Analyzing User Purchase Timing to Optimize Conversion: Product Analysis

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Objectives:

To provide insights on user purchase behavior, specifically the duration from the first session to first purchase within a day, analyzed over three months of data (November 2020 - January 2021).

Key Performance Metrics Summary

Metric	Value
Overall Avg. Purchase Time	4,484 seconds (1.2 hours)
Total Orders	4,633
Total Customers	4,274
Total Revenue	$346,915
Average Revenue per Order	$74.88

- The average time to purchase is consistent at around 1.2 hours across the three months, showing limited variability.

Monthly Performance Breakdown

Month	Avg. Time to Purchase	No. of Orders	Customers	Total Revenue	Avg. Revenue per Order
November 2020	4,320 seconds (1.2 hours)	1,523	1,461	$135,922	$89.25
December 2020	4,726 seconds (1.3 hours)	2,039	1,931	$156,357	$76.68
January 2021	4,256 seconds (1.2 hours)	1,071	882	$54,636	$51.01

- A gradual decline in revenue per order and order counts in January compared to November and December.
- Higher order counts in December may indicate seasonal shopping behavior, while January's drop could be post-holiday.

Distribution of Time-to-Purchase Across Users

Time Range	Orders	% of Total Orders	Avg. Revenue per Order
<1 hour	3,658	79.0%	$70.79
1-5 hours	685	14.8%	$91.32
5-10 hours	159	3.4%	$69.00
10-15 hours	64	1.4%	$125.05
15-20 hours	49	1.1%	$70.90
20-24 hours	18	0.4%	$127.39

- Majority of orders (79%) are completed within an hour, suggesting a high intent to purchase among users.
- Orders with longer time-to-purchase tend to have a higher average revenue, indicating that more deliberative buyers may purchase higher-value items.

Daily Patterns – Weekday Insights

Day	Avg. Duration (seconds)	Orders
Sunday	3,076	374
Monday	4,151	691
Tuesday	4,700	822
Wednesday	5,494	775
Thursday	4,276	671
Friday	4,655	793
Saturday	3,627	507

- Sundays have the shortest purchase duration but fewer orders, indicating a more efficient user experience but lower user engagement.
- Higher duration times mid-week (Wednesday) suggest potential delays or distractions during peak weekday times.

Monthly Trends in Daily Peak Activity

Key Points:

- **November**: Highest duration on 25th (9,003 sec); order peak on 30th (123 orders).
- **December**: Highest duration on 16th (6,507 sec); order peak on 11th (138 orders).
- **January**: Highest duration on 20th (8,611 sec); order peak on 20th (93 orders).
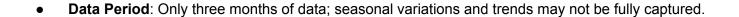
Insights:

- Spikes in purchase time and order volume indicate days with higher purchase friction and/or promotional influences.

Additional Insights

- **Users are largely decisive within an hour, with 79% making purchases quickly. The remaining distribution highlights that longer decision times are often associated with higher average order values.**

- **High-order days align with certain weekdays, hinting at possible strategic timing for promotional events.**

Limitations

- **Data Period**: Only three months of data; seasonal variations and trends may not be fully captured.

- **Granularity**: Insights may differ by product category, which isn't accounted for here.

Conclusions

- The quick purchase behavior observed indicates user intent is high, with most purchases completed in under an hour.

- Order volume and purchase durations vary by day, with noticeable spikes and dips during weekdays versus weekends.

Recommendations

- **Optimize Site for Quick Purchases**: Prioritize user experience enhancements for quick conversions, as most users decide within the hour.

- **Leverage Peak Days for Promotions**: Use high-engagement days like Tuesday to schedule promotional campaigns or limited-time offers.

- **Explore Causes of High Purchase Durations**: Further investigate user behavior on days with high average durations (e.g., Wednesdays) to identify potential user journey improvements.

The End

Questions?