IXIS Data Science Challenge

Insights and Opportunities

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IXIS Challenge: Analysis and Insights

1. **Data Preparation:** Cleaned and integrated session and cart data to ensure accuracy and readiness for analysis.

2. **Analytical Insights:** Analyzed user sessions and transactions across different devices and browsers, visualizing trends and outliers.

3. **Strategic Recommendations:** Identified optimal browser/device combinations and seasonal peaks to inform targeted marketing and optimization strategies.

Month and Device Significance
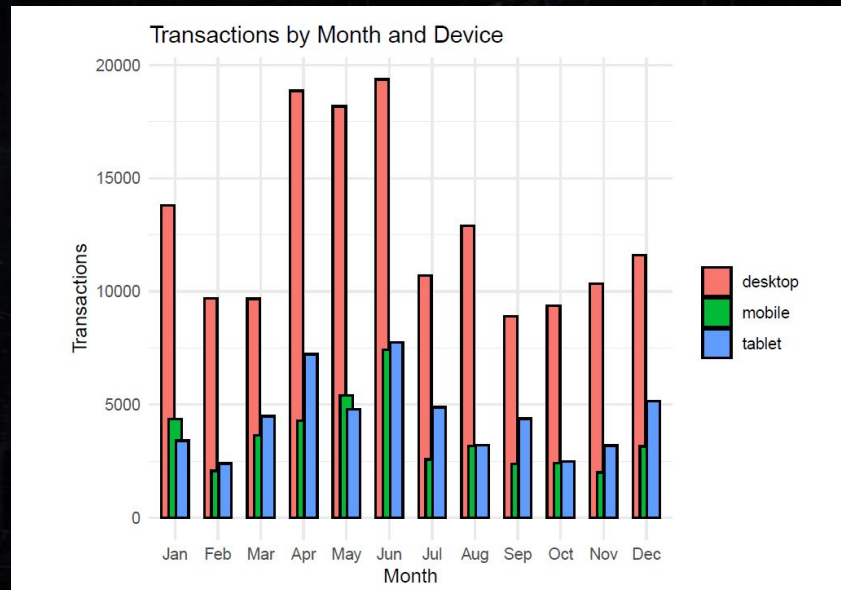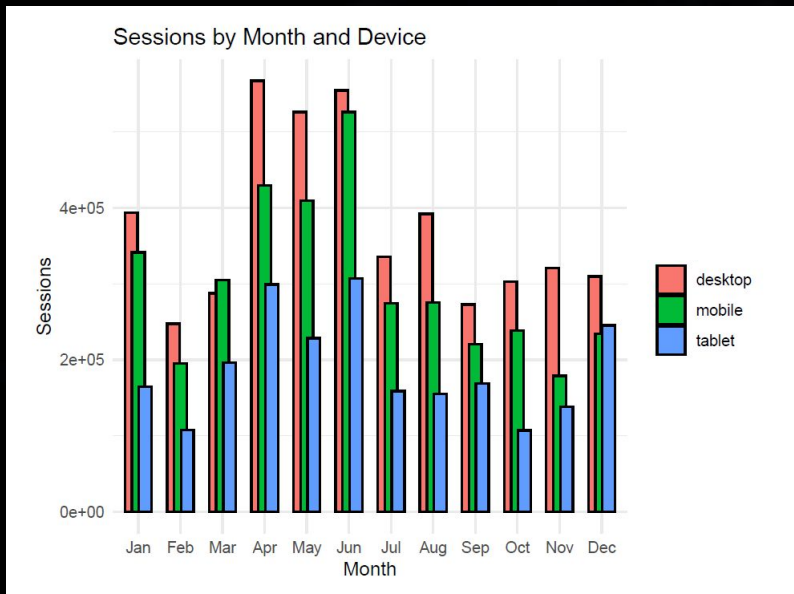
Desktop is the most popular device across the board for website engagement. Tablet and phone fight for second place: implying an opportunity for more mobile-friendly business adjustments.

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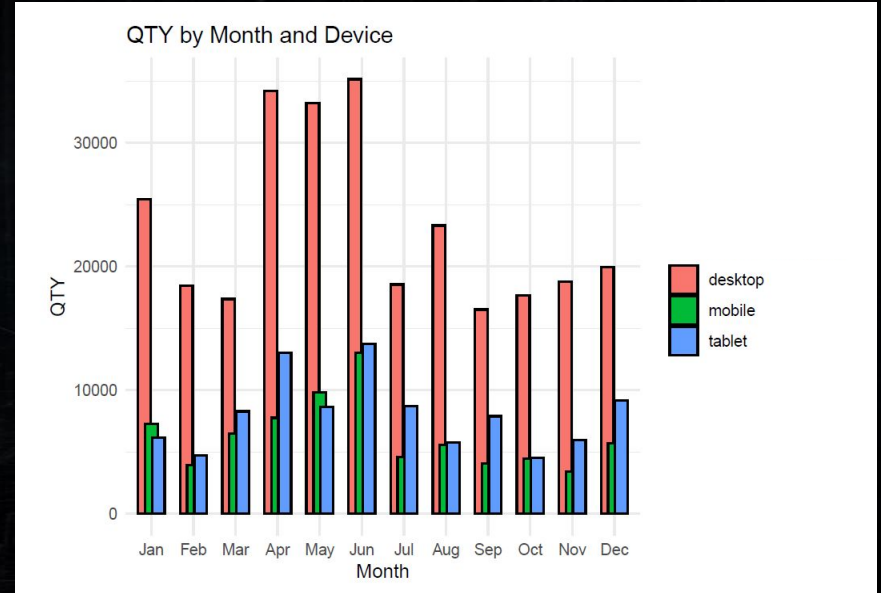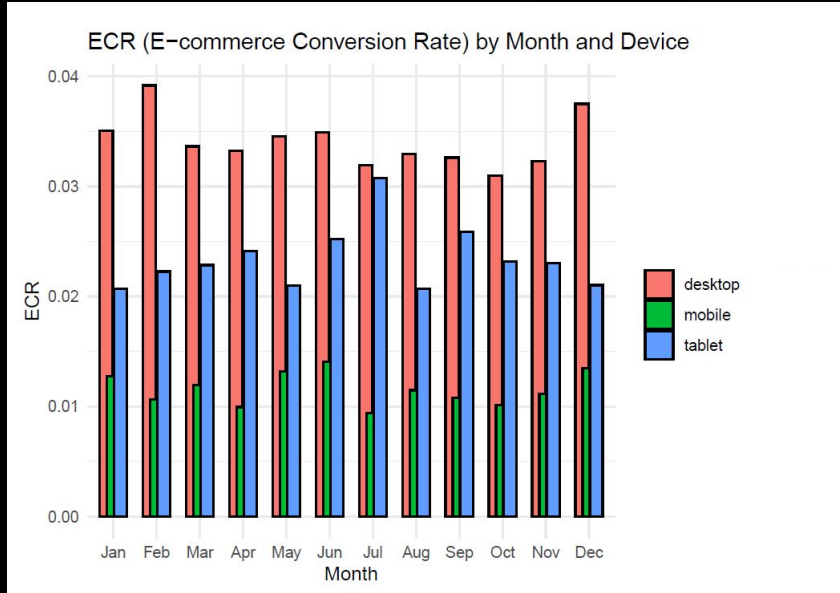
ECR (E-commerce Conversion Rate) by Month and Device
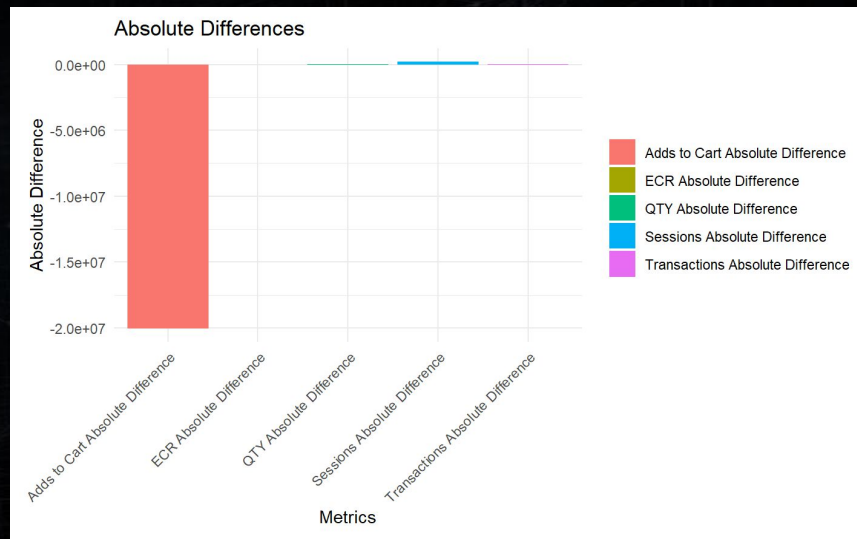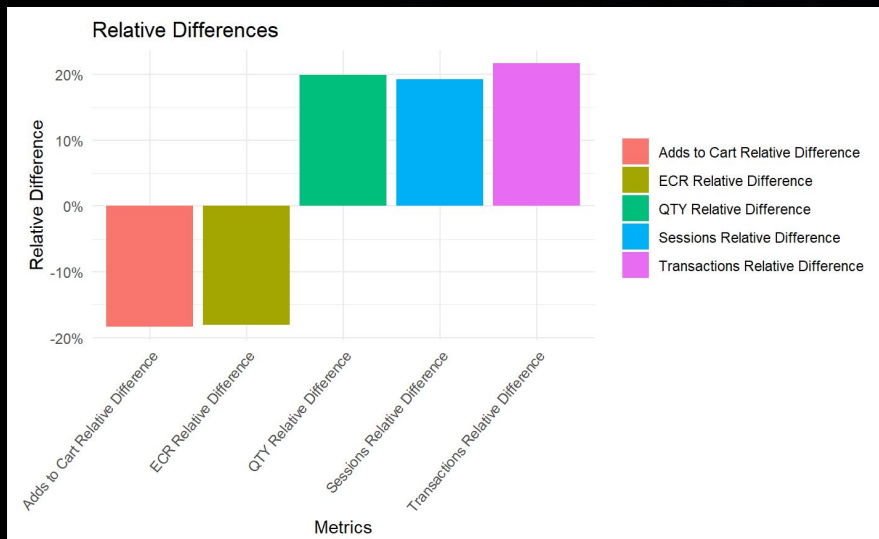

QTY by Month and Device

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Change Over Months

We see an uptick in transactions and quantity of items bought but a decrease in adds to cart over the month. This finding is counter-intuitive but may not be a negative trait.

Other Interesting Insight

April through June were on average ideal for website engagement.

Chrome, Internet Explorer, and Safari were the most popular browsers by session.

Other Interesting Insight

The raw data appears to follow a negative-binomial distribution.
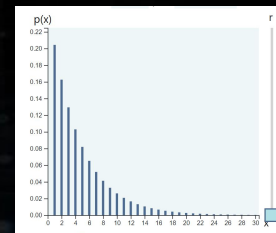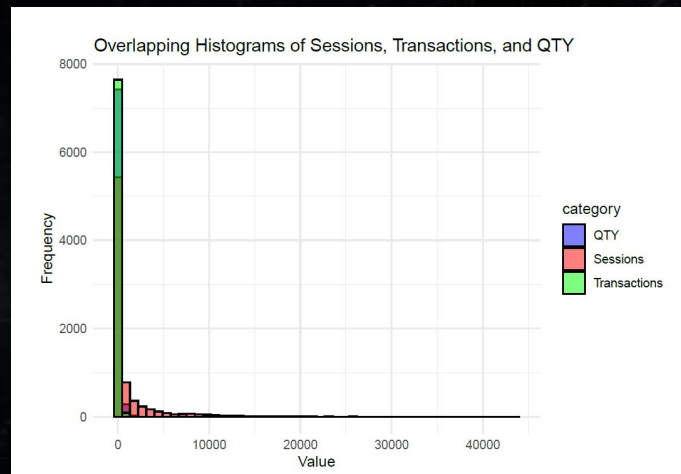
Dimension	Top Sessions	Top Transactions	Top QTY
Browser	Safari	Chrome	Chrome
Device Category	mobile	desktop	desktop
Mean Sessions	12,387	8,689	8,689
Mean Transactions	168	266	266
Mean QTY	298	507	507

- Safari and mobile was the best combination for a high number of sessions.

- Chrome and Desktop was the best combination for a higher number of transactions and quantity.

Conclusions

The analysis of user engagement patterns across different browsers and devices highlights several key insights.

- Desktop usage remains the most popular for website interactions, with Safari and Chrome on desktops showing strong performance in engagement and transactions, respectively.

- Seasonal trends indicate that April through June are peak months for user activity.

- Despite an increase in transactions, there is a notable decline in cart additions, suggesting more decisive purchasing behavior.

- The data's Negative-Binomial-like distribution provides a basis for further predictive modeling.

These insights should inform strategic enhancements, particularly in optimizing for device-specific experiences and adapting to user behavior trends.