**Meeting attendees.**

Xia Jiang,  Garrett Barber

**Meeting time**

4:00 – 5:00 pm, Jan 25, 2023

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

1. Review the progress of the work assigned last week.
2. Since the readmes for the tested are not completely updated yet, Dr. Jiang will do the tests during the week once all the readmes enhanced and pushed to the github repo.
3. Discuss issues encountered during the week.
4. 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.**

As shown by Garrett’s file called /Users/xij6/Documents/Research/git/XiaJiang-2Github/iRCT/docs/Garrett's findings for 1.18.23 meeting.docx

**Issues/Questions and Comments**

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

Developing iRCT and our CausalLearning package.

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

1. Incorporate the independent test mechanism from MXM R package to the current version of PC that we have, document the work and update the readme about this. Finished this but not yet updated the readme file. Will work on the readme this coming week to the standard in that one can do a test with our software according to the readme alone.
2. Looking into the other implementations of rFCI and FGS in CCD, for example the JAVA version. Once identify a “working” version, convert it to a python package to be included in our causal learning package. If can’t find a “working” version, then develop our own packages that truly work. For the coming week, you can revise the readme with the original package and incorporate it into the readme of our whole CausalLearning package.
3. Resume the functions regarding the three versions of iRCT created during the development phase, update the readme, and the tech report describing them in detail and explaining why running times are different. Readme is not updated yet. Should do this in the coming week. Again, our readme should include testing data and testing example.
4. Enhance all readme files. For example, in term of MBIL, we need to add a link to the version submitted to the python community in the readme; and also add and explain all function including the transformation function. Garrett found out that the current version of MBIL need to be enhanced in terms of documentation that is inside the python program (not the readme). This should be one of Garrett’s tasks for the coming week.
5. In terms of iRCT, for now, we just treat it as the supervising learning methods similar to MBIL. We can compare it to both MBIL and the results of causal learning methods. Garrett found out the MBIL-py does not work the COVID dataset, the program just threw an error. This should be should resolved.
6. Develop a web application for iRCT and the CausalLearning each respectively. You don’t have follow the format/style of our current iMed and iMedbot website, but you can use them as your resources. Using the local host to test it for now.
7. Work on the tech reports/papers. Look into some relevant journals for format of methodology paper. I will share with a list of relevant journals. Also you can look into the series of Journals under MDPI (https://www.mdpi.com/about/journals)

**Less urgent tasks**