Insights

Business Insights for Decision Making

1. Revenue Strategy

Since transaction amounts follow a **Log-Normal distribution**:

- Few high-value customers contribute large revenue.
- Focus on **premium customer retention strategies**.
- Use targeted marketing for high spenders.

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2. Operational Planning

Poisson distribution shows average transactions ≈ 2.85:

- Inventory and staffing can be optimized based on average arrival rate.
- Predict demand spikes using Poisson modeling.

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3. Risk Management

- Heavy tail indicates occasional extremely large transactions.
- Fraud detection systems should monitor unusually high Z-scores.
- Transactions with $|Z| > 3$ can be flagged for review.

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4. Model Selection Insight

- Normal distribution assumption would underestimate extreme purchases.
- Log-Normal modeling provides more realistic probability estimates.
- Better financial forecasting accuracy.

Final Statement

The dataset demonstrates:

- Non-normal, right-skewed behavior in transaction amounts.
- Event-based count structure in transaction frequency.
- Binary outcome modeling for transaction success.

Therefore, applying:

- Log-Normal for amount
- Poisson for counts
- Bernoulli/Binomial for success probability

provides statistically appropriate modeling and better decision-making support.