

UrbanCart Case Study: Turning Retail Data into Strategic Action



UrbanCart is a mid-sized retail company that offers a broad range of products across various categories, including electronics, clothing, and household goods. The company serves a diverse customer base, as reflected in its detailed customer records, which include demographic and regional information.

UrbanCart's transaction data captures individual purchase events over time, providing insights into buying behavior, product trends, and regional sales patterns. Each transaction is linked to a product category and sub-category, enabling a deeper understanding of what customers buy, how often they return, and how product types perform across markets.

With a growing emphasis on data-driven decision-making, UrbanCart is now leveraging this data to improve customer retention, optimize marketing investments, and strengthen its competitive position in the dynamic retail landscape.

Business Objectives

As a growing retail brand, **UrbanCart** seeks to leverage data for smarter decision-making. This project focuses on solving two high-impact business problems using real-world datasets:

1. Optimize Revenue through Customer and Product Insights

This objective focuses on understanding key drivers of revenue by analyzing customer behavior, demographics, and product performance. The goal is to:

- Identify top revenue-generating customers, age groups, and genders to guide targeted marketing and loyalty programs.
- Distinguish between repeat and one-time customers, including their demographic breakdown, to improve customer retention strategies.
- Analyze product categories and subcategories based on both sales revenue and return patterns, ensuring better inventory planning and promotional focus.

2. Improve Operational Efficiency through Regional and Store-Level Performance Analysis

This objective aims to uncover regional and store-related trends to support smarter decision-making. The goal is to:

- Evaluate sales performance by city to identify high-growth regions and inform regional expansion or support plans.
- Compare store types based on revenue and return rates to assess channel efficiency and customer satisfaction.
- Measure overall and segment-wise return rates (e.g., by gender and product category) to reduce revenue loss and enhance service quality.

Data Preparation and Processing

To ensure clean and meaningful analysis, the data was carefully prepared and validated. Key steps included:

- **Date Standardization:**
Inconsistent date formats in tran_date and DOB were cleaned and converted to YYYY-MM-DD. Unrealistic future dates were flagged as invalid.
- **Duplicate Removal:**
13 exact duplicate rows were found in the Transactions table and removed to prevent double-counting.
- **Return Classification:**
Transactions with negative Qty and total_amt were labeled as Return using a new transaction_type column.
- **Rate Correction:**
All negative Rate values were standardized to positive values for consistency, since unit prices should remain positive even for returns.
- **Business Logic Check:**
It was verified that $\text{total_amt} = \text{Qty} \times \text{Rate} + \text{Tax}$, confirming data accuracy.
- **Preserved Negative Values:**
Negative total_amt values were kept reflecting real return activity. An optional column with absolute amounts was also created for summary calculations.

These steps ensured that the dataset was ready for analysis while keeping real business behavior intact.

Database Normalization and Schema Design (MYSQL)

- Assigned **primary keys** to uniquely identify each record in main tables.
- Ensured **foreign keys** correctly reference related data across tables.
- Matched ID formats (e.g., cust_id, prod_subcat_code) between tables for consistency.
- Fixed mismatched or missing IDs to avoid join and integrity errors.
- Enabled **referential integrity** for accurate and reliable data analysis.

Data Analysis

This analysis was guided directly by UrbanCart's business priorities. Instead of exploring general trends, the focus remained on identifying insights critical to performance: customer retention, product category revenue contribution, and store-type effectiveness. The goal was to provide data-driven recommendations that support strategic decision-making. **UrbanCart Transactions & Returns – Key Insights.**

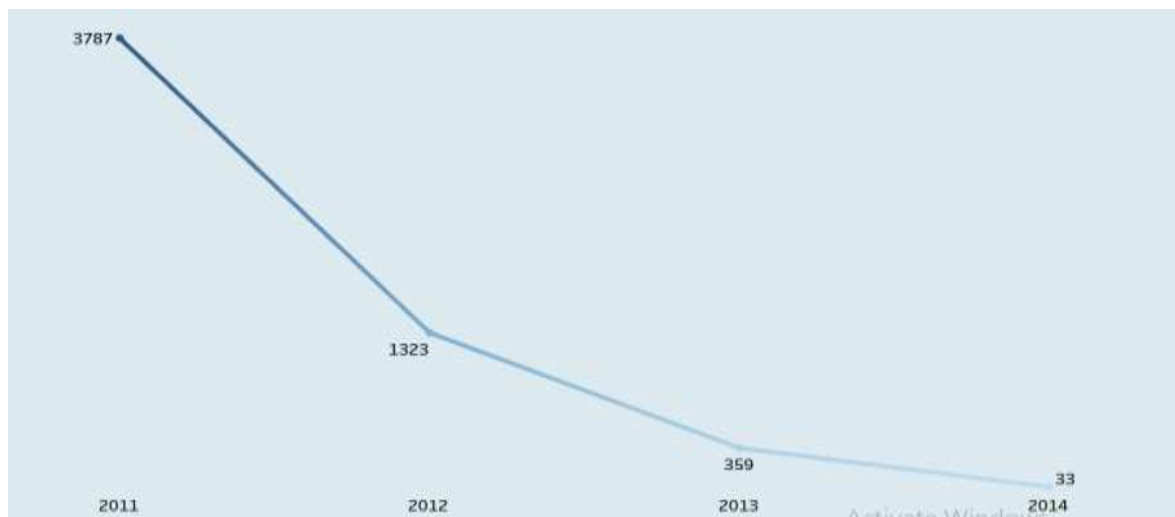
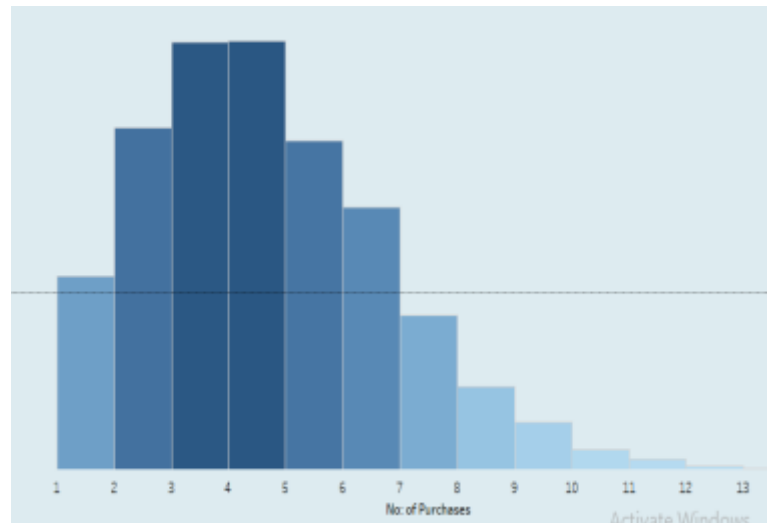
- A total of **5,665** unique customers were recorded. Notably, **91.5%** of them made more than one purchase, indicating high engagement and customer satisfaction.
- The platform processed **21,632** transactions in total, reflecting healthy sales volume across channels and store types.
- There were **2,163** return transactions, resulting in an overall return rate of **9.39%**. This falls within an acceptable retail industry range but should be closely monitored to avoid operational inefficiencies.
- A gender-based breakdown of return rates showed no significant difference:
 - **4.74%** for male customers
 - **4.64%** for female customers

This suggests that returns are fairly balanced across demographics.
- However, deeper analysis into product-level returns highlighted areas of concern:

- **Menswear** emerged as the **highest revenue-generating product category**, contributing **₹23,495,317** in sales.
 - It also had the **highest number of returns** at **965**, which may signal product-related issues such as sizing inconsistencies or unmet expectations.
 - Within subcategories, **Mobiles** led with **₹9,560,726** in revenue.
 - This indicates strong consumer demand and presents a clear opportunity for growth through targeted campaigns, bundling offers, and upselling accessories.
 - From a geographic perspective, **City Code 3** was the **top-performing region**, generating **5,724,567.34** in revenue, followed closely by **City Codes 4 and 7**.
 - These cities are clear high-potential markets where additional investments in regional promotions, logistics, and inventory could yield strong returns.
 - Revenue analysis by customer demographics showed that **male customers accounted for over 70%** of total sales, highlighting a clear purchasing trend.
 - While this indicates strong engagement with male customers, it also reveals an opportunity to improve engagement with female customers through personalized campaigns, product selection, and promotions.
 - Store-level performance revealed a clear hierarchy in channel contribution:
 - **e-Shop: 19,838,956.18**
 - **Flagship Store: 9,720,716.01**
 - **MBR (Mobile-Based Retail): 9,667,761.04**
 - **TeleShop: 9,348,396.02**
- This breakdown shows that **e-Shop is the leading revenue driver**, reinforcing the importance of digital strategy. Continued investment in online UX, personalization, and delivery optimization could further strengthen this channel.

These findings provide a comprehensive view of **UrbanCart's** sales and customer dynamics. They offer a strong foundation for optimizing marketing strategy, reducing returns, and aligning operational decisions with high-performing segments — ultimately enabling more informed and profitable business decisions.

Share and Act: In this step, we focused on the main business problems and showed specific charts to understand them more effectively. For detailed dashboard, reach out to my account on Tableau Public.



Recommendations Addressing Customer: (2011–2014)

1. Strengthen Retention Strategies for Repeat Buyers (3 to 6 Purchases Segment)

- Why: Cohort analysis shows a steady decline in active customers after initial repeat purchases, indicating customers need stronger incentives to stay engaged.

2. Investigate and Reduce Barriers Causing Customer Drop-off

- **Why:** Product issues, return hassles, or poor customer service could be causing attrition; improvements here can boost satisfaction and retention.

3. Enhance Marketing Efforts to Compete with Industry Innovations

- **Why:** Competitors may be adopting newer, more effective marketing techniques, such as digital campaigns, influencer partnerships, or personalized promotions. UrbanCart should invest in innovative marketing strategies to stay competitive and attract new as well as returning customers.

Recommendation to Boost Revenue and Sales

Expand and Optimize High-Performing Channels and Product Categories

- **Why:** The e-Shop channel generates nearly ₹20 million in sales, outperforming other channels by a wide margin, and subcategories like Mobiles and Menswear show strong revenue but also high return rates. UrbanCart should prioritize investment in the e-Shop platform by enhancing user experience, personalization, and delivery logistics. Simultaneously, targeted promotions and bundling offers for top-selling categories like Mobiles can increase average order value and cross-selling opportunities, driving overall revenue growth.