Hypothesis Testing Framework

Hypothesis Statement

"Does Faster shipping (24h/48h/72h) increase customer satisfaction, revenue, or loyalty?"

Test Design

- Variants: 24h (n=667), 48h (n=667), 72h (n=667)
- Duration: Jun, 2024 - May, 2025
- Metrics: 'order_value', 'satisfaction', 'delivery_rating' , 'cancellation', 'on_time_delivery', 'repurchase_in_30_days'

Statistical Thresholds

α = 0.05 | Power = 80% | Min. Detectable Effect = 10%

Aggreated values in shipping variants

shipping_variant	AvgOrderValue	AvgSatisfaction	AvgDeliveryRating	Cancella
24h	$173.5608	3.82	4.01	
48h	$177.4191	4.32	4.66	
72h	$174.3101	4.63	5.00	

Test results

metric	test_used	p_value	significant
delivery_rating	Kruskal-Wallis	0.00	True
on_time_delivery	Chi-squared Test	0.00	True
satisfaction	Kruskal-Wallis	0.00	True

Total

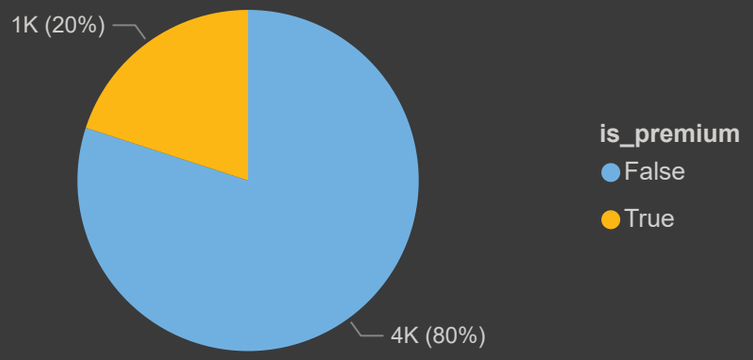
User Overview

5000
number of users

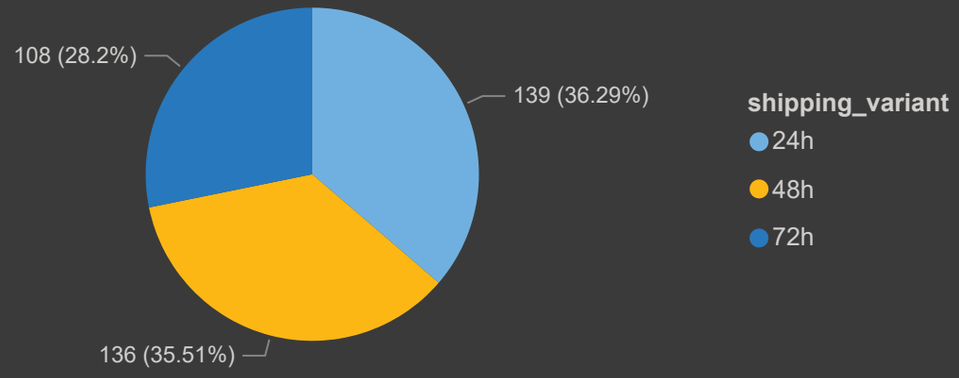
377.13
Avg tenure days

7
Total stores

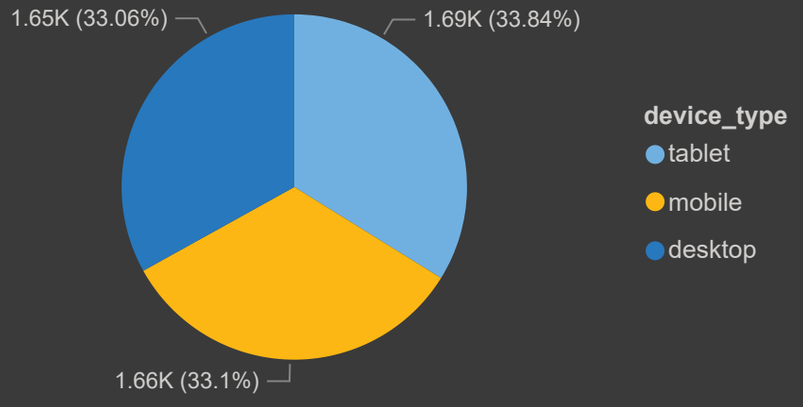
Premium vs. Regular users



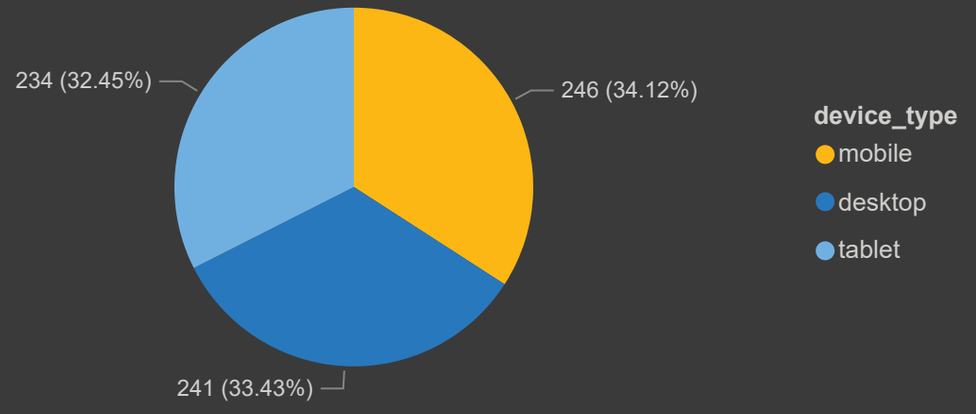
Distribution of shipping variants by premium users



Users by Device Type



Distribution of device type by premium users



Shipping Landscape

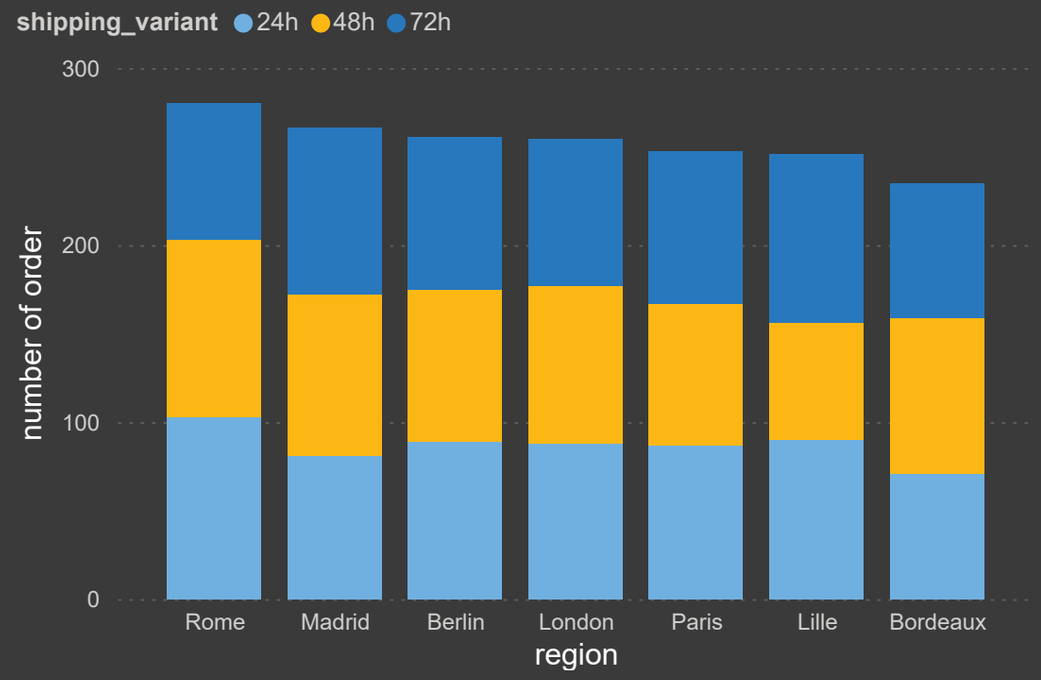
2024/6/19 2025/5/20

shipping_variant
- 24h
- 48h
- 72h

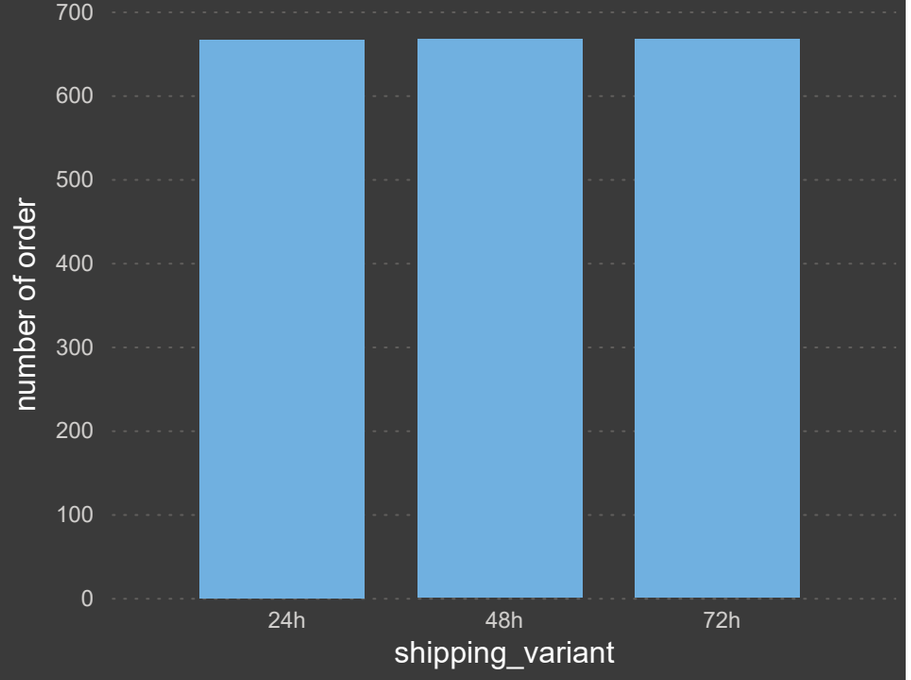
12.55
Average of delay_hours

66.89
On-Time Devlivery Rate (%)

Shipping method by region



Distribution of orders by shipping variant



shipping_variant	Average of OnTimeDeliveryRate	Average of CancellationRate	Average of delay_hours
24h	35.30	8.56	12.55
48h	66.00	10.04	12.55
72h	100.00	10.49	12.55

Repurchase & Satisfaction Overview

2024/6/19 2025/5/20

3.60
Repurchase Rate (%)

4.26
Avg Satisfaction

4.57
Avg Delivery Rating