

### Q&A Chat Webinar 9 - Fixed Effectes (Theory) - June 20

|    | Question                                                                                                                                                          | Answer                                                                                                                                                                                                                                                                                                                                   |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | With example differentiate Time varying control and time invariant control?Thank you                                                                              | Thank you for your question. We will show that in next examples                                                                                                                                                                                                                                                                          |
| 3  | The $\bar{Y}$ for me comes up how?                                                                                                                                | $\bar{Y}$ bar is the average value of Y. So if Y for inidividual i, at time period 1 = 10, and for the same individual at time period 2 = 10, y bar is 10 ( $10+10/2$ )                                                                                                                                                                  |
| 4  | Sorry: Now I get it                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                          |
| 5  | Please, do we have anything like Dynamic Panel with Fixed Effects?                                                                                                | By dynamic you mean there is a lagged independent variable? We will look at that I nthe very last set of sessions.                                                                                                                                                                                                                       |
| 6  | Also where quality of care is poor, those with health insurance may still have high health expenditure.                                                           | Yes                                                                                                                                                                                                                                                                                                                                      |
| 7  | I am unable to download the materials including the previous sessions. I have tried many times but I couldn't manage. Please attached to my email                 |                                                                                                                                                                                                                                                                                                                                          |
| 8  | Do we need to do unit root test before running fixed effects ?                                                                                                    | No, unit roots are for time-series data structures.                                                                                                                                                                                                                                                                                      |
| 9  | can you explain further, econometrists keep on coming up with models can that nean the weakness?                                                                  |                                                                                                                                                                                                                                                                                                                                          |
| 10 | To what extent is FE causal?                                                                                                                                      | The FE is eliminating time invariant sources of bias. If that is the only source of bias, then yes we can consider the results as causal.                                                                                                                                                                                                |
| 11 | If using econometrics mean our design or model is weak, I wish to know what then should be normally used when studying a model? Thats, in absense of econometrics | Economics has moved (in the last 15 years) to more design-based studies. The whole RCT revolution is about design, so you design an RCT and then don't need fancy econometrics to analyze ther esults. Stronger designs mean you need simpler statistical models.                                                                        |
| 16 | What guides the identification of the problem, to justify using the fancy model?                                                                                  | Typically that the error term is correlated with the X variable of interest. AS Jeremy showed, the ui is correlated with X, leading to endogeneity (bias). To eminiate ui we use the FE model.                                                                                                                                           |
| 17 | Good day, I was unable to attend Sessions Three and Four. May you kindly share the slides and video. I am failing to find the link online.                        | <a href="https://www.airp3-africa.org/applied-quantitative-analysis-webinar-series">https://www.airp3-africa.org/applied-quantitative-analysis-webinar-series</a>                                                                                                                                                                        |
| 18 | Please, what reasons could possibly be given for using fe instead of pooled OLS?                                                                                  | You will choose FE model over OLS when you have an unobserved time-invariant error term correlates with your X variable os interest. A FE model will remove that correleation and give you unbiased estimate. There is a statistical test that tests whether FE is preferred over pooled OLS (Hausman test--will be reviewed next week). |
| 19 | Thank you so much Professors. This was amazing.                                                                                                                   |                                                                                                                                                                                                                                                                                                                                          |
| 20 | In case we do not have panels data, it is possible to use cross-sectional data example for DHIS                                                                   | If you dont have an individual panel, then maybe DHS has repeated clusters and you can do cluster-fixed effects. Otherwise you have to find some other unit that is repeated over time. Otherwise you cannot do a FE model.                                                                                                              |
| 21 | So is it possible to run an OLS on panel data in the first place?                                                                                                 | Yes. I ran OLS with panel data all the time                                                                                                                                                                                                                                                                                              |
| 23 | Can you use fixed effects to examine the effects of the policy or a program? If so, how?                                                                          | Yes as long as the policy varies over the individual (before and after, for example). Only time varying variables rmain in the FE model. If the policy is not time-varying at the individual level you cannot use FE.                                                                                                                    |
| 24 | Hi. Is it possible to get the recording of this webinar and previous ones?                                                                                        | See the website above                                                                                                                                                                                                                                                                                                                    |