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# Do Peer Comparison Feedback and Financial Incentives Induce Healthy Behavior? Evidence from Dormitory Roommate



## Assignments

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### Objective

**Encouraging individuals to increase their physical exercise behavior by providing them with financial incentive and peer comparison feedback**

### Introduction

- The American Heath Association recommends 150 minutes of moderate physical activity or 90 minutes of vigorous physical activity per week (AHA 2014)
- Physical inactivity has been linked to increase in the risk of health problems such as obesity, cardiovascular diseases, diabetes, cancer, arthritis, hypertension and depression (Lee et al. 2012; Warburton et al. 2006)
- According to the BRFSS data only 27 percent of the US adults meet the CDC physical activity recommendation (Brownson et al. 2005)

### Experimental Design

**Subject:** Freshmen living in dormitories at a public university in the Midwest

**Duration:** Study started in Sept 2014 and concluded in December 2014 for a period of 10 weeks

#### Randomization:

- Rooms in a residence hall are divided in to houses
- Each residence hall consists of 15 houses on average
- Houses were randomly divided into three group. Two treatment and one control group
- All the rooms in a house belonged to their respective control and treatment groups
- One person from each room was randomly selected
- Nudges were emailed to the students every Monday morning
- Daily recreation center data usage was obtained from the University Recreation Center

### Balance Test

- Regression estimates of base student characteristics on a constant, and a dummy variable for being in the treatment group (Glewwe et al. 2009)
- Results show that the sample is balanced between the control and treatment groups

### Financial Incentive Treatment

- 599 students randomly assigned to the financial incentive group
- Financial incentive was in the form of a lottery
- 299 received a higher financial incentive and 300 received a lower financial incentive
- The higher incentives progressed from \$20 to \$120 and the lower incentives progressed from \$10 to \$120
- A message mentioning that every time a student visited the recreation center, s/he would be entered into a lottery to win an Amazon gift card and the actual probability of winning the lottery

### Results for Impact of Financial Incentive on Visits to the Recreation Center of Freshmen

Number of Visits to the recreation center during each intervention week	Male	Female
<b>Lower Financial Incentive</b>	<b>0.092</b> (0.056)	<b>-0.003</b> (0.062)
<b>Higher Financial Incentive</b>	<b>-0.040</b> (0.055)	<b>-0.024</b> (0.060)
<b>N (Low Treatment)</b>	<b>136</b>	<b>164</b>
<b>N (High Treatment)</b>	<b>129</b>	<b>170</b>
<b>N (Control)</b>	<b>315</b>	<b>330</b>

### Results

- Social norming and financial incentives in the form of a lottery are well established policies employed towards behavior modification
- However, results from my study show that the interventions were not successful in encouraging freshmen to visit the university recreation center
- In case of financial incentive and a higher chance of winning, the lottery might help in increasing the effective ness of the treatment
- In case of social norming, including a positive inductive message might help in encouraging students
- Further research can be applied towards studying the mechanism for economic incentives to understand their true effect

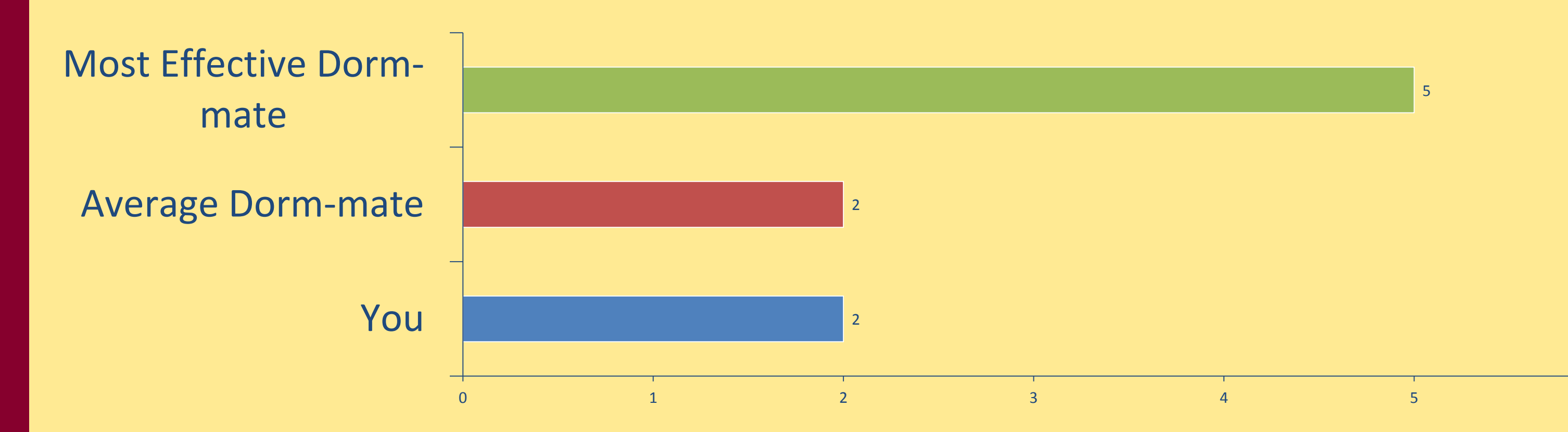
### Social Norming Treatment

- 566 students randomly assigned to the financial incentive group
- A message containing following information was sent to the students every Monday morning
  - A bar chart comparing the individual's number of visits to the recreation center to that of the group of comparable peers and to the peer with the highest number of recreation center visits over the previous week
  - A normative message to motivate physical exercise
  - Information on the university recreation center and the benefits of exercising

### Results for Impact of Social Norming on Visits to the Recreation Center of Freshmen

Number of Visits to the recreation center during each intervention week	Male	Female
<b>Social Norming Treatment</b>	<b>0.057</b> (0.102)	<b>-0.059</b> (0.115)
<b>N</b>	<b>605</b>	<b>606</b>

### Fig: Example Social Norming (Peer Feedback) Treatment



### Descriptive Statistics for the Control and Treatment Groups

(Mean/Frequency)

Variable	Control	Email	Financial
<b>Age (years)</b>	<b>18.06</b>	<b>18.06</b>	<b>18.03</b>
<b>Female</b>	<b>0.51</b>	<b>0.48</b>	<b>0.55</b>
<b>Local Student</b>	<b>0.63</b>	<b>0.63</b>	<b>0.63</b>
<b>Race = White</b>	<b>0.81</b>	<b>0.79</b>	<b>0.79</b>
<b>Race = Asian</b>	<b>0.11</b>	<b>0.11</b>	<b>0.12</b>
<b>Race = Other</b>	<b>0.08</b>	<b>0.10</b>	<b>0.09</b>