Driving Conversion Rates with Improved User Experience

A/B Testing Analysis

Putri Wulandari

Project Background

Group A: Control

existing landing page

Group B: Treatment

landing page with food & drink banner

Effectiveness of a new banner at the top of the website

The AB Test

- Overview
- The Control group A
- The Treatment group B
- Average Spending
- Conversion: purchase/signup

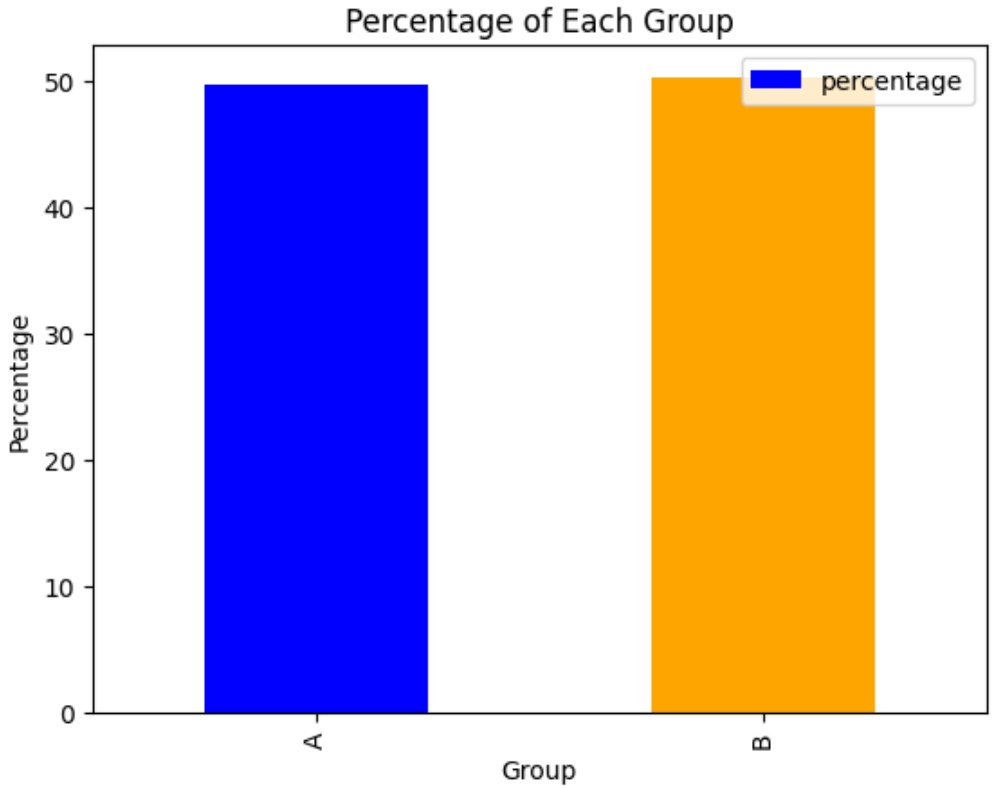
Group A: Control

existing landing page

Group B: Treatment

landing page with food & drink banner

Important Key Metrics



A= 49.72%

B= 50.28%

Average spending for group A

$3.37

Average spending for group B

$3.38

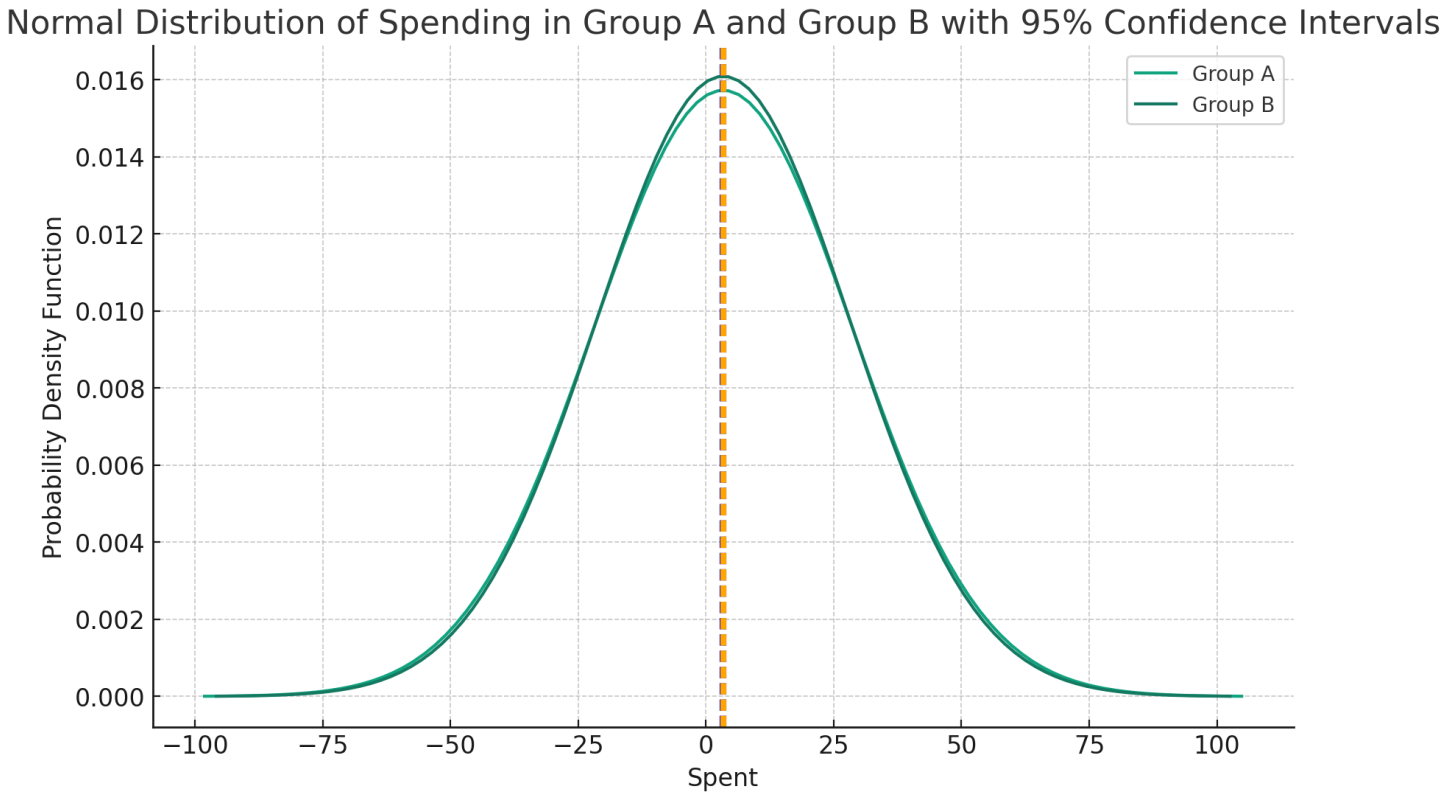
Conversion rate for group A

3.92%

Conversion rate for group B

4.63%

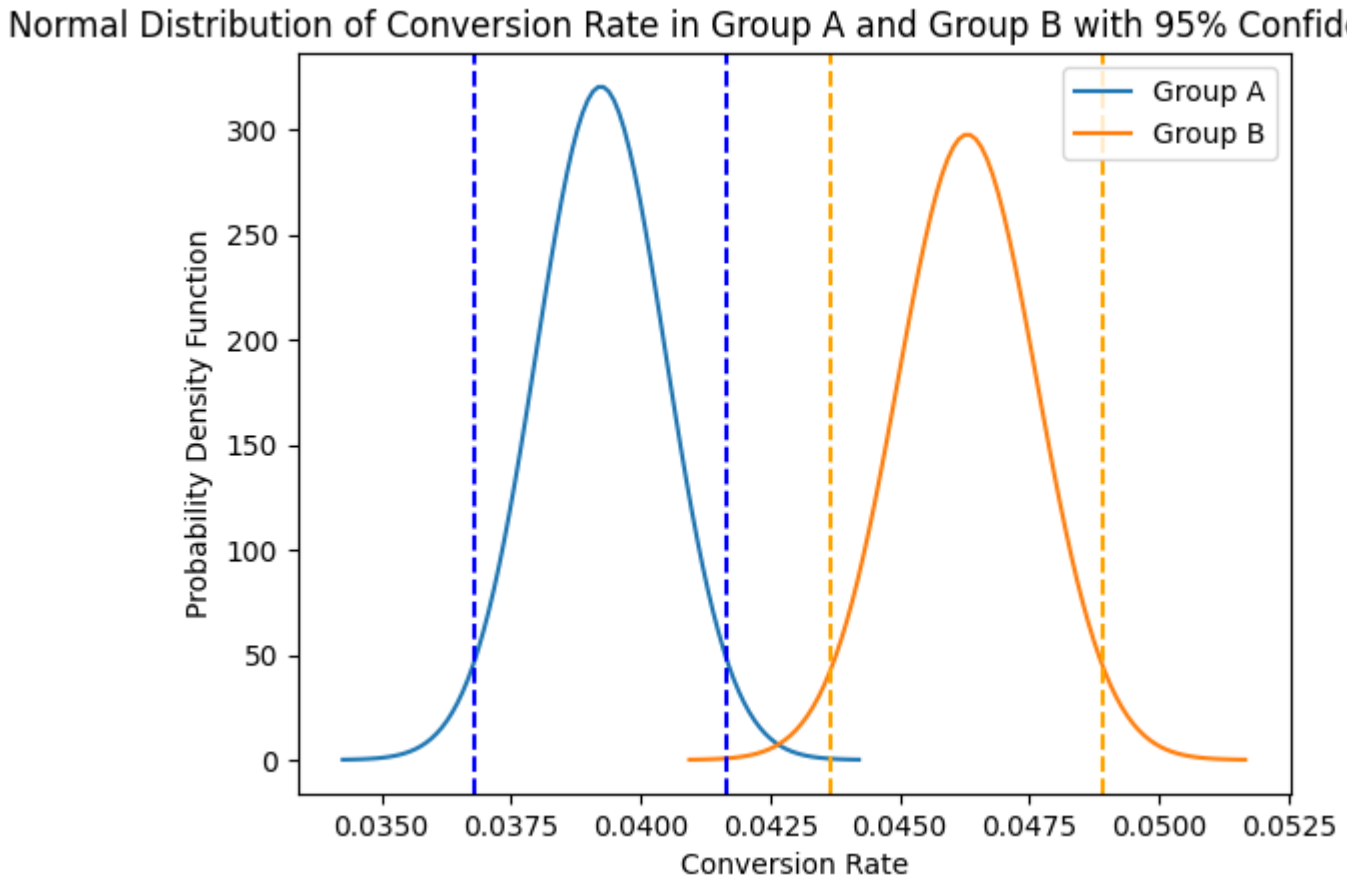
Confidence Interval for Mean



The 95% confidence interval for the average spending in Group A is approximately $3.05,$3.68$,

Group B, it's approximately $3.07,$3.69

Confidence Interval for Conversion Rate



- Group A: 0.037, 0.042
- Group B: 0.044, 0.049

Two-Sample Test of Proportions

- Using z-interval , assuming equal proportions, using pooled standard error
- What is the null hypothesis?
- Is the result statistically significant?
- Make decisions

Two-Sample Test of Proportions

Difference in average amount of spent between two groups

- What is the null hypothesis?

  H0:μ1=μ2

  H1:μ1≠μ2

- Using Welch's t-test assumes unequal variance?

$$t = \frac{\bar{X}_2 - \bar{X}_1}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Two-Sample Test of Proportions

Result:

p-value = **0.9523976714075935 ~ 95%**

p-value > 0.05

Statistically **insignificant**, we fail to reject the null hypothesis that there is no difference in the mean amount spent per user between the control and treatment.

Two-Sample Test of Proportions

Difference in conversion rates

pool p= 0.042784463559651 02

standar err pooled= 0.0018295260812852 74

z_score = -3.864291770414927

Two-Sample Test of Proportions

Result:

p-value = **`0.00011141198532937935 ~ 0.01%`**

p-value < 0,05

Statistically **significant**, we reject the null hypothesis that there is a significant difference in the conversion rates between the control and treatment.

Confidence Intervals

95% confidence interval for the difference in the conversion rate between the treatment and control (treatment-control)

- Using normal distribution and unpooled standard error
- Conversion A = 3.92% Conversion B= 4.63%
- Std. errors A = 0.00124; Std. errors B 0.00134
- Conversion diff = 0.007
- Std. error diff = 0.002
- Z-Score = 1.96
- Margin of error= 0.004

Confidence Intervals

95% confidence interval for the difference in the conversion rate between the treatment and control (treatment-control)

- **0.35% and 1.07%.**

Decision:

launch the new experience to all users