

Device Insurance Attach % Analysis & January Forecast

Retail Chain: Jumbo & Company

Data Science Internship Assessment – Zopper

1. Executive Summary

This report analyses device insurance attach percentage across 163 stores of Jumbo & Company to understand performance drivers, identify improvement opportunities, and forecast January attach percentage at the store level. The analysis reveals a clear month-on-month improvement in attach percentage from August to December, significant variability across stores, and distinct performance segments. Actionable recommendations are proposed based on store categorisation. January attach percentage is forecasted using a trend-based approach and supported by observed historical patterns.

2. Business Context & Objective

Attach percentage represents the proportion of device buyers who also purchase an insurance plan such as screen protection, extended warranty, or accidental damage cover. For Zopper, attach percentage is a key business KPI, as higher attach directly translates to increased insurance revenue without requiring higher device sales volume.

Objectives of the analysis:

- Analyse attach % behaviour across months, branches, and stores
 - Identify top- and bottom-performing stores
 - Segment stores based on performance and consistency
 - Generate actionable business recommendations
 - Predict January attach % at store level
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3. Data Understanding & Exploratory Analysis

Dataset Overview

- **Rows:** 163 stores
- **Columns:** Branch, Store Name, Aug–Dec attach %, engineered metrics
- **Time Period:** August to December
- **Missing Values:** None
- **Zero Values:** Retained as valid business outcomes (no insurance sold)

Descriptive Statistics (Month-wise)

- Mean attach % increases steadily from **12.9% (Aug)** to **21.7% (Dec)**
- Median follows a similar upward pattern
- High standard deviation across months indicates large inter-store variation

Key Insight:

The data is clean, reliable, and already shows early evidence of improvement over time.

4. Feature Engineering & Derived Metrics

To support deeper analysis, the following metrics were created:

4.1 Average Attach Percentage (avg_attach)

- Mean attach % across Aug–Dec per store
- Represents overall store performance

4.2 Store Consistency (std)

- Standard deviation of attach % across months
- Lower std indicates more stable performance

These metrics form the foundation for segmentation and forecasting.

5. Performance Analysis Across Dimensions

5.1 Month-wise Performance

- Attach % shows a clear upward trend from August to December
- Improvement is gradual and sustained, not driven by a single outlier month

5.2 Store-wise Performance

- Top-performing stores achieve average attach % above 35–60%
- Several stores show near-zero attach across all months
- Performance gap between top and bottom stores is significant

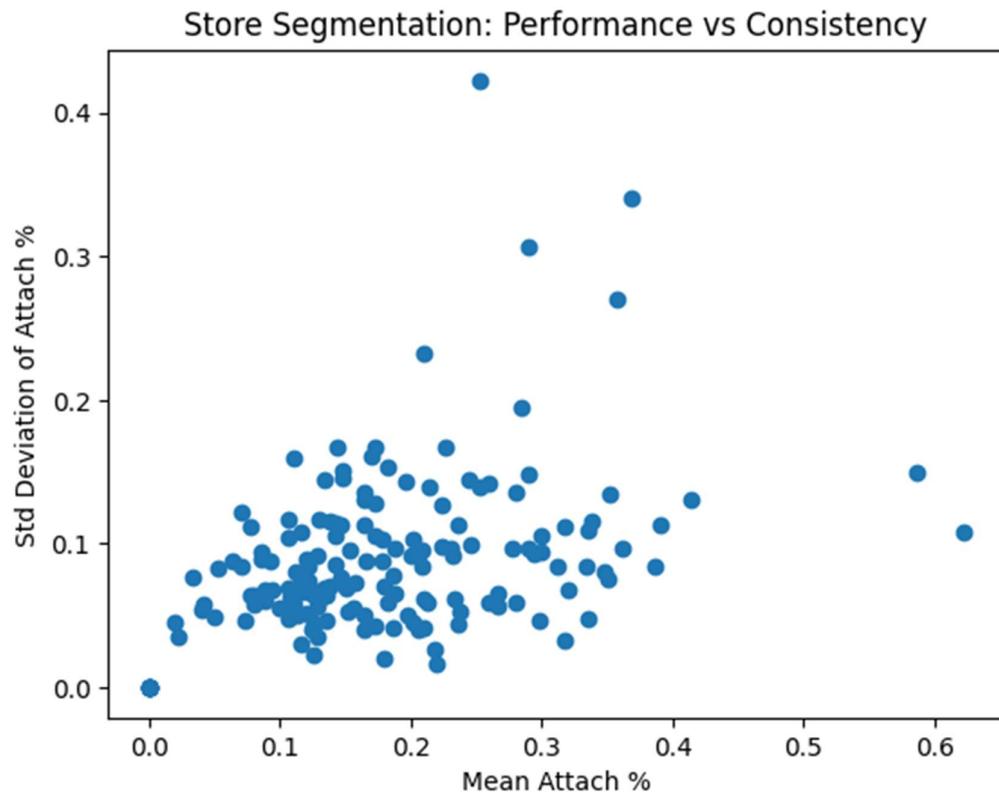
Key Insight:

Store-level execution differences dominate overall performance more than seasonality.

6. Store Segmentation & Categorisation

Stores were segmented using two dimensions:

- **Performance:** Based on quartiles of avg_attach (Low / Mid / High)
- **Consistency:** Based on median standard deviation (Consistent / Inconsistent)



Resulting Segments

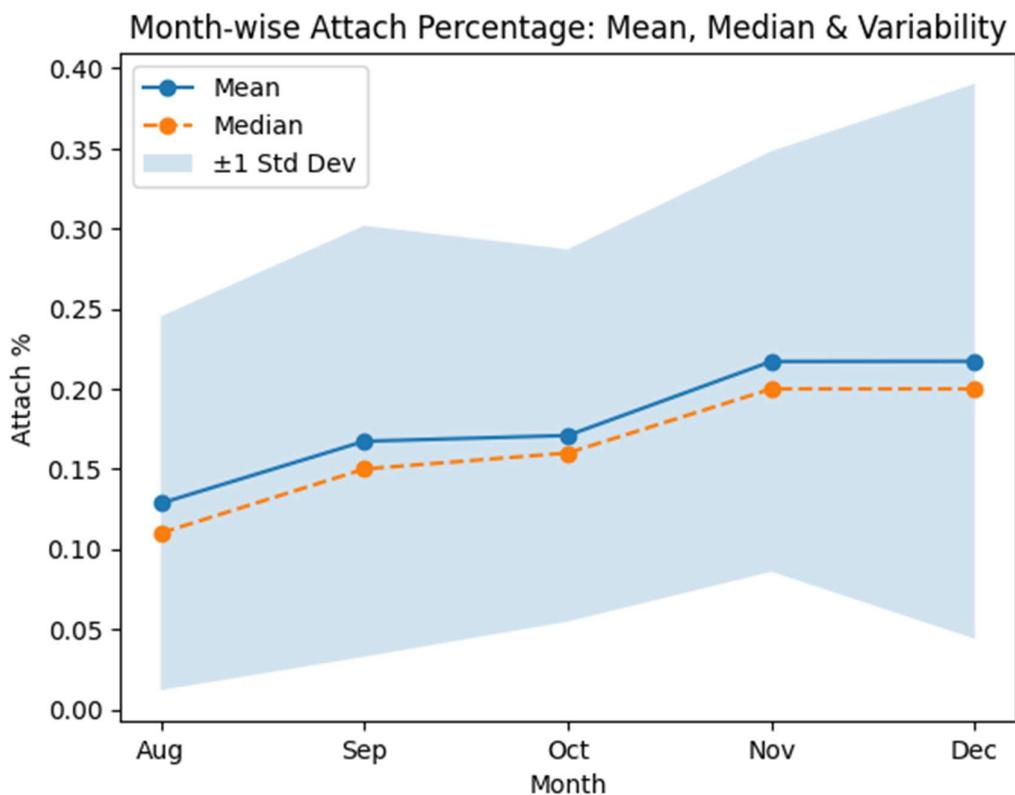
- **High + Consistent:** Best-practice stores (e.g., Greater Noida, Hauz Khas)
- **High + Inconsistent:** Strong potential but unstable execution
- **Mid + Consistent:** Stable but moderate performers
- **Low + Inconsistent:** Immediate intervention required

This segmentation enables targeted, efficient business actions instead of generic strategies.

7. Trend & Temporal Pattern Analysis

Chronologically ordered month-wise analysis confirms:

- Attach % increases steadily from August through December
- Inter-store variability remains high even as averages improve



Interpretation:

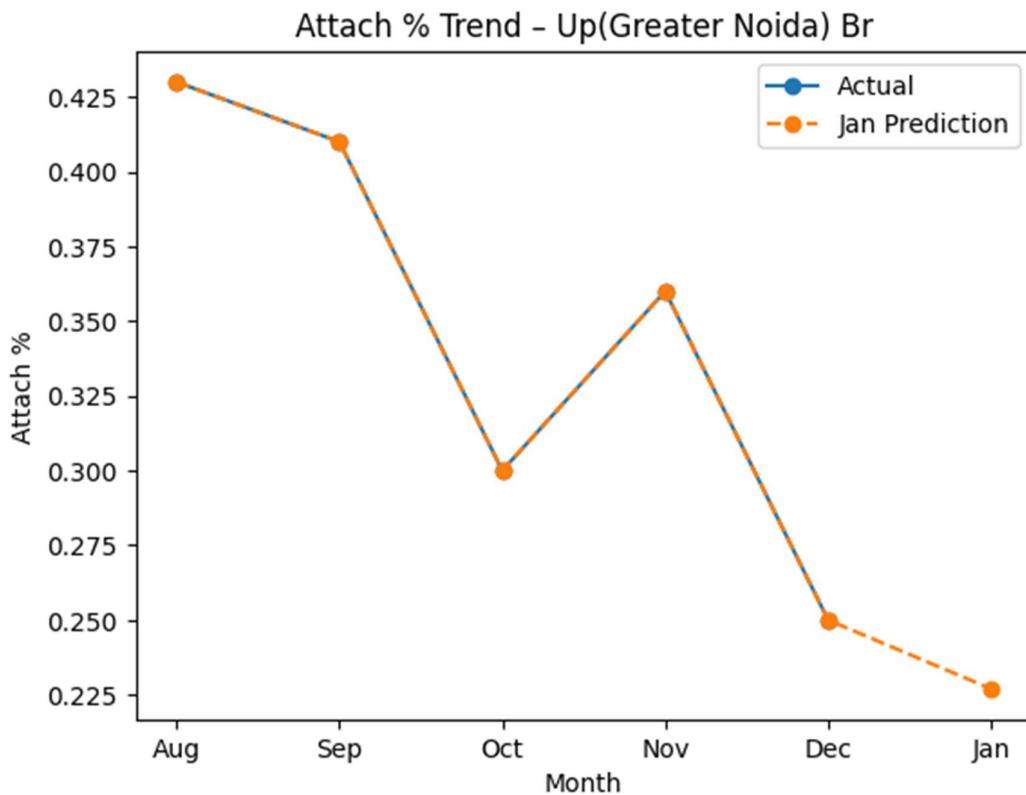
Overall growth is driven by a subset of stores, indicating scope to uplift underperformers by replicating best practices.

8. January Attach % Forecast

8.1 Forecasting Method

A store-level linear trend model was used:

- Months encoded numerically (Aug = 1 ... Dec = 5)
- Linear trend fitted per store
- January predicted as continuation of store-specific trend



Output

- Forecast column: `Jan_Predicted_Attach`
- Predictions reflect store-specific historical trajectories

Observations

- High-performing stores show continued strong momentum
- Some low-performing stores show flat or near-zero predictions
- A small number of stores show negative extrapolation, indicating no historical traction rather than model failure

Interpretation:

Negative or near-zero predictions highlight structurally weak stores rather than forecasting error.

9. Key Insights & Business Recommendations

Key Insights

- Attach % is improving month-on-month
- Store-level variability is the primary driver of performance differences
- Clear top and bottom segments exist across the network

Recommendations

1. Replicate selling practices from High + Consistent stores
 2. Prioritize Low + Inconsistent stores for focused training
 3. Introduce branch-level performance accountability
 4. Extend festive-season strategies to non-festive months
 5. Set realistic benchmarks using median-performing stores
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10. Assumptions & Limitations

Assumptions

- No major changes in store operations or incentives in January
- Historical attach patterns remain broadly stable

Limitations

- Only five months of historical data available
- No customer-level or device-level features
- External factors (promotions, staffing) not explicitly modelled

Despite these limitations, the approach is appropriate due to its interpretability and robustness with limited data.

11. Conclusion

This analysis demonstrates a consistent improvement in device insurance attach percentage from August to December, driven largely by store-level execution differences. Through performance analysis and segmentation, actionable opportunities for targeted intervention are identified. A store-level trend-based forecast provides a reasonable estimate of January attach percentage to support planning and decision-making. Overall, the findings offer meaningful insights to improve attach performance and drive sustainable insurance revenue growth for Zopper.

