



# **Effects of Expressing Gratitude for Shopping Local via Sign on Tipping Behavior**

Abby, Lia, Lily, Vicky  
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A top-down view of several coffee cups on a dark surface. One cup in the upper left has a heart-shaped latte art. Another cup in the lower left is filled with dark coffee. A white lid is visible between the cups.

# Experiment Details



## Research Question

Does adding a sign that says “Thank you for supporting local!” at the register of a coffee shop increase tips?



## Experiment Importance

Highly encouraged to support local businesses, especially after Covid

$$H_0$$

## Null Hypothesis

Displaying an appreciation sign does not increase the tipping percentage of customers at MCM Coffee Shop.

$$H_\alpha$$

## Alternative Hypothesis

Displaying an appreciation sign increases the tipping percentage of customers at MCM Coffee Shop



## Expected Direction of Outcome

Increase in tip percentage when the appreciation sign is displayed

# Treatment

- The treatment involves placing a sign that reads "Thanks for supporting local" next to the payment area at MCM Coffee Shop.
- June 24th, 2024 to July 7th 2024
- Measurement Units is each customer transaction for that day
- Assignment done by alternating Control and Treatment Days



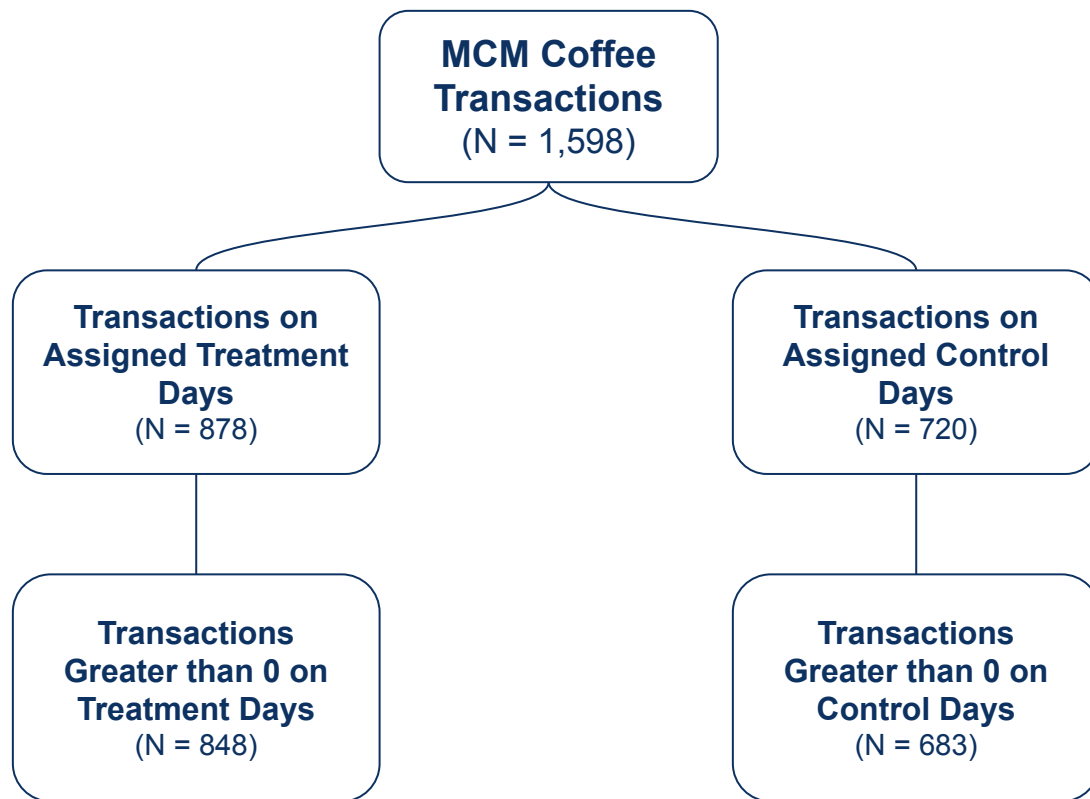
JUNE 2024

SUN	MON	TUES	WED	THU	FRI	SAT
						1
23	30 C	24 C	25 T	26 C	27 T	28 C
						29 T

JULY 2024

SUN	MON	TUES	WED	THU	FRI	SAT
	1 T	2 C	3 T	4 C	5 T	6 C
7 T	8	9	10	11	12	13

# Population Randomization



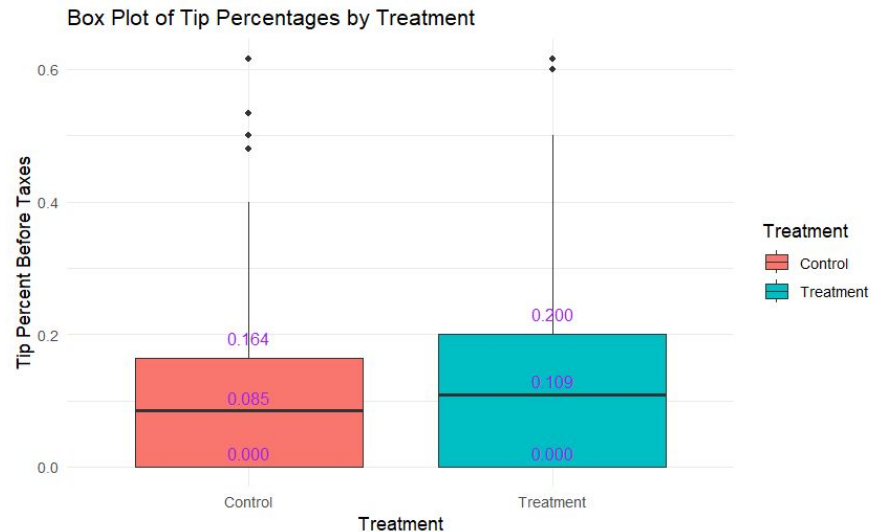
# ROXO Diagram

R	X	O
R		O

- Where:
  - R indicates the two randomized groups
  - X is the treatment
  - O are the outcomes

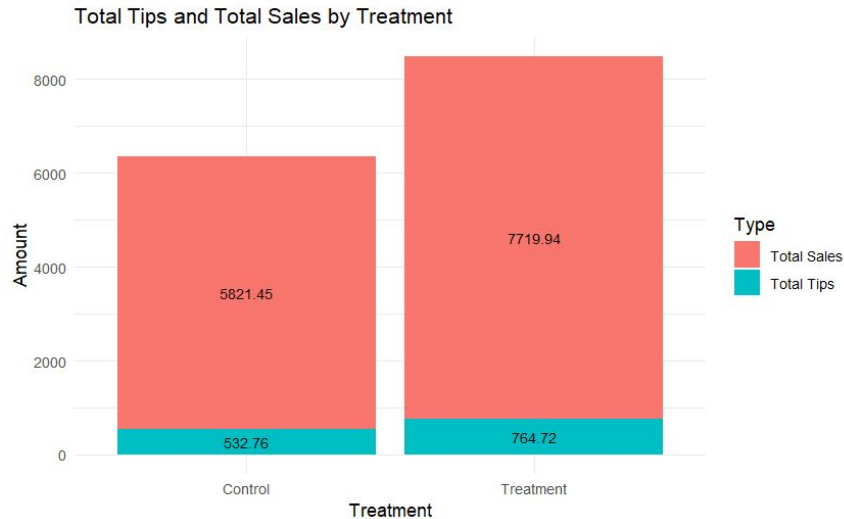
# Outcome Measures

- Comparison between the average tipping percentage on Treatment days (Sign displayed) compared to Control days (Sign not displayed)
  - Calculated tip percentage at transaction level
    - tip/before-tax sales amount
- Consider all transactions for each day in the experiment; Of all transactions, 45% were in control, 55% in treatment
- On average, the tip percentage was higher for treatment (10.1% (T) vs 9.1% (C)) and ~53% of customers tipped in Control 57% in Treatment



Treatment	Average Tip (\$)	Tip Standard Deviation (\$)	Average Tip Percent (%)	Tip Percent Standard Deviation (%)	Number of Tippers	Number of Customers	Percent of Transactions
Control	0.780	1.026	0.091	0.102	361	683	0.446
Treatment	0.902	1.097	0.101	0.104	482	848	0.554

# Outcome Visualizations



Day of Week	Average Tip (\$)	Tip Standard Deviation (\$)	Average Tip Percent (%)	Tip Percent Standard Deviation (%)	Number of Tippers	Percent of Transactions
Weekday	0.821	1.041	0.097	0.114	652	0.771
Weekend	0.937	1.148	0.093	0.106	191	0.229

# Regression Analysis

- Model 1:
  - Percentage Tipped ~ Treatment
- Model 2:
  - Percentage Tipped ~ Treatment + Day of the Week + (Treatment \* Day of the Week)

Table 1: Regression Results

	<i>Dependent variable:</i>	
	Tip Percentage Before Tax	
	Baseline	Including Day of Week Interaction
	(1)	(2)
Treatment	0.011* (0.006)	0.020* (0.012)
Weekday		0.011 (0.010)
Treatment:Weekday		-0.012 (0.014)
Constant	0.099*** (0.004)	0.090*** (0.009)
Observations	1,531	1,531
R <sup>2</sup>	0.002	0.003
Adjusted R <sup>2</sup>	0.002	0.001
Residual Std. Error	0.112 (df = 1529)	0.112 (df = 1527)
F Statistic	3.503* (df = 1; 1529)	1.574 (df = 3; 1527)
<i>Note:</i>		*p<0.1; **p<0.05; ***p<0.01



## Conclusions

“ This was a very exciting experiment and MCM was happy to  
be a part of it. We will keep using your sign here on out ”  
-MCM Coffee Owner

# T-Test Analysis Lia

Test	Average Treatment Effect	t- value	p-value	Confidence Interval (lower)	Confidence Interval (upper)
Percent Tipped ~ Treatment	0.0108	-1.8760	0.9696	-0.0203	Inf
Percent Tipped ~ Treatment + Weekdays	0.0080	-1.2027	0.8853	-0.0190	Inf
Percent Tipped ~ Treatment + Weekends	0.0200	-1.7758	0.9617	-0.0386	Inf

