Funnel Analysis Case Study

This report presents an end-to-end funnel analysis conducted to understand user behaviour across key stages of an e-commerce journey. The objective of the analysis was to identify where users drop off, determine whether conversion issues are structural or contextual, and propose data-driven recommendations to improve overall conversion efficiency.

1. Business Context and Objective

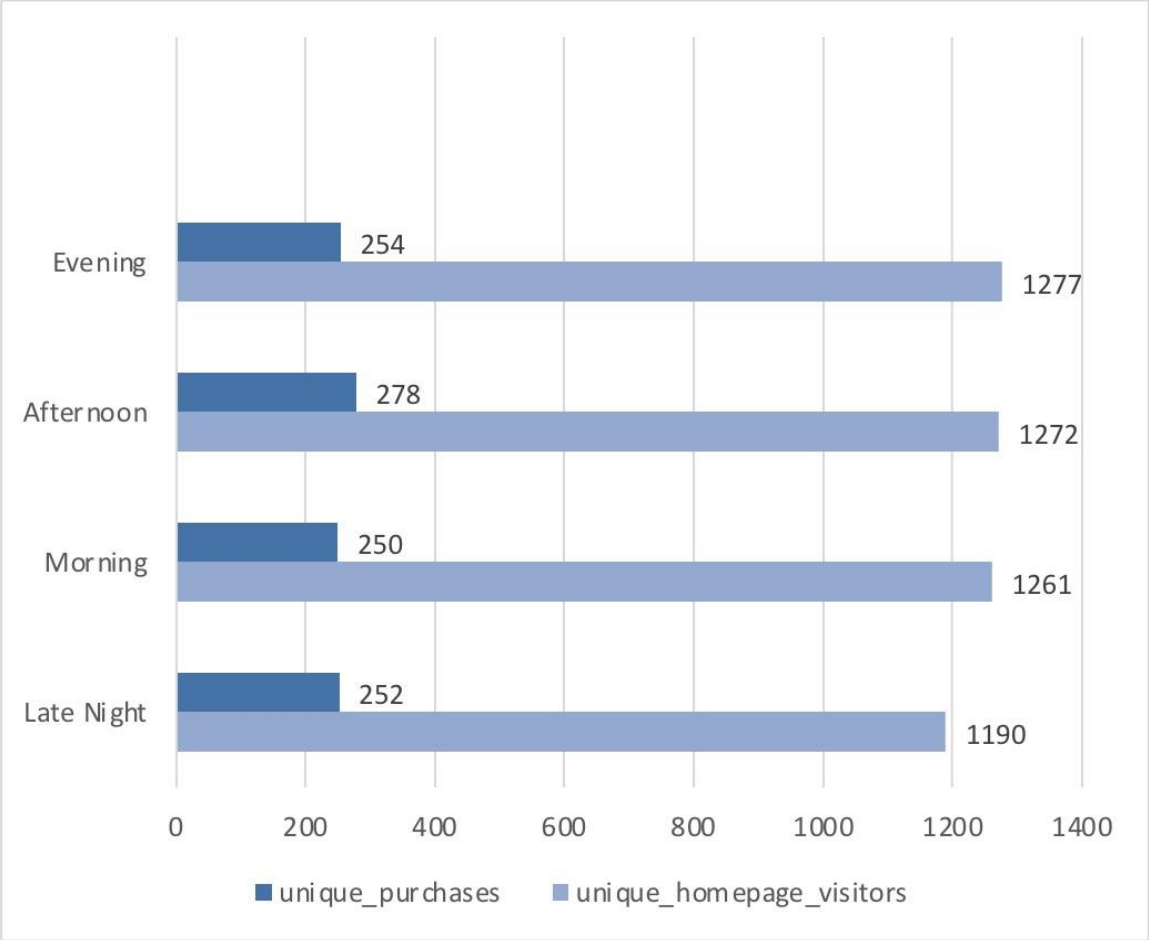
The product operates a standard e-commerce funnel consisting of homepage visits, product page views, cart additions, checkout initiation, and purchase confirmation. Despite healthy traffic volumes, overall conversion remained lower than expected. The goal of this analysis was to diagnose conversion inefficiencies and provide actionable insights for optimisation.

2. Data Overview and Methodology

The analysis was performed using cleaned and structured event-level data representing user movement through the funnel. Key metrics included user counts per stage, stage-to-stage conversion rates, time-based performance patterns, and referral source contributions. Visualisations were created to support both descriptive and diagnostic analysis.

3. Funnel Performance Overview

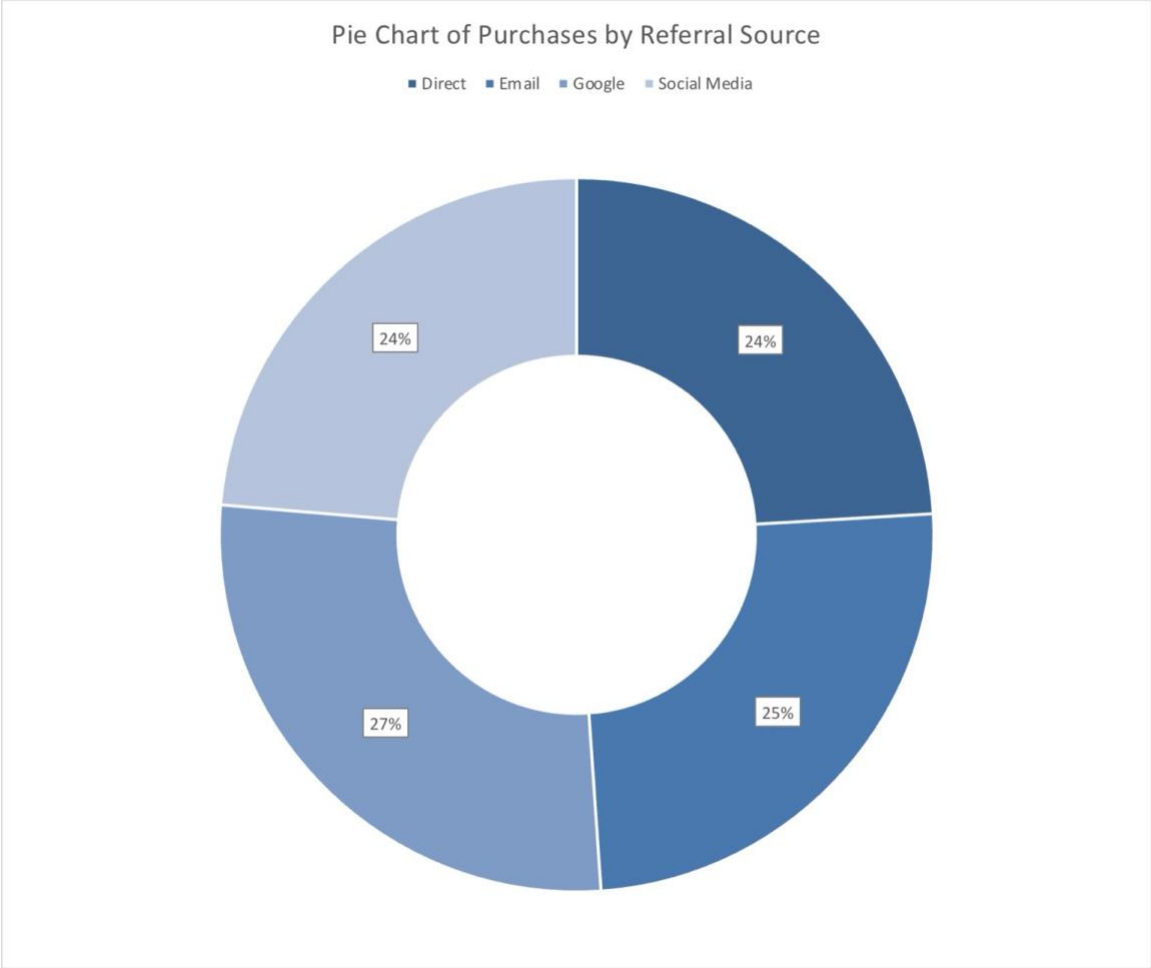
The first step was to quantify absolute user retention at each stage of the funnel. This provided a clear, high-level view of where the most significant user losses occurred.



The funnel shows a substantial drop between the product page and cart stages. While homepage-to-product engagement remains relatively strong, fewer than half of users who view a product proceed to add it to their cart. Downstream stages exhibit smaller relative losses, indicating that once users commit to checkout, they are more likely to complete purchase.

4. Conversion Rate Analysis

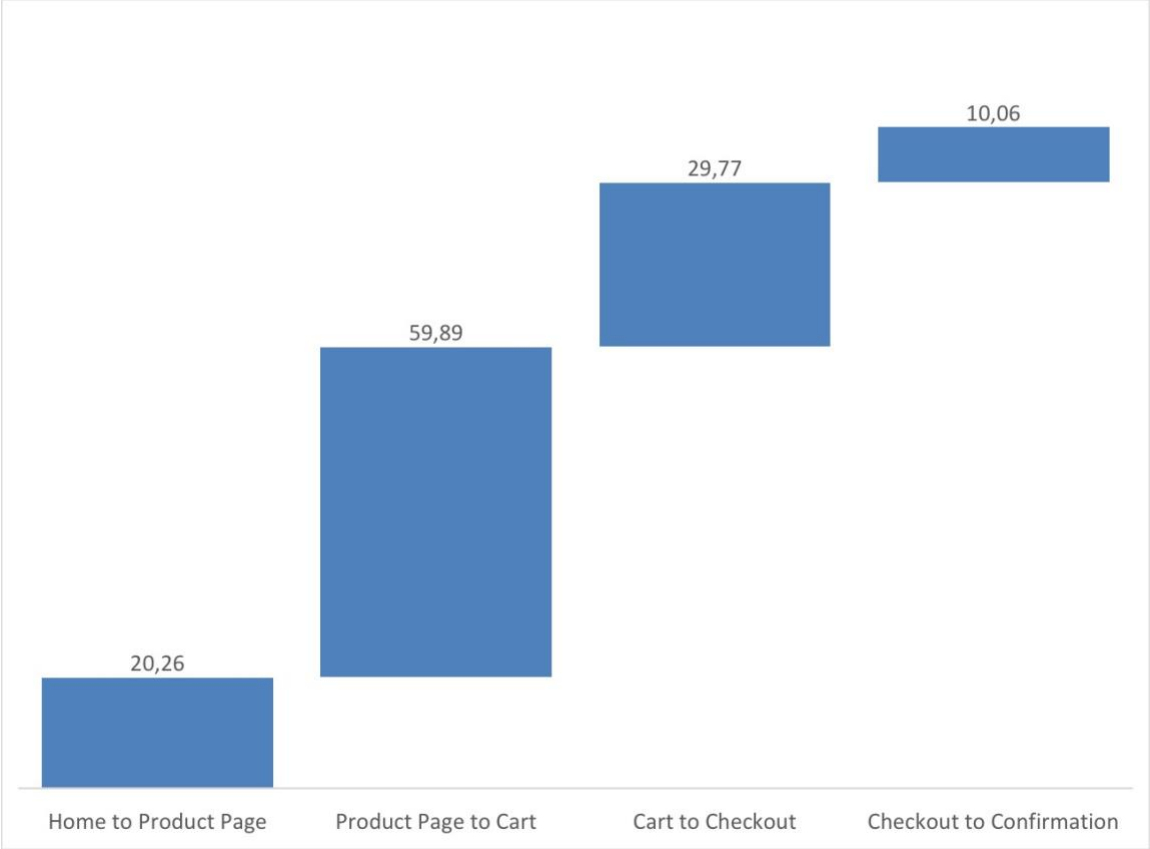
To contextualise raw user counts, stage-to-stage conversion rates were calculated. This allowed comparison of relative efficiency across funnel transitions.



The conversion rate analysis confirms that the primary bottleneck occurs at the product evaluation stage. In contrast, checkout-to-confirmation conversion is comparatively high, suggesting fewer friction points during payment and order completion.

5. Drop-Off Contribution by Stage

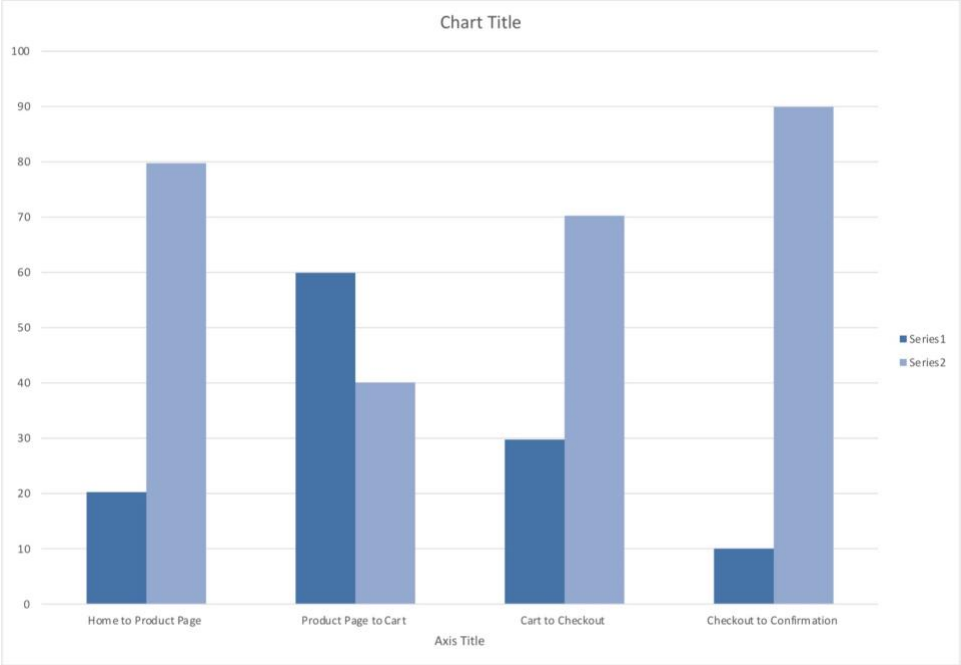
To better understand the magnitude of losses at each step, a drop-off contribution analysis was conducted.



The largest absolute drop-off is observed between product page views and cart additions, accounting for the majority of lost users. This reinforces the hypothesis that product-level information, pricing, or perceived value may be inhibiting progression.

6. Referral Source Analysis

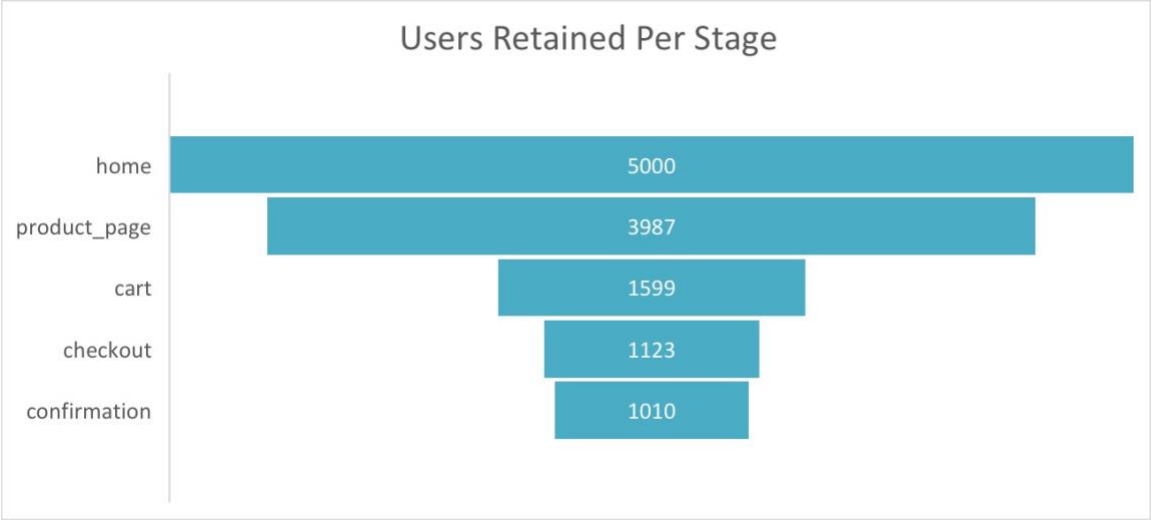
Understanding where converting users originate provides insight into acquisition quality.



Purchases are relatively evenly distributed across referral sources, suggesting that conversion challenges are not driven by a single acquisition channel. This further supports the conclusion that funnel inefficiencies are structural rather than traffic-quality related.

7. Time-of-Day Behavioural Patterns

To explore whether user intent varies across the day, homepage visits were compared against completed purchases by time segment.



While homepage traffic remains consistent throughout the day, purchase activity is marginally higher during afternoon and evening periods. This suggests potential value in timing promotions or nudges to align with higher-intent windows.

8. Key Insights

The analysis highlights a clear structural bottleneck at the product evaluation stage. Users are willing to browse but frequently disengage before adding items to cart. Downstream funnel performance is comparatively strong, indicating that resolving early-stage friction could yield meaningful gains in overall conversion.

9. Recommendations

Based on the findings, several actions are recommended. Product pages should be optimised with clearer pricing, stronger value propositions, and trust signals such as reviews or guarantees. Mobile usability at product and cart stages should be audited. Promotional activity should be aligned with high-conversion time windows, and improvements should be validated through controlled A/B testing.

10. Next Steps

Future work should focus on implementing automated funnel monitoring dashboards to track performance over time. A/B testing frameworks should be established to evaluate product page changes, and cohort-level analysis could be introduced to assess behavioural differences across user segments.