

# Hackathon Task:

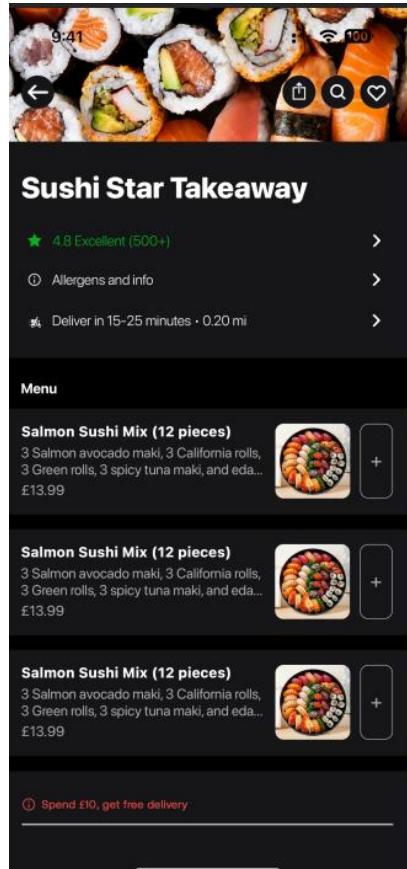
A/B Test Analysis for Foodtech Company



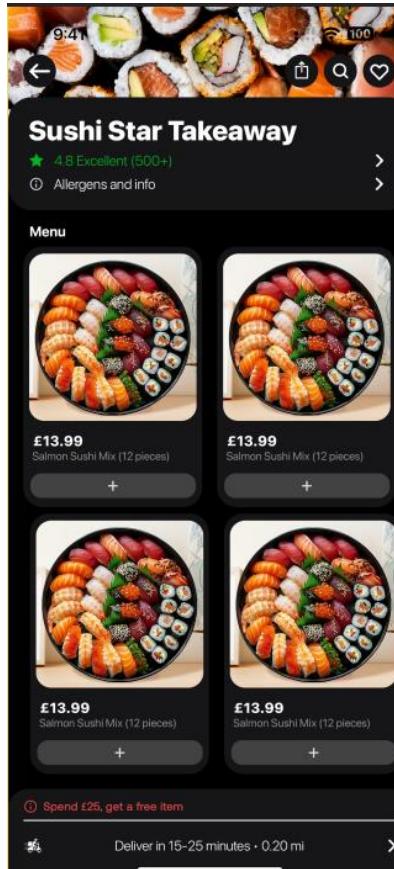
Ifeoluwa / March 12

# Improvement Suggestions

A



B



- Item name should be made bolder
- The price should be placed under the item name, it should be clear but not as large as the item name.
- Quantity box can be included on the page to allow users add number of items they need for multiple order for same item to avoid repetitive clicks
- “Spend £25, get a free item” information can go unnoticed, it should be made as a pop-up notifying users instead.

# Analysing the Dataset

## Variation 1

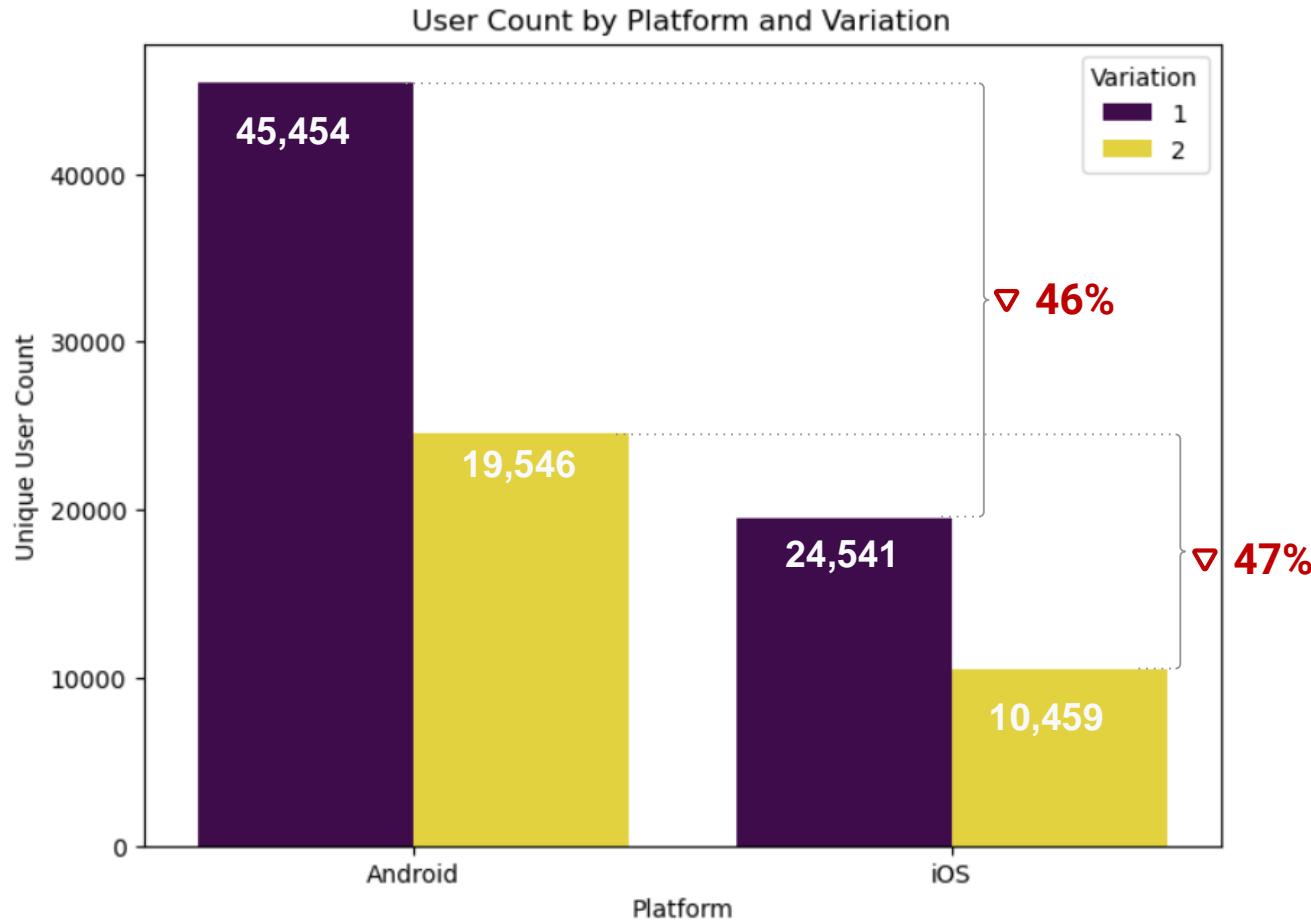
- **212,602** users recorded in variation 1 out of which **65,000 (~31%)** are unique users
- Unique users in variation 1 consist of **45,454 (~70%)** Android users and **19,546 (~30%)** iOS users

## Variation 2

- **114,319** users recorded in variation 2 out of which **35,000 (~31%)** are unique users
- Unique users in variation 2 consist of **24,541 (~70%)** Android users and **10,459 (~30%)** iOS users

Variation	Device	No. of Users	No of Unique Users
1	Andriod	146,777	45,454
1	iOS	65,825	19,546
	Subtotal	<b>212,602</b>	<b>65,000</b>
2	Andriod	79,152	24,541
2	iOS	35,167	10,459
	Subtotal	<b>114,319</b>	<b>35,000</b>
	Total	<b>326,921</b>	<b>100,000</b>

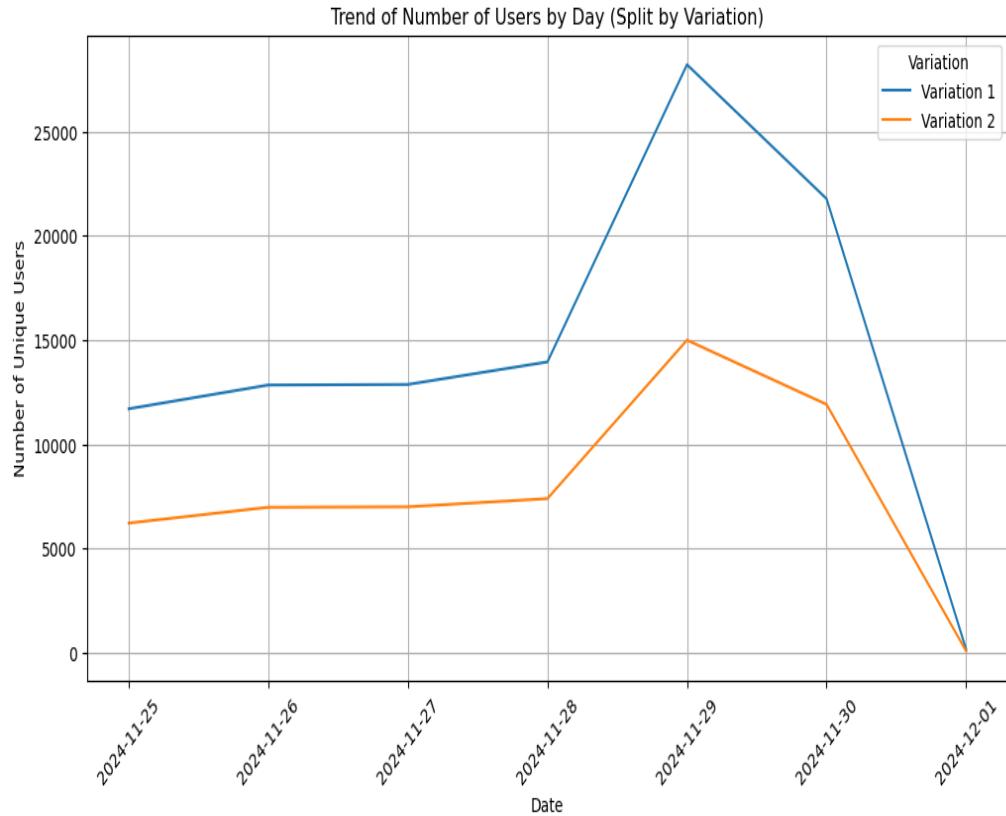
# Analysing the Dataset



# Analysing the Dataset

## Variation 1 and Variation 2

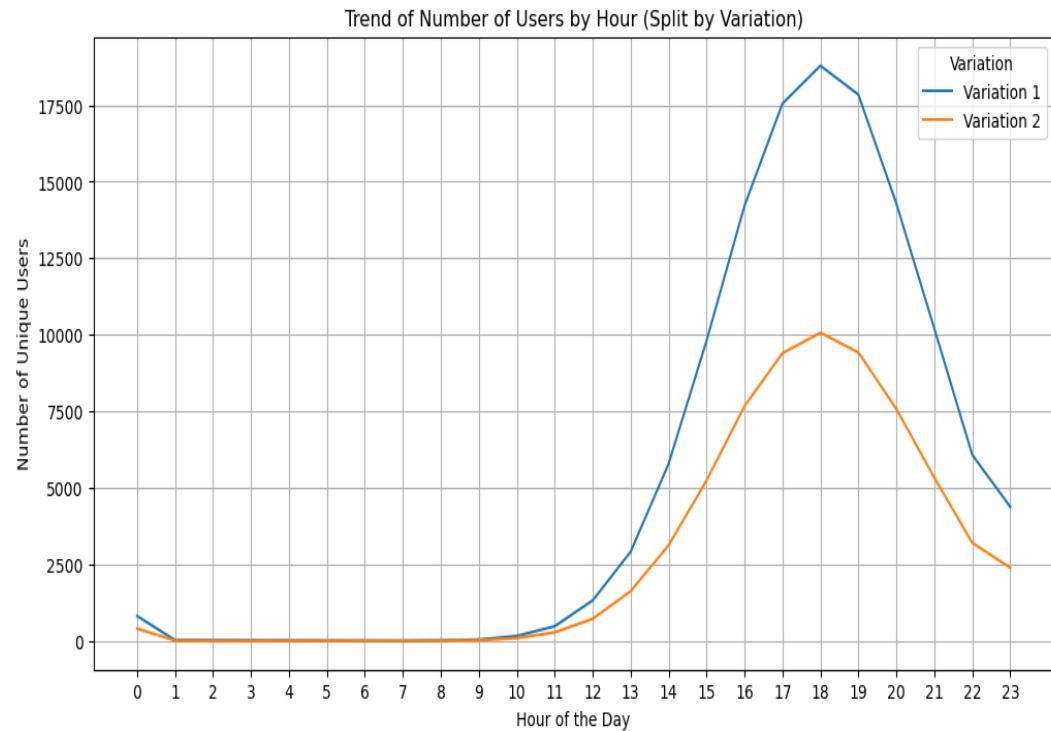
- Usage is lowest on 25 November 2024 (Monday), increased steadily then there's a spike on 29 November 2024 (Friday) which was also the peak and usage drop again on the 30 November 2024 (Saturday)



# Analysing the Dataset

## Variation 1 and Variation 2

- Usage is lowest between 1am and 10am, the usage start to increase from 11am, it rises steadily and reached the peak at 6pm when it starts to decline



# Hypothesis Testing

To determine conversion rate, the data is filtered using the '**event\_type**' column where the value is '*Order\_finished*' which brings value in the '**final\_order\_status**' column to either '*Successful*', '*Cancelled*', or '*Refund\_after\_Delivery*'. Only '*successful*' is considered for order conversion.

Variation	Device	No of Unique Users by Session	Successful	Cancelled	Refund after Delivery
1	Andriod	81,458	19,309	2,285	1,427
1	iOS	35,131	9,352	1,106	661
	<b>Subtotal</b>	<b>116,589</b>	<b>28,661</b>	<b>3,391</b>	<b>2,088</b>
2	Andriod	43,997	10,871	1,302	112
2	iOS	18,708	5,326	608	59
	<b>Subtotal</b>	<b>62,705</b>	<b>16,197</b>	<b>1,910</b>	<b>171</b>
	<b>Total</b>	<b>179,294</b>	<b>44,858</b>	<b>5,301</b>	<b>2,259</b>

# Hypothesis Testing & Conclusions

Number of Successful order is compared to total number of users while grouping it by 'session\_id', this is to ensure users that have completed order in different sessions is not selected uniquely.

Variation 2 (**25.83%**) have a slightly higher order conversion rate than Variation 1 (**24.58%**)

Variation	No of Users by Session	No of Successful orders	Conversion Rate
1	116,589	28,661	24.58%
2	62,705	16,197	25.83%

# Hypothesis Testing & Conclusions

To test that this outcome has statistics significance and not coincidence, hypothesis testing using '*proportions\_ztest*' package from '*statsmodels*' library

**Ho:** Increasing the size of food images on restaurant menu cards will not improve conversion to orders.

**H1:** Increasing the size of food images on restaurant menu cards will improve conversion to orders.

## **Output:**

p-value: 0.00000005

## **Conclusion:**

since p-value is less than 0.001, we reject Ho and accept H1. Therefore, we can conclude that result is highly statistically significant: **Increasing the size of food images on restaurant menu cards will improve conversion to orders.**

# Recommendations for Product Team

- Variation 2 performed better, it can be implemented for all user to measure engagement and improve order conversion.
- Variation 2 has higher order conversion rate but lower user engagement compared to Variation 1, improving the features as highlighted in improvement suggestions (pg. 2) can increase engagement and also increase order conversion.
- Usage is lowest between Monday and Thursday, with off-peak periods between 1am and 11am (pg. 5 &6) Discounts or other promotional activities can be done to increase engagement within these periods.