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1 *****
2 ***SYNTAX FOR "The influence of socio-economic factors on patterns of internet use among older
3 adults before and during the COVID-19 pandemic: A latent transition analysis of the English
4 Longitudinal Study of Ageing"***
5 *****
6
7 * STATA version: 17.0, BE-Basic Edition
8
9 * STATA citation: StataCorp. 2021. Stata Statistical Software: Release 17. College Station, TX:
10 StataCorp LLC.
11
12 * Data citation (main ELSA survey): Banks, J., Batty, G. David, Breedvelt, J., Coughlin, K.,
13 Crawford, R., Marmot, M., Nazroo, J., Oldfield, Z., Steel, N., Steptoe, A., Wood, M., Zaninotto, P.
14 (2021). English Longitudinal Study of Ageing: Waves 0-9, 1998-2019. [data collection]. 37th Edition.
15 UK Data Service. SN: 5050, DOI: 10.5255/UKDA-SN-5050-24
16
17 * Data citation (COVID-19 sub-study): Steptoe, A., Addario, G., Banks, J., Batty, G. David,
18 Coughlin, K., Crawford, R., Dangerfield, P., Marmot, M., Nazroo, J., Oldfield, Z., Pacchiotti, B.,
19 Steel, N., Wood, M., Zaninotto, P. (2021). English Longitudinal Study of Ageing COVID-19 Study,
20 Waves 1-2, 2020. [data collection]. 2nd Edition. UK Data Service. SN: 8688, DOI:
21 10.5255/UKDA-SN-8688-2
22
23 * Data access statement: ELSA data from the main survey (SN 5050) and the COVID-19 sub-study (SN
24 8688) are available through the UK Data Service (https://ukdataservice.ac.uk/). The main ELSA
25 dataset is safeguarded and can be accessed via
26 https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=5050#!/access-data. The COVID-19
27 sub-study can be accessed via
28 https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=8688#!/access-data. More information
29 on how to access ELSA, including the conditions of use, can be found on the UK Data Service website
30 (main ELSA survey: https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=5050#!/details;
31 COVID-19 sub-study: https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=8688#!/details)
32 and the ELSA website (main ELSA survey: https://www.elsa-project.ac.uk/accessing-elsa-data; COVID-19
33 sub-study: https://www.elsa-project.ac.uk/covid-19-data).
34
35 * Date of data access/download (dd/mm/yyyy): 17/12/2021
36
37 * Project ID: 217429
38
39 * Data documentation: Documentation pertaining to ELSA (e.g., data dictionaries, questionnaires,
40 technical reports, user guides) is available on the UK Data Service website (main ELSA survey:
41 https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=5050#!/documentation; COVID-19
42 sub-study: https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=8688#!/documentation) and
43 the ELSA website (main ELSA survey: https://www.elsa-project.ac.uk/data-and-documentation; COVID-19
44 sub-study: https://www.elsa-project.ac.uk/covid-19-data).
45
46 *****
47 ***DATA PROCESSING***
48 *****
49
50 * Change working directory - add pathname in between quotation marks for Windows
51 cd ""
52
53 * Variables Wave 9
54 use idauniq scint scinddt scindlt scindtb scindph scind95 scind96 scinaem scinacl scinaed scinabk
55 scinash scinasl scinasn scinact scinanw scinast scinagm scinajb scinaps scina95 scina96 scinahe
56 w9nssec8 w9nssec3 samptyp w9xwgt w9scwt indsex indager dimarr fqethnmr wpdes hhtot heill helim using
57 wave_9_elsa_data_eul_v1.dta
58 * Describe dataset
59 describe

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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
39 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

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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 obsnr==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

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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, or other grade
equivalent
197 replace educanew = 1 if inlist(edqual,3,4,5)
198 * Assign the number 2 if the participant has completed some higher education (below degree), or 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

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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

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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 household
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

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321 * Install carryforward command
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

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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 for 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

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426 * News
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 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 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 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 0 if the participant reported not using the internet for 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 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 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 0 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(educu_cons,0,2)

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```

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 Sex 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

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```

534 rename socialnetworking1 social1
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 clear
567 import excel "", sheet("") firstrow
568 * Save dataset with a new name
569 save posteriormalec3t0.dta
570 * Import posterior probabilities of class membership following the unconditional 3-class LCA for
male participants (intra-pandemic)
571 import excel "", sheet("") firstrow clear
572 * Save dataset with a new name
573 save posteriormalec3t1.dta
574
575 * Use male participant dataset with core variables included in analyses
576 use malewide2.dta
577 * One-to-one merge of data in memory with posteriormalec3t0.dta on participant ID
578 merge 1:1 idauniq using posteriormalec3t0.dta, generate (merge_posc3t0)
579 * Sort from lowest to highest participant ID
580 sort idauniq
581 * One-to-one merge of data in memory with posteriormalec3t1.dta on participant ID
582 merge 1:1 idauniq using posteriormalec3t1.dta, generate (merge_posc3t1)
583 * Sort from lowest to highest participant ID
584 sort idauniq
585 * Drop unnecessary variables
586 drop merge_posc3t0 merge_posc3t1
587 * Save dataset with a new name
588 save LCAmalecross.dta
589
590 * Re-order classes
591 gen classnew0 = .
592 replace classnew0 = 1 if class0==3
593 replace classnew0 = 2 if class0==2
594 replace classnew0 = 3 if class0==1

```

```

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

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```

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

```

```

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

```



```

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

```

```

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

```

```

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

```