Discounts & Coupons Effect on Customer Retention & Profitability

Group 11

Competitive Industry

Low Customer Loyalty

Low Profitability

Research Question & Hypotheses

1 **Does a free delivery positively impact a restaurant's profitability and customer retention rate?**

H_0: No positive impact on profitability & customer retention with free delivery
H_1: Positive impact on profitability & customer retention with free delivery

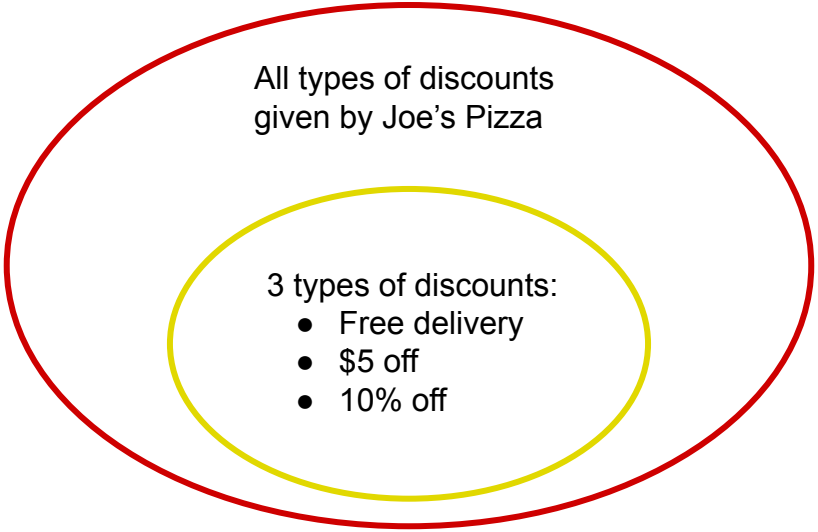
2 **Does a $5 off discount positively impact a restaurant's profitability and customer retention rate?**

H_0: No positive impact on profitability & customer retention with $5 off discount
H_1: Positive impact on profitability & customer retention with $5 off discount

3 **Does a 10% off discount positively impact a restaurant's profitability and customer retention rate?**

H_0: No positive impact on profitability & customer retention with 10% discount
H_1: Positive impact on profitability & customer retention with 10% discount

Population, Sample, & Variables



Independent Variable: Discount

- **Control Group** (50 subjects): No Discount
- **Treatment Group 1** (50 subjects): Free Delivery
- **Treatment Group 2** (50 subjects): $5 Off Coupon
- **Treatment Group 3** (50 subjects): 10% Off Discount

Dependent Variables

- Profitability
- Customer Retention Rate

Operational Procedure

1. Calculate **current customer retention rate**

2. Collect information on Joe's Pizza's **profitability**

3. Use simple random sampling to **select 200 Grubhub accounts**

4. Use simple random assignment to **assign 50 subjects** into each group

5. **Issue corresponding discount** (if any) to each subject

6. Track **# of discounts used** & **# of times each subject returned** to order from Joe's Pizza for **1 year**

7. Calculate & compare **profitability & customer retention rate** between each group

Data Collection & Statistical Analysis

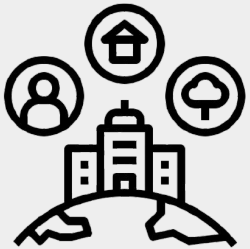
Data Collected

- New York City Grubhub accounts purchase histories
- Number of times ordered from Joe's Pizza on Grubhub per subject before & after the study
- Percentage of subjects that used their discounts
- Joe's Pizza's profitability before & after the study
- Joe's Pizza's customer retention rate before & after the study

Statistical Analysis

- Identify any differences in each group's order frequency on Grubhub
- 2 One-Way ANOVA models for each dependent variable

Limitations & Uncertainties



A **volatile external environment** due to COVID-19 poses a substantial risk to the long-term generalizability of this study. Customer loyalty outside of orders placed through Grubhub cannot be recorded.

A **1-year long study** allows extended period of time for treatment group customers to place additional orders, but such a large time gap may diminish confidence in determining any causative relationship between concessions and repeat orders.

Simulation Scenarios

Research Question	Scenario	Mean Effect in Simulated Data	95% CI of Mean Effect	% of False Positives	% of True Negatives	% of False Negatives	% of True Positives
Question 1 (Free Delivery)	No Effect	0.0094427	0.5124251	3.6	3.6	96.4	96.4
	Effect: $2.00	0.0743184	0.0861656	3.6	68.2	96.4	96.4
Question 2 ($5 off)	No Effect	0.010507	0.4933016	5.4	5.4	94.6	94.6
	Effect: $1.60	0.0361524	0.2421139	32.6	32.6	67.4	67.4
Question 3 (10% off)	No Effect	0.0100359	0.5073775	4.6	4.6	95.4	95.4
	Effect: $1.25	0.0104591	0.501948	4.6	4.6	95.4	95.4