```stata
1   ********************************************************************************
    ********************************************************************************
    ***************
2   ***SYNTAX FOR "The influence of socio-economic factors on patterns of internet use among older
    adults before and during the COVID-19 pandemic: A latent transition analysis of the English
    Longitudinal Study of Ageing"***
3   ********************************************************************************
    ********************************************************************************
    ***************
4
5   * STATA version: 17.0, BE-Basic Edition
6
7   * STATA citation: StataCorp. 2021. Stata Statistical Software: Release 17. College Station, TX:
    StataCorp LLC.
8
9   * Data citation (main ELSA survey): Banks, J., Batty, G. David, Breedvelt, J., Coughlin, K.,
    Crawford, R., Marmot, M., Nazroo, J., Oldfield, Z., Steel, N., Steptoe, A., Wood, M., Zaninotto, P.
    (2021). English Longitudinal Study of Ageing: Waves 0-9, 1998-2019. [data collection]. 37th Edition.
    UK Data Service. SN: 5050, DOI: 10.5255/UKDA-SN-5050-24
10
11  * Data citation (COVID-19 sub-study): Steptoe, A., Addario, G., Banks, J., Batty, G. David,
    Coughlin, K., Crawford, R., Dangerfield, P., Marmot, M., Nazroo, J., Oldfield, Z., Pacchiotti, B.,
    Steel, N., Wood, M., Zaninotto, P. (2021). English Longitudinal Study of Ageing COVID-19 Study,
    Waves 1-2, 2020. [data collection]. 2nd Edition. UK Data Service. SN: 8688, DOI:
    10.5255/UKDA-SN-8688-2
12
13  * Data access statement: ELSA data from the main survey (SN 5050) and the COVID-19 sub-study (SN
    8688) are available through the UK Data Service (https://ukdataservice.ac.uk/). The main ELSA
    dataset is safeguarded and can be accessed via
    https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=5050#!/access-data. The COVID-19
    sub-study can be accessed via
    https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=8688#!/access-data. More information
    on how to access ELSA, including the conditions of use, can be found on the UK Data Service website
    (main ELSA survey: https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=5050#!/details;
    COVID-19 sub-study: https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=8688#!/details)
    and the ELSA website (main ELSA survey: https://www.elsa-project.ac.uk/accessing-elsa-data; COVID-19
    sub-study: https://www.elsa-project.ac.uk/covid-19-data).
14
15  * Date of data access/download (dd/mm/yyyy): 17/12/2021
16
17  * Project ID: 217429
18
19  * Data documentation: Documentation pertaining to ELSA (e.g., data dictionaries, questionnaires,
    technical reports, user guides) is available on the UK Data Service website (main ELSA survey:
    https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=5050#!/documentation; COVID-19
    sub-study: https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=8688#!/documentation) and
    the ELSA website (main ELSA survey: https://www.elsa-project.ac.uk/data-and-documentation; COVID-19
    sub-study: https://www.elsa-project.ac.uk/covid-19-data).
20
21  *********************
22  ***DATA PROCESSING***
23  *********************
24
25  * Change working directory - add pathname in between quotation marks for Windows
26  cd ""
27
28  * Variables Wave 9
29  use idauniq scint scinddt scindlt scindtb scindph scind95 scind96 scinaem scinacl scinaed scinabk
    scinash scinasl scinasn scinact scinanw scinast scinagm scinajb scinaps scina95 scina96 scinahe
    w9nssec8 w9nssec3 samptyp w9xwgt w9scwt indsex indager dimarr fqethnmr wpdes hhtot heill helim using
    wave_9_elsa_data_eul_v1.dta
30  * Describe dataset
31  describe
```

```stata
32    * Sort from lowest to highest participant identifier (ID)
33    sort idauniq
34    * Rename variables to shorter forms
35    rename w9nssec8 nssec8
36    rename w9nssec3 nssec3
37    rename indsex Sex
38    * Generate a new variable called wave and assign the number 9 to each observation (to designate Wave
      9)
39    gen wave = 9
40    * Save Wave 9 core dataset
41    save wave9internet.dta
42
43    * Variables COVID Wave 1
44    use idauniq CvIntA CvIntB CvIntC01 CvIntC02 CvIntC03 CvIntC04 CvIntC05 CvIntC06 CvIntC07 CvIntC08
      CvIntC09 CvIntC10 CvIntC11 CvIntC12 CvIntD CvIntE01 CvIntE02 CvIntE03 CvIntE04 CvIntE05 CvIntE06
      CvIntE07 CvIntE08 CvIntE980 CvIntE990 CvIntE995 CvIntE998 FinStat Cohort CorePartner wtfin1 wtfin2
      cov19lwgt Sex Age_Arch RelStat Ethnicity_arch CvPred CvPstd CvNumP heill_updated helim_updated using
      elsa_covid_w1_eul.dta
45    * Describe dataset
46    describe
47    * Sort from lowest to highest participant ID
48    sort idauniq
49    * Generate a new variable called wave and assign the number 10 to each observation (to designate
      COVID Wave 1)
50    gen wave = 10
51    * Save COVID Wave 1 core dataset
52    save covidwave1internet.dta
53
54    * Variables Wave 9 Derived
55    use idauniq edqual using wave_9_ifs_derived_variables.dta
56    * Describe dataset
57    describe
58    * Sort from lowest to highest participant ID
59    sort idauniq
60    * Save Wave 9 derived dataset
61    save wave9derived.dta
62
63    * Variables Wave 9 Financial Derived
64    use idauniq totwq5_bu_s using wave_9_financial_derived_variables.dta
65    * Describe dataset
66    describe
67    * Sort from lowest to highest participant ID
68    sort idauniq
69    * Save Wave 9 financial dataset
70    save wave9financial.dta
71
72    * Wave 9 complete data
73    * Merge core, derived, and financial datasets for Wave 9 using the participant ID
74    use wave9internet.dta
75    * One-to-one merge of data in memory with wave9financial.dta on participant ID
76    merge 1:1 idauniq using wave9financial.dta, generate (merge_financial9)
77    * Overwrite Wave 9 dataset, by replacing the previously saved file
78    save wave9internet.dta, replace
79    * Use the newly saved file for Wave 9
80    use wave9internet.dta
81    * One-to-one merge of data in memory with wave9derived.dta on participant ID
82    merge 1:1 idauniq using wave9derived.dta, generate (merge_derived9)
83    * Sort from lowest to highest participant ID
84    sort idauniq
85    * Overwrite Wave 9 dataset, by replacing the previously saved file
86    save wave9internet.dta, replace
87
88    * Append Wave 9 and COVID Wave 1 datasets
```

```
89    use wave9internet.dta
90    append using covidwave1internet.dta
91    * Sort by participant ID and wave (lowest to highest)
92    sort idauniq wave
93    * Assigns a number in ascending order to each row of observations
94    gen ascnr = _n
95
96    * Unique individual serial number (personal ID)
97    * Replace variable as missing for any missing cases (coded as negative numbers in the ELSA dataset)
98    replace idauniq = . if idauniq<0
99
100   * Organising dataset
101   * Generate a variable that assigns the observation number (i.e., 1 for first data collection
      timepoint, 2 for second data collection timepoint) to each row by participant ID
102   bysort idauniq (wave): gen obsnr = _n
103   * Generate a variable that assigns the number of total observations to each row of data for a given
      participant
104   bysort idauniq: gen obscount = _N
105   * Check how many participants have data at 1 or 2 timepoints - the "if obsnr==1" statement is used
      to prevent participants with data at two timepoints from contributing to the counts twice
106   tabulate obscount if obsnr==1
107   * Generate a variable that assigns the number 1 to the row representing participants' first
      observation
108   bysort idauniq (wave): gen first = 1 if _n==1
109   * Generate a variable that assigns the number 1 to the row representing participants' last observation
110   bysort idauniq (wave): gen last = 1 if _n==_N
111   * Generate a variable that assigns the number 1 to the row representing participants' first
      observation if this corresponds to Wave 9 (baseline)
112   bysort idauniq (wave): gen firstwave = 1 if pynr==1 & wave==9
113   * Carry the value of this last variable forwards to the remainder of a participant's observations
114   bysort idauniq: gen variable = firstwave[1]
115   * Install unique command
116   ssc install unique
117   * Count total number of participants and observations
118   unique idauniq
119   * 9,043 individuals, 15,776 observations
120   * Assign the COVID Wave 1 longitudinal weight to all observations for a participant
121   bysort idauniq(wave): replace cov19lwgt = cov19lwgt[2]
122   * Drop if participant is not a core member
123   drop if (samptyp !=1 & wave==9) | (inlist(wtfin1,-1,.) & wave==10)
124   * Count total number of participants and observations
125   unique idauniq
126   * 7,489 individuals, 13,074 observations
127   * Replace age = 90 if participant is aged 90+ years (collapsed in ELSA and coded as -7 at Wave 9)
128   replace indager = 90 if indager==-7
129   * Drop observation if the participant is aged less than 60 years at Wave 9
130   drop if indager < 60 & wave==9
131   * Count total number of participants and observations
132   unique idauniq
133   * 7,097 individuals, 11,687 observations
134   * Check how many participants have data at Wave 9
135   tab firstwave
136   * Drop if age data are missing at Wave 9
137   drop if indager ==. & wave==9
138   * Count total number of participants and observations
139   unique idauniq
140   * 7,097 individuals, 11,687 observations
141   tab Age_Arch
142   * Drop observation if the participant is aged less than 60 years at COVID Wave 1
143   drop if Age_Arch < 60 & wave==10
144   * Count total number of participants and observations
145   unique idauniq
146   * 6,187 individuals, 10,777 observations
```

```stata
147    * Drop if age data are missing at COVID Wave 1
148    drop if Age_Arch ==. & wave==10
149    * Count total number of participants and observations
150    unique idauniq
151    * 6,187 individuals, 10,777 observations
152    * Save dataset with a new name
153    save dataLCA.dta
154
155    * Internet frequency (Wave 9, COVID Wave 1)
156    * Wave 9
157    * Replace variables as missing for any missing cases (coded as negative numbers in the ELSA dataset)
158    replace scint = . if scint<0
159    * Generate a new variable
160    gen frequency = .
161    * Assign the number 0 if the participant never used the internet or email
162    replace frequency = 0 if scint == 6
163    * Assign the number 1 if the participant used the internet or email at least once a month (but not
       every week), at least once every 3 months, or less than every 3 months
164    replace frequency = 1 if inlist(scint,3,4,5)
165    * Assign the number 2 if the participant used the internet or email at least once a week (but not
       every day)
166    replace frequency = 2 if scint == 2
167    * Assign the number 3 if the participant used the internet or email every day, or almost every day
168    replace frequency = 3 if scint == 1
169    * COVID Wave 1
170    * Replace variables as missing for any missing cases (coded as negative numbers in the ELSA dataset)
171    replace CvIntA = . if CvIntA<0
172    * Assign the number 0 if the participant never used the internet
173    replace frequency = 0 if CvIntA == 6
174    * Assign the number 1 if the participant used the internet at least once a month (but not every
       week), or less than monthly
175    replace frequency = 1 if inlist(CvIntA,4,5)
176    * Assign the number 2 if the participant used the internet at least once a week (but not every day)
177    replace frequency = 2 if CvIntA == 3
178    * Assign the number 3 if the participant used the internet more than once a day, every day, or
       almost every day
179    replace frequency = 3 if inlist(CvIntA,1,2)
180    * Coding of final internet frequency variable:
181    * 0: Never
182    * 1: Low frequency (At least once a month, but not every week/Less than monthly/At least once every
       three months/Less than every three months)
183    * 2: Moderate frequency (At least once a week, but not every day)
184    * 3: High frequency (More than once a day/Every day, or almost every day)
185
186    * Highest Educational Qualification (Wave 9)
187    * Excluded foreign/other
188    * Replace variable as missing for any missing cases (coded as negative numbers in the ELSA dataset)
189    replace edqual = . if edqual<0
190    * Check participant counts in each category at Wave 9
191    tab edqual if wave==9
192    * Generate a new variable
193    gen educanew = .
194    * Assign the number 0 if the participant does not have any formal qualifications
195    replace educanew = 0 if edqual == 7
196    * Assign the number 1 if the participant has A level equivalent, O level equivalent, other grade
       equivalent, or higher education below degree
197    replace educanew = 1 if inlist(edqual,3,4,5)
198    * Assign the number 2 if the participant has a degree or equivalent
199    replace educanew = 2 if inlist(edqual,1,2)
200    * Coding of final education variable:
201    * 0: No formal qualifications
202    * 1: School qualifications
203    * 2: Higher education
```

```
204
205    * NS-SEC 8 and 3 category classification (Wave 9)
206    * Excluded Never worked and long-term unemployed
207    * Replace variables as missing for any missing cases (coded as negative numbers or 99 in the ELSA
       dataset)
208    replace nssec8 = . if nssec8<0
209    replace nssec8 = . if nssec8 == 99
210    replace nssec3 = . if nssec3<0
211    replace nssec3 = . if nssec3 == 99
212    * Generate a new variable
213    gen mynssec3 = .
214    * Assign the number 2 if the participant's current or most recent occupation was coded as: Higher
       managerial, administrative and professional occupations; or Lower managerial, administrative and
       professional occupations
215    replace mynssec3 = 2 if inlist(nssec8,1,2)
216    * Assign the number 1 if the participant's current or most recent occupation was coded as:
       Intermediate occupation; or Small employers and own account workers
217    replace mynssec3 = 1 if inlist(nssec8,3,4)
218    * Assign the number 0 if the participant's current or most recent occupation was coded as: Lower
       supervisory and technical occupations; or Semi-routine occupations; or Routine occupations
219    replace mynssec3 = 0 if inlist(nssec8,5,6,7)
220    * Coding of final occupational class variable:
221    * 0: Lower occupations
222    * 1: Intermediate occupations
223    * 2: Higher occupations
224
225    * Quintiles of BU total (non-pension) wealth (Wave 9)
226    * Replace variable as missing for any missing cases (coded as negative numbers in the ELSA dataset)
227    replace totwq5_bu_s = . if totwq5_bu_s<0
228    * Coding of final wealth variable:
229    * 1: 1st quintile (lowest)
230    * 2: 2nd quintile
231    * 3: 3rd quintile
232    * 4: 4th quintile
233    * 5: 5th quintile (highest)
234
235    * Biological sex (Wave 9, COVID Wave 1)
236    * Replace variable as missing for any missing cases (coded as negative numbers in the ELSA dataset)
237    replace Sex = . if Sex<0
238    * Assign the number 0 if the participant is male
239    replace Sex = 0 if Sex == 1
240    * Assign the number 1 if the participant is female
241    replace Sex = 1 if Sex == 2
242    * Coding of the final biological sex variable:
243    * 0: Male, 1: Female
244
245    * Ethnicity (Wave 9, COVID Wave 1)
246    * Wave 9
247    * Replace variable as missing for any missing cases (coded as negative numbers in the ELSA dataset)
248    replace fqethnmr = . if fqethnmr<0
249    * Assign the number 0 if the participant is White
250    replace fqethnmr = 0 if fqethnmr == 1
251    * Assign the number 1 if the participant is Non-White
252    replace fqethnmr = 1 if fqethnmr == 2
253    * COVID Wave 1
254    * Assign the number 0 if the participant is Non-BAME
255    replace Ethnicity_arch = 0 if Ethnicity_arch == 1
256    * Assign the number 1 if the participant is BAME
257    replace Ethnicity_arch = 1 if Ethnicity_arch == 2
258    * Coding of the final ethnicity variable:
259    * 0: White, 1: Non-White
260
261    * Current employment situation (Wave 9, COVID Wave 1)
```

```
262    * Replace variables as missing for any missing cases (coded as negative numbers in the ELSA dataset)
263    replace wpdes = . if wpdes<0
264    replace CvPstd = . if CvPstd<0
265
266    * Number of people in household (Wave 9, COVID Wave 1)
267    * Wave 9
268    * Replace variable as missing for any missing cases (coded as negative numbers or 0 in the ELSA
       dataset)
269    replace hhtot = . if hhtot<0
270    replace hhtot = . if hhtot==0
271    * Assign the number 0 if one person lives in household
272    replace hhtot = 0 if hhtot==1
273    * Assign the number 1 if more than one person lives in household
274    replace hhtot = 1 if hhtot>1 & hhtot != .
275    * COVID Wave 1
276    * Replace variable as missing for any missing cases (coded as negative numbers or 0 in the ELSA
       dataset)
277    replace CvNumP = . if CvNumP<0
278    * Assign the number 0 if one person lives in household
279    replace CvNumP = 0 if CvNumP==1
280    * Assign the number 1 if more than one person lives in househol
281    replace CvNumP = 1 if CvNumP>1 & CvNumP != .
282    * Coding of the final living status variable:
283    * 0: Living alone, 1: Not living alone
284
285    * Age categorical (Wave 9, COVID Wave 1)
286    * Generate a new variable
287    gen age_cat = .
288    * Assign the number 0 for participants aged 60-69 years at Wave 9
289    replace age_cat = 0 if indager >= 60 & indager <= 69
290    * Assign the number 1 for participants aged 70-79 years at Wave 9
291    replace age_cat = 1 if indager >= 70 & indager <= 79
292    * Assign the number 2 for participants aged 80+ years at Wave 9 and without missing age data
293    replace age_cat = 2 if indager >= 80 & indager != .
294    * Assign the number 0 for participants aged 60-69 years at COVID Wave 1
295    replace age_cat = 0 if Age_Arch >= 60 & Age_Arch <= 69
296    * Assign the number 1 for participants aged 70-79 years at COVID Wave 1
297    replace age_cat = 1 if Age_Arch >= 70 & Age_Arch <= 79
298    * Assign the number 2 for participants aged 80+ years at COVID Wave 1 and without missing age data
299    replace age_cat = 2 if Age_Arch >= 80 & Age_Arch != .
300    * Coding of the final categorical age variable:
301    * 0: 60-69 years
302    * 1: 70-79 years
303    * 2: 80+ years
304
305    * Limiting long-standing illness (Wave 9)
306    * Generate a new variable and assign the number 0 for participants with no long-standing illness or
       a long-standing illness that is not limiting
307    gen limiting = 0 if heill == 2 | helim == 2
308    * Assign the number 1 for participants with a limiting long-standing illness
309    replace limiting = 1 if helim == 1
310    * Coding of the final limiting long-standing illness variable:
311    * 0: No long-standing illness or not limiting, 1: Limiting long-standing illness
312
313    * Save dataset with a new name
314    save data01LCA.dta
315
316    * Time-constant education - Wave 9
317    * Generate a new variable duplicating the education variable at Wave 9
318    gen educa_cons = educanew if wave==9
319    * Declare a panel dataset with participant ID "idauniq" and time variable "wave"
320    tsset idauniq wave
321    * Install carryforward command
```

```stata
322    ssc install carryforward
323    * Generate a completely balanced dataset (i.e., all participants have a row for each wave)
324    tsfill, full
325    * Carryforward observations with respect to the time variable "wave" (i.e., from Wave 9 to COVID
       Wave 1) by participant ID
326    bysort idauniq: carryforward educa_cons, replace
327
328    * Time-constant occupational class - Wave 9
329    * Generate a new variable duplicating the occupational class variable at Wave 9
330    gen mynssec3_cons = mynssec3 if wave==9
331    * Declare a panel dataset with participant ID "idauniq" and time variable "wave"
332    tsset idauniq wave
333    * Carryforward observations with respect to the time variable "wave" (i.e., from Wave 9 to COVID
       Wave 1) by participant ID
334    bysort idauniq: carryforward mynssec3_cons, replace
335
336    * Time-constant wealth - Wave 9
337    * Generate a new variable duplicating the wealth variable at Wave 9
338    gen wealth_cons = totwq5_bu_s if wave==9
339    * Declare a panel dataset with participant ID "idauniq" and time variable "wave"
340    tsset idauniq wave
341    * Carryforward observations with respect to the time variable "wave" (i.e., from Wave 9 to COVID
       Wave 1) by participant ID
342    bysort idauniq: carryforward wealth_cons, replace
343
344    * Time-constant biological sex - Wave 9
345    * Generate a new variable duplicating the biological sex variable at Wave 9
346    gen sex_cons = Sex if wave==9
347    * Declare a panel dataset with participant ID "idauniq" and time variable "wave"
348    tsset idauniq wave
349    * Carryforward observations with respect to the time variable "wave" (i.e., from Wave 9 to COVID
       Wave 1) by participant ID
350    bysort idauniq: carryforward sex_cons, replace
351
352    * Time-constant age category - Wave 9
353    * Generate a new variable duplicating the categorical age variable at Wave 9
354    gen age_cons = age_cat if wave==9
355    * Declare a panel dataset with participant ID "idauniq" and time variable "wave"
356    tsset idauniq wave
357    * Carryforward observations with respect to the time variable "wave" (i.e., from Wave 9 to COVID
       Wave 1) by participant ID
358    bysort idauniq: carryforward age_cons, replace
359
360    * Limiting long-standing illness - Wave 9 (and updated in COVID Wave 1 for non-responders)
361    * Generate a new variable duplicating the limiting long-standing illness variable at Wave 9
362    gen limiting_cons = limiting if wave==9
363    * Declare a panel dataset with participant ID "idauniq" and time variable "wave"
364    tsset idauniq wave
365    * Carryforward observations with respect to the time variable "wave" (i.e., from Wave 9 to COVID
       Wave 1) by participant ID
366    bysort idauniq: carryforward limiting_cons, replace
367    * Assign the number 0 for participants with no long-standing illness or a long-standing illness that
       is not limiting at COVID Wave 1
368    replace limiting_cons = 0 if heill_updated == 2 | helim_updated == 2
369    * Assign the number 1 for participants with a limiting long-standing illness at COVID Wave 1
370    replace limiting_cons = 1 if helim_updated == 1
371
372    * Save dataset with a new name
373    save data02LCA.dta
374
375    * Time variable
376    * Generate a new variable
377    gen Time = .
```

```
378   * Assign the number 0 for observations at Wave 9
379   replace Time = 0 if wave==9
380   * Assign the number 1 for observations at COVID Wave 1
381   replace Time = 1 if wave==10
382   * Coding of the final time variable:
383   * 0: Wave 9, 1: COVID Wave 1
384
385   * Activities respondent used internet for in last 3 months (Wave 9, COVID Wave 1)
386   * Emails
387   * Generate a new variable
388   gen emails = .
389   * Assign the number 1 if the participant reported using the internet for sending/receiving emails
390   replace emails = 1 if scinaem==1 & wave==9
391   replace emails = 1 if CvIntC01==1 & wave==10
392   * Assign the number 0 if the participant reported not using the internet to sending/receiving emails
393   replace emails = 0 if scinaem==0 & wave==9
394   replace emails = 0 if CvIntC01==0 & wave==10
395   * Calls
396   * Generate a new variable
397   gen calls = .
398   * Assign the number 1 if the participant reported using the internet for telephoning/video calls
      (via webcam) over the internet at Wave 9
399   replace calls = 1 if scinacl==1 & wave==9
400   * Assign the number 1 if the participant reported using the internet for making video or voice calls
      at COVID Wave 1
401   replace calls = 1 if CvIntC02==1 & wave==10
402   * Assign the number 0 if the participant reported not using the internet for telephoning/video calls
      (via webcam) over the internet at Wave 9
403   replace calls = 0 if scinacl==0 & wave==9
404   * Assign the number 0 if the participant reported not using the internet for making video or voice
      calls at COVID Wave 1
405   replace calls = 0 if CvIntC02==0 & wave==10
406   * Health
407   * Generate a new variable
408   gen health = .
409   * Assign the number 1 if the participant reported using the internet for finding information on
      health-related issues
410   replace health = 1 if scinahe==1 & wave==9
411   replace health = 1 if CvIntC03==1 & wave==10
412   * Assign the number 0 if the participant reported not using the internet for finding information on
      health-related issues
413   replace health = 0 if scinahe==0 & wave==9
414   replace health = 0 if CvIntC03==0 & wave==10
415   * Entertainment
416   * Generate a new variable
417   gen entertainment = .
418   * Assign the number 1 if the participant reported using the internet for streaming/downloading live
      or on demand TV/radio (BBC iPlayer, 4OD, ITV Player, Demand 5), music (iTunes, Spotify), ebooks, or
      games at Wave 9
419   replace entertainment = 1 if (scinast==1 | scinagm==1) & wave==9
420   * Assign the number 1 if the participant reported using the internet for streaming TV/videos/radio
      (BBC iPlayer, Netflix, Amazon Prime, YouTube), listening to music (Spotify, Apple Music), playing
      online games, or reading ebooks at COVID Wave 1
421   replace entertainment = 1 if CvIntC08==1 & wave==10
422   * Assign the number 0 if the participant reported not using the internet for streaming/downloading
      live or on demand TV/radio (BBC iPlayer, 4OD, ITV Player, Demand 5), music (iTunes, Spotify),
      ebooks, or games at Wave 9
423   replace entertainment = 0 if (scinast==0 & scinagm==0) & wave==9
424   * Assign the number 0 if the participant reported not using the internet for streaming
      TV/videos/radio (BBC iPlayer, Netflix, Amazon Prime, YouTube), listening to music (Spotify, Apple
      Music), playing online games, or reading ebooks at COVID Wave 1
425   replace entertainment = 0 if CvIntC08==0 & wave==10
426   * News
```

```stata
427   * Generate a new variable
428   gen news = .
429   * Assign the number 1 if the participant reported using the internet for news/newspaper/blog websites
430   replace news = 1 if scinanw==1 & wave==9
431   replace news = 1 if CvIntC07==1 & wave==10
432   * Assign the number 0 if the participant reported not using the internet for reading
      news/newspaper/blog websites
433   replace news = 0 if scinanw==0 & wave==9
434   replace news = 0 if CvIntC07==0 & wave==10
435   * Market
436   * Generate a new variable
437   gen market = .
438   * Assign the number 1 if the participant reported using the internet for shopping/buying goods or
      services
439   replace market = 1 if scinash==1 & wave==9
440   replace market = 1 if CvIntC05==1 & wave==10
441   * Assign the number 0 if the participant reported not using the internet for shopping/buying goods
      or services
442   replace market = 0 if scinash==0 & wave==9
443   replace market = 0 if CvIntC05==0 & wave==10
444   * Social networking
445   * Generate a new variable
446   gen socialnetworking = .
447   * Assign the number 1 if the participant reported using the internet for using social networking
      sites (Facebook, Twitter, MySpace), or creating, uploading, or sharing content (YouTube, blogging,
      or Flickr) at Wave 9
448   replace socialnetworking = 1 if (scinasn==1 | scinact==1) & wave==9
449   * Assign the number 1 if the participant reported using the internet for using social networking
      sites at COVID Wave 1
450   replace socialnetworking = 1 if CvIntC06==1 & wave==10
451   * Assign the number 0 if the participant reported not using the internet for using social networking
      sites (Facebook, Twitter, MySpace), or creating, uploading, or sharing content (YouTube, blogging,
      or Flickr) at Wave 9
452   replace socialnetworking = 0 if (scinasn==0 & scinact==0) & wave==9
453   * Assign the number 1 if the participant reported using the internet for using social networking
      sites at COVID Wave 1
454   replace socialnetworking = 0 if CvIntC06==0 & wave==10
455   * Internet transactions
456   * Generate a new variable
457   gen internettransactions = .
458   * Assign the number 1 if the participant reported using the internet for finances (banking, paying
      bills), or using public services (e.g., obtaining benefits, paying taxes) at Wave 9
459   replace internettransactions = 1 if (scinabk==1 | scinaps==1) & wave==9
460   * Assign the number 1 if the participant reported using the internet for managing finances at COVID
      Wave 1
461   replace internettransactions = 1 if CvIntC04==1 & wave==10
462   * Assign the number 0 if the participant reported not using the internet for finances (banking,
      paying bills), or using public services (e.g., obtaining benefits, paying taxes) at Wave 9
463   replace internettransactions = 0 if (scinabk==0 & scinaps==0) & wave==9
464   * Assign the number 1 if the participant reported not using the internet for managing finances at
      COVID Wave 1
465   replace internettransactions = 0 if CvIntC04==0 & wave==10
466
467   * Count total number of participants and observations
468   unique idauniq
469   * 6,187 individuals, 12,374 observations
470
471   * Dummy variables for conditional LCA and LTA models
472   * Education
473   * Medium education (i.e., school qualifications) (coded as 1) versus low (i.e., no formal
      qualifications) or high (i.e., higher education) education (coded as 0)
474   gen mediumed = 0 if inlist(educa_cons,0,2)
475   replace mediumed = 1 if educa_cons == 1
```

```
476  * High education (coded as 1) versus low or medium education (coded as 0)
477  gen highed = 0 if inlist(educa_cons,0,1)
478  replace highed = 1 if educa_cons == 2
479  * Occupational class
480  * Intermediate occupations (coded as 1) versus lower or higher occupations (coded as 0)
481  gen mediumocc = 0 if inlist(mynssec3_cons,0,2)
482  replace mediumocc = 1 if mynssec3_cons == 1
483  * Higher occupations (coded as 1) versus lower or intermediate occupations (coded as 0)
484  gen highocc = 0 if inlist(mynssec3_cons,0,1)
485  replace highocc = 1 if mynssec3_cons == 2
486  * Wealth
487  * 2nd quintile (coded as 1) versus 1st, 3rd, 4th, or 5th quintile (coded as 0)
488  gen quint2 = 0 if inlist(wealth_cons,1,3,4,5)
489  replace quint2 = 1 if wealth_cons == 2
490  * 3rd quintile (coded as 1) versus 1st, 2nd, 4th, or 5th quintile (coded as 0)
491  gen quint3 = 0 if inlist(wealth_cons,1,2,4,5)
492  replace quint3 = 1 if wealth_cons == 3
493  * 4th quintile (coded as 1) versus 1st, 2nd, 3rd, or 5th quintile (coded as 0)
494  gen quint4 = 0 if inlist(wealth_cons,1,2,3,5)
495  replace quint4 = 1 if wealth_cons == 4
496  * 5th quintile (coded as 1) versus 1st, 2nd, 3rd, or 4th quintile (coded as 0)
497  gen quint5 = 0 if inlist(wealth_cons,1,2,3,4)
498  replace quint5 = 1 if wealth_cons == 5
499
500  * Age continuous (Wave 9, COVID Wave 1)
501  gen agecont = indager if wave==9
502  replace agecont = Age_Arch if wave==10
503
504  * Time-constant age continuous - Wave 9
505  * Generate a new variable duplicating the categorical age variable at Wave 9
506  gen indager_cons = indager if wave==9
507  * Declare a panel dataset with participant ID "idauniq" and time variable "wave"
508  tsset idauniq wave
509  * Carryforward observations with respect to the time variable "wave" (i.e., from Wave 9 to COVID
     Wave 1) by participant ID
510  bysort idauniq: carryforward indager_cons, replace
511
512  * Save dataset with a new name
513  save datalongLCA.dta
514
515  ******************
516  ***DATA ANALYSIS***
517  ******************
518
519  * Keep necessary variables
520  keep idauniq Time mediumed highed mediumocc highocc quint2 quint3 quint4 quint5 indager_cons sex_cons
      Sex emails calls health entertainment news market socialnetworking internettransactions
521  * Save dataset with a new name
522  save LCAlongcov.dta
523  * Reshape data into wide format for observations identified by participant ID and add "Time" as an
     identifying time period
524  reshape wide frequency Sex agecont age_cat emails calls health entertainment news market
     socialnetworking internettransactions, j(Time) i(idauniq)
525  * Save dataset with a new name
526  save LCAwidecov.dta
527  * Rename time-varying variables to shorter forms and/or to distinguish the relevant time period
528  rename Sex0 SexTV0
529  rename entertainment0 enter0
530  rename socialnetworking0 social0
531  rename internettransactions0 transa0
532  rename Sex1 SexTV1
533  rename entertainment1 enter1
534  rename socialnetworking1 social1
```

```stata
535    rename internettransactions1 transa1
536    * Save dataset with a new name
537    save LCAwidenamescov.dta
538
539    * Use data in memory
540    use LCAwidenamescov.dta
541    * Keep if the participant is male
542    keep if sex_cons==0 | SexTV1==0
543    * Save dataset with a new name
544    save malewide2.dta
545    * Count total number of participants
546    unique idauniq
547    * 2,694 individuals
548    * Find the necessary package
549    search stata2mplus
550    * Convert Stata data into a data file and Mplus input file
551    stata2mplus using malewide2.dta
552
553    * Use LCAwidenamescov.dta dataset
554    use LCAwidenamescov.dta
555    * Keep if the participant is female
556    keep if sex_cons==1 | SexTV1==1
557    * Save dataset with a new name
558    save femalewide2.dta
559    * Count total number of participants
560    unique idauniq
561    * 3,493 individuals
562    * Convert Stata data into a data file and Mplus input file
563    stata2mplus using femalewide2.dta
564
565    * Import posterior probabilities of class membership following the unconditional 3-class LCA for
       male participants (pre-pandemic)
566    import excel "", sheet("") firstrow
567    * Save dataset with a new name
568    save posteriormalec3t0.dta
569    * Import posterior probabilities of class membership following the unconditional 3-class LCA for
       male participants (intra-pandemic)
570    import excel "", sheet("") firstrow clear
571    * Save dataset with a new name
572    save posteriormalec3t1.dta
573
574    * Use male participant dataset with core variables included in analyses
575    use malewide2.dta
576    * One-to-one merge of data in memory with posteriormalec3t0.dta on participant ID
577    merge 1:1 idauniq using posteriormalec3t0.dta, generate (merge_posc3t0)
578    * Sort from lowest to highest participant ID
579    sort idauniq
580    * One-to-one merge of data in memory with posteriormalec3t1.dta on participant ID
581    merge 1:1 idauniq using posteriormalec3t1.dta, generate (merge_posc3t1)
582    * Sort from lowest to highest participant ID
583    sort idauniq
584    * Drop unnecessary variables
585    drop merge_posc3t0 merge_posc3t1
586    * Save dataset with a new name
587    save LCAmalecross.dta
588
589    * Re-order classes
590    gen classnew0 = .
591    replace classnew0 = 1 if class0==3
592    replace classnew0 = 2 if class0==2
593    replace classnew0 = 3 if class0==1
594    gen classnew1 = .
595    replace classnew1 = 1 if class1==2
```

```stata
596    replace classnew1 = 2 if class1==3
597    replace classnew1 = 3 if class1==1
598    * 1: Low
599    * 2: Medium
600    * 3: High
601    * Overwrite dataset, by replacing the previously saved file
602    save LCAmalecross.dta, replace
603
604    * Produce a two-way table of frequency counts (preliminary cross-classification tables)
605    tabulate classnew0 classnew1
606    tab classnew0 if classnew0!=. & classnew1!=.
607    tab classnew1 if classnew0!=. & classnew1!=.
608
609    * Use full dataset
610    use datalongLCA.dta
611    * Keep observations at baseline
612    keep if wave==9
613    * Save dataset with a new name
614    save demographw9.dta
615
616    * Descriptive statistics for the total male sample and stratified by class membership (pre-pandemic)
617    * Use complete male participant dataset
618    use LCAmalecross.dta
619    * One-to-one merge of data in memory with demographw9.dta on participant ID
620    merge 1:1 idauniq using demographw9.dta, generate (merge_demograph)
621    * Sort from lowest to highest participant ID
622    sort idauniq
623    * Keep data from the participants included in the unconditional LCA at pre-pandemic
624    keep if classnew0!=.
625    * Count total number of participants
626    unique idauniq
627    * 1,819 individuals
628    replace dimarr = . if dimarr<0
629    replace dimarr = 4 if dimarr==5
630    replace dimarr = 5 if dimarr==6
631    sum indager
632    tab age_cat
633    tab fqethnmr
634    tab dimarr
635    tab wpdes
636    save maledescw9.dta
637    tab hhtot
638    tab edqual
639    tab educa_cons
640    tab mynssec3_cons
641    tab wealth_cons
642    tab frequency
643    tab limiting
644    tab limiting_cons
645
646    sum indager_cons if classnew0==1
647    tab age_cat if classnew0==1
648    tab fqethnmr if classnew0==1
649    tab dimarr if classnew0==1
650    tab wpdes if classnew0==1
651    tab hhtot if classnew0==1
652    tab educa_cons if classnew0==1
653    tab mynssec3_cons if classnew0==1
654    tab wealth_cons if classnew0==1
655    tab frequency if classnew0==1
656    tab limiting if classnew0==1
657    tab limiting_cons if classnew0==1
658
```

```
659    sum indager_cons if classnew0==2
660    tab age_cat if classnew0==2
661    tab fqethnmr if classnew0==2
662    tab dimarr if classnew0==2
663    tab wpdes if classnew0==2
664    tab hhtot if classnew0==2
665    tab educa_cons if classnew0==2
666    tab mynssec3_cons if classnew0==2
667    tab wealth_cons if classnew0==2
668    tab frequency if classnew0==2
669    tab limiting if classnew0==2
670    tab limiting_cons if classnew0==2
671
672    sum indager_cons if classnew0==3
673    tab age_cat if classnew0==3
674    tab fqethnmr if classnew0==3
675    tab dimarr if classnew0==3
676    tab wpdes if classnew0==3
677    tab hhtot if classnew0==3
678    tab educa_cons if classnew0==3
679    tab mynssec3_cons if classnew0==3
680    tab wealth_cons if classnew0==3
681    tab frequency if classnew0==3
682    tab limiting if classnew0==3
683    tab limiting_cons if classnew0==3
684
685    use datalongLCA.dta
686
687    * Time-constant marital status - Wave 9
688    * Generate a new variable duplicating the marital status variable at Wave 9
689    gen marital_cons = dimarr if wave==9
690    * Declare a panel dataset with participant ID "idauniq" and time variable "wave"
691    tsset idauniq wave
692    * Carryforward observations with respect to the time variable "wave" (i.e., from Wave 9 to COVID
       Wave 1) by participant ID
693    bysort idauniq: carryforward marital_cons, replace
694
695    * Time-constant ethnicity - Wave 9
696    * Generate a new variable duplicating the ethnicity variable at Wave 9
697    gen ethnicity_cons = fqethnmr if wave==9
698    * Declare a panel dataset with participant ID "idauniq" and time variable "wave"
699    tsset idauniq wave
700    * Carryforward observations with respect to the time variable "wave" (i.e., from Wave 9 to COVID
       Wave 1) by participant ID
701    bysort idauniq: carryforward ethnicity_cons, replace
702
703    save datalongLCA.dta, replace
704
705    * Use full dataset
706    use datalongLCA.dta
707    * Keep observations at follow-up
708    keep if wave==10
709    * Save dataset with a new name
710    save demographcw1.dta
711
712    * Descriptive statistics for the total male sample and stratified by class membership (intra-pandemic)
713    * Use complete male participant dataset
714    use LCAmalecross.dta
715    * One-to-one merge of data in memory with demographcw1.dta on participant ID
716    merge 1:1 idauniq using demographcw1.dta, generate (merge_demograph)
717    * Sort from lowest to highest participant ID
718    sort idauniq
719    * Keep data from the participants included in the unconditional LCA at intra-pandemic
```

```stata
720    keep if classnew1!=.
721    * Count total number of participants
722    unique idauniq
723    * 1,750 individuals
724    sum Age_Arch
725    tab age_cat
726    tab Ethnicity_arch
727    tab RelStat
728    tab marital_cons
729    replace marital_cons = . if marital_cons<0
730    tab RelStat if marital_cons==.
731    gen relcw1 = marital_cons
732    replace relcw1 = 1 if RelStat == 8 & marital_cons==.
733    replace relcw1 = 2 if inlist(RelStat,1,3,4) & marital_cons==.
734    replace relcw1 = 4 if inlist(RelStat,5,6) & marital_cons==.
735    replace relcw1 = 4 if marital_cons==5
736    replace relcw1 = 5 if marital_cons==6
737    replace relcw1 = 5 if RelStat == 7 & marital_cons==.
738    tab CvPstd
739    save maledescw10.dta
740    tab CvNumP
741    tab educa_cons
742    tab mynssec3_cons
743    tab wealth_cons
744    tab frequency
745    tab limiting_cons
746
747    sum Age_Arch if classnew1==1
748    tab age_cat if classnew1==1
749    tab Ethnicity_arch if classnew1==1
750    tab relcw1 if classnew1==1
751    tab CvPstd if classnew1==1
752    tab CvNumP if classnew1==1
753    tab educa_cons if classnew1==1
754    tab mynssec3_cons if classnew1==1
755    tab wealth_cons if classnew1==1
756    tab frequency if classnew1==1
757    tab limiting_cons if classnew1==1
758
759    sum Age_Arch if classnew1==2
760    tab age_cat if classnew1==2
761    tab Ethnicity_arch if classnew1==2
762    tab relcw1 if classnew1==2
763    tab CvPstd if classnew1==2
764    tab CvNumP if classnew1==2
765    tab educa_cons if classnew1==2
766    tab mynssec3_cons if classnew1==2
767    tab wealth_cons if classnew1==2
768    tab frequency if classnew1==2
769    tab limiting_cons if classnew1==2
770
771    sum Age_Arch if classnew1==3
772    tab age_cat if classnew1==3
773    tab Ethnicity_arch if classnew1==3
774    tab relcw1 if classnew1==3
775    tab CvPstd if classnew1==3
776    tab CvNumP if classnew1==3
777    tab educa_cons if classnew1==3
778    tab mynssec3_cons if classnew1==3
779    tab wealth_cons if classnew1==3
780    tab frequency if classnew1==3
781    tab limiting_cons if classnew1==3
782
```

```
783     * Import posterior probabilities of class membership following the unconditional 3-class LCA for
        female participants (pre-pandemic)
784     import excel "", sheet("") firstrow clear
785     * Save dataset with a new name
786     save posteriorfemalec3t0.dta
787     * Import posterior probabilities of class membership following the unconditional 2-class LCA for
        female participants (intra-pandemic)
788     import excel "", sheet("") firstrow clear
789     * Save dataset with a new name
790     save posteriorfemalec2t1.dta
791
792     * Use female participant dataset with core variables included in analyses
793     use femalewide2.dta
794     * One-to-one merge of data in memory with posteriorfemalec3t0.dta on participant ID
795     merge 1:1 idauniq using posteriorfemalec3t0.dta, generate (merge_posc3t0)
796     * Sort from lowest to highest participant ID
797     sort idauniq
798     * One-to-one merge of data in memory with posteriorfemalec3t1.dta on participant ID
799     merge 1:1 idauniq using posteriorfemalec2t1.dta, generate (merge_posc2t1)
800     * Sort from lowest to highest participant ID
801     sort idauniq
802     * Drop unnecessary variables
803     drop merge_posc3t0 merge_posc2t1
804     * Save dataset with a new name
805     save LCAfemalecross.dta
806
807     * Re-order classes
808     gen classnew0 = .
809     replace classnew0 = 1 if class0==2
810     replace classnew0 = 2 if class0==3
811     replace classnew0 = 3 if class0==1
812     gen classnew1 = .
813     replace classnew1 = 1 if class1==2
814     replace classnew1 = 2 if class1==1
815     * 1: Low
816     * 2: Medium
817     * 3: High
818     * Overwrite dataset, by replacing the previously saved file
819     save LCAfemalecross.dta, replace
820
821     * Produce a two-way table of frequency counts (preliminary cross-classification tables)
822     tabulate classnew0 classnew1
823     tab classnew0 if classnew0!=. & classnew1!=.
824     tab classnew1 if classnew0!=. & classnew1!=.
825
826     * Descriptive statistics for the total female sample and stratified by class membership (pre-pandemic)
827     * Use complete female participant dataset
828     use LCAfemalecross.dta
829     * One-to-one merge of data in memory with demographw9.dta on participant ID
830     merge 1:1 idauniq using demographw9.dta, generate (merge_demograph)
831     * Sort from lowest to highest participant ID
832     sort idauniq
833     * Keep data from the participants included in the unconditional LCA at pre-pandemic
834     keep if classnew0!=.
835     * Count total number of participants
836     unique idauniq
837     * 2,235 individuals
838     replace dimarr = . if dimarr<0
839     replace dimarr = 4 if dimarr==5
840     replace dimarr = 5 if dimarr==6
841     sum indager
842     tab age_cat
843     tab fqethnmr
```

```
844    tab dimarr
845    tab wpdes
846    save femaledescw9.dta
847    tab hhtot
848    tab edqual
849    tab educa_cons
850    tab mynssec3_cons
851    tab wealth_cons
852    tab frequency
853    tab limiting
854    tab limiting_cons
855
856    sum indager_cons if classnew0==1
857    tab age_cat if classnew0==1
858    tab fqethnmr if classnew0==1
859    tab dimarr if classnew0==1
860    tab wpdes if classnew0==1
861    tab hhtot if classnew0==1
862    tab educa_cons if classnew0==1
863    tab mynssec3_cons if classnew0==1
864    tab wealth_cons if classnew0==1
865    tab frequency if classnew0==1
866    tab limiting if classnew0==1
867    tab limiting_cons if classnew0==1
868
869    sum indager_cons if classnew0==2
870    tab age_cat if classnew0==2
871    tab fqethnmr if classnew0==2
872    tab dimarr if classnew0==2
873    tab wpdes if classnew0==2
874    tab hhtot if classnew0==2
875    tab educa_cons if classnew0==2
876    tab mynssec3_cons if classnew0==2
877    tab wealth_cons if classnew0==2
878    tab frequency if classnew0==2
879    tab limiting if classnew0==2
880    tab limiting_cons if classnew0==2
881
882    sum indager_cons if classnew0==3
883    tab age_cat if classnew0==3
884    tab fqethnmr if classnew0==3
885    tab dimarr if classnew0==3
886    tab wpdes if classnew0==3
887    tab hhtot if classnew0==3
888    tab educa_cons if classnew0==3
889    tab mynssec3_cons if classnew0==3
890    tab wealth_cons if classnew0==3
891    tab frequency if classnew0==3
892    tab limiting if classnew0==3
893    tab limiting_cons if classnew0==3
894
895    * Descriptive statistics for the total female sample and stratified by class membership
           (intra-pandemic)
896    * Use complete female participant dataset
897    use LCAfemalecross.dta
898    * One-to-one merge of data in memory with demographcw1.dta on participant ID
899    merge 1:1 idauniq using demographcw1.dta, generate (merge_demograph)
900    * Sort from lowest to highest participant ID
901    sort idauniq
902    * Keep data from the participants included in the unconditional LCA at intra-pandemic
903    keep if classnew1!=.
904    * Count total number of participants
905    unique idauniq
```

```
906    * 2,158 individuals
907    sum Age_Arch
908    tab age_cat
909    tab Ethnicity_arch
910    tab RelStat
911    tab marital_cons
912    replace marital_cons = . if marital_cons<0
913    tab RelStat if marital_cons==.
914    gen relcw1 = marital_cons
915    replace relcw1 = 1 if RelStat == 8 & marital_cons==.
916    replace relcw1 = 2 if inlist(RelStat,1,2,3,4) & marital_cons==.
917    replace relcw1 = 4 if inlist(RelStat,5,6) & marital_cons==.
918    replace relcw1 = 4 if marital_cons==5
919    replace relcw1 = 5 if marital_cons==6
920    replace relcw1 = 5 if RelStat == 7 & marital_cons==.
921    tab CvPstd
922    save femaledescw10.dta
923    tab CvNumP
924    tab educa_cons
925    tab mynssec3_cons
926    tab wealth_cons
927    tab frequency
928    tab limiting_cons
929
930    sum Age_Arch if classnew1==1
931    tab age_cat if classnew1==1
932    tab Ethnicity_arch if classnew1==1
933    tab relcw1 if classnew1==1
934    tab CvPstd if classnew1==1
935    tab CvNumP if classnew1==1
936    tab educa_cons if classnew1==1
937    tab mynssec3_cons if classnew1==1
938    tab wealth_cons if classnew1==1
939    tab frequency if classnew1==1
940    tab limiting_cons if classnew1==1
941
942    sum Age_Arch if classnew1==2
943    tab age_cat if classnew1==2
944    tab Ethnicity_arch if classnew1==2
945    tab relcw1 if classnew1==2
946    tab CvPstd if classnew1==2
947    tab CvNumP if classnew1==2
948    tab educa_cons if classnew1==2
949    tab mynssec3_cons if classnew1==2
950    tab wealth_cons if classnew1==2
951    tab frequency if classnew1==2
952    tab limiting_cons if classnew1==2
```