

# Executive Insight Report

Generated: December 03, 2025

## Executive Summary

```
## KPI Summary - **total_volume**: 237609 - **total_value**: {'user_id': 11038013665, 'app_code': 59188395, 'is_4g': 85851, 'is_click': 10862}
```

## Key Findings

```
## Performance Analysis ### Summary Statistics: - **user_id**: Mean=46454.52682768751, Median=46597.0, Std=26802.726666116265 - **app_code**: Mean=249.09997096069594, Median=213.0, Std=135.21360889979172 - **is_4g**: Mean=0.3613120715124427, Median=0.0, Std=0.48038175412328926 - **is_click**: Mean=0.04571375663379754, Median=0.0, Std=0.2088640531175953 ### Outliers Detected: - **user_id**: 0 outliers detected - **app_code**: 0 outliers detected - **is_4g**: 0 outliers detected - **is_click**: 10862 outliers detected
```

## Recommendations

## Recommendations

1. \*\*Data Quality\*\*: Ensure all missing values are addressed before further analysis
2. \*\*Outlier Management\*\*: Investigate and handle detected outliers appropriately
3. \*\*Performance Optimization\*\*: Focus on top-performing segments
4. \*\*Monitoring\*\*: Implement continuous monitoring of key metrics
5. \*\*Documentation\*\*: Maintain detailed records of all changes and decisions

## Data Quality Report

- Data shape: {'main': {'before': {'shape': (237609, 7), 'missing\_values': 0, 'duplicates': 0, 'dtypes': {'impression\_id': dtype('O'), 'impression\_time': dtype('O'), 'user\_id': dtype('int64'), 'app\_code': dtype('int64'), 'os\_version': dtype('O'), 'is\_4G': dtype('int64'), 'is\_click': dtype('int64')}, 'numeric\_columns': ['user\_id', 'app\_code', 'is\_4G', 'is\_click'], 'categorical\_columns': ['impression\_id', 'impression\_time', 'os\_version'], 'memory\_usage\_mb': 59.08315658569336}, 'after': {'shape': (237609, 7), 'missing\_values': 0, 'duplicates': 0, 'dtypes': {'impression\_id': dtype('O'), 'impression\_time': dtype('O'), 'user\_id': dtype('int64'), 'app\_code': dtype('int64'), 'os\_version': dtype('O'), 'is\_4g': dtype('int64'), 'is\_click': dtype('int64')}, 'numeric\_columns': ['user\_id', 'app\_code', 'is\_4g', 'is\_click'], 'categorical\_columns': ['impression\_id', 'impression\_time', 'os\_version'], 'memory\_usage\_mb': 59.08315658569336}, 'missing\_patterns': {}}, 'items': {'before': {'shape': (132761, 6), 'missing\_values': 0, 'duplicates': 0, 'dtypes': {'item\_id': dtype('int64'), 'item\_price': dtype('int64'), 'category\_1': dtype('int64'), 'category\_2': dtype('int64'), 'category\_3': dtype('int64'), 'product\_type': dtype('int64')}, 'numeric\_columns': ['item\_id', 'item\_price', 'category\_1', 'category\_2', 'category\_3', 'product\_type'], 'categorical\_columns': []}, 'memory\_usage\_mb': 6.077442169189453}, 'after': {'shape': (132761, 6), 'missing\_values': 0, 'duplicates': 0, 'dtypes': {'item\_id': dtype('int64'), 'item\_price': dtype('int64'), 'category\_1': dtype('int64'), 'category\_2': dtype('int64'), 'category\_3': dtype('int64'), 'product\_type': dtype('int64')}, 'numeric\_columns': ['item\_id', 'item\_price', 'category\_1', 'category\_2', 'category\_3', 'product\_type'], 'categorical\_columns': []}, 'memory\_usage\_mb': 6.077442169189453}, 'missing\_patterns': {}}}
- All data processed and validated