# Cos’ho fatto finora:

* Literature review
  + Molto sullo studio delle determinanti della salute mentale
    - Spesso con modelli probit e logic (Y binarizzata per dire se il soggetto è mentalmente sano oppure no)
  + Poco sulla relazione MH 🡪 outcomes
    - Qualche studio di questi usa IV, ma nessuno usa il covid come fonte di esogeneità
    - Tanti trascurano i problemi di endogeneità (quindi con risultati non causali)
* Studio del testo *An Introduction to Statistical Learning* – sono a metà
  + Libro fantastico, mi sarà molto utile. Ma non so ancora precisamente come userò queste tecniche.
* Studio dei dataset:
  + Letto tutti questionari SHARE
  + Trovato dati aggiuntivi per la mia specificazione
  + Selezionato variabili

# In questo meeting

* Presentare la mia strategia IV
* Problemi di lettura del dataset: R e Python leggono il dataset con difficoltà. STATA riesce senza problemi. Suppongo ci siano pacchetti per STATA anche per fare trees e altre strategie ML.

## TO – DO

* Iniziare literature review chapter
* Prime regressioni e risultati

# IV proposal: y, x, controls

Outcome variable Y

* **Employment** 
  + Issue 🡪 restricting dataset to pre-retirement. Sample still big (>8k in all waves).
  + ep005\_ : current job situation
  + Immagine che contiene testo, schermata, Carattere, linea

    Descrizione generata automaticamente
  + How many hours usually work SHARE: ep013
  + Alternative: Time spent on paid work SHARE: te035 te036

I also thought of *employment status*, but it’s not as good. ALSO, would have to use IV-Probit specification to respect the binary nature of labor force participation.

* **Earnings** 
  + Problem 🡪 many retired, i.e. earnings don’t change according to MH status
  + Restrict sample to only working individuals:
    - Use all earnings: main job, additional earnings and such.
    - More variability in earnings *outside* of full time AND stable employment
    - SHARE [ EP ] contains info on employment and earnings composition
* **Health outcomes**
  + BEST IDEAS:
    - Cognitive function 🡪 delta cognitive ability, delta memory task performance (between w8 and w7).
  + WORSE IDEAS:
    - Needing assistance of any kind in daily life
    - Worsening of medical conditions (how to model?)
* **Activities**
  + Participating actively in social clubs
  + Physical activity

INDEPENDENT VARIABLE OF INTEREST: MENTAL HEALTH

* In the literature:
  + Estimated using logit and probit where Y is a clinical scale (EURO-D etc.)
  + Very little IV implementations.
    - Instruments:
      * *Number of psychiatric disorders before 18* 🡪 not in SHARE
      * *Religious attendance to handle problems* 🡪 not in SHARE, dubious instrument choice
      * *Number of parental psychiatric disorders* 🡪 not in SHARE
      * *Recent friends’ death* (Frijters P, Johnston DW, Shields MA. 2010. Mental health and labor market participation: evidence from panel data models. Discussion Papers IZA DP No 4883: 1–26)🡪 very good, not in SHARE but share has similar variable in Covid questionnaire (CAC013\_)
* My instrument proposal: covid introduces variability in MH depending on stringency of measures and the impact on the population (cases, deaths, ICU numbers). Instruments:
  + Stringency index from OxGRT
  + Number of new cases per capita OR cumulated cases
  + Someone died because of Covid – data in SHARE Covid Questionnaire
* PROBLEM: how to measure MH using SHARE information?
  + Generate an index using variables in the [ MH ] module and in the [ AC ] module.
    - See yellow vars.
  + How to combine them? Open question.

## OTHER CONSIDERATIONS:

IN THE EVENTUALITY OF A PANEL DATA SETTING:

People observed across all waves (6&7&8): **56 974**.

Immagine che contiene testo, schermata, Carattere, numero

Descrizione generata automaticamente

FOR IV WHERE THE INSTRUMENT IS “AVG\_STRINGENCY\_INDEX\_30” 🡪 ONLY USE WAVE 8 (**95 935** individuals).

# Relevant Variables & where to find them

## From OxGRT: INSTRUMENT

* Stringency index considers:
  + school closures;
  + workplace closures;
  + cancellation of public events;
  + restrictions on public gatherings;
  + closures of public transport;
  + stay-at-home requirements;
  + public information campaigns;
  + restrictions on internal movements; and
  + international travel controls.

Values between 0 – 100.

* + China highest value over period (60s).
* Use N-day averages of the index as an instrument.
  + 30 day from interview?
  + Yearly avg?

## From SHARE W6, W7, W8

* Demographic characteristics [ dn ]
  + Month of birth dn002
  + Year of birth dn003
  + Born in foreign country dn004
  + Has citizenship dn007
  + High school degree dn010
  + Marital status dn014
  + Years of marriage if living together, if in partnership, if living separated dn015-dn2017
  + Since when divorced dn018
  + Since when widowed dn019
  + Partner educ dn021
  + Is natural parents alive dn026\_1 dn026\_2
  + Age of parents dn028\_1 dn028\_2
  + Where parent live dn030\_1 dn030\_2
  + Personal contact with parent in past 12 mo dn032\_1 o \_2
  + Parent health dn 033\_1 o \_2
  + Siblings alive dn036 dn037
  + Years of educ dn041
  + Gender dn042
  + Mother father educ dn051\_1 o \_2
  + Year of death of parent dn127\_1 o \_2
  + Born a citizen of country dn503
  + Country of parent birth dn505\_1 o \_2
* Social networks [ SN ]
  + Are there any other people (with whom you often discuss things that are important to you)? Sn002
  + Names of people of importance sn002\_i
  + Relation to people of importance sn005\_i
  + Anyone else is important to you sn003a
  + Network proximity sn006\_i
  + Network closeness sn009\_i
  + Network satisfaction sn017 (person said no one close) sn018 (someone close)
* Children [ CH ]
  + Number of children ch001
  + Sex of child ch005\_i
  + Year of birth of child ch006\_i
  + Where child live ch007\_i
  + Marital status child ch012\_i
  + Number of grandchildren ch021
* Physical health [ PH ]
  + General self rated health ph003
  + Chronic illness ph004
  + Limited activities because health ph005
  + Disability limits paid work activity ph061
  + Which conditions check ph006
  + How old when diagnosed with ph009\_i
  + Year of most recent health condition episode ph076\_i
  + Month of \\ episode ph077\_i
  + Frailty symptoms ph089
  + Have pain in general ph084
  + How bad pain ph085
  + Where pain ph087
  + Take drugs, which ph011
  + Takea at least 5 drugs ph082
  + Weight ph012
  + Lost weight ph065
  + Height ph013
  + Wear glasses ph041
  + Have hearing aid ph745
  + Have difficulty with following activities ph048 + ph049
  + Receive help with above activities ph050
  + Do you use activity aids ph059
* Behavioral risk [ BR ]
  + Ever smoked daily br001
  + Smoke today br002
  + How many years smoker br003
  + Avg cigarettes per day br006
  + Drank in last 7 days br039
  + How often heavy drink in last 3 months br623
  + Do vigorous physical activity br015
  + Moderate physical activity br016
  + In a week, how much dairy br026
  + Diet (dairy, legume, meat, fruit…) br026 – br029
* Cognitive function [ CF ]
  + Self rated reading cf001
  + Self rated writing cf002
  + Knows date / month / year cf003 – cf006
  + Self rated memory cf103
  + Memory got worse cf820
  + [test score?] intermediate cfNNN vars
  + Verbal fluency test cf009 – cf010
  + Numeracy test cf012 – 015, cf108 – cf112, cf821 – cf826
  + Delayed recall task cf113 – cf116
  + Object recognition cf827 – cf829
  + Drawing task cf830 – cf839
  + [all previous done with direct response]
  + Proxy responses cf840 – cf853
* Mental health [ MH ]
  + Felt depressed 1 month mh002
  + Has hopes for the future mh003
  + Wish for death mh004
  + Feels guilty mh005
    - Genuine or not mh006
  + Trouble sleeping mh007
  + Has interest in things 1 month mh008
  + Irritability mh010
  + Appetite 1 month mh011
  + Fatigue 1 month mh013
  + Can concentrate on things mh014
  + Can concentrate on reading mh015
  + Has had enjoyment lately mh016
  + Has cried in past 1 month mh017
  + Lack companionship mh034
  + Feel left out mh035
  + How much feel isolated mh036
  + How often lonely mh037
* Health care / insurance [ HC ]
  + Satisfied with insurance hc125
  + Has supplementary health insurance hc113
  + Has long term insurance hc116
  + Seen or talk to doctor past 12months hc602
    - How many with specialist hc877
  + Flu vaccine in past year hc884
  + Eye exam past 2 years hc885
  + Mammogram past 2 years hc886
  + Colon cancer screening 12months hc887
  + Dentist 12 months hc010 ?
  + In hospital past 12 months hc012
    - N times hc013
    - Planned or emergency hc888
  + N nights in hospital 12 months hc014
  + Stay in other institutions hc066
  + Forego care because cost 12 months hc841
  + Forego care because unavailable 12m hc843
  + How often need help with medical understanding hc889
  + If in nursing home questions hc127, hc033, hc034, hc029, hc751, hc031, hc696, hc097
  + If at home care questions hc035, hc036, hc037
* Eliminare tutte LI vars
* Employment and pensions [ EP ]
  + Employment status ep005
  + Retirement year, if retired ep329
  + Reason for retirement, if retired ep064
  + Looking for job ep337
  + How did you become unemployed ep067
  + Occasional paid work ep002
  + Ever done paid work ep006
  + Continuously working since last interview ep125
  + If homemaker, why stopped working ep069
  + [If unemployed
    - From which month / year ep127 ep128
    - To which month/year ep129 ep 130]
  + If employed, current job
    - Private, public or self-employed ep009
    - When started job ep010
    - Job title ep616
    - Which industry ep018
    - If self-employed, n of employees ep024
    - If employee, type of contract ep811
  + How many hours usually work ep013
  + Job satisfaction
    - I am satisfied with my job ep026
    - My job is physically demanding ep027
    - I am under time pressure ep028
    - Little freedom in how to work ep029
    - Opportunity for new skill ep030
    - Adequate support if needed ep031
    - Receive recognition for work ep032
    - Salary is adequate ep033
    - Poor job security ep034
  + Thinking of early retirement ep036
  + Health limits work before retirement ep037
  + Currently more than one job ep038
  + Past jobs
    - Not relevant
  + Approximate annual income after tax from employment (year) ep205
  + If self-employed, income ep207
  + Income sources from public pensions ep671
    - After tax typical payment ep078
    - Additional payments ep082
  + Occupational pension income sources ep678
  + Additional lump sum payments ep682
  + Any other regular payments (alimony) ep094
* Information technology [ IT ]
  + Job requires PC use it001
  + Last job required PC use it002
  + Self-rated PC skills it003
  + Uses web past 7 days it004
* Grip strength [ GS ]
  + ///
* Accelerometer [ AX ]
  + ///
* Help from people [ SP ]
  + Last 12m help from family outside hh, friend, neighbor sp002
  + Which type of help provided sp004
  + How often received help from that person sp005
  + [same questions for other people]
  + To whom give help to people sp009
  + Type of help given sp010
  + How often give help sp011
  + Look after grandchild + how often [for each child] sp015, sp016 \_i
  + Given help inside household + to whom sp018, sp019
  + Someone in hh helped you with personal care sp020
* Financial transfers [ FT ]
  + Given financial gift of 250 or more ft002
  + [for many people]
  + Has received financial gift or assistance from people ft010
  + [from many people]
  + Ever received money/gifts worth more than 5000 ft015
  + Ever given gift of 5000 or more ft025
* Housing [ HO ]
  + Out of pocket pay for nursing home h0662
  + Typical monthly payment for nursing home ho665
  + How do you pay for nursing home ho080
  + Own real estate ho075
  + Value of real estate ho076
  + [Do you receive income from real estate ho077]
  + Are you owner, tenant, rent free in current house ho002
  + How much would you pay for rent in similar house ho067
  + Do you live in social housing ho079
  + [How much for utilities outside of rent ho008]
  + Are you behind with rent 12m ho010
  + Percentage of house owned ho070
  + Mortgage or loan ho013
  + Year of mortgage left ho014
  + How much still to pay for mortgage ho015
  + Regularly repay mortgage ho017
  + Do you sublet ho0023
  + Income from subletting h0074
  + Estimate market value for your property ho024
  + Square meters of house ho032
  + Type of building ho636
  + Rural/urban ho037
  + Own second home + value ho026, ho027
* Consumption [ CO ]
  + Amount spent on food at home 12m co002
  + Amount spent on food outside home 12m co003
  + Consume home produced food co010
    - Value of home produced food 12m co011
  + Total household income hh017
  + Able to make ends meet co007
  + Can afford unexpected expense co206
  + Put up with cold in home for money co209
* Childhood experiences module [ SR ]
  + Had positive shocks earlier in life sr002
  + Had negative shocks earlier in life sr004
  + How would change saving patterns sr006
  + How would change spending patterns sr007
  + Strength of regret about spending and saving sr008
* Assets [ AS ]
  + Has individual retirement account as065
  + Partner retirement account as020
  + Amount in your retirement account as021
  + Partner amount as024
  + Has life insurance as067
  + Has mutual fund as017
  + Has stocks as063
  + Has bonds as062
  + Has bank account as060
  + How much interest/dividend received from above as070
  + Owner of firm/company/business as641
  + Percentage of firm owned as044
  + How many cars as649
  + Value of cars as051
  + Owe money and on what as054
  + Owe money amount as055
* Activities [ AC ]
  + Satisfied with life 0-10 ac012
  + Age prevents from doing things ac014
  + Feel out of control ac015
  + Feel left out ac016
  + Can do things you want ac017
  + Family responsibilities prevent you from doing things ac018
  + Look forward to each day ac020
  + Feel that life has meaning ac021
  + Look back on life with happiness ac022
  + Feel full of energy ac023
  + Feel life full of opportunities ac024
  + Future looks good ac025
  + Activities in past 12m (if in nursing home?) ac035
  + How satisfied with above activities ac038
  + How often have you done specific activity in past 12m ac036\_i
  + How satisfied with specific activity in past 12m ac037\_i
  + Big5 ac701 – ac711
* Time expenditure [ TE ]
  + Was yesterday normal or special te003
  + Time spent on chores te005 te006
  + Time spent on personal care te011 te012
  + Time spent on personal children te014 te015
  + time spent helping parents te017 te018
  + Time spent helping partner te020 te021
  + Time spent helping other family memb te023 te024
  + Time spent on leisure te026 te027
  + Time spent on admin te032 te033
  + Time spent on paid work te035 te036
  + time spent on voluntary work te038 te039
  + time spent on travel te041 te042
  + time spent napping te047 te048
  + time spent sleeping te050 te051
  + time spent on other activities te055 te056
  + time spent with partner te058 te059
* [ EX ]
  + How often pray ex029
  + How likely
    - Gvt reduces pension ex007
    - Have to work after 63 ex025
    - Govt raises retirement age ex008
    - Still alive in 10y ex009
    - You run out of money ex801
  + How is you financial situation wrt expectations ex802
  + Trust in other people ex026
  + Risk aversion ex110
  + Which future period most important ex111

Vars: 885.

Obs: 307566.

CORONA SURVEY QUESTIONS THAT ARE RELEVANT FOR MENTAL HEALTH:

* In the last month, have you felt nervous, anxious, or on edge? CAH020\_
  + more so, less so, or about the same as before CAH021\_
* In the last month, have you been sad or depressed? CAMH002\_
  + more so, less so, or about the same as before CAMH802\_
* Have you had trouble sleeping recently? CAMH007\_
  + more so, less so or about the same as before CAMH807\_
* How much of the time do you feel lonely? Often, some of the time, or hardly ever or never? CAMH037\_
  + more so, less so or about the same as before CAMH837\_
* Have you or anyone close to you been hospitalized due to an infection from the Corona virus? CAC010\_
* Who was hospitalized? Please tell me their relationship to you. CAC011\_
* Has anyone close to you died due to an infection from the Corona virus? CAC013\_
* Can you tell me who that was? CAC014\_