



```

name: <unnamed>
log: \\wsl.localhost\Debian\home\lsys\neutrality\analysis\logs\figureD2-estima
> tes.smcl
log type: smcl
opened on: 2 Dec 2025, 12:27:08

1 .
2 . do ./init.do

3 . cls                                // Clear results window

4 . clear all                          // Start with a clean slate

5 . set more off, perm      // Disable partitioned output
   (set more preference recorded)

6 . macro drop _all                  // Clear all macros to avoid namespace conflicts

7 . set linesize 150                // Line size limit to make output more readable, affects log
> s

8 . set varabbrev off, perm // Turn off variable abbreviation
   (set varabbrev preference recorded)

9 . // pause on                      // Enable pause mode for debugging
10. version 13.1                   // Set Stata version to 13.1

11. set matsize 10000

12.
13. *=====
14. // Set root path
15. // cap net install here, from("https://raw.githubusercontent.com/korenmiklos/here/master/")
16. cap here

17. if _rc == 0 {
18.     here, set
19.     cd ${here}
20. }

21. else {
22.     global here "\\wsl.localhost\Debian\home\lsys\neutrality\analysis"
23.     cd $here
\\wsl.localhost\Debian\home\lsys\neutrality\analysis
24. }

25.
26. *=====
27. // Point to ado programs
28. adopath ++ ./ado
[1]          "./ado"
[2]  (BASE)      "C:\Program Files (x86)\Stata13\ado\base/"
[3]  (SITE)      "C:\Program Files (x86)\Stata13\ado\site/"
[4]
[5]  (PERSONAL)  "c:\ado\personal/"
[6]  (PLUS)       "c:\ado\plus/"
[7]  (OLDPLACE)   "c:\ado/"

```

```
29.
30. use ".../pipeline/out/media.dta", clear
31. do preamble
32. *-----
33. * IDENTIFIERS AND METADATA
34. *-----
35. label var qid          "Quote ID"
36. label var article_id   "News article ID (title-date tuple)"
37. label var speech_id    "Speech ID"
38.
39. label var date         "Publication date"
40. label var matched_date "Matched speech date"
41. label var matched_score "Matched score in semi-automated assessing"
42.
43. label var mp           "MP ID"
44. label var party         "Party of politician (string code)"
45. label var opposition    "=1 if from an opposition party"
46. gen ruling = (party == "pap")
47. label var ruling        "=1 if from the government party"
48. label var non_partisan  "=1 if non-partisan MP"
49. assert (1 == opposition + ruling + non_partisan)
50. label var speaker       "=1 if making speech in capacity of speaker"
51.
52. label var section       "Original article section"
53.
54. *=====
55. * MP CAREER
56. *=====
57. label var start "Start date of MP's parliamentary service"
58. rename _end end
59. label var end   "End date of MP's parliamentary service"
60.
61. *--- Rank of MP -----
62. label define rank_label ///
>      1 "pm" 2 "dpm" 3 "minister" 4 "sms" 5 "mos" 6 "mayor" 7 "sps" ///
>      8 "parl sec" 9 "speaker" 10 "mp" 11 "ncmp" 12 "nmp"
63. encode rank, gen(mp_rank) label(rank_label)
64. drop rank
```

```
65. rename mp_rank rank
66. label var rank "Rank of MP at time of speech"
67. fvset base 10 rank // base: Member of Parliament
68.
69. *--- Tenure -----
70. gen _tenure = tenure / 365
71. drop tenure
72. rename _tenure tenure
73. label var tenure "Seniority of politician at time of speech (years)"
74.
75. gen tenure2 = tenure^2
76. label var tenure2 "Square of tenure"
77.
78. *=====
79. * INDIVIDUAL DEMOGRAPHICS
80. *=====
81. label var dob "Date of birth of MP"
82. label var yob "Year of birth of MP"
83.
84. *--- Gender (0 = male, 1 = female) -----
85. label define gender_label 0 "male" 1 "female"
86. encode gender, gen(sex) label(gender_label)
87. drop gender
88. rename sex gender
89. fvset base 0 gender
90. label var gender "Gender of politician"
91.
92. *--- Race -----
93. label define race_label 0 "chinese" 1 "malay" 2 "indian" 3 "eurasian"
94. encode race, gen(ethnic) label(race_label)
95. drop race
96. rename ethnic race
97. fvset base 0 race
98. label var race "Race of politician (Chinese, Malay, Indian, Eurasian/other)"
99.
100 *--- Age -----
101 gen _age = age / 365
```

```

102 drop age

103 rename _age age

104 label var age "Age of politician at time of speech (years)"

105
106 gen age2      = age^2

107 label var age2 "Square of age"

108
109 *=====
110 * MINISTRY
111 *=====
112 label var MND      "=1 if speech made while at Ministry of National Development"
113 label var MinDef   "=1 if speech made while at Ministry of Defence"
114 label var MFA      "=1 if speech made while at Ministry of Foreign Affairs"
115 label var MinLaw   "=1 if speech made while at Ministry of Law"
116 label var MHA      "=1 if speech made while at Ministry of Home Affairs"
117 label var MOT      "=1 if speech made while at Ministry of Transport"
118 label var MOF      "=1 if speech made while at Ministry of Finance"
119 label var MOM      "=1 if speech made while at Ministry of Manpower"
120 label var MTI      "=1 if speech made while at Ministry of Trade and Industry"
121 label var MCCY     "=1 if speech made while at Ministry of Culture, Community and Youth"
122 label var MSF      "=1 if speech made while at Ministry of Social and Family Development"
123 label var MOH      "=1 if speech made while at Ministry of Health"
124 label var PMO      "=1 if speech made while at Prime Minister's Office"
125 label var MEWR     "=1 if speech made while at Ministry of the Environment and Water Resources"
126 label var MCI      "=1 if speech made while at Ministry of Communications and Information"
127 label var MOE      "=1 if speech made while at Ministry of Education"

128
129 recode MFA PMO MEWR MCI MTI MHA MCCY MinLaw MOH MOM MinDef MSF MOT MND MOF MOE (. =
> 0)
(MFA: 13913 changes made)
(PMO: 14288 changes made)
(MEWR: 14348 changes made)
(MCI: 14173 changes made)
(MTI: 14135 changes made)
(MHA: 13392 changes made)
(MCCY: 14301 changes made)
(MinLaw: 13971 changes made)
(MOH: 14054 changes made)
(MOM: 14058 changes made)
(MinDef: 13790 changes made)
(MSF: 14693 changes made)
(MOT: 13884 changes made)
(MND: 13741 changes made)
(MOF: 13401 changes made)
(MOE: 13792 changes made)

```

```

130
131 *=====
132 * STRING SIMILARITY AND SEMANTIC MATCHING
133 *=====
134
135 *--- String similarity 1 (partialscore) -----
136 rename partialscore_quote_to_fullspeech ss1_quote_to_speech

137 label var ss1_quote_to_speech           "String similarity score 1 for quote to spe
> ech"

138
139 rename partialscore_quote_to_paragraph ss1_quote_to_paragraph

140 label var ss1_quote_to_paragraph         "String similarity score 1 for quote to par
> agraph"

141
142 rename partialscore_quote_to_sentence   ss1_quote_to_sentence

143 label var ss1_quote_to_sentence          "String similarity score 1 for quote to sen
> tence"

144
145 rename _partialscore_speech            _ss1_quote_to_speech

146 label var _ss1_quote_to_speech          "(no stopwords) string similarity score 1 f
> or quote to speech"

147
148 rename _partialscore_paragraph         _ss1_quote_to_paragraph

149 label var _ss1_quote_to_paragraph       "(no stopwords) string similarity score 1 f
> or quote to paragraph"

150
151 rename _partialscore_sentence          _ss1_quote_to_sentence

152 label var _ss1_quote_to_sentence        "(no stopwords) string similarity score 1 f
> or quote to sentence"

153
154 *--- String similarity 2 (tokensecscore) -----
155 rename tokensecscore_quote_to_sentence ss2_quote_to_sentence

156 label var ss2_quote_to_sentence         "String similarity score 2 for quote to sen
> tence"

157
158 rename tokensecscore_quote_to_paragraph ss2_quote_to_paragraph

159 label var ss2_quote_to_paragraph        "String similarity score 2 for quote to par
> agraph"

160
161 rename tokensecscore_quote_to_fullspeec ss2_quote_to_speech

162 label var ss2_quote_to_speech           "String similarity score 2 for quote to spe
> ech"

```

```

163
164 rename tokensestscore_quote_to_sentence_ _ss2_quote_to_sentence
165 label var _ss2_quote_to_sentence "(no stopwords) string similarity score 2 f
> or quote to sentence"
166
167 rename _0tokensestscore_quote_to_paragra _ss2_quote_to_paragraph
168 label var _ss2_quote_to_paragraph "(no stopwords) string similarity score 2 f
> or quote to paragraph"
169
170 rename _1tokensestscore_quote_to_fullspe _ss2_quote_to_speech
171 label var _ss2_quote_to_speech "(no stopwords) string similarity score 2 f
> or quote to speech"
172
173 *--- Semantic matching scores -----
174 replace ce_max_quote2speech = 100 * ce_max_quote2speech
(14903 real changes made)
175 label var be_max_quote2speech "Best embedding-based biencoder score for quote to spe
> ech"
176 label var ce_max_quote2speech "Cross-encoder semantic score for quote to speech (0-1
> 00)"
177
178 *=====
179 * CONSTITUENCY AND ELECTORAL VARIABLES
180 *=====
181 rename num group_size
182 label var group_size "Politician size of constituency (1 to 6)"
183
184 label var voters "Electoral size of constituency for current parliam
> ent"
185 label var valid_votes "Number of valid votes in constituency"
186 label var winners_majority "Number of votes for winning party/candidate"
187 label var vote "Number of votes for current parliament"
188 label var vote_share "Percentage of votes for current parliament"
189 label var winners_majority_share "Winners' majority share (percent of valid votes)"
190 label var swing "Electoral swing in ruling party vote share (percen
> tage points)"
191
192 *=====
193 * PARLIAMENT, YEAR, ELECTION TIMING, WEEKDAY
194 *=====
195 *--- Parliament life: dummies + factor -----
196 label var parl10 "=1 if speech occurred in 10th Parliament"

```

```
197 label var parl11 "=1 if speech occurred in 11th Parliament"
198 label var parl12 "=1 if speech occurred in 12th Parliament"
199 label var parl13 "=1 if speech occurred in 13th Parliament"
200
201 label define parl_label 0 "10th parliament" 1 "11th parliament" 2 "12th parliament"
> 3 "13th parliament"
202 encode parl, gen(parliament) label(parl_label)
203 drop parl
204 rename parliament parl
205 fvset base 0 parl
206 label var parl "Parliament life (categorical)"
207
208 *=====
209 * ELECTION TIMING INDICATORS
210 *=====
211 *--- General elections -----
212 label var ge2006      "=1 if article published in year of General Election 2006"
213 label var ge2011      "=1 if article published in year of General Election 2011"
214 label var ge2015      "=1 if article published in year of General Election 2015"
215
216 label var ge2006_1mth  "=1 if article within 1 month of General Election 2006"
217 label var ge2006_3mths "=1 if article within 3 months of General Election 2006"
218 label var ge2006_6mths "=1 if article within 6 months of General Election 2006"
219
220 label var ge2011_1mth  "=1 if article within 1 month of General Election 2011"
221 label var ge2011_3mths "=1 if article within 3 months of General Election 2011"
222 label var ge2011_6mths "=1 if article within 6 months of General Election 2011"
223
224 label var ge2015_1mth  "=1 if article within 1 month of General Election 2015"
225 label var ge2015_3mths "=1 if article within 3 months of General Election 2015"
226 label var ge2015_6mths "=1 if article within 6 months of General Election 2015"
227
228 *--- By-elections -----
229 label var be2012      "=1 if article published in year of By-election 2012"
230 label var be2013      "=1 if article published in year of By-election 2013"
231 label var be2016      "=1 if article published in year of By-election 2016"
```

```

232
233 label var be2012_1mth    "=1 if article within 1 month of By-election 2012"
234 label var be2012_3mths   "=1 if article within 3 months of By-election 2012"
235 label var be2013_1mth    "=1 if article within 1 month of By-election 2013"
236 label var be2013_3mths   "=1 if article within 3 months of By-election 2013"
237 label var be2016_1mth    "=1 if article within 1 month of By-election 2016"
238 label var be2016_3mths   "=1 if article within 3 months of By-election 2016"

239
240 *--- Presidential elections -----
241 label var pe2005          "=1 if article published in year of Presidential Election 200
> 5"
242 label var pe2011          "=1 if article published in year of Presidential Election 201
> 1"
243
244 label var pe2005_1mth    "=1 if article within 1 month of Presidential Election 2005"
245 label var pe2005_3mths   "=1 if article within 3 months of Presidential Election 2005"
246 label var pe2005_6mths   "=1 if article within 6 months of Presidential Election 2005"
247
248 label var pe2011_1mth    "=1 if article within 1 month of Presidential Election 2011"
249 label var pe2011_3mths   "=1 if article within 3 months of Presidential Election 2011"
250 label var pe2011_6mths   "=1 if article within 6 months of Presidential Election 2011"
251
252 *=====
253 * ARTICLE-LEVEL VARIABLES: SECTION, AUTHOR, LANGUAGE, BEAT
254 *=====
255 * Encoded section with 'others' as base
256 label define section2_label ///
>      1 "home" 2 "insight" 3 "money" 4 "news" 5 "opinion" 6 "others" ///
>      7 "prime news" 8 "review - insight" 9 "singapore" 10 "sports" ///
>      11 "st" 12 "think" 13 "top of the news" 14 "world"
257 encode section2, gen(sect2) label(section2_label)
258 drop section2
259 rename sect2 section2
260 fvset base 6 section2
261 label var section2 "Section of article (base: others)"
262
263 * Language / translation flags
264 label var malay          "=1 if quote is in Malay"
265 label var mandarin       "=1 if quote is in Mandarin"

```

```
266 label var tamil      "=1 if quote is in Tamil"
267 label var vernacular  "=1 if quote is in a non-English vernacular language"
268 label var translations "=1 if quote translated from vernacular to English"
269
270 * Author and beat
271 rename author_cleaned2 authorID
272 label var authorID "Author ID"
273
274 encode beat, gen(beat2)
275 drop beat
276 rename beat2 beat
277 label var beat "Beat assignment of reporter"
278
279 *---- Weekday of publication -----
280 label define weekday_label ///
>     1 "monday" 2 "tuesday" 3 "wednesday" 4 "thursday" 5 "friday" 6 "saturday" 7 "sun
> day"
281 encode weekday, gen(dayofweek) label(weekday_label)
282 drop weekday
283 rename dayofweek weekday
284 fvset base 1 weekday
285 label var weekday "Day of week of article publication"
286
287 *=====
288 * TEXT LENGTH
289 *=====
290 * Word counts
291 rename wordcount_quote      quote
292 label var quote           "Word count of quote"
293
294 rename wordcount_paragraph paragraph
295 label var paragraph        "Word count of paragraph"
296
297 rename wordcount_fullspeech speech
298 label var speech          "Word count of full speech"
299
300 rename wordcount          article
301 label var article         "Article length (words)"
```

```

302
303 * Character counts
304 rename char_count_quote      quote_char
305 label var quote_char         "Character count of quote"
306
307 rename char_count_paragraph paragraph_char
308 label var paragraph_char     "Character count of paragraph"
309
310 rename char_count_fullspeech speech_char
311 label var speech_char       "Character count of speech"
312
313 rename article_len_char    article_char
314 label var article_char      "Article length (characters)"
315
316 * Log transformations
317 #delimit ;
  delimiter now ;
318 global log_variables "
  >      quote
  >      quote_char
  >      paragraph
  >      paragraph_char
  >      speech
  >      speech_char
  >      article
  >      article_char
  >  ";
319 #delimit cr
  delimiter now cr
320
321 foreach var in $log_variables {
  2.      gen ln_`var' = ln(`var')
  3.      label var ln_`var' "ln of `var'"
  4.  }
(2 missing values generated)
(2 missing values generated)

322
323 *=====
324 * TOPIC DISTRIBUTIONS
325 *=====
326
327 * 50-topic models: quote, speech, article
328 forvalues i = 1/50 {
  2.      label var quote_50K_`i'    "Probability for topic `i'/50 for quote"
  3.      label var speech_50K_`i'   "Probability for topic `i'/50 for speech"
  4.      label var article_50K_`i'  "Probability for topic `i'/50 for article"
  5.  }
329
330 * 92-topic models: quote, speech, sentence

```

```

331 forvalues i = 1/92 {
2.      label var quote_92K_`i'      "Probability for topic `i'/92 for quote"
3.      label var speech_92K_`i'     "Probability for topic `i'/92 for speech"
4.      label var sentence_92K_`i'   "Probability for topic `i'/92 for sentence"
5. }

332
333 * 100-topic models: quote, speech
334 forvalues i = 1/100 {
2.      label var quote_100K_`i'    "Probability for topic `i'/100 for quote"
3.      label var speech_100K_`i'   "Probability for topic `i'/100 for speech"
4. }

335
336 * Article-level topic models (30 and 40 topics)
337 forvalues i = 1/30 {
2.      label var article_30K_`i'   "Probability for topic `i'/30 for article"
3. }

338
339 forvalues i = 1/40 {
2.      label var article_40K_`i'   "Probability for topic `i'/40 for article"
3. }

340
341 *=====
342 * LEXICAL RICHNESS
343 *=====
344 label var ttr      "Type-token ratio"

345 label var rttr     "Root type-token ratio"
346 label var cttr     "Corrected type-token ratio"
347 label var herdan   "Herdan's C lexical diversity"
348 label var summer   "Summer lexical diversity index"
349 label var dugast   "Dugast lexical diversity index"
350 label var maas     "Maas lexical diversity index"
351 label var msttr    "Mean segmental type-token ratio"
352 label var mattr    "Moving-average type-token ratio"
353 label var mtld     "Measure of textual lexical diversity"
354 label var hdd      "Hypergeometric distribution diversity"

355
356 *=====
357 * READABILITY
358 *=====
359 label var dalechall "Dale-Chall readability index"

360 label var flesch     "Flesch reading ease score"
361 label var fleschkincaid "Flesch-Kincaid grade level"

```

```

362 label var gunningfog      "Gunning-Fog readability index"
363 label var smog            "SMOG readability index"
364 label var notdalechall   "Share of difficult words (not in Dale-Chall list)"
365 label var polysyllable    "Number of polysyllabic words (more than 3 syllables)"
366 label var syllables       "Total number of syllables"
367 label var sentences       "Total number of sentences"

368
369 *=====
370 * SUBJECTIVITY, OBJECTIVITY, POLARITY
371 *=====
372 * Subjectivity (0 = objective, 1 = subjective)
373 gen speech_objectivity     = 1 - speech_subjectivity

374 label var speech_subjectivity "Speech subjectivity (0 objective - 1 subjective)"

375
376 gen para_objectivity      = 1 - para_subjectivity
(2 missing values generated)

377 label var para_subjectivity "Paragraph subjectivity (0-1)"

378
379 gen sentence_objectivity   = 1 - sentence_subjectivity
(2 missing values generated)

380 label var sentence_subjectivity "Sentence subjectivity (0-1)"

381
382 gen quote_objectivity     = 1 - quote_subjectivity

383 label var quote_subjectivity "Quote subjectivity (0-1)"

384
385 gen quote_sentence_objectivity = 1 - quote_sentence_subjectivity
(1 missing value generated)

386 label var quote_sentence_subjectivity "Quote sentence subjectivity (0-1)"

387
388 label var speech_objectivity      "Speech objectivity (0 objective - 1 subjective"
> )"

389 label var para_objectivity       "Paragraph objectivity (0-1)"

390 label var sentence_objectivity   "Sentence objectivity (0-1)"

391 label var quote_objectivity     "Quote objectivity (0-1)"

392 label var quote_sentence_objectivity "Quote sentence objectivity (0-1)"

393
394 * Polarity (-1 = negative, +1 = positive)
395 label var speech_polarity      "Speech polarity (-1 negative to +1 positive), Pat
> ternAnalyzer"

```

```
396 label var para_polarity          "Paragraph polarity (-1 to +1), PatternAnalyzer"  
397 label var sentence_polarity      "Sentence polarity (-1 to +1), PatternAnalyzer"  
398 label var quote_polarity         "Quote polarity (-1 to +1), PatternAnalyzer"  
399 label var quote_sentence_polarity "Quote sentence polarity (-1 to +1), PatternAnalyzer"  
> er"  
400  
    end of do-file  
401  
402 global TABSAVEDIR ../results/tables  
403 global FIGSAVEDIR ../results/figures  
404 global graphformats png pdf eps tif  
405  
406  
407 *=====  
408 * Global macros  
409 *=====  
410 #delimit;  
    delimiter now ;  
411 global time  
    >           i.parl  
    >           i.year  
    > ;  
412 global ind  
    >           i.gender  
    >           i.race  
    >           c.age  
    >           c.age2  
    >           c.tenure  
    >           c.tenure2  
    > ;  
413     global article  
    >           i.weekday  
    >           i.section2  
    >           translations  
    > ;  
414     global portfolio  
    >           MFA  
    >           PMO  
    >           MEWR  
    >           MCI  
    >           MTI  
    >           MHA  
    >           MCCY  
    >           MinLaw  
    >           MOH  
    >           MOM  
    >           MinDef  
    >           MSF  
    >           MOT  
    >           MND  
    >           MOF  
    >           MOE  
    >           speaker  
    > ;
```

```
415      global electoral
>      c.group_size
>      c.voters
>      c.vote_share
>      c.winners_majority_share
> ;

416      global topics
>      speech_92K*
>      quote_92K*
>      article_40K*
> ;

417      global objectivity
>      speech_objectivity
>      para_objectivity
>      sentence_objectivity
>      quote_objectivity
>      quote_sentence_objectivity
> ;

418      global polarity
>      speech_polarity
>      para_polarity
>      sentence_polarity
>      quote_polarity
>      quote_sentence_polarity
> ;

419      global readability
>      flesch
>      fleschkincaid
>      gunningfog
>      smog
>      dalechall
>      notdalechall
>      sentences
>      syllables
>      polysyllable
> ;

420      global lexical
>      ttr
>      rttr
>      cttr
>      herdan
>      summer
>      dugast
>      maas
>      msttr
>      mattr
>      mtld
>      hdd
> ;

421      global length_s
>      quote
>      speech
>      article
> ;
```

```

422 global length_s
>     ln_quote
>     ln_speech
>     ln_article
> ;

423 assert_macros "portfolio time ind article topics";
Checking portfolio:
portfolio contains: MFA      PMO      MEWR      MCI      MTI      MHA      MCCY      MinLaw
> MOH      MOM      MinDef     MSF      MOT      MND      MOF      MOE      speaker
Checking time:
time contains: i.parl          i.year
Checking ind:
ind contains: i.gender        i.race       c.age       c.age2      c.tenure      c.tenure2
Checking article:
article contains: i.weekday    i.section2   translations
Checking topics:
topics contains: speech_92K*   quote_92K*   article_40K*
424 global min
>     i.rank
>     $portfolio
>     i.rank#($portfolio)
> ;
425     global base_controls
>     $time
>     $ind
>     $article
>     $topics
> ;
426     global base_controls_min
>     $time
>     $ind
>     $article
>     $topics
>     $min
> ;
427 #delimit cr
delimiter now cr
428 *=====
429 * COEFFICIENT LABELS
430 * =====
431 * =====
432 #delimit;
delimiter now ;
433 global coeff_labels
>     "
>     1.opposition "Opposition"
>     1.opposition#c.trend "Opposition $\times$ Year"
>     trend "Year"
>     pcl_objectivity "Objectivity of speech and quote"
>     pcl_polarity "Polarity of speech and quote"
>     pcl_readability "Grade/readability score of speech transcript"
>     pcl_lexical "Lexical richness of speech transcript"
>     "
> ;

```

```

434 #delimit cr
      delimiter now cr
435
      end of do-file
436
437 tictoc tic 1


---


----- Time log -----
Start time: 2 Dec 2025 12:27:09


---


438
439 global outcome          ce_max_quote2speech
440 global maintopics        speech_92K* quote_92K* article_40K*
441
442 assert_macros "length_s time ind article portfolio maintopics"
      Checking length_s:
      length_s contains: ln_quote      ln_speech      ln_article
      Checking time:
      time contains: i.parl         i.year
      Checking ind:
      ind contains: i.gender       i.race        c.age        c.age2       c.tenure       c.tenure2
      Checking article:
      article contains: i.weekday     i.section2    translations
      Checking portfolio:
      portfolio contains: MFA        PMO        MEWR        MCI        MTI        MHA        MCCY        MinLaw
      >   MOH        MOM        MinDef      MSF        MOT        MND        MOF        MOE        speaker
      Checking maintopics:
      maintopics contains: speech_92K* quote_92K* article_40K*
443 local SAVEPATH ./figureD2/specest-semantic
444
445 * main is full interaction of portfolio, but no electoral controls
446 qui reg $outcome $time $length_s $maintopics $ind $article ($portfolio)##i.rank oppo
      > sition, vce(cluster article_id)
447 specchart opposition,spec(main $outcome time length topic ind article portfolio rank
      > portfolio rank) file(`SAVEPATH') replace
      (note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
      file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
      (note: dataset contains 0 observations)
      file ./figureD2/specest-semantic.dta saved
      obs was 0, now 1
      (1 real change made)
      file ./figureD2/specest-semantic.dta saved
448
449 * Loop over accuracy type
450 foreach y of varlist $outcome {
      2.      foreach i of num 1/9 { /* Loop over topic combinations */
      3.          if "`i'"=="1" { /* speechK=50 articleK=30 */
      4.              global topictype speech_50K* quote_50K* article_30K*
      5.              local topictype topic`i'
      6.          }
      7.          else if "`i'"=="2" { /* speechK=50 articleK=40 */
      8.              global topictype speech_50K* quote_50K* article_40K*
      9.              local topictype topic`i'
      10.         }
      11.         else if "`i'"=="3" { /* speechK=50 articleK=50 */
      12.             global topictype speech_50K* quote_50K* article_50K*
      13.             local topictype topic`i'
      14.         }

```

```

15.           else if "`i'"=="4" { /* speechK=92 articleK=30 */
16.               global topicstype speech_92K* quote_92K* article_30K*
17.               local topicstype topic`i'
18.           }
19.           else if "`i'"=="5" { /* speechK=92 articleK=40 */
20.               global topicstype speech_92K* quote_92K* article_40K*
21.               local topicstype topic`i'
22.           }
23.           else if "`i'"=="6" { /* speechK=92 articleK=50 */
24.               global topicstype speech_92K* quote_92K* article_50K*
25.               local topicstype topic`i'
26.           }
27.           else if "`i'"=="7" { /* speechK=100 articleK=30 */
28.               global topicstype speech_100K* quote_100K* article_30K*
29.               local topicstype topic`i'
30.           }
31.           else if "`i'"=="8" { /* speechK=100 articleK=30 */
32.               global topicstype speech_100K* quote_100K* article_40K*
33.               local topicstype topic`i'
34.           }
35.           else if "`i'"=="9" { /* speechK=100 articleK=30 */
36.               global topicstype speech_100K* quote_100K* article_50K*
37.               local topicstype topic`i'
38.           }
39.           * (1) Main spec, in terms of covariates
451          qui reg `y' $time $length_s $topicstype $ind $article ($portfolio)##i
> .rank opposition, vce(cluster article_id)
40.             specchart opposition,spec(`y' time length `topicstype' ind articl
> e portfolio rank portfoliorank) file(`SAVEPATH')
41.
452           * (2) No Ind controls
453          qui reg `y' $time $length_s $topicstype $article ($portfolio)##i.rank
> opposition, vce(cluster article_id)
42.             specchart opposition,spec(`y' time length `topicstype' article po
> rtfolio rank portfoliorank) file(`SAVEPATH')
43.
454           * (3) No length controls
455          qui reg `y' $time $topicstype $ind $article ($portfolio)##i.rank oppo
> sition, vce(cluster article_id)
44.             specchart opposition,spec(`y' time `topicstype' ind article portf
> olio rank portfoliorank) file(`SAVEPATH')
45.
456           * (4) No article controls
457          qui reg `y' $time $length_s $topicstype $ind ($portfolio)##i.rank opp
> osition, vce(cluster article_id)
46.             specchart opposition,spec(`y' time length `topicstype' ind portfo
> lio rank portfoliorank) file(`SAVEPATH')
47.
458           * (5) No portfolio
459          qui reg `y' $time $length_s $topicstype $ind $article i.rank oppositi
> on, vce(cluster article_id)
48.             specchart opposition,spec(`y' time length `topicstype' ind articl
> e rank) file(`SAVEPATH')
49.
460           * (6) No Rank
461          qui reg `y' $time $length_s $topicstype $ind $article $portfolio oppo
> sition, vce(cluster article_id)
50.             specchart opposition,spec(`y' time length `topicstype' ind articl
> e portfolio) file(`SAVEPATH')
51.

```

```

462          * (7) No portfolio + rank interaction
463          qui reg `y' $time $length_s $topicstype $ind $article $portfolio i.ra
> nk opposition, vce(cluster article_id)
52.           specchart opposition,spec(`y' time length `topicstype' ind articl
> e portfolio rank) file(`SAVEPATH')
53.
464          * (8) + electoral
465          qui reg `y' $time $length_s $topicstype $ind $article ($portfolio)##i
> .rank opposition $electoral, vce(cluster article_id)
54.           specchart opposition,spec(`y' time length `topicstype' ind articl
> e portfolio rank portfoliorank elec) file(`SAVEPATH')
55.       }
56. }

(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 1, now 2
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 2, now 3
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 3, now 4
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 4, now 5
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 5, now 6
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 6, now 7
(1 real change made)

```



```
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 13, now 14
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 14, now 15
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 15, now 16
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 16, now 17
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 17, now 18
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 18, now 19
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 19, now 20
(1 real change made)
(1 real change made)
```

```
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 20, now 21
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 21, now 22
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 22, now 23
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 23, now 24
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 24, now 25
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 25, now 26
(1 real change made)
file ./figureD2/specest-semantic.dta saved
```

```
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 26, now 27
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 27, now 28
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 28, now 29
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 29, now 30
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 30, now 31
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 31, now 32
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 32, now 33
(1 real change made)
(1 real change made)
(1 real change made)
```

```
(1 real change made)
(1 real change made)
(1 real change made)
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 33, now 34
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 34, now 35
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 35, now 36
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 36, now 37
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 37, now 38
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 38, now 39
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
```

```
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 39, now 40
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 40, now 41
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 41, now 42
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 42, now 43
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 43, now 44
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 44, now 45
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 45, now 46
(1 real change made)
(1 real change made)
(1 real change made)
(1 real change made)
```

```
(1 real change made)
(1 real change made)
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 46, now 47
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 47, now 48
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 48, now 49
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 49, now 50
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 50, now 51
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 51, now 52
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
```

```
obs was 52, now 53
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 53, now 54
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 54, now 55
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 55, now 56
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 56, now 57
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 57, now 58
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 58, now 59
(1 real change made)
```

```
(1 real change made)
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 59, now 60
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 60, now 61
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 61, now 62
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 62, now 63
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 63, now 64
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 64, now 65
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 65, now 66
```

```
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 66, now 67
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 67, now 68
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 68, now 69
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 69, now 70
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 70, now 71
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 71, now 72
(1 real change made)
```

```
(1 real change made)
file ./figureD2/specest-semantic.dta saved
(note: file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp not found)
file C:\Users\Admin\AppData\Local\Temp\ST_1e000001.tmp saved
obs was 72, now 73
(1 real change made)
file ./figureD2/specest-semantic.dta saved
```

```
466
467 tictoc toc 1
```

```
----- Time log -----
Start time: 2 Dec 2025 12:27:08
End time: 2 Dec 2025 12:29:36
Elapsed seconds: 147
Elapsed minutes: 2
Elapsed hours: .04
```

```
468 beepme 3
```

```
469 log close
    name: <unnamed>
    log: \\wsl.localhost\Debian\home\lsys\neutrality\analysis\logs\figureD2-estima
> tes.smcl
    log type: smcl
    closed on: 2 Dec 2025, 12:29:39
```
