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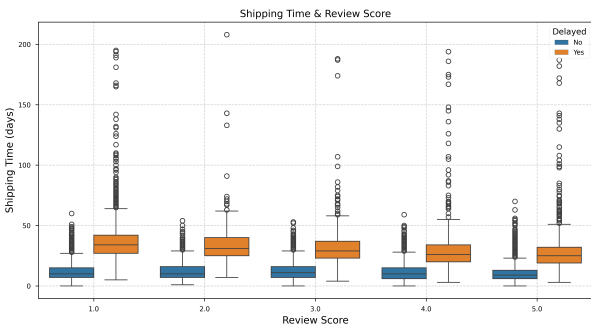
EXECUTIVE SUMMARY: OLIST E-COMMERCE ANALYSIS

An end-to-end analysis of 100,000 Olist orders revealed critical challenges in logistics and customer retention. This report summarizes three data-driven findings and proposes actionable recommendations to improve customer satisfaction and foster repeat business.

Finding #1: The #1 Driver of Bad Reviews Isn't Speed, It's the Broken Promise.

Statistical analysis proved that customers forgive a long but predictable wait; they do not forgive an unexpected delay. Orders arriving after the estimated date are exponentially more likely to receive 1-star reviews.

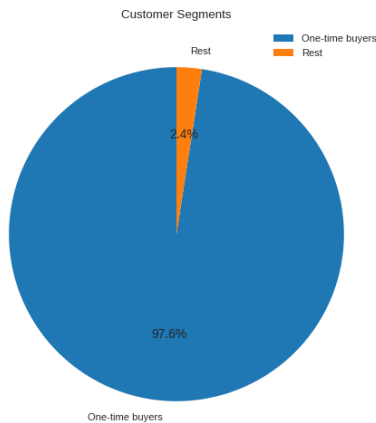
The core issue is delivery estimate **accuracy**, not **speed**.



Finding #2: The 'Leaky Bucket' — 97.5% of Customers Buy Only Once.

RFM and K-Means segmentation revealed the business model is almost entirely dependent on new customer acquisition. 97.5% of clients never make a second purchase.

The strategic challenge is not increasing average ticket, but **fostering the second purchase**.



Finding #3: We Can Proactively Identify 68% of All Bad Reviews.

A Random Forest model was successfully built to predict which orders will receive a 1 or 2-star review. This model achieves **68% Recall**.

This allows the business to move from a *reactive* ("Sorry") to a *proactive* ("We see your order is delayed, here's a voucher") customer service model.

Metric	Logistic Regression	Random Forest	Improvement
ROC AUC	0.69	0.78	Significant
Recall	0.50 (50%)	0.68 (68%)	Excellent
Precision	0.28 (28%)	0.32 (32%)	Slight
F1-Score	0.36	0.44	Good

ACTIONABLE RECOMMENDATIONS

- **Fix the Promise:** Overhaul the delivery estimation algorithm to prioritize **accuracy** over speed.
- **Drive the 2nd Purchase:** Implement RFM-based campaigns targeting the "Need Attention" segment (recent, single-purchase clients).
- **Operationalize the Model:** Integrate the **68%-Recall** model into the CS workflow to proactively flag at-risk orders for intervention.
- **Adjust Planning:** Shift from unreliable daily sales forecasts (proven by our analysis) to a more stable **Monthly Forecast** for inventory and financial planning.