders



52,8%

In Full Delivery
(IF %)

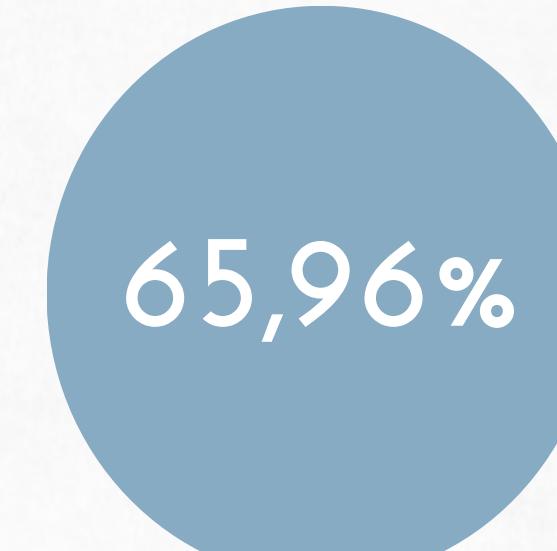
Number of orders
delivered in Full quantity
/ Total Number of Orders



29.0%

On Time In Full
Delivery (OTIF %)

Number of orders
delivered both IN Full &
On Time / Total Number
of Orders



65,96%

Line Fill Rate
(LIFR %)

Number of order lines
shipped In Full Quantity /
Total Order Lines

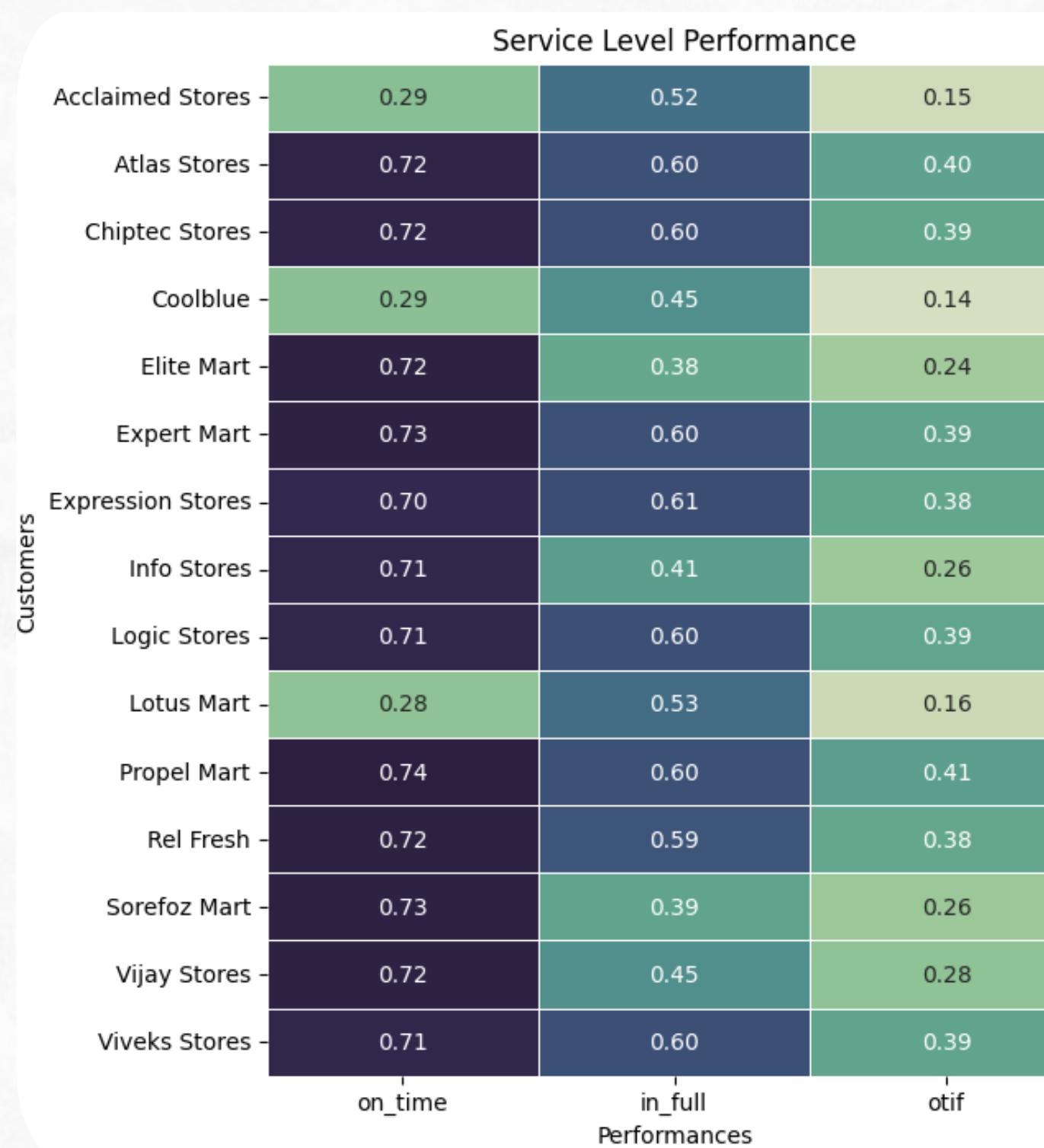


96,59%

Volume Fill Rate
(VOFR %)

Total Quantity shipped /
Total Quantity Ordered

SERVICE LEVEL PERFORMANCE

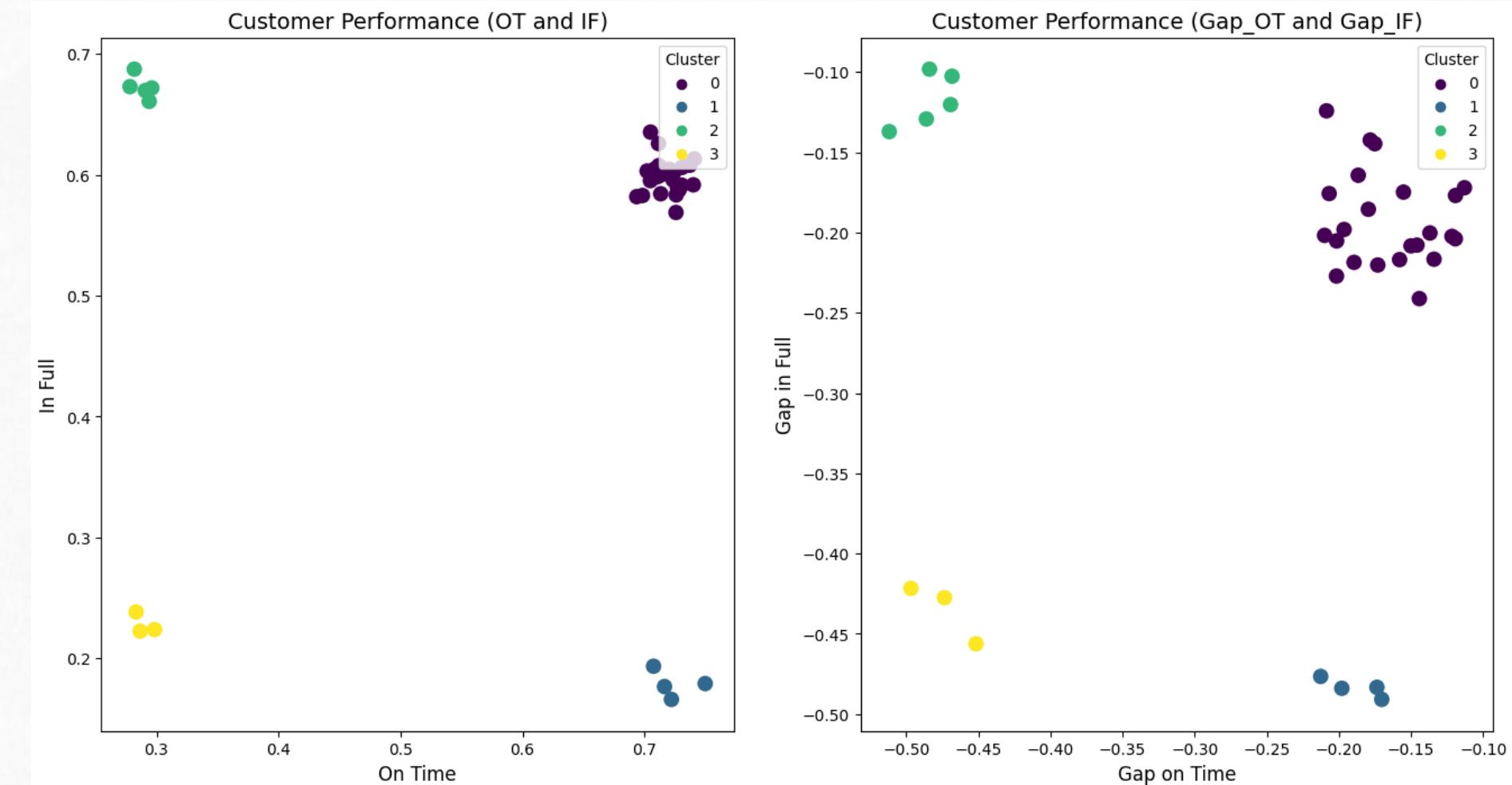


Lowest Performance

- Among the listed customer names, "Coolblue" appears to have the lowest performance across all three metrics:
 - On-time delivery: 0.29
 - In-full delivery: 0.54
 - OTIF: 0.14
- This indicates that Coolblue has the lowest rates of on-time deliveries, deliveries in full quantity, and orders delivered both on time and in full.

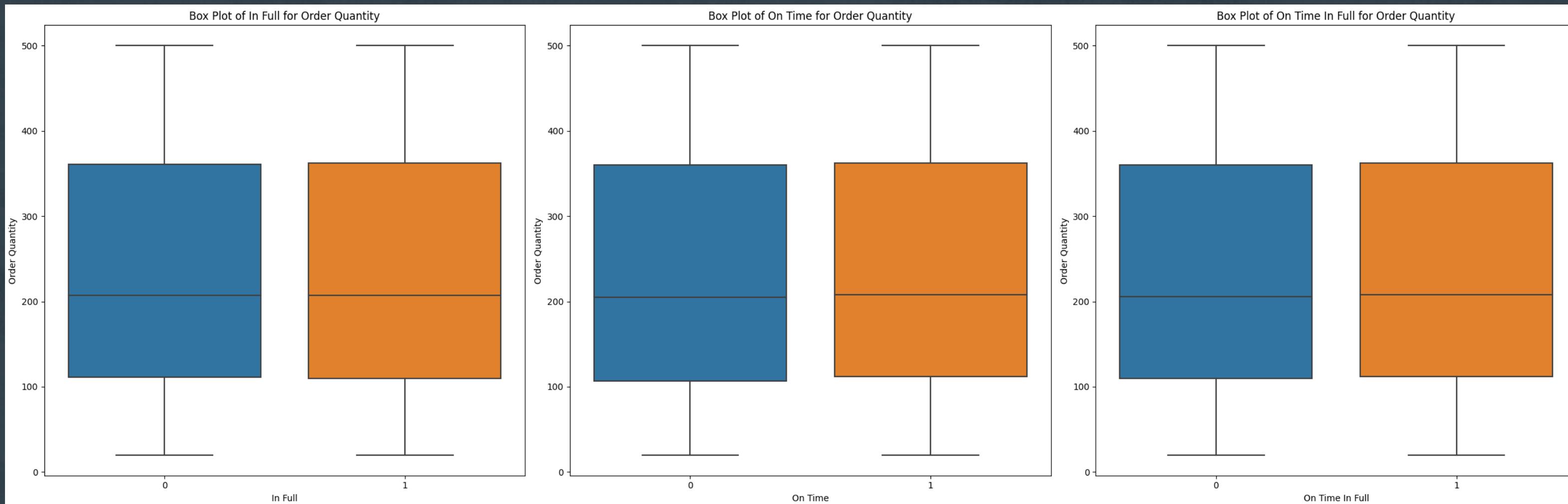
CLUSTER CUSTOMER PERFORMANCE

- Customers in Cluster 3, such as:
 - Acclaimed Stores in Surat City
 - Coolblue in Vadodata City
 - Lotus Mart in Ahmedabad City
 exhibit the **lowest performance in delivery service metrics.**
- On-time delivery percentages for these customers range from approximately 28% to 30%, while in-full delivery percentages range from around 22% to 24%.
- There is a noticeable gap between the target performance percentages and the actual delivery performance metrics, with negative gaps indicating that the actual performance falls below the set targets.



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IS THERE A DIFFERENCE IN ORDER QUANTITY DISTRIBUTION BY PERFORMANCE METRIC?

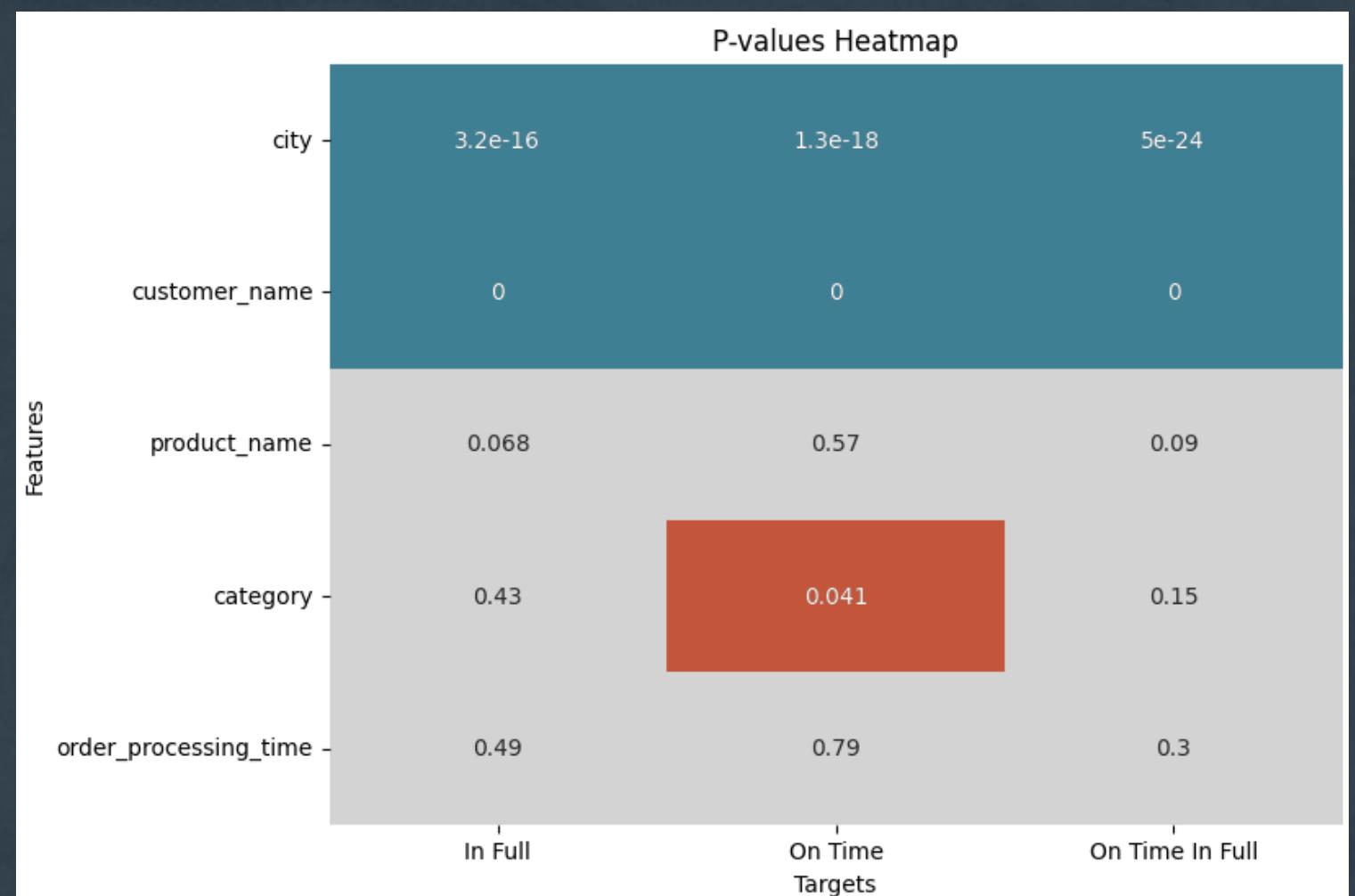


The boxplot analysis compared order quantity distribution based on delivery performance (OT, IF, OTIF). Results showed no significant difference in median, Q3, Q1, min, and max between orders with full fulfillment versus those without, indicating consistent order quantity distribution regardless of delivery performance.

ARE THERE ANY VARIABLES ASSOCIATED WITH PERFORMANCE?

The p-values obtained from the chi-square test for various features indicate the significance of their association with delivery performance metrics (In Full, On Time, On Time In Full):

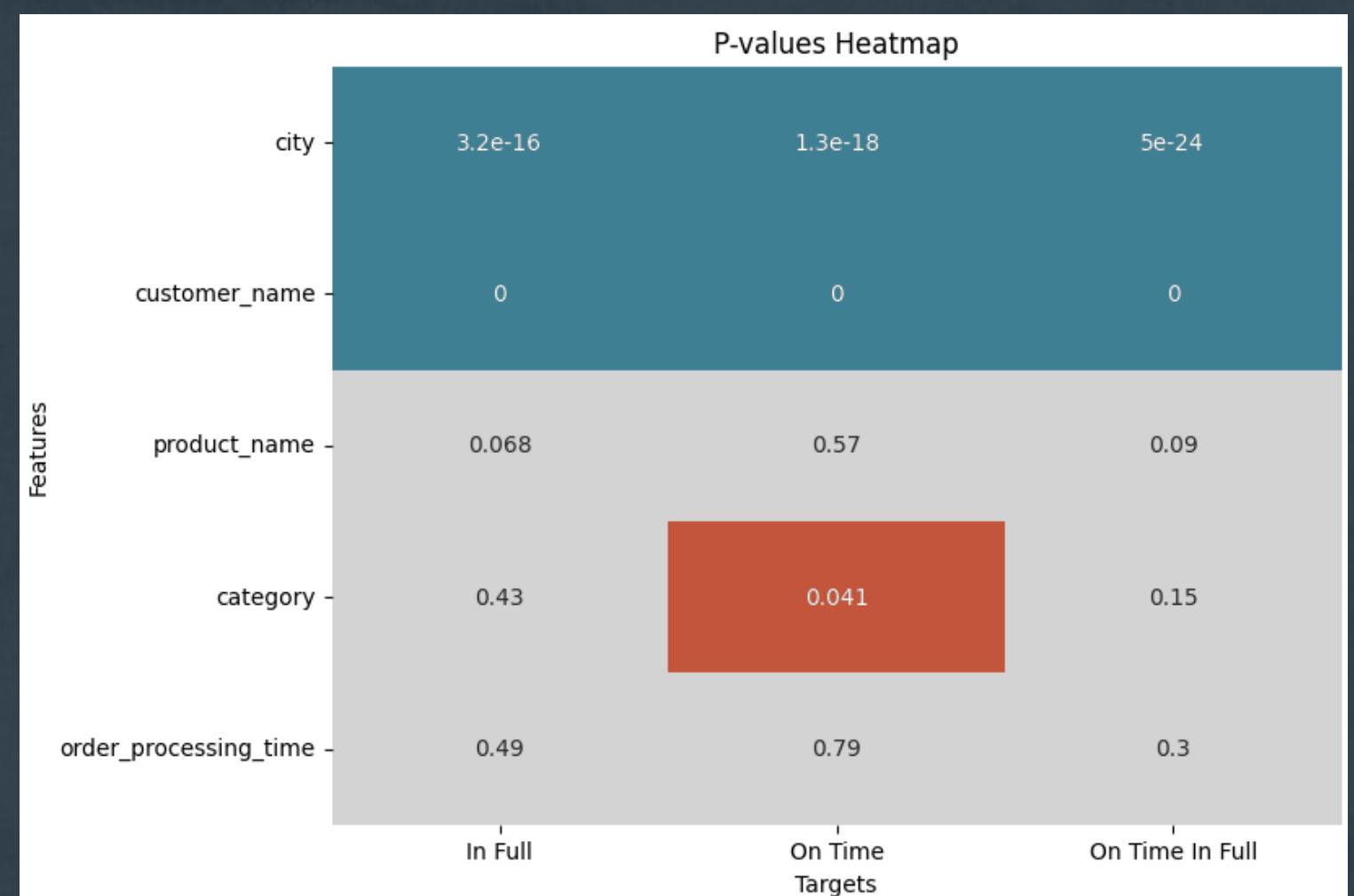
- City and Customer Name:** Both city and customer name show extremely low p-values (close to 0), suggesting a **highly significant association with all delivery performance variable**.
- Product Name:** While the association of product name with delivery performance varies across metrics, it shows moderate significance for some metrics, particularly In Full and On Time In Full.
- Category:** The product category also demonstrates a significant association with **On Time Performance**.



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CONCLUSIONS

PERFORMANCE INSIGHTS

- Coolblue exhibits the lowest performance across all metrics, highlighting challenges in meeting delivery targets.
- Customers in Cluster 3, including Acclaimed Stores and Lotus Mart, also show consistently poor performance.

ORDER QUANTITY DISTRIBUTION

- No significant difference in order quantity distribution was observed between orders with full and incomplete fulfillment.

FACTORS IMPACTING PERFORMANCE

- City and customer name are highly significant factors associated with delivery performance.
- Product name and category also demonstrate moderate significance, particularly in in-full and on-time performance.

RECOMMENDATION

To address the identified challenges and improve delivery performance, Atliq Mart should implement targeted strategies tailored to specific customer segments and geographical areas. By focusing on underperforming customers like Coolblue and those in Cluster 3.

THANK YOU

FOR YOUR ATTENTION