Mid-Term Check-In
Purell Group: Omar, Carmen, Nikki
W241
March 2018

- At a high level, how are you planning to execute the experiment? How will you divide up the data collection task among yourselves?
    a. We plan on placing Purell bottles in areas with high foot traffic and weighing them daily. After a time of leaving them in control, we will add an instructional sign requesting passers-by to use the Purell. We will continue to weigh the bottle daily to see if a sign encourages people to use hand sanitizer more.
    b. To divide the work amongst ourselves, we picked locations close to each of our houses. To verify that our design will work, we created mock data and ran an OLS on it:

```
In [163]: ols_revised = sm.ols(formula="wt_diff ~ blue", data=revised_df).fit(cov_type='cluster',
                                                                              cov_kwds={'groups': revised_df['locatic
          n']},
                                                                              use_t=True)
          ols_revised.summary()
```

Out[163]:

Dep. Variable:	wt_diff	**R-squared:**	0.714
Model:	OLS	**Adj. R-squared:**	0.706
Method:	Least Squares	**F-statistic:**	100.8
Date:	Sun, 04 Mar 2018	**Prob (F-statistic):**	0.00210
Time:	13:36:31	**Log-Likelihood:**	-183.20
No. Observations:	36	**AIC:**	370.4
Df Residuals:	34	**BIC:**	373.6
Df Model:	1		
Covariance Type:	cluster		

	coef	**std err**	**t**	**P>|t|**	**[0.025**	**0.975]**
Intercept	75.6413	12.387	6.107	0.009	36.222	115.061
blue	124.3587	12.387	10.040	0.002	84.939	163.778

Omnibus:	24.636	**Durbin-Watson:**	1.704
Prob(Omnibus):	0.000	**Jarque-Bera (JB):**	44.148
Skew:	1.739	**Prob(JB):**	2.59e-10
Kurtosis:	7.163	**Cond. No.**	2.56

- How detailed is your experimental design and procedure so far?
    a. Our experimental design is done, and is pretty detailed. The locations, schedule, and procedures have been selected. We did a first run test this week to verify the locations are secure enough that no one will steal the bottles, and so far so good.
- What parts of the protocol have you not fleshed out yet?
    a. Our protocol is fully fleshed out, except that we may still make some

changes to the schedule for assigning each location and date to the treatment or control group. This is discussed in more detail below.

- What aspects are you undecided about? Would you like advice on these?

  The design of the experiment needs finalizing. David Reiley advised a stepped-wedge design to address the locations where the same people are likely to be present every day (office and residential). How to actually implement that is unclear. Below is our proposed schedule of experiments

	Pilot Study						Regular Study - Week 1							Regular Study - Week 2							Regular Study - Week 3 (also Spring Break!)						
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	
Location	March 5	March 6	March 7	March 8	March 9	March 10	March 11	March 12	March 13	March 14	March 15	March 16	March 17	March 18	March 19	March 20	March 21	March 22	March 23	March 24	March 25	March 26	March 27	March 28	March 29	March 30	
Omar's Pediatrician - Well	Control	Control	Control	Control	Control			Treat	Treat	Treat	Treat	Treat			Control	Control	Control	Control	Control			Treat	Treat	Treat	Treat	Treat	
Omar's Pediatrician - Not W	Control	Control	Control	Control	Control			Control	Control	Control	Control	Control			Treat	Treat	Treat	Treat	Treat			Control	Control	Control	Control	Control	
Yarn Store								Control	Control	Control	Control	Control	Control		Treat	Treat	Treat	Treat	Treat	Treat		Treat	Treat	Treat	Treat	Treat	
Nikki's Gym								Control	Control	Control	Control	Control	Control		Treat	Treat	Treat	Treat	Treat	Treat		Treat	Treat	Treat	Treat	Treat	
Carmen's Gym																											
Carmen's Apartment Lobby							Control							Treat													
Concur Floor 3								Control	Control	Control	Control	Control			Treat	Treat	Treat	Treat	Treat			Treat	Treat	Treat	Treat	Treat	
Concur Floor 6								Control	Control	Control	Control	Control			Control	Control	Control	Control	Control			Treat	Treat	Treat	Treat	Treat	
Concur Floor 9								Control	Control	Control	Control	Control			Treat	Treat	Treat	Treat	Treat			Treat	Treat	Treat	Treat	Treat	
Concur Floor 11								Control	Control	Control	Control	Control			Control	Control	Control	Control	Control			Treat	Treat	Treat	Treat	Treat	
Concur Floor 16								Control	Control	Control	Control	Control			Treat	Treat	Treat	Treat	Treat			Treat	Treat	Treat	Treat	Treat	
Number of Observations	2	2	2	2	2	0	1	8	8	8	8	8	2	1	8	8	8	8	8	2	0	8	8	8	8	8	

- What software (if any) needs to be written to execute the experiment? How far along are you on this?

  Data cleanup and OLS regressions to be written in Python. No special software is needed otherwise. We will review the data as it comes in and start thinking about what cleanup will be necessary.

- On what questions would you like advice from the instructor?
  a. Omar: If a stepped wedge is needed and how to implement it
  b. Nikki: I would like to use stepped-wedge for this as well.
  c. Carmen: is our proposed treatment/control schedule a stepped wedge design?
- Are you hoping for a grant to help cover expenses of the experiment? If so, make sure to send the instructor a one-page email detailing your grant amount request (up to $500 per group)
  a. Omar: 2 x $22 for Purell $18 for scale $20 for signs
  b. Nikki: Yes, we hope to purchase Purell containers costing around $22.00 per container. We will need signs as well .
  c. Carmen: $112.05 for 4 Purells and 1 scale