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The Impact of a Sense of Community on Help-Seeking Behavior

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Introduction

Being part of a community has been shown to have many benefits for individuals, such as providing a sense of belonging and social support. However, the extent to which community affiliation influences individuals' willingness to help others within the same community remains a topic of interest. The current study aims to investigate the impact of shared community affiliation on helping behavior among Boston University (BU) students. Specifically, we sought to test whether wearing a BU shirt, which represents a shared community symbol, would increase participants' willingness to engage in helping behavior towards their fellow students. By understanding the factors that promote prosocial behavior within a community, we can create stronger, more connected communities that benefit all members. The results of this study can inform community-building initiatives and interventions that aim to foster empathy and altruism among individuals and promote a greater sense of community belongingness.

Research Question:

Does shared community affiliation increase the likelihood of helping behavior among individuals in a university setting?

Hypothesis:

Wearing a BU shirt, which represents a shared community affiliation, will increase the likelihood of helping behavior (giving their phone for a quick call) among participants, as compared to those who do not share this affiliation.

Methodology:

Participants

Our study aimed to examine the effect of shared community affiliation on individuals' willingness to help others. To achieve this, we conducted a social experiment at the Boston University (BU) campus, which provided an ideal environment to study the effects of community affiliation on helping behavior among students.

To select participants, we targeted students as they are more likely to have a community affiliation with BU. Although we did not collect age data from participants, we noticed that the majority of individuals appeared to be students based on their appearance. We acknowledge that not collecting comprehensive demographic data is a limitation of our study, and future studies could benefit from doing so.

We recruited 60 individuals for our experiment by randomly selecting students at the entrance of the George Sherman Union (GSU), BU's main student center. To measure our outcome of interest, we approached these students and asked if we could use their phone for a quick call, citing that our phone had died. This low-risk request for help provided a valid measure of participants' willingness to help, without causing any significant inconvenience or burden.

By comparing the level of helping behavior between the treatment and control groups, we can determine the effect of shared community affiliation on helping behavior. We can confidently conclude that any differences in helping behavior between the treatment and control groups are primarily due to the influence of community affiliation, rather than task difficulty.

Experimental Design

Treatment Group:

The treatment group will consist of participants who are exposed to a confederate, who we will refer to as "Member A," wearing a Boston University (BU) shirt. Member A will approach the participant and ask for help borrowing a phone to make a call. By seeing Member A wearing a BU shirt, the treatment group participants will experience a sense of community affiliation, as they also identify as BU students. This affiliation is expected to create a feeling of social connectedness with Member A, leading participants to feel more inclined to help.

We captured 30 individuals overall in the Treatment Group.

Control Group:

The control group will consist of participants who are exposed to a confederate, who we will refer to as "Member A," wearing a plain shirt. Member A will approach the participant and ask for help borrowing a phone to make a call, in the same way as the treatment group. However, unlike the treatment group, participants in the control group will not see any indication of shared community affiliation with Member A.

By not wearing a BU shirt, Member A is expected to be perceived as a stranger with no identifiable affiliation or connection to the participant, and hence no sense of community. This lack of community affiliation is expected to reduce the likelihood of participants in the control group feeling a sense of social connectedness with Member A, and thus less likely to feel inclined to help.

Overall, the control group is crucial to the validity of the study as it provides a baseline measure of the natural helping behavior of participants, and helps to isolate the effect of community affiliation on helping behavior.

We captured 30 individuals in the Control Group.

Data Variables:

In our experiment we collected binary data on our participants as follows:

- **Treatment :** Whether participant was in the treatment (=1) or control group(=0).
- **Gender:** Whether participant was Male(=0) or Female(=1)
- **Group:** Whether participant alone(=1) or in a group of two people or more(=0)
- **Headphones**: Whether participant had any wearables in their ears(=1) (headphones,earphones etc) or not(=0)
- **Phone_hand:** Whether they had a phone in their hand(=1) or not (=0)
- **Outcome:** Whether they agreed to give their phone(=1) or not (=0)

Randomization:

Randomization is a critical aspect of this study as it ensures that participants are assigned to the treatment or control group in a completely random and unbiased manner. In this experiment, the unit of randomization is individual students. We have chosen to use systematic sampling as a method of randomization, where each team member stands at a different entrance of the George Sherman Union (GSU) and counts ten members passing by. The eleventh participant who passes by during that time frame will be approached for the experiment.

In order to ensure that we had an equal number of participants in the treatment and control groups, we used a systematic sampling method. We asked each of the five individuals involved in the study to collect 12 samples each, and in each set of 12 samples, we assigned treatment to 6 numbers and control to the other 6 using a random number generator. For example, if numbers 1, 2, 5, 9, and 12 were assigned to the treatment group, those individuals were approached wearing a BU shirt, while those in the control group were approached without the BU shirt. This method allowed us to block for treatment and ensure that we obtained 30 samples in each group.

It is important to note that systematic sampling may introduce bias if there is a regular pattern to the way people enter the space. Therefore, we carefully considered other randomization methods, such as clustering samples and stratified random sampling. However, since we were unable to collect demographic data such as age, we ultimately decided to use systematic sampling. To mitigate any potential bias, we will closely monitor the sampling process and conduct the experiment over the course of an entire day to ensure that the systematic sampling is as random as possible.

Randomization checks:

To ensure that our sample dataset is randomized properly, we will conduct two checks on pre-treatment variables with the treatment variable.

-> The first check will involve assessing whether gender is randomized properly between the treatment and control groups. To conduct this check, we will use regression analysis to examine the relationship between gender and treatment, and see if there is any statistically significant difference between male and female for the different treatment groups. If the p-value associated with this analysis is less than 0.05, we would reject the null hypothesis that there is no difference between male and female in the treatment and control groups, suggesting that the randomization was not done properly.

	Gender
Treatment	0.033
	(0.131)
Num.Obs.	60
R2	0.001

Note: ^^ + p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Conclusion: In our case, the p-value associated with the analysis is not significant and is larger than 0.05. This suggests that we fail to reject the null hypothesis, and we can conclude that there is no significant difference in gender between the treatment and control groups. Therefore, we can say that the randomization was done properly for gender.

-> We conducted a second regression analysis to determine if the randomization of group variable between treatment and control was done properly.

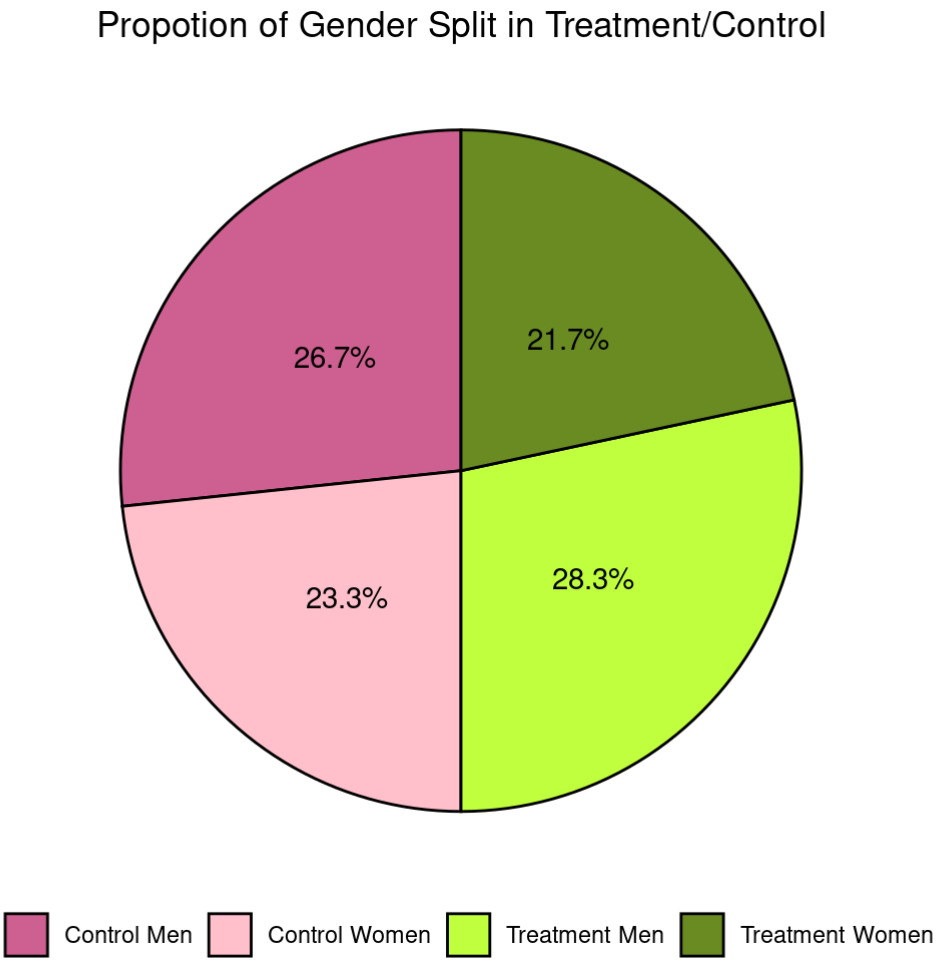
	Group
Treatment	-0.133
	(0.127)
Num.Obs.	60
R2	0.019

Note: ^^ + p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Conclusion: Our results show that the p value is greater than 0.05, indicating that there is no statistically significant difference between treatment and control groups for the Group variable. We can, therefore, conclude that the randomization process was successful for the group variable.

Since the above tells us that our randomization was done properly, it gives us confidence in the validity of our experimental design and allows us to move forward with analyzing the treatment effect on our outcome variable.

The visualization below shows the proportion of gender for Treatment and Control



The plot above shows that gender is split evenly across Treatment and Control and there is no imbalance in our dataset.

Data Analysis

Summary of the data:

```
[1] "The total users are: 60"

[1] "The total users in treatment group are: 30"

[1] "The total users that agreed to give their phone in treatment group are: 17"

[1] "The % of users in treatment group that agreed to gie their phone are:
56.6666666666667"

[1] "The total users in control group are: 30"

[1] "Users in control group that agreed to give their phone are: 16"

[1] "The percentage of users in control group that agreed are: 53.3333333333333"
```

```
[1] "The percentage conversion difference between groups is: 3.33333333333333"
```

```
[1] "The percentage of people that agreed to give their phone is: 55"
```

Lets take a look at the average treatment effect (ATE) on outcome:

```
[1] "The Average Treatment effect is:  0.0333333333333333"
```

Lets take a look at the Cohen's D value for our experiment:

```
Warning: 'y' is numeric but has only 2 unique values.
  If this is a grouping variable, convert it to a factor.
```

```
[1] "The value of cohens D is:  0.0659133468152658"
```

Cohen's d is a measure of effect size, which indicates the standardized difference between two means. A Cohen's d of 0.065 is considered a small effect size. It suggests that there is a small difference between the means of the treatment and control groups.

In the context of the experiment, the small effect size could indicate that shared community affiliation has a limited effect on individuals' willingness to help others. However, it's important to note that effect sizes can be influenced by a variety of factors, including sample size and measurement error. Therefore, it's important to interpret effect sizes in conjunction with other statistical measures and context-specific information to draw meaningful conclusions.

Regression Models

Model 1: Regress Outcome on Treatment

First we will regress outcome on the treatment without considering any covariates.

	Outcome
Treatment	0.033
	(0.131)
Num.Obs.	60
R2	0.001

Note: ^^ + p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

The above code performs a regression of the Outcome variable on the Treatment variable using the feols function. The output of the regression is displayed using the etable function. The table displays the coefficients, standard errors, t-values, and p-values for the Treatment variable.

- In the regression output, the constant (represented by the term "Intercept") is 0.5333 with three asterisks, which indicates that it is statistically significant at a level of 0.001. This means that when Treatment is zero (i.e., in the control group), the predicted value of Outcome is 0.5333.

- The Treatment coefficient is 0.0333, indicating that the treatment group had an average outcome value that is 0.0333 units higher than the control group. However, the p-value of this coefficient is higher than 0.05, which is not statistically significant at conventional levels (e.g. 0.05). Therefore, we cannot conclude that the treatment had a significant effect on the outcome, based on this regression analysis.

```
    Welch Two Sample t-test

data:  data[Treatment == 1, Outcome] and data[Treatment == 0, Outcome]
t = 0.25528, df = 57.997, p-value = 0.7994
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.2280410  0.2947077
sample estimates:
mean of x mean of y
0.5666667 0.5333333
```

A t-test for the above, confirms that the p-value is 0.7994 which is significantly higher than our confidence level (0.05). Therefore, we cannot conclude that the treatment had a significant effect on the outcome, based on this regression analysis.

Model 2: Regress Outcome on Treatment with covariates

Now we will regress outcome on treatment with covariates such as gender, group, phone_hand and headphones an control for these variables.

	Outcome
Treatment	-0.070
	(0.110)
Gender	0.024
	(0.113)
Group	-0.556***
	(0.108)
Phone_hand	0.104
	(0.119)
Headphones	-0.215+
	(0.112)
Num.Obs.	60
R2	0.288

Note: ^^ + p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

The regression model above includes all the variables in the dataset, including Treatment, Gender, Group, Phone_hand, and Headphones, to see how each variable is associated with the Outcome.

- The Treatment coefficient of -0.0702 means that, holding all other variables constant, being in the treatment group is associated with a decrease of 0.0702 in the Outcome, compared to the control group. This coefficient is negative, indicating that the treatment group has a lower Outcome on average than the control group. This is not significant so we cannot conclude that the treatment has any effect on the outcome.
- The Gender coefficient of 0.0237 means that, holding all other variables constant, being female is associated with an increase of 0.0237 in the Outcome, compared to being male. This coefficient is positive, indicating that females have a higher Outcome on average than males.
- The Group coefficient of -0.5557*** means that, holding all other variables constant, being alone is associated with a decrease of -0.5557 in the Outcome, compared to being in a group. This coefficient is negative and statistically significant at the 0.001 level, indicating that there is a significant difference in the Outcome between the two groups.
- The Phone_hand coefficient of 0.1040 means that, holding all other variables constant, having a phone in hand is associated with an increase of 0.1040 in the Outcome, compared to not having a phone in hand. This coefficient is positive, indicating that having a phone in hand is associated with a higher Outcome.
- The Headphones coefficient of -0.2146 means that, holding all other variables constant, wearing headphones is associated with a decrease of 0.2146 in the Outcome, compared to not wearing headphones. This coefficient is negative, indicating that wearing headphones is associated with a lower Outcome.

  Since we have reduced the standard error of Treatment from 0.13 to 0.11, we can conclude that including these covariates has increased precision to our model. Our Treatment effect still remains negligible as it did before and since it is not significant, we cannot say that the treatment has any effect on the outcome.

Model 3: Regress Outcome on Treatment only with single covariate

	Outcome	Outcome	Outcome	Outcome
Treatment	-0.034	0.031	0.033	0.028
	(0.115)	(0.132)	(0.131)	(0.133)
Group	-0.505***			
	(0.118)			
Gender		0.056		
		(0.132)		
Phone_hand			0.107	

	Outcome	Outcome	Outcome	Outcome
			(0.131)	
Headphones				-0.036
				(0.133)
Num.Obs.	60	60	60	60
R2	0.244	0.004	0.013	0.002

Note: ^^ + p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

The above models control for a single covariate(Group, gender, phone_hand and headphones respectively). In all cases, we notice that the Treatment was not statistically significant and the p-values for all models were greater than 0.05. We can conclude that the covariates individually had no effect on the outcome variable for the Treatment and control groups.

Model 4: Regress Outcome on Treatment with interaction term(Group)

The regression model for interaction between Treatment and Group aims to investigate whether the effect of Treatment on Outcome differs based on the Group variable.

```
                        reg_cov_inter
Dependent Var.:               Outcome

Constant             0.8125*** (0.1010)
Treatment              -0.1125 (0.1465)
Group               -0.5982*** (0.1519)
Treatment x Group       0.1982 (0.2384)
___________________ ____________________
S.E. type           Heteroskedast.-rob.
Observations                        60
R2                             0.25289
Adj. R2                        0.21286
---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

The results are as follow:

- The constant (0.8125***) represents the expected value of Outcome when both Treatment and Group are equal to 0.
- The coefficient for Treatment (-0.1125) represents the change in Outcome associated with a one-unit increase in Treatment, holding Group constant. This coefficient is negative, suggesting that on average, participants in the Treatment group had lower Outcome scores than those in the Control group. This term is not significant, so we cannot conclude that the treatment has any effect.
- The coefficient for Group (-0.5982***) represents the change in Outcome associated with a one-unit increase in Group, holding Treatment constant. This coefficient is also negative, suggesting

that on average, participants alone had lower Outcome scores than those in groups. This term is significant.
- The coefficient for Treatment x Group (0.1982) represents the difference in Treatment effect between the two Groups. This coefficient is positive, suggesting that the effect of Treatment on Outcome is larger alone than in groups. This term is not significant, so we cannot conclude that the treatment effect differs between the two groups.

Overall, the results show that even with an interaction term, the treatment has no effect on the outcome consideirng being alone or in a group.

Limitations

Let us discuss some of the limitations to understand why we did not see any effect on outcome even though our hypothesis said so.

There are several limitations to this experiment:

1. Limited demographic information: The study did not collect comprehensive demographic information on the participants, such as age or ethnicity, which limits the ability to generalize the results to the broader population.

2. Limited outcome measure: The outcome measure only assessed participants' willingness to lend their phone for a quick call. While this is a valid measure of helping behavior, it is a narrow measure that may not capture other forms of prosocial behavior.

3. Small sample size: The study had a relatively small sample size of 60 participants, which limits the statistical power and generalizability of the results.

4. Potential demand characteristics: Participants may have guessed the purpose of the experiment and adjusted their behavior accordingly, leading to demand characteristics that could affect the validity of the results.

5. Potential experimenter bias: The experimenters themselves may have inadvertently influenced the participants' behavior, either intentionally or unintentionally, leading to experimenter bias that could affect the validity of the results.

Conclusion

Our study's findings indicate that shared community affiliation, as represented by wearing a BU shirt, does not have a significant effect on the likelihood of helping behavior among individuals in a university setting. However, an interesting observation emerged from our analysis, revealing that participants walking in a group demonstrated a significant impact on the outcome. This suggests that the presence of others may play a more important role in influencing helping behavior than shared community affiliation in this specific context. The social dynamics within a group could potentially encourage individuals to act more prosocially, either due to social norms, the desire to maintain a positive image

among peers, or feeling more safe within groups so that more willingness to help strangers. While our initial hypothesis was not supported, these results highlight the importance of further investigating the role of group dynamics in promoting helping behavior and designing community-building initiatives that leverage the influence of social interactions to foster empathy and altruism.

Bibliography

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