**Meeting attendees.**

Xia Jiang,  Garrett Barber

**Meeting time**

2:00 – 3:00 pm, Dec 28, 2022

**Meeting agenda (an addition meeting in response to an email question).**

1. Review progress.
2. Test iRCT.
3. Work assignment.

**Research Design**

iRCT – an intelligent pseudo randomized controlled trial.

1. Implement the simple matching estimator method as described in Jiang’s slide (AboutDID.pptx).
2. Created a simple test dataset using the same example Jiang used in her slides.
3. Test 1) with the dataset created in 2).
4. Include a transform function in our iRCT (See the MBIL package) that can convert all the covariates into one variable (such as the X in the example).
5. Develop a function that convert multi-value variables into a binary variable and include it in the iRCT pacakge.
6. Apply iRCT to our LSM-15year.
7. Identify more interesting “treatment” variables such as Menopausal status in our LSM-15 year, use method developed in 5) to convert them into binary each respectively, if they are non-binary. Then apply iRCT each respectively.
8. Compare what you learned from using iRCT with what you can learn from our MBIL methods, and from the other causal learning methods that we have access to.
9. In terms of the completed causal network, such as the you (Garrett) learned using FCI with our LSM-15year, you can just retrieve the direct causes to the target variable (BCM) and compare with our MBIL and iRCT.

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**Progress made in the past week.**

**Issues/Questions and Comments**

Discuss LSM15-Year dataset, maybe in order to solve DID issue.

**Ongoing tasks that cover more than a week**

**Specific tasks for the coming week (the original task assignment for two weeks)**

1. Finish the experiment suggested previously if not finished.
2. Do more experiments using the two new datasets provided. More specifically, compare the causal learning results using iRCT and the other five causal learning methods. In terms of iRCT, for every pair of variables, treating one as treatment, the other as the target, and the remaining as the covariates, record the total “differences”; then exchange the target and the treatment and redo. In terms of the other methods, record the output of the methods.
3. Side by side comparison of the causal relationships learning from the six methods.
4. Develop readme files for the iRCT and the causal methods.
5. Look into how the output of iRCT be interpreted. Is there a “threshold” for causal or non causal?
6. Start putting together our iRCT methodology paper/technical report.

**Less urgent tasks**