



A/B Test Analysis for Foodtech Company

Insights and Business Recommendations

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Test Analysis

- Evaluate the A/B test design
- Analyze the dataset
- Draw conclusions and make business recommendations

Hypothesis: Increasing the size of food images on restaurant menu cards will improve conversion to orders

Evaluating the A/B Test Design

STRENGTHS

Clear Hypothesis

Well-defined and directly tied to a specific UX change (larger images) and a measurable outcome (conversion to orders)

Randomized User Assignment

Ensures comparability and reduces bias due to user characteristics

Consistent Test Duration

Helps in capturing behaviors across week days, including potential variation in weekday vs weekend

Clear UI Difference

Only image size varies, minimizing confounding factors that could influence user behavior

User Behavior Tracking

Various interaction events like shop entry, order payment, order completion, allow a deeper analysis of user journey

Evaluating the A/B Test Design

POTENTIAL LIMITATIONS AND IMPROVEMENTS

Geographic Limitation

London-specific; expanding regions would improve insights

Seasonality Effects

Holiday season; Conduct tests at different times of the year

User Segmentation

No demographic or past behavior data included

Long-Term Effects

Does not consider impact on long term user behavior

Confounding Factors

Possible external influences (e.g., promotions, events)

Longer Test Duration

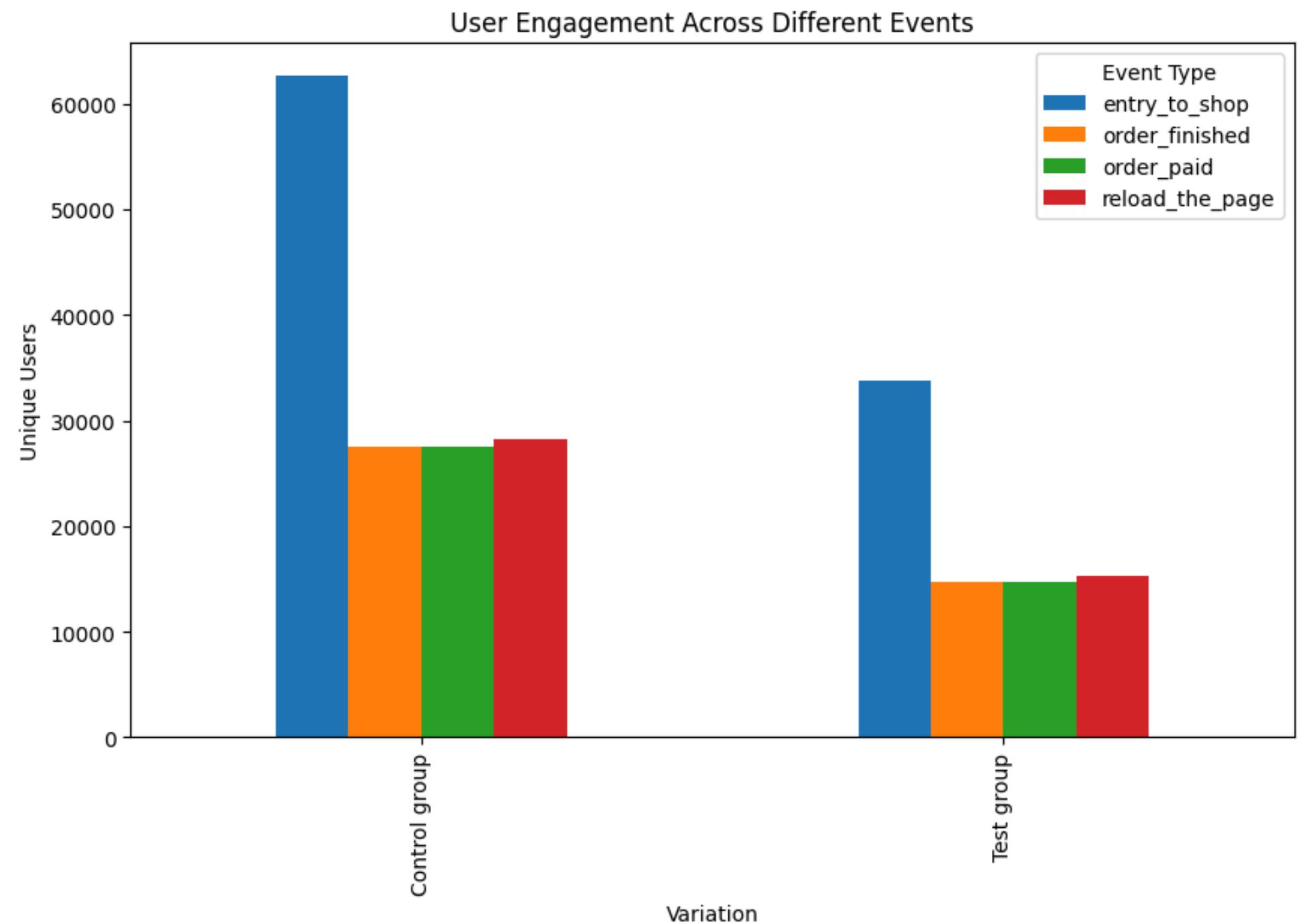
A long period may capture broader user behaviors

Dataset

- Contains 326,921 rows and 9 columns
- Key fields include:
 - **variation**: Identifies the control (1) and test (2) groups
 - **platform**: Captures user platform (ios or android)
 - **event_type**: Tracks user interactions such as page reload, shop entry, order payment and order completion
 - **final_order_status**: Captures order outcomes
 - **datetime_event**: Timestamp for each event

User Engagement Analysis

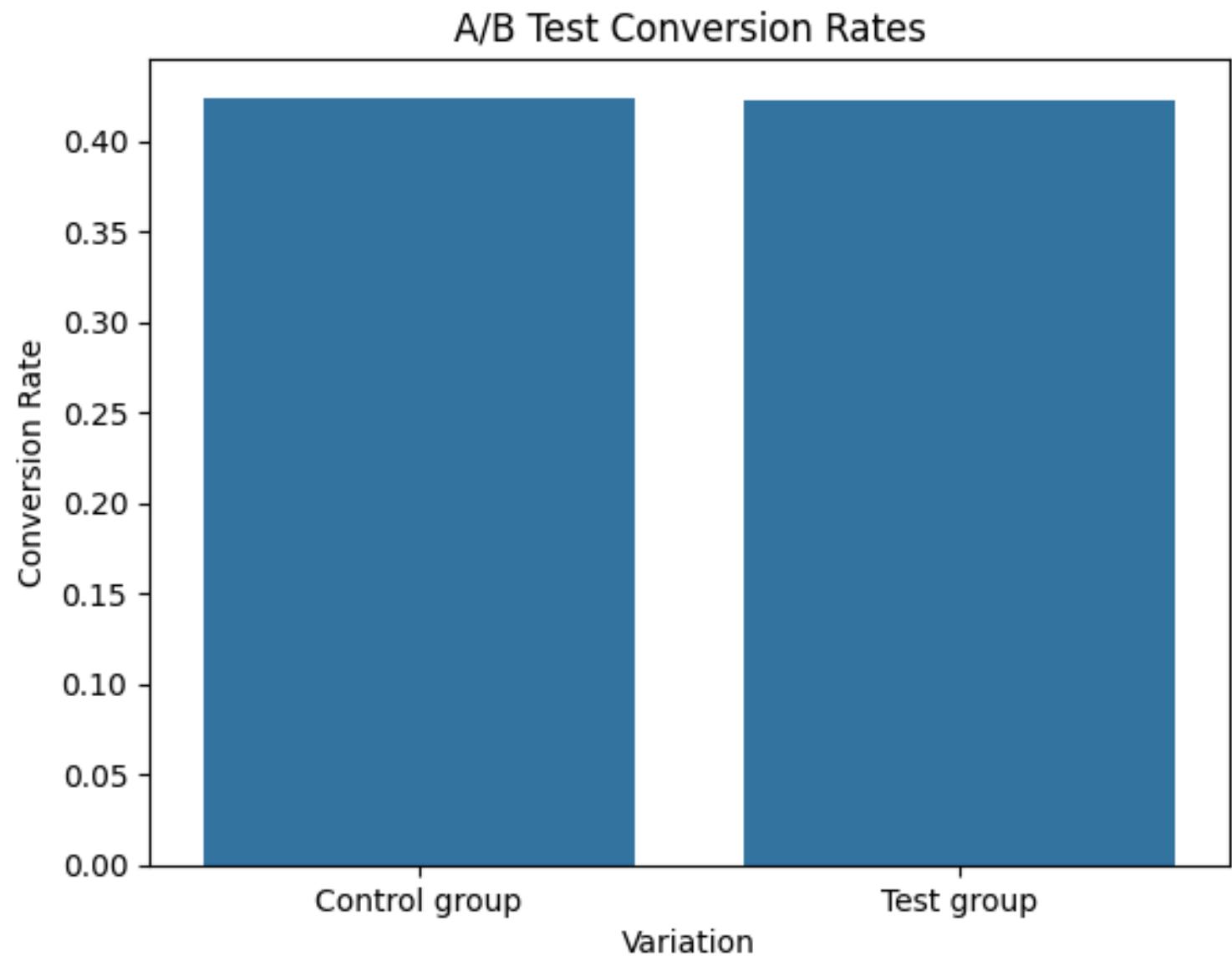
- Total Users:
 - Control (Small Images): 65,000 users
 - Test (Large Images): 35,000 users
- Users Entering Shops:
 - Control (Small Images): 62,581 users
 - Test (Large Images): 33,712 users
- Users Placing Orders:
 - Control (Small Images): 27,568 users
 - Test (Large Images): 14,770 users
- Users with Finished Orders:
 - Control (Small Images): 27,568 users
 - Test (Large Images): 14,770 users
- Users Reloading the Page:
 - Control (Small Images): 28,171 users
 - Test (Large Images): 15,217 users



Conversion Rate

$$ConversionRate = \frac{OrdersPlaced}{TotalUsers} \times 100$$

- Control (Small Images):
 - Total Users: 65,000
 - Orders Placed: 27,568
 - Conversion Rate: 42.41%
- Test (Large Images):
 - Total Users: 35,000
 - Orders Placed: 14,770
 - Conversion Rate: 42.20%



Hypothesis Testing

Null Hypothesis (H_0): The conversion rate is independent of the variation (i.e., larger images do not impact order rates)

Alternative Hypothesis (H_1): The conversion rate depends on the variation (i.e., larger images significantly affect order rates)

Chi-Square Test:

- $\chi^2=0.41$
- p-value=0.5213

	Orders Placed	No Orders Placed
Control Group	27,568	37,432
Test Group	14,770	20,230

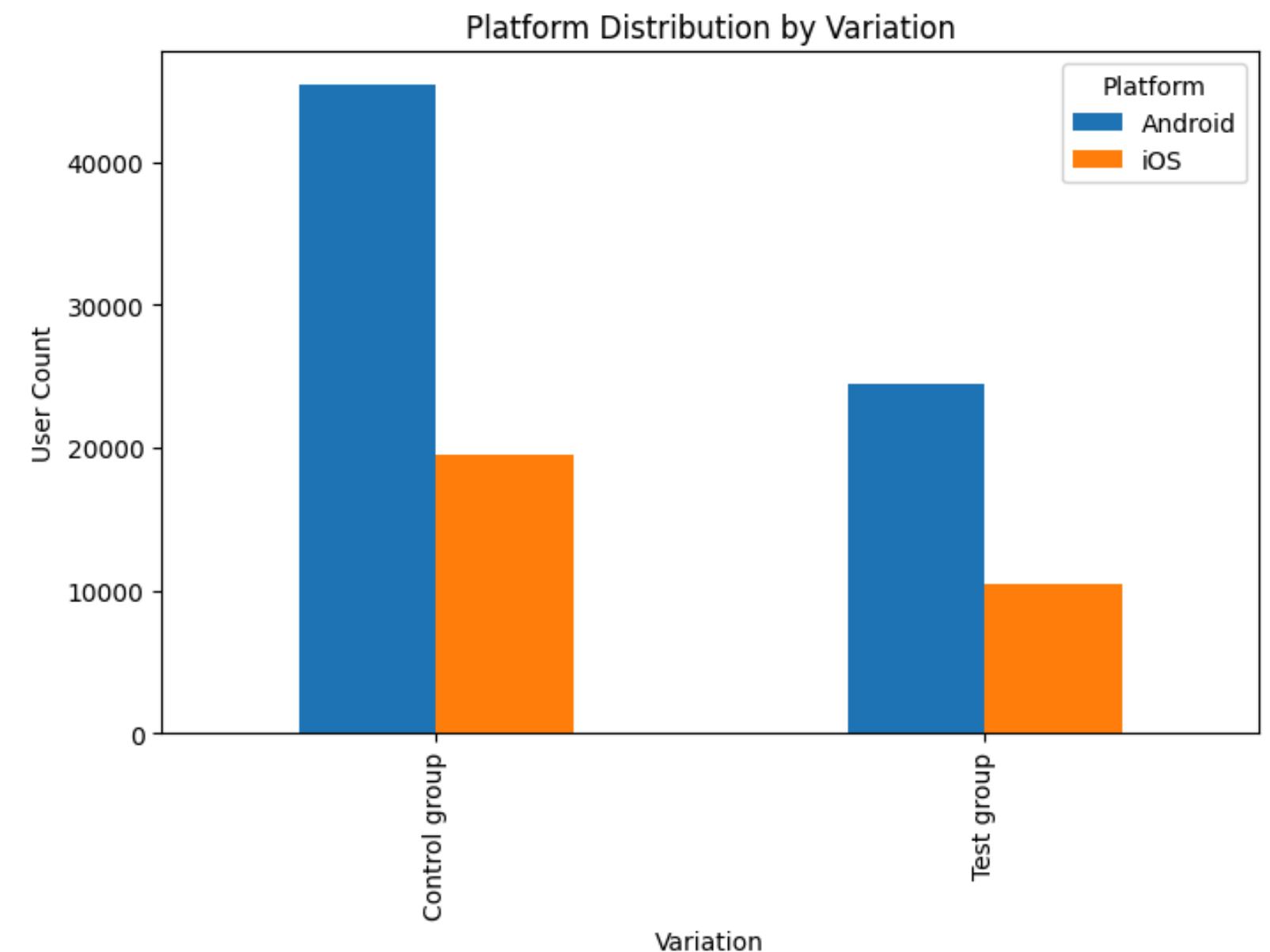
Contingency Table

p-value > 0.05 → Fail to reject H_0 → No significant impact

Segmentation and Analysis

Distribution by Platform

	Android (users)	iOS (users)
Control Group	45,454	19,546
Test Group	24,541	10,459



Segmentation and Analysis

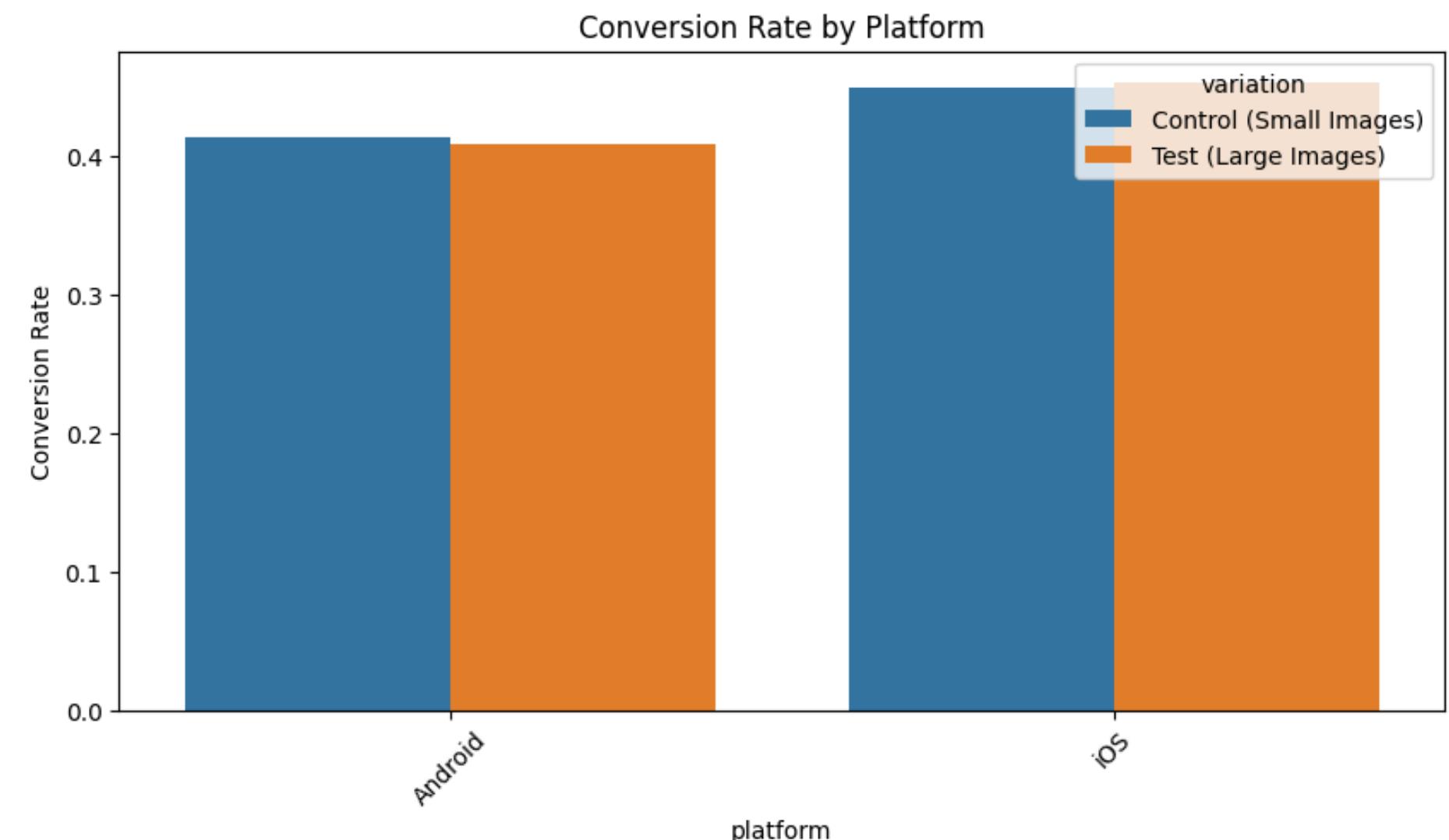
Conversion Rate by Platform

	Android	iOS
Control Group	41.32%	44.95%
Test Group	40.88%	45.29%

Chi-Square Test:

- Android: $\chi^2=1.25$, p-value=0.2643
- iOS: $\chi^2=0.31$, p-value=0.5802

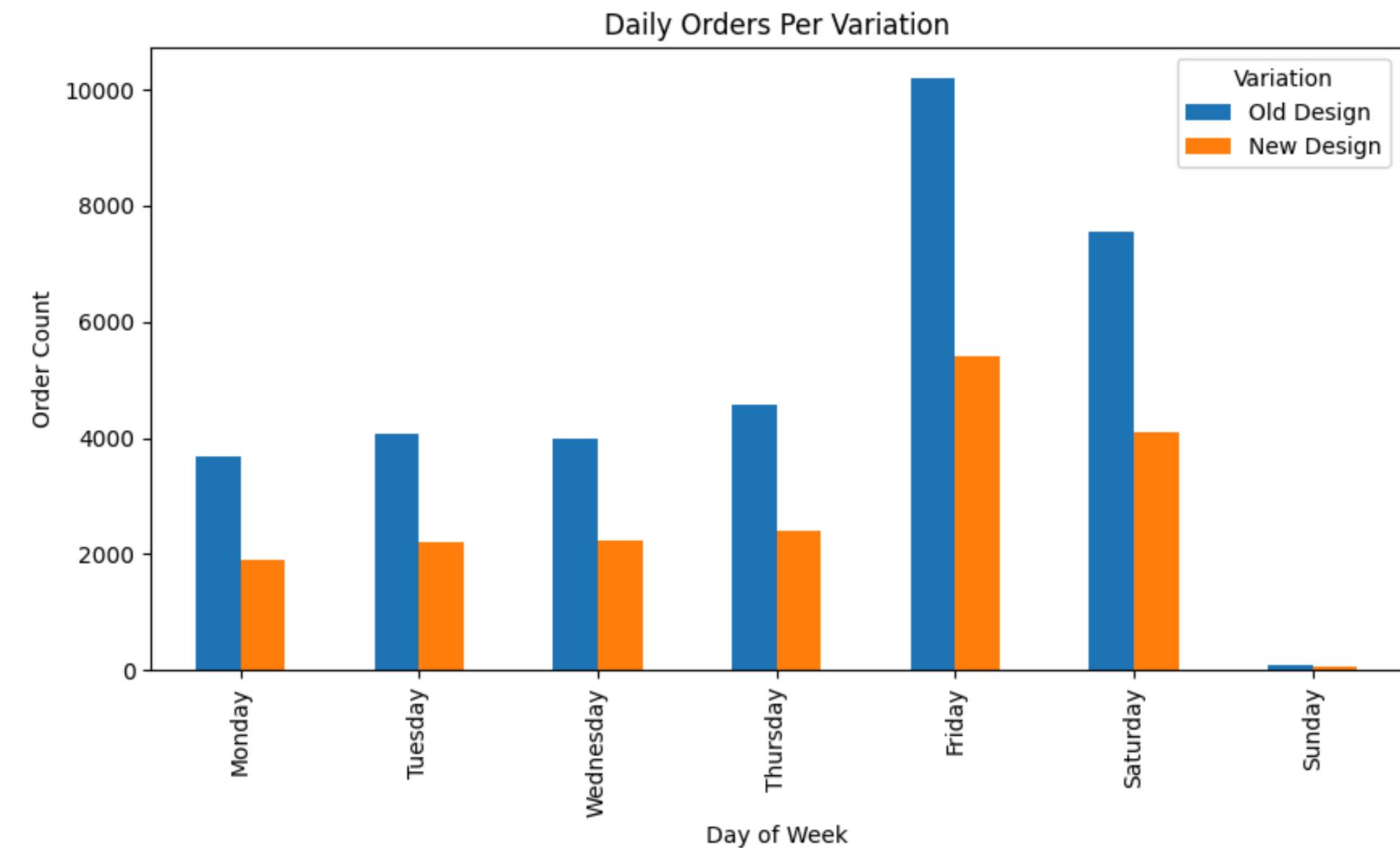
p-value > 0.05 → Fail to reject H_0 → No significant impact



Segmentation and Analysis

Distribution by Day of the Week

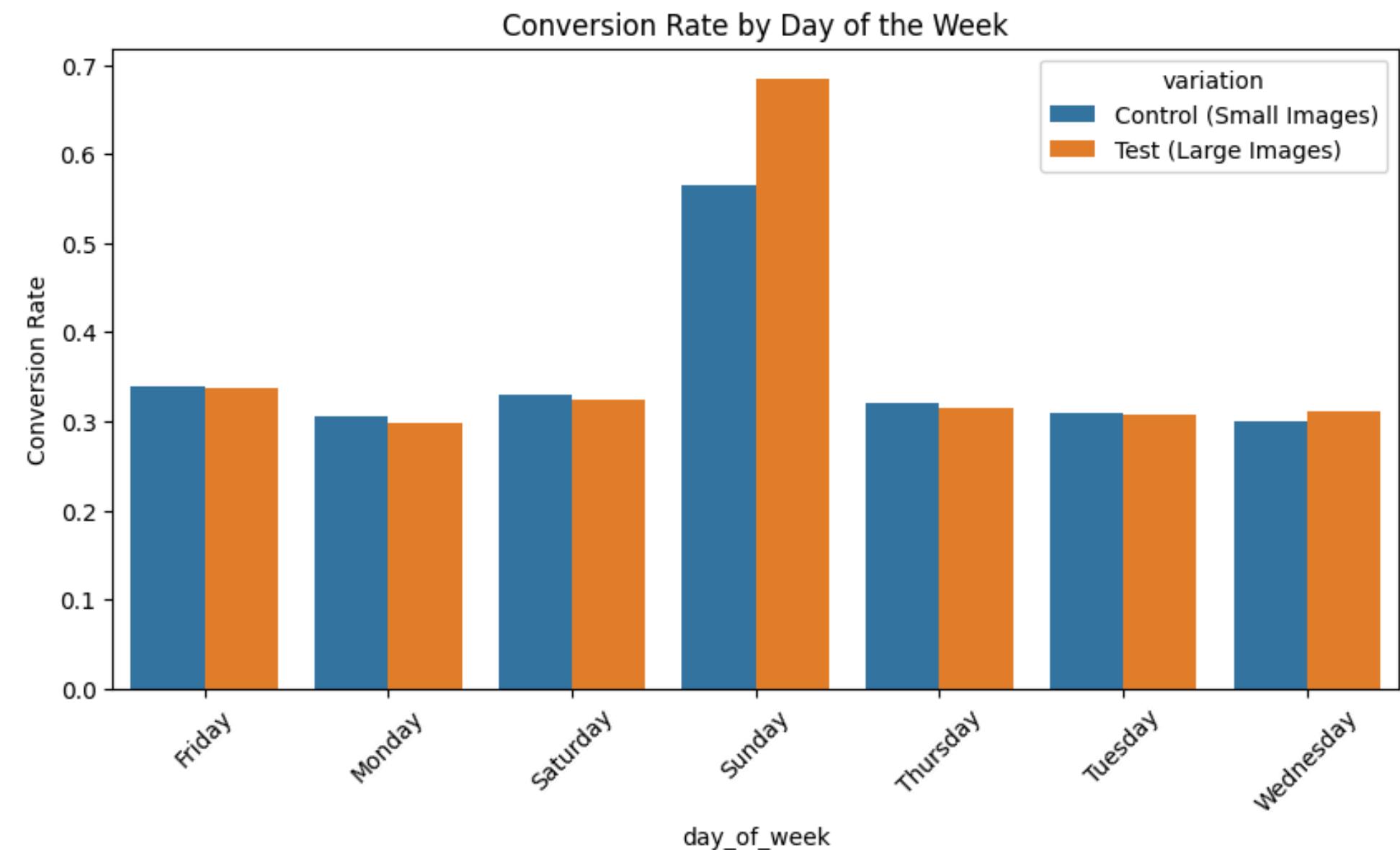
	Control Group (users)	Test Group (users)
Monday	3673	1894
Tuesday	4062	2200
Wednesday	3980	2240
Thursday	4581	2394
Friday	10205	5407
Saturday	7553	4091
Sunday	86	52



Segmentation and Analysis

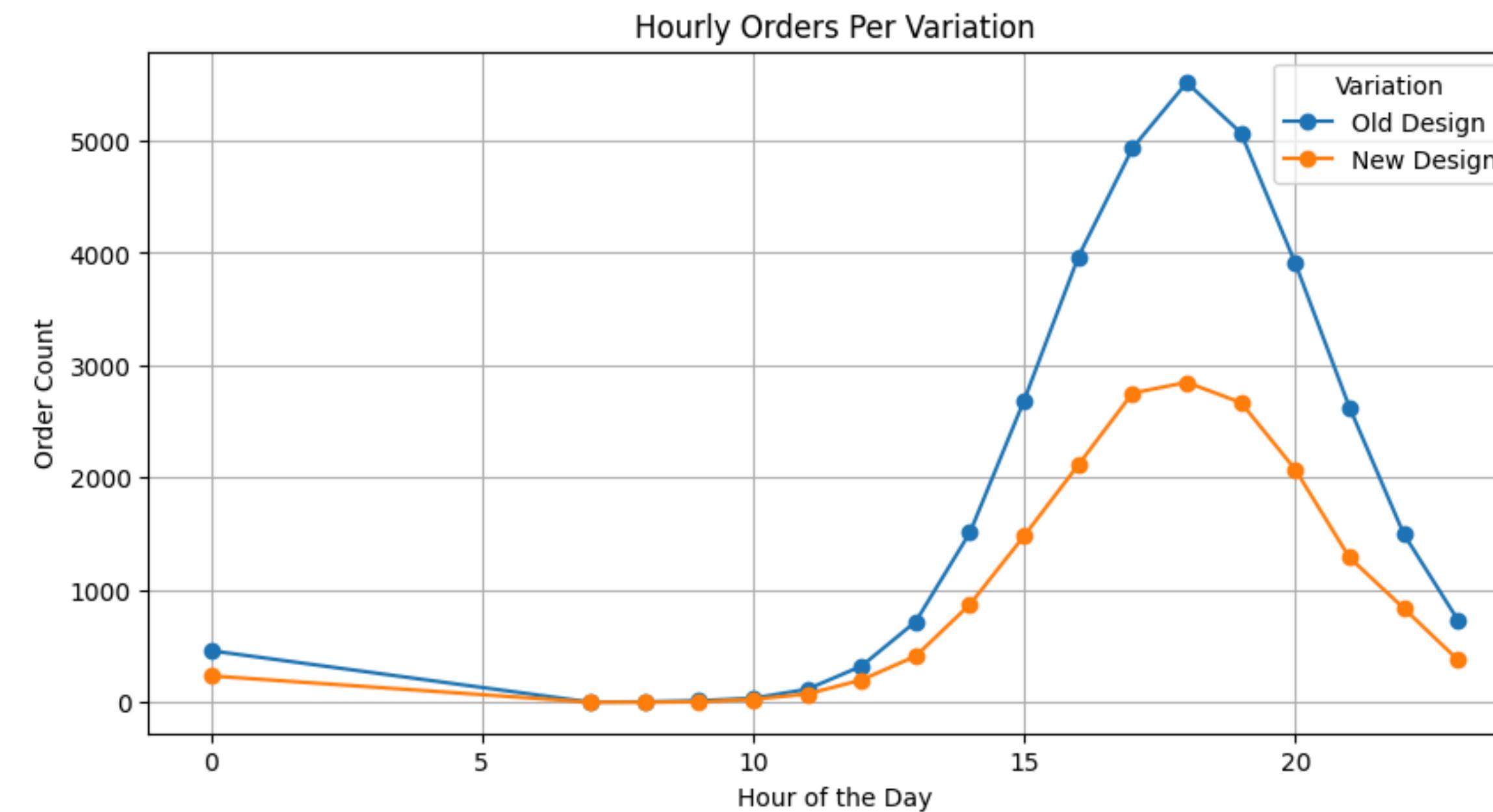
Conversion Rate by Day of the Week

	Control Group	Test Group
Monday	30.55%	29.72%
Tuesday	30.89%	30.70%
Wednesday	30.09%	31.05%
Thursday	31.96%	31.40%
Friday	33.87%	33.71%
Saturday	32.92%	32.51%
Sunday	56.57%	68.42%



Segmentation and Analysis

Distribution by Time of the Day



Segmentation and Analysis

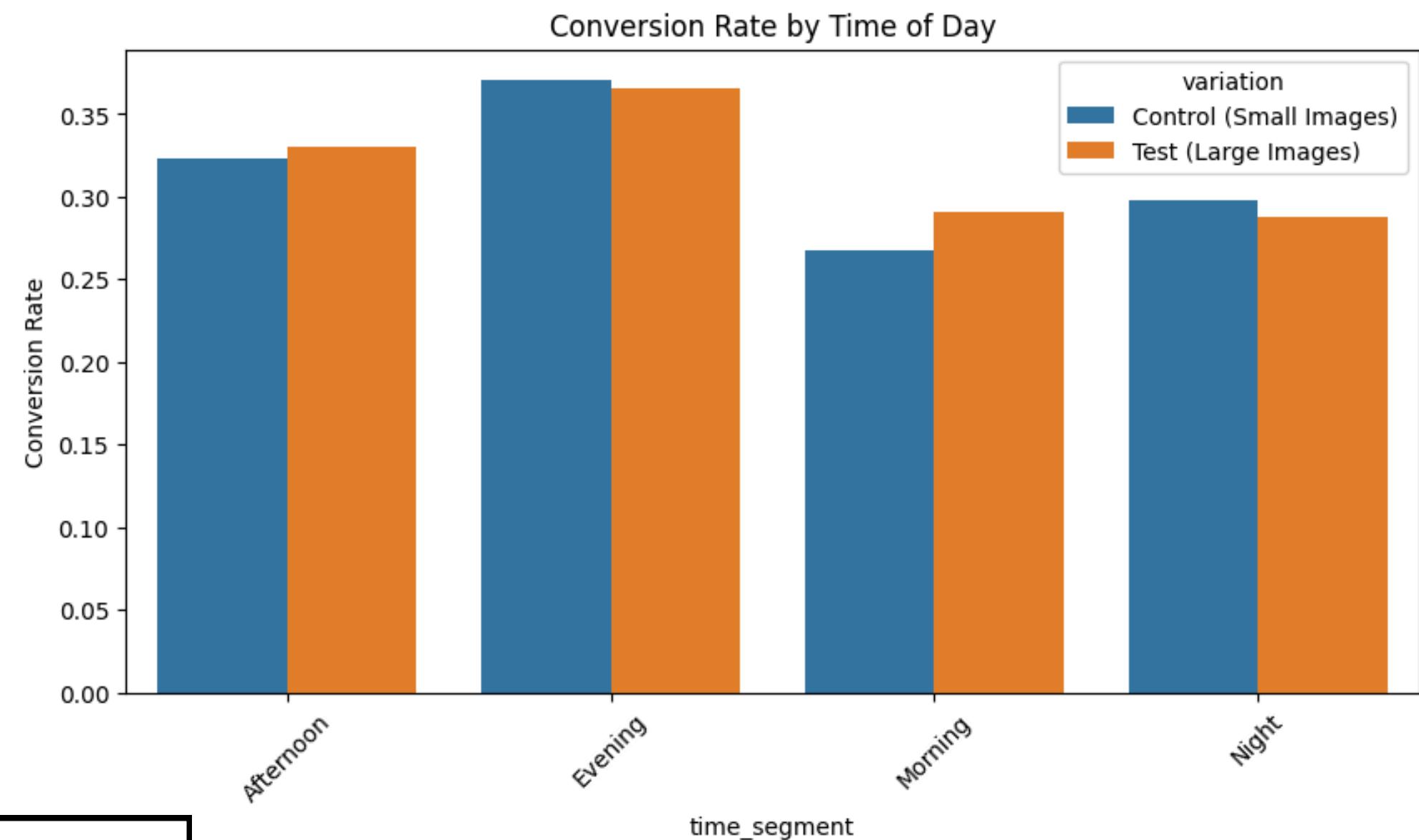
Conversion Rate by Time of the Day

	Control Group	Test Group
Morning	26.80%	29.10%
Afternoon	32.28%	33.05%
Evening	37.06%	36.59%
Night	29.77%	28.75%

Chi-Square Test for Morning:

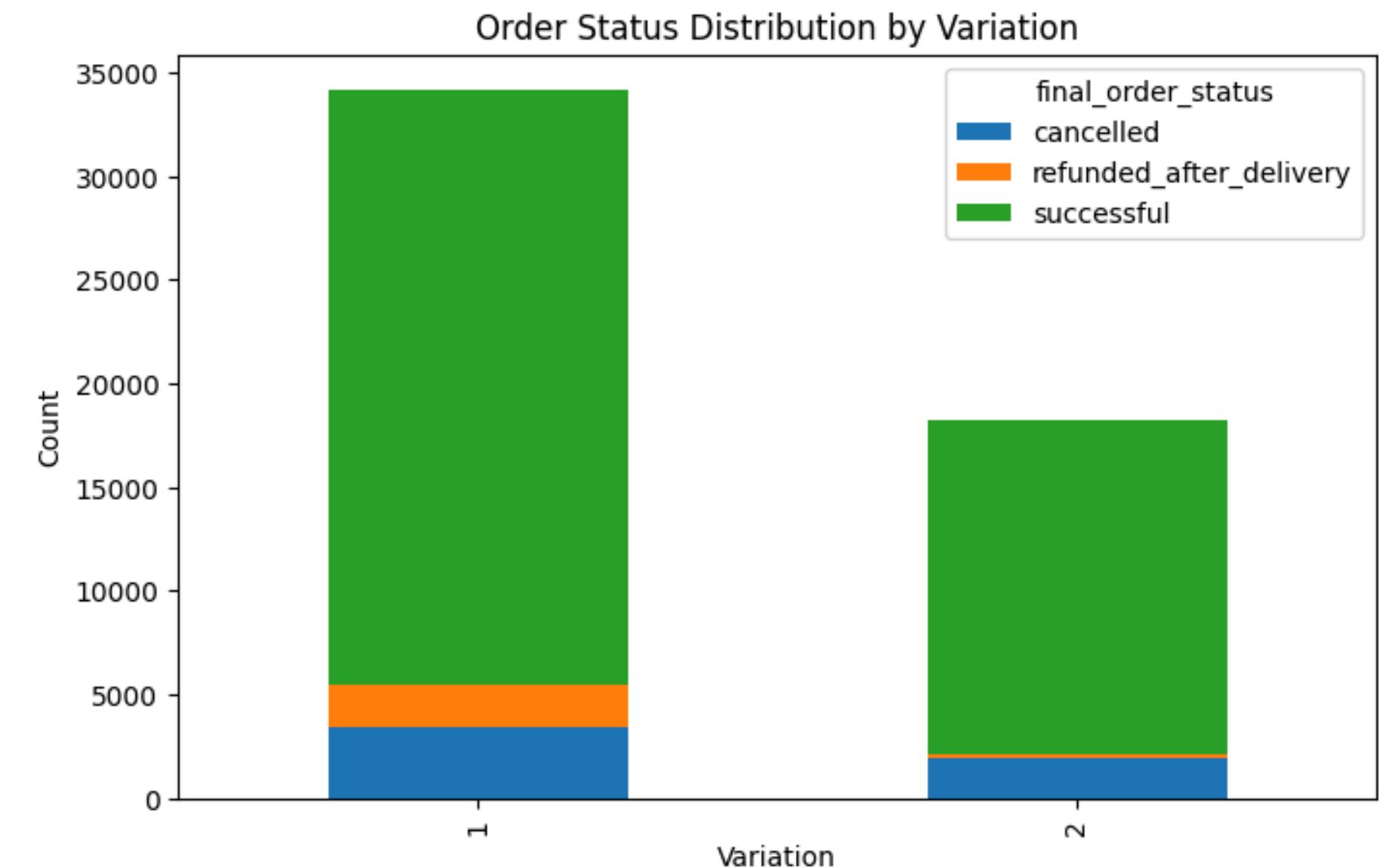
- $\chi^2=0.52$
- p-value=0.4691

p-value > 0.05 → Fail to reject H_0 → No significant impact



Order Status for Each Group

Final Order Status	Control Group	Test Group
Cancelled	3391 (9.93%)	1910 (10.45%)
Refunded After Delivery	2088 (6.12%)	171 (0.94%)
Successful	28661 (83.95%)	16197 (88.61%)



A greater percentage of orders are refunded in case of control group.

Key Findings

- Larger images did not significantly increase conversion rate
- User behavior patterns remained consistent across variations
- Lower refund rates in the test group suggest a better post-purchase experience





Business Recommendations

Further UX/UI Testing

Explore other changes beyond image size, such as descriptions and reviews

Invest in features that enhance decision-making at checkout

Consider bulking images with richer product details (e.g., ingredient list, portion sizes and allergen information)

Assess profitability beyond just conversion rates

While order rates remained similar, did larger images impact average order value?

Thank You

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