

## Ecommerce Clickstream Analysis: Enhancing Conversion Rates Through User Behaviour Insights

### Project Summary:

Conducted an in-depth analysis of 10,000 e-commerce user sessions to understand customer behaviour, traffic source effectiveness, and product performance. Created an interactive Power BI dashboard with three report pages focused on user engagement, marketing trends, and sales performance.

### Key Insights & Business Impact:

- Identified high-engagement sessions (10+ mins) as the key driver of conversions, supporting targeted retention strategies.
- Discovered 45–54 age group as the most profitable demographic, enabling more effective age-targeted marketing.
- Flagged and corrected 3.3K blank product category entries, improving data quality and reporting accuracy.
- Revealed direct traffic as the highest converting source (17.43%), guiding marketing teams on budget reallocation.
- Pinpointed electronics as the top revenue-generating category, helping focus promotional campaigns on high-performing products.
- Mapped seasonal and geographic patterns, with December and Australia leading in sessions—supporting timing and region-specific strategies.

### Recommendations

- Focus more on Direct and Social traffic — they performed the best across all KPIs.
- Target marketing efforts toward the 45–54 age group and longer session users, as they showed high conversion.
- Clean and maintain product category data to improve product-level analysis and personalization.
- Utilize Customer ID and Product ID fields for advanced segmentation and deeper behavioural insights.
- Design future marketing campaigns based on hourly user engagement trends, especially during evening peaks.

### Conclusion

This e-commerce clickstream analysis uncovered key behavioural patterns, such as high conversions during longer sessions, strong performance from the 45–54 age group, and significant revenue from electronics and social traffic. The insights derived can directly inform user experience optimization, targeted marketing, and campaign planning. Overall, this project demonstrates the ability to turn raw session data into strategic business insights.