ICCS

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Introduction

This file documents the data cleaning for the ICCS 1999-2009-2016 Citizenship Norms Project

Note that for citizenship norm recodes in all three survey waves, the norms are coded in the descending mean order of the 1999 data: obey,rights,local,work,envir,vote,history,respect,news,protest,discuss,party

1999 data loading and merging

1999 data: https://www.icpsr.umich.edu/icpsrweb/civicleads/studies/21661/datadocumentation
Downloaded Jan 17, 2019

Load 1999 country files, in chronological order of file names. Bind all 1999 files. Note, total observations of resulting tbl1 (93,882) concur with xls documentation of expected total n

```
# all files
files <- list.files("../data", full.names = TRUE)

# helper function to load files
load_files <- function(file) {
  e <- new.env()
  load(file, envir = e)

  stopifnot(length(e) == 1)  # safety first

  get(names(e)[1], envir = e)
}

tbl1 <- files %>%
  magrittr::extract(1:28) %>%      # filter to 1999 files only
  map(~ .x %>%
        load_files() %>%
        select(COUNTRY, IDCNTRY, IDSTUD, BS3B1, BS3B11, BS3B9, BS3B4, BS3B13,
               BS3B2, BS3B6, BS3B10, BS3B8, BS3B5, BS3B12, BS3B3,TOTWGT)) %>%
  reduce(rbind) %>%
  as_tibble() %>%
  mutate(`ICCS_year` = 1999) %>%     # add survey year variable
  select(`ICCS_year`, everything())
```

Cit norm, count all indicators to begin recode.

```
original_vars <- tbl1 %>%
  select(BS3B1, BS3B11, BS3B9, BS3B4, BS3B13, BS3B2, BS3B6, BS3B10, BS3B8, BS3B5, BS3B12, BS3B3) %>%
  colnames()

original_vars %>%
  map(~ tbl1 %>% count(!!sym(.x)))
```

```
## [[1]]
## # A tibble: 5 x 2
```

```
##   BS3B1                        n
##   <fct>                    <int>
## 1 (1) not important         1995
## 2 (2) somewhat unimportant  2418
## 3 (3) somewhat important   20211
## 4 (4) very important       66431
## 5 <NA>                      2827
##
## [[2]]
## # A tibble: 5 x 2
##   BS3B11                       n
##   <fct>                    <int>
## 1 (1) not important         2975
## 2 (2) somewhat unimportant 10785
## 3 (3) somewhat important   35630
## 4 (4) very important       38503
## 5 <NA>                      5989
##
## [[3]]
## # A tibble: 5 x 2
##   BS3B9                        n
##   <fct>                    <int>
## 1 (1) not important         2986
## 2 (2) somewhat unimportant 11726
## 3 (3) somewhat important   42796
## 4 (4) very important       31396
## 5 <NA>                      4978
##
## [[4]]
## # A tibble: 5 x 2
##   BS3B4                        n
##   <fct>                    <int>
## 1 (1) not important         5447
## 2 (2) somewhat unimportant 11830
## 3 (3) somewhat important   35762
## 4 (4) very important       35769
## 5 <NA>                      5074
##
## [[5]]
## # A tibble: 5 x 2
##   BS3B13                       n
##   <fct>                    <int>
## 1 (1) not important         4064
## 2 (2) somewhat unimportant 12865
## 3 (3) somewhat important   36910
## 4 (4) very important       35383
## 5 <NA>                      4660
##
## [[6]]
## # A tibble: 5 x 2
##   BS3B2                        n
##   <fct>                    <int>
## 1 (1) not important         4566
## 2 (2) somewhat unimportant 13382
```

```
## 3 (3) somewhat important   37364
## 4 (4) very important       35023
## 5 <NA>                      3547
##
## [[7]]
## # A tibble: 5 x 2
##   BS3B6                        n
##   <fct>                    <int>
## 1 (1) not important         7861
## 2 (2) somewhat unimportant 17428
## 3 (3) somewhat important   32388
## 4 (4) very important       31589
## 5 <NA>                      4616
##
## [[8]]
## # A tibble: 5 x 2
##   BS3B10                       n
##   <fct>                    <int>
## 1 (1) not important         6109
## 2 (2) somewhat unimportant 18138
## 3 (3) somewhat important   40898
## 4 (4) very important       22579
## 5 <NA>                      6158
##
## [[9]]
## # A tibble: 5 x 2
##   BS3B8                        n
##   <fct>                    <int>
## 1 (1) not important         7319
## 2 (2) somewhat unimportant 18421
## 3 (3) somewhat important   42831
## 4 (4) very important       20869
## 5 <NA>                      4442
##
## [[10]]
## # A tibble: 5 x 2
##   BS3B5                        n
##   <fct>                    <int>
## 1 (1) not important         8941
## 2 (2) somewhat unimportant 18358
## 3 (3) somewhat important   34180
## 4 (4) very important       22693
## 5 <NA>                      9710
##
## [[11]]
## # A tibble: 5 x 2
##   BS3B12                       n
##   <fct>                    <int>
## 1 (1) not importnat        13954
## 2 (2) somewhat unimportant 34883
## 3 (3) somewhat important   28004
## 4 (4) very important        8959
## 5 <NA>                      8082
##
```

```
## [[12]]
## # A tibble: 5 x 2
##   BS3B3                        n
##   <fct>                    <int>
## 1 (1) not important        23205
## 2 (2) somewhat unimportant 36163
## 3 (3) somewhat important   19853
## 4 (4) very important        6741
## 5 <NA>                      7920
```

Cit norm, count and recode 1st indicator as example.

```
# recode
tbl1 <- tbl1 %>%
  mutate(BS3B1_binary = fct_collapse(BS3B1,
  "not important" = c("(1) not important", "(2) somewhat unimportant"),
  "important"     = c("(3) somewhat important", "(4) very important")))

# confirm correct recode
tbl1 %>%
  count(BS3B1, BS3B1_binary)
```

```
## # A tibble: 5 x 3
##   BS3B1                    BS3B1_binary      n
##   <fct>                    <fct>         <int>
## 1 (1) not important        not important  1995
## 2 (2) somewhat unimportant not important  2418
## 3 (3) somewhat important   important     20211
## 4 (4) very important       important     66431
## 5 <NA>                     <NA>           2827
```

Repeat for all all cit norm indicators. NOTE: BS3B12 recoded separately below b/c of typo in string variable.

```
tbl1 <-tbl1 %>%
  mutate_at(vars(BS3B1, BS3B11, BS3B9, BS3B4, BS3B13, BS3B2, BS3B6, BS3B10, BS3B8, BS3B5, BS3B3),
            funs(bin = fct_collapse(.,
                                    "not important"= c("(1) not important", "(2) somewhat unimportant")
                                    "important"    = c("(3) somewhat important", "(4) very important")))
  )
```

BS3B12 error troubleshoot when included in prior chunk. Count table command below yields console output showing that string text of 1st category "importnat" spelled incorrectly, i.e. "a" and "n" transposed. BS3B12 "mutate" command to correctly recode with this typo:

```
# troubleshoot
tbl1 %>% count(BS3B12)
```

```
## # A tibble: 5 x 2
##   BS3B12                       n
##   <fct>                    <int>
## 1 (1) not importnat        13954
## 2 (2) somewhat unimportant 34883
## 3 (3) somewhat important   28004
## 4 (4) very important        8959
## 5 <NA>                      8082
```

```
# recode
tbl1 <- tbl1 %>%
```

```
  mutate(BS3B12_bin = fct_collapse(BS3B12,
                                   "not important" = c("(1) not importnat", "(2) somewhat unimportant"),
                                   "important"     = c("(3) somewhat important", "(4) very important"))
  )
```

Confirm successful mutates for all indicators.

```
bin_vars <- original_vars %>%
  paste0("_bin")

map2(original_vars, bin_vars, ~ tbl1 %>% count(!!sym(.x), !!sym(.y)))
```

```
## [[1]]
## # A tibble: 5 x 3
##   BS3B1                     BS3B1_bin         n
##   <fct>                     <fct>         <int>
## 1 (1) not important         not important  1995
## 2 (2) somewhat unimportant not important  2418
## 3 (3) somewhat important    important     20211
## 4 (4) very important        important     66431
## 5 <NA>                      <NA>           2827
##
## [[2]]
## # A tibble: 5 x 3
##   BS3B11                    BS3B11_bin        n
##   <fct>                     <fct>         <int>
## 1 (1) not important         not important  2975
## 2 (2) somewhat unimportant not important 10785
## 3 (3) somewhat important    important     35630
## 4 (4) very important        important     38503
## 5 <NA>                      <NA>           5989
##
## [[3]]
## # A tibble: 5 x 3
##   BS3B9                     BS3B9_bin         n
##   <fct>                     <fct>         <int>
## 1 (1) not important         not important  2986
## 2 (2) somewhat unimportant not important 11726
## 3 (3) somewhat important    important     42796
## 4 (4) very important        important     31396
## 5 <NA>                      <NA>           4978
##
## [[4]]
## # A tibble: 5 x 3
##   BS3B4                     BS3B4_bin         n
##   <fct>                     <fct>         <int>
## 1 (1) not important         not important  5447
## 2 (2) somewhat unimportant not important 11830
## 3 (3) somewhat important    important     35762
## 4 (4) very important        important     35769
## 5 <NA>                      <NA>           5074
##
## [[5]]
## # A tibble: 5 x 3
```

```
##   BS3B13                   BS3B13_bin        n
##   <fct>                    <fct>         <int>
## 1 (1) not important        not important  4064
## 2 (2) somewhat unimportant not important 12865
## 3 (3) somewhat important   important     36910
## 4 (4) very important       important     35383
## 5 <NA>                     <NA>           4660
##
## [[6]]
## # A tibble: 5 x 3
##   BS3B2                    BS3B2_bin         n
##   <fct>                    <fct>         <int>
## 1 (1) not important        not important  4566
## 2 (2) somewhat unimportant not important 13382
## 3 (3) somewhat important   important     37364
## 4 (4) very important       important     35023
## 5 <NA>                     <NA>           3547
##
## [[7]]
## # A tibble: 5 x 3
##   BS3B6                    BS3B6_bin         n
##   <fct>                    <fct>         <int>
## 1 (1) not important        not important  7861
## 2 (2) somewhat unimportant not important 17428
## 3 (3) somewhat important   important     32388
## 4 (4) very important       important     31589
## 5 <NA>                     <NA>           4616
##
## [[8]]
## # A tibble: 5 x 3
##   BS3B10                   BS3B10_bin        n
##   <fct>                    <fct>         <int>
## 1 (1) not important        not important  6109
## 2 (2) somewhat unimportant not important 18138
## 3 (3) somewhat important   important     40898
## 4 (4) very important       important     22579
## 5 <NA>                     <NA>           6158
##
## [[9]]
## # A tibble: 5 x 3
##   BS3B8                    BS3B8_bin         n
##   <fct>                    <fct>         <int>
## 1 (1) not important        not important  7319
## 2 (2) somewhat unimportant not important 18421
## 3 (3) somewhat important   important     42831
## 4 (4) very important       important     20869
## 5 <NA>                     <NA>           4442
##
## [[10]]
## # A tibble: 5 x 3
##   BS3B5                    BS3B5_bin         n
##   <fct>                    <fct>         <int>
## 1 (1) not important        not important  8941
## 2 (2) somewhat unimportant not important 18358
```

```
## 3 (3) somewhat important   important     34180
## 4 (4) very important       important     22693
## 5 <NA>                     <NA>           9710
##
## [[11]]
## # A tibble: 5 x 3
##   BS3B12                   BS3B12_bin        n
##   <fct>                    <fct>         <int>
## 1 (1) not importnat        not important 13954
## 2 (2) somewhat unimportant not important 34883
## 3 (3) somewhat important   important     28004
## 4 (4) very important       important      8959
## 5 <NA>                     <NA>           8082
##
## [[12]]
## # A tibble: 5 x 3
##   BS3B3                    BS3B3_bin         n
##   <fct>                    <fct>         <int>
## 1 (1) not important        not important 23205
## 2 (2) somewhat unimportant not important 36163
## 3 (3) somewhat important   important     19853
## 4 (4) very important       important      6741
## 5 <NA>                     <NA>           7920
```

Select for LCA vars tibble, including rename all 12 mutated variables and display first five lines of dataframe. Use "select" for key LCA variables to create reduced tbl that can be "binded" with other ICCS years.

```
tbl1 <- tbl1 %>%
  select(ICCS_year,
         COUNTRY,
         IDSTUD,
         TOTWGTS = TOTWGT,
         obey    = BS3B1_bin,
         rights  = BS3B11_bin,
         local   = BS3B9_bin,
         work    = BS3B4_bin,
         envir   = BS3B13_bin,
         vote    = BS3B2_bin,
         history = BS3B6_bin,
         respect = BS3B10_bin,
         news    = BS3B8_bin,
         protest = BS3B5_bin,
         discuss = BS3B12_bin,
         party   = BS3B3_bin)

tbl1 %>% head()
```

```
## # A tibble: 6 x 16
##   ICCS_year COUNTRY IDSTUD TOTWGTS obey  rights local work  envir vote
##       <dbl> <fct>    <dbl>   <dbl> <fct> <fct>  <fct> <fct> <fct> <fct>
## 1      1999 AUS      10302    57.2 impo~ not i~ impo~ impo~ impo~ impo~
## 2      1999 AUS      10305    57.2 impo~ not i~ impo~ impo~ impo~ impo~
## 3      1999 AUS      10311    57.2 impo~ <NA>   <NA>  impo~ impo~ not ~
## 4      1999 AUS      10313    57.2 impo~ not i~ not ~ not ~ not ~ impo~
## 5      1999 AUS      10317    57.2 impo~ impor~ impo~ not ~ impo~ not ~
```

```
## 6      1999 AUS      10319    57.2 impo~ impor~ impo~ impo~ impo~ impo~
## # ... with 6 more variables: history <fct>, respect <fct>, news <fct>,
## #   protest <fct>, discuss <fct>, party <fct>
```

2009 dataloading and merging

2009 data: https://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/36997 Downloaded Jan 17, 2019

Load 2009 country files, in chronological order of file names. Bind all 2009 files; Note, total observations of resulting tbl2 (140,650) concur with xls documentation of expected total n.

```
tbl2 <- files %>%
  magrittr::extract(29:66) %>%      # filter to 2009 files only
  map(~ .x %>%
        load_files() %>%
        select(COUNTRY, IDCNTRY, IDSTUD, IS2P21L, IS2P21I, IS2P21H, IS2P21K, IS2P21J, IS2P21A,
               IS2P21C, IS2P21E, IS2P21D, IS2P21G, IS2P21F, IS2P21B,TOTWGTS)) %>%
  reduce(rbind) %>%
  as_tibble() %>%
  mutate(`ICCS_year` = 2009) %>%     # survey year variable creation
  select(`ICCS_year`, everything())
```

Cit norm, count all indicators to begin recode.

```
original_vars <- tbl2 %>%
  select(IS2P21L, IS2P21I, IS2P21H, IS2P21K, IS2P21J, IS2P21A, IS2P21C, IS2P21E, IS2P21D, IS2P21G, IS2P2
  colnames()

original_vars %>%
  map(~ tbl2 %>% count(!!sym(.x)))
```

```
## [[1]]
## # A tibble: 5 x 2
##   IS2P21L                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      76977
## 2 (2) QUITE IMPORTANT     45856
## 3 (3) NOT VERY IMPORTANT  10022
## 4 (4) NOT IMPORTANT AT ALL  3961
## 5 <NA>                      3834
##
## [[2]]
## # A tibble: 5 x 2
##   IS2P21I                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      53959
## 2 (2) QUITE IMPORTANT     59698
## 3 (3) NOT VERY IMPORTANT  18844
## 4 (4) NOT IMPORTANT AT ALL  3862
## 5 <NA>                      4287
##
## [[3]]
## # A tibble: 5 x 2
##   IS2P21H                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      47674
```

```
## 2 (2) QUITE IMPORTANT      63169
## 3 (3) NOT VERY IMPORTANT   21124
## 4 (4) NOT IMPORTANT AT ALL  4368
## 5 <NA>                      4315
##
## [[4]]
## # A tibble: 5 x 2
##   IS2P21K                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      53170
## 2 (2) QUITE IMPORTANT     58047
## 3 (3) NOT VERY IMPORTANT  20006
## 4 (4) NOT IMPORTANT AT ALL  5379
## 5 <NA>                      4048
##
## [[5]]
## # A tibble: 5 x 2
##   IS2P21J                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      61438
## 2 (2) QUITE IMPORTANT     54712
## 3 (3) NOT VERY IMPORTANT  16255
## 4 (4) NOT IMPORTANT AT ALL  4043
## 5 <NA>                      4202
##
## [[6]]
## # A tibble: 5 x 2
##   IS2P21A                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      58412
## 2 (2) QUITE IMPORTANT     54399
## 3 (3) NOT VERY IMPORTANT  20691
## 4 (4) NOT IMPORTANT AT ALL  4019
## 5 <NA>                      3129
##
## [[7]]
## # A tibble: 5 x 2
##   IS2P21C                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      50412
## 2 (2) QUITE IMPORTANT     55702
## 3 (3) NOT VERY IMPORTANT  24553
## 4 (4) NOT IMPORTANT AT ALL  5582
## 5 <NA>                      4401
##
## [[8]]
## # A tibble: 5 x 2
##   IS2P21E                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      40616
## 2 (2) QUITE IMPORTANT     65090
## 3 (3) NOT VERY IMPORTANT  24294
## 4 (4) NOT IMPORTANT AT ALL  6739
## 5 <NA>                      3911
```

```
##
## [[9]]
## # A tibble: 5 x 2
##   IS2P21D                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      37359
## 2 (2) QUITE IMPORTANT     63832
## 3 (3) NOT VERY IMPORTANT  29728
## 4 (4) NOT IMPORTANT AT ALL  5920
## 5 <NA>                     3811
##
## [[10]]
## # A tibble: 5 x 2
##   IS2P21G                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      35362
## 2 (2) QUITE IMPORTANT     51996
## 3 (3) NOT VERY IMPORTANT  37311
## 4 (4) NOT IMPORTANT AT ALL 11557
## 5 <NA>                     4424
##
## [[11]]
## # A tibble: 5 x 2
##   IS2P21F                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      15669
## 2 (2) QUITE IMPORTANT     43337
## 3 (3) NOT VERY IMPORTANT  61418
## 4 (4) NOT IMPORTANT AT ALL 15929
## 5 <NA>                     4297
##
## [[12]]
## # A tibble: 5 x 2
##   IS2P21B                     n
##   <fct>                   <int>
## 1 (1) VERY IMPORTANT      12868
## 2 (2) QUITE IMPORTANT     33456
## 3 (3) NOT VERY IMPORTANT  71041
## 4 (4) NOT IMPORTANT AT ALL 19402
## 5 <NA>                     3883
```

Recode all cit norm indicators.

```
tbl2 <- tbl2 %>%
  mutate_at(vars(IS2P21L, IS2P21I, IS2P21H, IS2P21K, IS2P21J, IS2P21A, IS2P21C, IS2P21E, IS2P21D, IS2P2
            funs(bin = fct_collapse(.,
                                    "not important" = c("(3) NOT VERY IMPORTANT", "(4) NOT IMPORTANT AT
                                    "important"     = c("(1) VERY IMPORTANT", "(2) QUITE IMPORTANT")))
  )
```

Confirm successful recodes.

```
bin_vars <- original_vars %>%
  paste0("_bin")

map2(original_vars, bin_vars, ~ tbl2 %>% count(!!sym(.x), !!sym(.y)))
```

```
## [[1]]
## # A tibble: 5 x 3
##   IS2P21L                  IS2P21L_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     76977
## 2 (2) QUITE IMPORTANT      important     45856
## 3 (3) NOT VERY IMPORTANT   not important 10022
## 4 (4) NOT IMPORTANT AT ALL not important  3961
## 5 <NA>                     <NA>           3834
##
## [[2]]
## # A tibble: 5 x 3
##   IS2P21I                  IS2P21I_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     53959
## 2 (2) QUITE IMPORTANT      important     59698
## 3 (3) NOT VERY IMPORTANT   not important 18844
## 4 (4) NOT IMPORTANT AT ALL not important  3862
## 5 <NA>                     <NA>           4287
##
## [[3]]
## # A tibble: 5 x 3
##   IS2P21H                  IS2P21H_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     47674
## 2 (2) QUITE IMPORTANT      important     63169
## 3 (3) NOT VERY IMPORTANT   not important 21124
## 4 (4) NOT IMPORTANT AT ALL not important  4368
## 5 <NA>                     <NA>           4315
##
## [[4]]
## # A tibble: 5 x 3
##   IS2P21K                  IS2P21K_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     53170
## 2 (2) QUITE IMPORTANT      important     58047
## 3 (3) NOT VERY IMPORTANT   not important 20006
## 4 (4) NOT IMPORTANT AT ALL not important  5379
## 5 <NA>                     <NA>           4048
##
## [[5]]
## # A tibble: 5 x 3
##   IS2P21J                  IS2P21J_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     61438
## 2 (2) QUITE IMPORTANT      important     54712
## 3 (3) NOT VERY IMPORTANT   not important 16255
## 4 (4) NOT IMPORTANT AT ALL not important  4043
## 5 <NA>                     <NA>           4202
##
## [[6]]
## # A tibble: 5 x 3
```

```
##   IS2P21A                  IS2P21A_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     58412
## 2 (2) QUITE IMPORTANT      important     54399
## 3 (3) NOT VERY IMPORTANT   not important 20691
## 4 (4) NOT IMPORTANT AT ALL not important  4019
## 5 <NA>                     <NA>           3129
##
## [[7]]
## # A tibble: 5 x 3
##   IS2P21C                  IS2P21C_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     50412
## 2 (2) QUITE IMPORTANT      important     55702
## 3 (3) NOT VERY IMPORTANT   not important 24553
## 4 (4) NOT IMPORTANT AT ALL not important  5582
## 5 <NA>                     <NA>           4401
##
## [[8]]
## # A tibble: 5 x 3
##   IS2P21E                  IS2P21E_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     40616
## 2 (2) QUITE IMPORTANT      important     65090
## 3 (3) NOT VERY IMPORTANT   not important 24294
## 4 (4) NOT IMPORTANT AT ALL not important  6739
## 5 <NA>                     <NA>           3911
##
## [[9]]
## # A tibble: 5 x 3
##   IS2P21D                  IS2P21D_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     37359
## 2 (2) QUITE IMPORTANT      important     63832
## 3 (3) NOT VERY IMPORTANT   not important 29728
## 4 (4) NOT IMPORTANT AT ALL not important  5920
## 5 <NA>                     <NA>           3811
##
## [[10]]
## # A tibble: 5 x 3
##   IS2P21G                  IS2P21G_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     35362
## 2 (2) QUITE IMPORTANT      important     51996
## 3 (3) NOT VERY IMPORTANT   not important 37311
## 4 (4) NOT IMPORTANT AT ALL not important 11557
## 5 <NA>                     <NA>           4424
##
## [[11]]
## # A tibble: 5 x 3
##   IS2P21F                  IS2P21F_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     15669
## 2 (2) QUITE IMPORTANT      important     43337
```

```
## 3 (3) NOT VERY IMPORTANT   not important 61418
## 4 (4) NOT IMPORTANT AT ALL not important 15929
## 5 <NA>                     <NA>           4297
##
## [[12]]
## # A tibble: 5 x 3
##   IS2P21B                  IS2P21B_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) VERY IMPORTANT       important     12868
## 2 (2) QUITE IMPORTANT      important     33456
## 3 (3) NOT VERY IMPORTANT   not important 71041
## 4 (4) NOT IMPORTANT AT ALL not important 19402
## 5 <NA>                     <NA>           3883
```

Select to rename all 12 mutated variables and display first five lines of dataframe - listed in order of 1999 descending means (IJCS article). Use "select" for key LCA variables to create reduced tbl that can be "binded" with other ICCS years.

```
tbl2 <- tbl2 %>%
  select(ICCS_year,
         COUNTRY,
         IDSTUD,
         TOTWGTS,
         obey    = IS2P21L_bin,
         rights  = IS2P21I_bin,
         local   = IS2P21H_bin,
         work    = IS2P21K_bin,
         envir   = IS2P21J_bin,
         vote    = IS2P21A_bin,
         history = IS2P21C_bin,
         respect = IS2P21E_bin,
         news    = IS2P21D_bin,
         protest = IS2P21G_bin,
         discuss = IS2P21F_bin,
         party   = IS2P21B_bin)

tbl2 %>% head()
```

```
## # A tibble: 6 x 16
##   ICCS_year COUNTRY IDSTUD TOTWGTS obey  rights local work  envir vote
##       <dbl> <fct>    <dbl>   <dbl> <fct> <fct>  <fct> <fct> <fct> <fct>
## 1      2009 AUT     1.00e7    26.6 not ~ impor~ impo~ not ~ impo~ impo~
## 2      2009 AUT     1.00e7    26.6 impo~ impor~ impo~ not ~ impo~ not ~
## 3      2009 AUT     1.00e7    26.6 impo~ impor~ impo~ impo~ impo~ impo~
## 4      2009 AUT     1.00e7    26.6 impo~ impor~ impo~ not ~ impo~ impo~
## 5      2009 AUT     1.00e7    26.6 impo~ impor~ impo~ impo~ impo~ impo~
## 6      2009 AUT     1.00e7    26.6 impo~ impor~ not ~ impo~ impo~ impo~
## # ... with 6 more variables: history <fct>, respect <fct>, news <fct>,
## #   protest <fct>, discuss <fct>, party <fct>
```

2016 data loading and merging

2016 data: https://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/37147 Downloaded Jan 21, 2019

2016 country files, in chronological order of file names. Bind all 2016 country files. Note, total observations of resulting tbl (94,603) concur with xls documentation of expected total n.

```
tbl3 <- files %>%
  magrittr::extract(67:90) %>%      # filter to 2016 files only
  map(~ .x %>%
        load_files() %>%
        select(COUNTRY, IDCNTRY, IDSTUD, IS3G23L, IS3G23I, IS3G23H, IS3G23K, IS3G23J,
               IS3G23A, IS3G23C, IS3G23E, IS3G23D, IS3G23G, IS3G23F, IS3G23B,TOTWGTS)) %>%
  reduce(rbind) %>%
  as_tibble()%>%
  mutate(`ICCS_year` = 2016) %>%    # create survey year variable
  select(`ICCS_year`, everything())
```

Cit norm, count all indicators to begin recode.

```
original_vars <- tbl3 %>%
  select(IS3G23L, IS3G23I, IS3G23H, IS3G23K, IS3G23J, IS3G23A, IS3G23C, IS3G23E, IS3G23D, IS3G23G, IS3G
  colnames()

original_vars %>%
  map(~ tbl3 %>% count(!!sym(.x)))
```

```
## [[1]]
## # A tibble: 5 x 2
##   IS3G23L                     n
##   <fct>                   <int>
## 1 (1) Very important      53951
## 2 (2) Quite important     30460
## 3 (3) Not very important   5857
## 4 (4) Not important at all  1711
## 5 <NA>                     2624
##
## [[2]]
## # A tibble: 5 x 2
##   IS3G23I                     n
##   <fct>                   <int>
## 1 (1) Very important      37255
## 2 (2) Quite important     40011
## 3 (3) Not very important  12492
## 4 (4) Not important at all  2228
## 5 <NA>                     2617
##
## [[3]]
## # A tibble: 5 x 2
##   IS3G23H                     n
##   <fct>                   <int>
## 1 (1) Very important      32569
## 2 (2) Quite important     42817
## 3 (3) Not very important  14079
## 4 (4) Not important at all  2471
## 5 <NA>                     2667
##
## [[4]]
## # A tibble: 5 x 2
##   IS3G23K                     n
##   <fct>                   <int>
```

```
## 1 (1) Very important       38082
## 2 (2) Quite important      40137
## 3 (3) Not very important   11292
## 4 (4) Not important at all  2536
## 5 <NA>                      2556
##
## [[5]]
## # A tibble: 5 x 2
##   IS3G23J                      n
##   <fct>                    <int>
## 1 (1) Very important       42126
## 2 (2) Quite important      37204
## 3 (3) Not very important   10437
## 4 (4) Not important at all  2188
## 5 <NA>                      2648
##
## [[6]]
## # A tibble: 5 x 2
##   IS3G23A                      n
##   <fct>                    <int>
## 1 (1) Very important       38931
## 2 (2) Quite important      37262
## 3 (3) Not very important   13975
## 4 (4) Not important at all  2490
## 5 <NA>                      1945
##
## [[7]]
## # A tibble: 5 x 2
##   IS3G23C                      n
##   <fct>                    <int>
## 1 (1) Very important       37043
## 2 (2) Quite important      36919
## 3 (3) Not very important   14836
## 4 (4) Not important at all  3023
## 5 <NA>                      2782
##
## [[8]]
## # A tibble: 5 x 2
##   IS3G23E                      n
##   <fct>                    <int>
## 1 (1) Very important       33375
## 2 (2) Quite important      43140
## 3 (3) Not very important   12581
## 4 (4) Not important at all  3017
## 5 <NA>                      2490
##
## [[9]]
## # A tibble: 5 x 2
##   IS3G23D                      n
##   <fct>                    <int>
## 1 (1) Very important       26980
## 2 (2) Quite important      43878
## 3 (3) Not very important   18199
## 4 (4) Not important at all  3297
```

```
## 5 <NA>                       2249
##
## [[10]]
## # A tibble: 5 x 2
##   IS3G23G                       n
##   <fct>                     <int>
## 1 (1) Very important        22817
## 2 (2) Quite important       35020
## 3 (3) Not very important    26965
## 4 (4) Not important at all   7129
## 5 <NA>                       2672
##
## [[11]]
## # A tibble: 5 x 2
##   IS3G23F                       n
##   <fct>                     <int>
## 1 (1) Very important        11348
## 2 (2) Quite important       30410
## 3 (3) Not very important    41390
## 4 (4) Not important at all   8739
## 5 <NA>                       2716
##
## [[12]]
## # A tibble: 5 x 2
##   IS3G23B                       n
##   <fct>                     <int>
## 1 (1) Very important         9003
## 2 (2) Quite important       22157
## 3 (3) Not very important    48896
## 4 (4) Not important at all 12187
## 5 <NA>                       2360
```

Recode all cit norm indicators.

```
tbl3 <- tbl3 %>%
  mutate_at(vars(IS3G23L, IS3G23I, IS3G23H, IS3G23K, IS3G23J, IS3G23A, IS3G23C, IS3G23E, IS3G23D, IS3G23
            funs(bin = fct_collapse(.,
                                    "not important" = c("(3) Not very important", "(4) Not important at
                                    "important"     = c("(1) Very important", "(2) Quite important")))
  )
```

Confirm successful mutates.

```
bin_vars <- original_vars %>%
  paste0("_bin")

map2(original_vars, bin_vars, ~ tbl3 %>% count(!!sym(.x), !!sym(.y)))
```

```
## [[1]]
## # A tibble: 5 x 3
##   IS3G23L                   IS3G23L_bin       n
##   <fct>                     <fct>         <int>
## 1 (1) Very important        important     53951
## 2 (2) Quite important       important     30460
## 3 (3) Not very important    not important  5857
## 4 (4) Not important at all  not important  1711
```

```
## 5 <NA>                     <NA>           2624
##
## [[2]]
## # A tibble: 5 x 3
##   IS3G23I                  IS3G23I_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) Very important       important     37255
## 2 (2) Quite important      important     40011
## 3 (3) Not very important   not important 12492
## 4 (4) Not important at all not important  2228
## 5 <NA>                     <NA>           2617
##
## [[3]]
## # A tibble: 5 x 3
##   IS3G23H                  IS3G23H_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) Very important       important     32569
## 2 (2) Quite important      important     42817
## 3 (3) Not very important   not important 14079
## 4 (4) Not important at all not important  2471
## 5 <NA>                     <NA>           2667
##
## [[4]]
## # A tibble: 5 x 3
##   IS3G23K                  IS3G23K_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) Very important       important     38082
## 2 (2) Quite important      important     40137
## 3 (3) Not very important   not important 11292
## 4 (4) Not important at all not important  2536
## 5 <NA>                     <NA>           2556
##
## [[5]]
## # A tibble: 5 x 3
##   IS3G23J                  IS3G23J_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) Very important       important     42126
## 2 (2) Quite important      important     37204
## 3 (3) Not very important   not important 10437
## 4 (4) Not important at all not important  2188
## 5 <NA>                     <NA>           2648
##
## [[6]]
## # A tibble: 5 x 3
##   IS3G23A                  IS3G23A_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) Very important       important     38931
## 2 (2) Quite important      important     37262
## 3 (3) Not very important   not important 13975
## 4 (4) Not important at all not important  2490
## 5 <NA>                     <NA>           1945
##
## [[7]]
## # A tibble: 5 x 3
```

```
##   IS3G23C                  IS3G23C_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) Very important       important     37043
## 2 (2) Quite important      important     36919
## 3 (3) Not very important   not important 14836
## 4 (4) Not important at all not important  3023
## 5 <NA>                     <NA>           2782
##
## [[8]]
## # A tibble: 5 x 3
##   IS3G23E                  IS3G23E_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) Very important       important     33375
## 2 (2) Quite important      important     43140
## 3 (3) Not very important   not important 12581
## 4 (4) Not important at all not important  3017
## 5 <NA>                     <NA>           2490
##
## [[9]]
## # A tibble: 5 x 3
##   IS3G23D                  IS3G23D_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) Very important       important     26980
## 2 (2) Quite important      important     43878
## 3 (3) Not very important   not important 18199
## 4 (4) Not important at all not important  3297
## 5 <NA>                     <NA>           2249
##
## [[10]]
## # A tibble: 5 x 3
##   IS3G23G                  IS3G23G_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) Very important       important     22817
## 2 (2) Quite important      important     35020
## 3 (3) Not very important   not important 26965
## 4 (4) Not important at all not important  7129
## 5 <NA>                     <NA>           2672
##
## [[11]]
## # A tibble: 5 x 3
##   IS3G23F                  IS3G23F_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) Very important       important     11348
## 2 (2) Quite important      important     30410
## 3 (3) Not very important   not important 41390
## 4 (4) Not important at all not important  8739
## 5 <NA>                     <NA>           2716
##
## [[12]]
## # A tibble: 5 x 3
##   IS3G23B                  IS3G23B_bin       n
##   <fct>                    <fct>         <int>
## 1 (1) Very important       important      9003
## 2 (2) Quite important      important     22157
```

```
## 3 (3) Not very important   not important 48896
## 4 (4) Not important at all not important 12187
## 5 <NA>                     <NA>           2360
```

Select to rename all 12 mutated variables and display first five lines of dataframe - listed in order of 1999 descending means (IJCS article). Use "select" for key LCA variables to create reduced tbl that can be "binded" with other ICCS years.

```
tbl3 <- tbl3 %>%
  select(ICCS_year,
         COUNTRY,
         IDSTUD,
         TOTWGTS,
         obey    = IS3G23L_bin,
         rights  = IS3G23I_bin,
         local   = IS3G23H_bin,
         work    = IS3G23K_bin,
         envir   = IS3G23J_bin,
         vote    = IS3G23A_bin,
         history = IS3G23C_bin,
         respect = IS3G23E_bin,
         news    = IS3G23D_bin,
         protest = IS3G23G_bin,
         discuss = IS3G23F_bin,
         party   = IS3G23B_bin)

tbl3 %>% head()
```

```
## # A tibble: 6 x 16
##   ICCS_year COUNTRY IDSTUD TOTWGTS obey  rights local work  envir vote
##       <dbl> <fct>    <dbl>   <dbl> <fct> <fct>  <fct> <fct> <fct> <fct>
## 1      2016 BFL     1.00e7    22.5 impo~ impor~ impo~ impo~ impo~ impo~
## 2      2016 BFL     1.00e7    22.5 impo~ impor~ impo~ impo~ impo~ impo~
## 3      2016 BFL     1.00e7    22.5 impo~ impor~ impo~ impo~ impo~ impo~
## 4      2016 BFL     1.00e7    22.5 impo~ impor~ impo~ impo~ impo~ impo~
## 5      2016 BFL     1.00e7    22.5 impo~ impor~ impo~ impo~ impo~ impo~
## 6      2016 BFL     1.00e7    22.5 impo~ impor~ impo~ impo~ impo~ not ~
## # ... with 6 more variables: history <fct>, respect <fct>, news <fct>,
## #   protest <fct>, discuss <fct>, party <fct>
```

Combining recoded 1999, 2009 and 2016 data frames

Combine the three data frames and create unique id per observation across binded country files to be able to import Latent Gold class assignment for each unique observation.

```
tbl <- rbind(tbl1, tbl2, tbl3) %>%
  mutate(id  = row_number(),
         id2 = paste0(COUNTRY, IDSTUD))
```

Check number of observations by survey year of the combined data frame.

```
# number of observations by survey year
tbl %>%
  count(ICCS_year) %>%
  knitr::kable()
```

ICCS_year	n
1999	93882
2009	140650
2016	94603

Exporting final combined datafile

Before exporting, convert citizenship norm indicators to integer (0 = "not important", 1 = "important").

```
cit_norm_indicators <- vars(obey, rights, local, work, envir, vote, history, respect, news, protest, dis

tbl <- tbl %>%
  mutate_at(cit_norm_indicators,
            funs(case_when(
              . == "not important" ~ 0,
              . == "important"     ~ 1
            ))
  ) %>%
  mutate_if(is.double, as.integer) %>%
  mutate(COUNTRY = as.character(COUNTRY))
```

```
## Warning in evalq(as.integer(IDSTUD), <environment>): NAs introduced by
## coercion to integer range
```

```
tbl %>% head()
```

```
## # A tibble: 6 x 18
##   ICCS_year COUNTRY IDSTUD TOTWGTS  obey rights local  work envir  vote
##       <int> <chr>    <int>   <int> <int>  <int> <int> <int> <int> <int>
## 1      1999 AUS      10302      57     1      0     1     1     1     1
## 2      1999 AUS      10305      57     1      0     1     1     1     1
## 3      1999 AUS      10311      57     1     NA    NA     1     1     0
## 4      1999 AUS      10313      57     1      0     0     0     0     1
## 5      1999 AUS      10317      57     1      1     1     0     1     0
## 6      1999 AUS      10319      57     1      1     1     1     1     1
## # ... with 8 more variables: history <int>, respect <int>, news <int>,
## #   protest <int>, discuss <int>, party <int>, id <int>, id2 <chr>
```

We can also attach factor labels to the citizenship norm indicators for internal use in R, but won't export the factor labels to the output text file (we'd have to save as an R object .e.g `.rds`). An example of how we can do this:

```
example <- tbl %>%
  mutate_at(cit_norm_indicators,
            funs(haven::labelled(., labels = c("not important" = 0, "important" = 1))))

# cit norm indicator vars are now int+lbl type
example %>%
  glimpse()
```

```
## Observations: 329,135
## Variables: 18
## $ ICCS_year <int> 1999, 1999, 1999, 1999, 1999, 1999, 1999, 1999, 1999...
## $ COUNTRY   <chr> "AUS", "AUS", "AUS", "AUS", "AUS", "AUS", "AUS", "AU...
## $ IDSTUD    <int> 10302, 10305, 10311, 10313, 10317, 10319, 10324, 103...
## $ TOTWGTS   <int> 57, 57, 57, 57, 57, 57, 57, 57, 57, 57, 53, 53, 53, ...
```

```
## $ obey      <int+lbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## $ rights    <int+lbl> 0, 0, NA, 0, 1, 1, 1, NA, 1, 1, 1, 1, 1, 1, 1, 1...
## $ local     <int+lbl> 1, 1, NA, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ work      <int+lbl> 1, 1, 1, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...
## $ envir     <int+lbl> 1, 1, 1, 0, 1, 1, 1, 1, 1, 1, 1, 1, 0, 1, 1, 1, ...
## $ vote      <int+lbl> 1, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 1, 1, 0, 1, 1, ...
## $ history   <int+lbl> 1, 0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 1, 1, 0, 1, 1, ...
## $ respect   <int+lbl> 0, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 1, 1, 0, 1, 1, ...
## $ news      <int+lbl> 1, 0, 1, 0, 0, 1, 1, 1, 0, 1, 1, 0, 1, 0, 1, 1, ...
## $ protest   <int+lbl> 0, 1, NA, 0, 1, 1, 0, NA, 1, 0, 1, 1, 1, 1, 1, 1...
## $ discuss   <int+lbl> 0, 0, NA, 0, 1, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0,...
## $ party     <int+lbl> 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...
## $ id        <int> 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 1...
## $ id2       <chr> "AUS10302", "AUS10305", "AUS10311", "AUS10313", "AUS...
```

```r
# access labels by converting those vars to factors
example %>%
  mutate_at(cit_norm_indicators, funs(as_factor(.)))
```

```
## # A tibble: 329,135 x 18
##    ICCS_year COUNTRY IDSTUD TOTWGTS obey  rights local work  envir vote
##        <int> <chr>    <int>   <int> <fct> <fct>  <fct> <fct> <fct> <fct>
##  1      1999 AUS      10302      57 impo~ not i~ impo~ impo~ impo~ impo~
##  2      1999 AUS      10305      57 impo~ not i~ impo~ impo~ impo~ impo~
##  3      1999 AUS      10311      57 impo~ <NA>   <NA>  impo~ impo~ not ~
##  4      1999 AUS      10313      57 impo~ not i~ not ~ not ~ not ~ impo~
##  5      1999 AUS      10317      57 impo~ impor~ impo~ not ~ impo~ not ~
##  6      1999 AUS      10319      57 impo~ impor~ impo~ impo~ impo~ impo~
##  7      1999 AUS      10324      57 impo~ impor~ impo~ impo~ impo~ impo~
##  8      1999 AUS      10325      57 impo~ <NA>   impo~ impo~ impo~ impo~
##  9      1999 AUS      10326      57 impo~ impor~ impo~ impo~ impo~ not ~
## 10      1999 AUS      10327      57 impo~ impor~ impo~ impo~ impo~ impo~
## # ... with 329,125 more rows, and 8 more variables: history <fct>,
## #   respect <fct>, news <fct>, protest <fct>, discuss <fct>, party <fct>,
## #   id <int>, id2 <chr>
```

Export recoded data for LCA - RdM to current `ICCS-2019/clean-data` directory.

```r
write_delim(tbl, "output/clean_tbl.dat", na = ".")
```

Tables:

Means of citizenship norm indicators by country and year.

```r
# count and percent of responses to "obey" grouped by year
means <- tbl %>%
  group_by(COUNTRY, ICCS_year) %>%
  summarize_at(cit_norm_indicators, funs(mean(., na.rm = TRUE)))

means %>%
  knitr::kable()
```

COUNTRY	ICCS_year	obey	rights	local	work	envir	vote	history	respe
AUS	1999	0.9287573	0.6870358	0.7994714	0.8806166	0.7470647	0.8862080	0.5465386	0.66733
AUT	2009	0.8398073	0.7592034	0.7545290	0.6304348	0.6721954	0.7343750	0.7719298	0.67925
BFL	2009	0.8709239	0.7703300	0.7649660	0.7756280	0.7907609	0.8203999	0.4652589	0.82428

COUNTRY	ICCS_year	obey	rights	local	work	envir	vote	history	respe
BFL	2016	0.9343015	0.8141379	0.8035221	0.8631034	0.8645473	0.8457575	0.5680719	0.87852
BFR	1999	0.9063765	0.7764645	0.5622407	0.5403599	0.7199587	0.8148893	0.4187817	0.55455
BGR	1999	0.8667904	0.8225058	0.6767757	0.8159393	0.8146703	0.7074202	0.7993791	0.67594
BGR	2009	0.8483789	0.9029064	0.8689413	0.8885705	0.8966177	0.6876972	0.8531379	0.67473
BGR	2016	0.8366562	0.9015598	0.8735314	0.8941707	0.9038862	0.7594632	0.8880779	0.72305
CHE	1999	0.9543364	0.8769334	0.7631579	0.6670065	0.6986532	0.6857996	0.6230331	0.73060
CHE	2009	0.8852686	0.7328696	0.6455211	0.6738227	0.7133449	0.7164539	0.7409722	0.79667
CHL	1999	0.9536101	0.8259359	0.8842719	0.8665441	0.8908662	0.9103722	0.8759273	0.85685
CHL	2009	0.8891924	0.8838483	0.9030244	0.8043222	0.9025822	0.8281827	0.8514599	0.84892
CHL	2016	0.8760529	0.8390920	0.8386774	0.7789198	0.8618131	0.7805317	0.8311245	0.76655
COL	1999	0.9737226	0.9408348	0.9420320	0.8372605	0.9392670	0.8791631	0.8427437	0.86183
COL	2009	0.8751908	0.9412559	0.8983767	0.8112245	0.9603121	0.8706667	0.8903479	0.85456
COL	2016	0.8921386	0.9250832	0.8835096	0.8220292	0.9513143	0.8454097	0.9011931	0.83546
CYP	1999	0.9739499	0.9372948	0.9148450	0.6816976	0.7931826	0.9135153	0.9256360	0.90888
CYP	2009	0.8108817	0.8374710	0.7462834	0.7179993	0.8050875	0.8208809	0.8323985	0.79357
CZE	1999	0.9739569	0.8229434	0.7886964	0.7724551	0.8161081	0.6797863	0.7157776	0.42725
CZE	2009	0.9219565	0.8167287	0.7668348	0.9511983	0.8348283	0.6829533	0.6449782	0.45826
DEU	1999	0.9478791	0.9020108	0.8421201	0.6601857	0.7166904	0.6974015	0.5846682	0.68804
DNK	1999	0.9514781	0.7860852	0.8640553	0.5943869	0.8232558	0.6075949	0.4453561	0.63114
DNK	2009	0.9430028	0.6881545	0.5543884	0.7497674	0.7629991	0.7908210	0.6774119	0.88262
DNK	2016	0.9507480	0.7132973	0.5735269	0.8538513	0.7291737	0.8810720	0.7618808	0.92106
DNW	2016	0.9501754	0.8787666	0.7987288	0.6311360	0.6713781	0.6592022	0.7291372	0.83356
DOM	2009	0.9130784	0.9065725	0.8398374	0.9073673	0.9252108	0.8121994	0.9237197	0.87387
DOM	2016	0.9385813	0.9194573	0.8915420	0.9252874	0.9514871	0.7702590	0.9425725	0.91626
ENG	1999	0.9744219	0.7206045	0.7848620	0.9266643	0.7634566	0.7602983	0.4410293	0.70895
ENG	2009	0.9237526	0.7638156	0.7985258	0.9356868	0.7884751	0.7903564	0.6283713	0.80084
ESP	2009	0.9053889	0.8541155	0.8671587	0.7930717	0.8802947	0.7610159	0.6894219	0.78676
EST	1999	0.9319482	0.7806552	0.8133536	0.8272395	0.6806877	0.7010495	0.7104946	0.58699
EST	2009	0.8501292	0.8205033	0.8635190	0.8420664	0.7677253	0.6685103	0.8048871	0.73116
EST	2016	0.8662196	0.8328622	0.8691655	0.7892882	0.7802897	0.6699577	0.7918137	0.80854
FIN	1999	0.9734159	0.8299734	0.6103501	0.9316587	0.7419476	0.5915649	0.6864188	0.59326
FIN	2009	0.9143469	0.7342743	0.7624885	0.9195473	0.7983476	0.7333333	0.6299816	0.65248
FIN	2016	0.9452099	0.7930039	0.7878691	0.9481268	0.8213256	0.7733376	0.7253205	0.74735
GRC	1999	0.9555950	0.9181216	0.8995172	0.8101922	0.8879233	0.9428741	0.8808955	0.82125
GRC	2009	0.8436991	0.8476128	0.8313174	0.6507988	0.8686704	0.7471600	0.8179428	0.71768
GTM	2009	0.9317531	0.9363589	0.9502734	0.8718016	0.9664658	0.9220444	0.9261409	0.89950
HKG	1999	0.9444683	0.8014233	0.8520499	0.9044822	0.8251842	0.8400262	0.6979261	0.80716
HKG	2009	0.9637784	0.7845990	0.8430398	0.9087682	0.8839191	0.8586648	0.7871357	0.89314
HKG	2016	0.9303578	0.7728148	0.8096339	0.8830116	0.8521371	0.8374327	0.7395152	0.79607
HRV	2016	0.9415281	0.9071950	0.8660063	0.9525169	0.9269751	0.9001035	0.8976234	0.86427
HUN	1999	0.9762056	0.8925040	0.8947704	0.8953935	0.7654598	0.8152967	0.8575072	0.73771
IDN	2009	0.9629555	0.8574615	0.9307272	0.9393081	0.9359676	0.9709911	0.9606571	0.94749
IRL	2009	0.9149066	0.8344512	0.8418477	0.9348554	0.8532194	0.8904027	0.7358145	0.79286
ITA	1999	0.9688664	0.8677455	0.8288845	0.8351917	0.7930848	0.8370650	0.6629579	0.76074
ITA	2009	0.9695704	0.9062313	0.7790105	0.8453270	0.8896861	0.9063995	0.9098262	0.85748
ITA	2016	0.9692533	0.9157864	0.8371614	0.8752562	0.9024963	0.9100467	0.9276297	0.82781
KOR	2009	0.9321872	0.8376673	0.8377965	0.9243697	0.8792280	0.9677358	0.7519572	0.42556
KOR	2016	0.9391709	0.8357226	0.8639007	0.9236730	0.8980225	0.9259977	0.8206816	0.44186
LIE	2009	0.8845070	0.7138810	0.6807910	0.6257143	0.6524217	0.6901408	0.7542373	0.78062
LTU	1999	0.9276786	0.9030984	0.8544957	0.7817901	0.7951474	0.8393598	0.8056473	0.75981
LTU	2009	0.9004642	0.7648579	0.8145078	0.7449664	0.7713769	0.8060356	0.8908432	0.82222
LTU	2016	0.9314302	0.7544793	0.8003908	0.7642458	0.8087783	0.7889321	0.8851541	0.90756

COUNTRY	ICCS_year	obey	rights	local	work	envir	vote	history	respe
LUX	2009	0.8821556	0.7499473	0.6653302	0.6792096	0.7476301	0.7716618	0.7264885	0.80672
LVA	1999	0.9088700	0.7932773	0.7258065	0.8013923	0.7608786	0.7649919	0.7223587	0.66555
LVA	2009	0.8116048	0.8422214	0.7986009	0.7215888	0.7937385	0.8252107	0.7012509	0.65955
LVA	2016	0.8837726	0.8236976	0.7839821	0.7328051	0.8401652	0.7910872	0.8046925	0.81688
MEX	2009	0.8710834	0.8632276	0.8407513	0.8796642	0.9030837	0.8698566	0.8161414	0.78440
MEX	2016	0.8753982	0.8852336	0.8744151	0.8596886	0.9166511	0.8487941	0.8362231	0.79632
MLT	2009	0.9172217	0.8250478	0.7951173	0.8608987	0.8273553	0.8312796	0.7382550	0.82770
MLT	2016	0.9234807	0.8486860	0.8026024	0.8342557	0.8338870	0.7894160	0.7243963	0.83705
NLD	2009	0.7315011	0.7231907	0.7053524	0.7761352	0.7186674	0.7547368	0.4604847	0.80486
NLD	2016	0.8548154	0.7204924	0.7119506	0.8529518	0.7043478	0.7356446	0.5394642	0.85476
NOR	1999	0.9477124	0.9029281	0.8271208	0.7797525	0.9056604	0.7137059	0.4971483	0.64738
NOR	2009	0.8836071	0.8673647	0.8749563	0.8561453	0.8966237	0.8795014	0.7300314	0.85988
NOR	2016	0.9283479	0.8106411	0.8550629	0.8520231	0.8560106	0.8694226	0.7471511	0.87141
NZL	2009	0.8979010	0.7352788	0.7816332	0.9237947	0.7808433	0.8358325	0.7019506	0.78784
PER	2016	0.9235541	0.9250100	0.8835494	0.8211788	0.9490815	0.9512724	0.9401198	0.91971
POL	1999	0.9608669	0.8171943	0.9069343	0.7495350	0.7827819	0.9138452	0.8984185	0.81644
POL	2009	0.8504788	0.8506211	0.7593798	0.6411765	0.8170845	0.8906733	0.9129894	0.76385
PRT	1999	0.9698018	0.8832621	0.9395952	0.8163001	0.9213448	0.7138728	0.7227025	0.82790
PRY	2009	0.9099187	0.9140345	0.8426047	0.8778576	0.9595960	0.7626360	0.9360878	0.84951
ROM	1999	0.9359283	0.8858965	0.9009585	0.8077795	0.8786920	0.9205298	0.8747361	0.84787
RUS	1999	0.9354685	0.7842466	0.8254581	0.8865930	0.8015304	0.7910519	0.7476008	0.50049
RUS	2009	0.8663064	0.8267012	0.8011310	0.8209586	0.8772385	0.8305640	0.8945489	0.84870
RUS	2016	0.9070827	0.8081548	0.8144159	0.8363687	0.8868159	0.7604296	0.9319972	0.88169
SVK	1999	0.9848573	0.9313090	0.8721068	0.9680726	0.8593978	0.9074993	0.7254038	0.69876
SVK	2009	0.9114566	0.8438031	0.7548321	0.6990521	0.8443540	0.7813450	0.6682529	0.53353
SVN	1999	0.9478925	0.7758204	0.7837370	0.6537936	0.7309524	0.7981439	0.7200000	0.68713
SVN	2009	0.9071452	0.8073486	0.7491738	0.7134850	0.8242664	0.7455621	0.6601717	0.72460
SVN	2016	0.9199858	0.8463180	0.7949358	0.8526166	0.8557178	0.7963945	0.6846815	0.76085
SWE	1999	0.9596532	0.7816901	0.8206107	0.7841727	0.8069993	0.7922428	0.6244870	0.64278
SWE	2009	0.8792085	0.7608052	0.7822104	0.8229566	0.8079646	0.7647059	0.4511943	0.81148
SWE	2016	0.9450304	0.8214628	0.8126598	0.8442179	0.8383061	0.8633207	0.4833440	0.87745
THA	2009	0.9486445	0.9261103	0.9328358	0.5644946	0.9493017	0.9727255	0.9295450	0.82511
TWN	2009	0.9634170	0.9047341	0.8897116	0.9451041	0.8872005	0.7482967	0.7900585	0.71912
TWN	2016	0.9802131	0.8734145	0.8688816	0.9436834	0.8929206	0.7793558	0.8180894	0.77163
USA	1999	0.9520826	0.8316679	0.8808989	0.9123134	0.8316190	0.8303571	0.7301168	0.79501

Count and percentage of missing values for each indicator by country and year.

```
missing <- tbl %>%
  group_by(COUNTRY, ICCS_year) %>%
  summarize_at(cit_norm_indicators,
               funs(paste0(sum(is.na(.)), " (", (round(sum(is.na(.)) / length(.) * 100, 2)), "%)")))

missing %>%
  knitr::kable()
```

COUNTRY	ICCS_year	obey	rights	local	work	envir	vote	hi
AUS	1999	257 (7.72%)	369 (11.08%)	304 (9.13%)	282 (8.47%)	350 (10.51%)	264 (7.93%)	31
AUT	2009	64 (1.89%)	71 (2.1%)	73 (2.16%)	73 (2.16%)	69 (2.04%)	57 (1.68%)	79
BFL	2009	24 (0.81%)	29 (0.98%)	28 (0.94%)	22 (0.74%)	24 (0.81%)	17 (0.57%)	32
BFL	2016	39 (1.33%)	31 (1.06%)	35 (1.19%)	31 (1.06%)	37 (1.26%)	20 (0.68%)	37
BFR	1999	100 (4.82%)	130 (6.26%)	148 (7.13%)	131 (6.31%)	137 (6.6%)	88 (4.24%)	10

COUNTRY	ICCS_year	obey	rights	local	work	envir	vote	hi
BGR	1999	189 (6.55%)	298 (10.33%)	378 (13.11%)	249 (8.63%)	321 (11.13%)	283 (9.81%)	30
BGR	2009	111 (3.41%)	126 (3.87%)	121 (3.72%)	116 (3.56%)	123 (3.78%)	87 (2.67%)	11
BGR	2016	107 (3.61%)	81 (2.73%)	72 (2.43%)	84 (2.83%)	84 (2.83%)	60 (2.02%)	89
CHE	1999	60 (1.93%)	130 (4.19%)	140 (4.51%)	161 (5.19%)	134 (4.32%)	90 (2.9%)	11
CHE	2009	39 (1.33%)	49 (1.68%)	55 (1.88%)	36 (1.23%)	39 (1.33%)	25 (0.85%)	44
CHL	1999	148 (2.6%)	506 (8.9%)	201 (3.53%)	248 (4.36%)	181 (3.18%)	154 (2.71%)	29
CHL	2009	66 (1.27%)	78 (1.5%)	67 (1.29%)	102 (1.96%)	80 (1.54%)	47 (0.91%)	89
CHL	2016	95 (1.87%)	103 (2.03%)	91 (1.79%)	119 (2.34%)	95 (1.87%)	78 (1.54%)	10
COL	1999	131 (2.66%)	278 (5.64%)	182 (3.69%)	385 (7.82%)	151 (3.07%)	242 (4.91%)	39
COL	2009	307 (4.95%)	280 (4.51%)	290 (4.67%)	324 (5.22%)	308 (4.96%)	204 (3.29%)	34
COL	2016	241 (4.3%)	203 (3.62%)	218 (3.89%)	198 (3.53%)	207 (3.69%)	130 (2.32%)	24
CYP	1999	35 (1.13%)	60 (1.93%)	41 (1.32%)	90 (2.9%)	55 (1.77%)	65 (2.09%)	40
CYP	2009	143 (4.48%)	173 (5.42%)	167 (5.23%)	155 (4.85%)	167 (5.23%)	129 (4.04%)	16
CZE	1999	36 (1%)	94 (2.61%)	86 (2.38%)	100 (2.77%)	56 (1.55%)	50 (1.39%)	64
CZE	2009	30 (0.65%)	63 (1.36%)	71 (1.53%)	40 (0.86%)	59 (1.27%)	25 (0.54%)	50
DEU	1999	93 (2.51%)	169 (4.57%)	153 (4.14%)	254 (6.86%)	195 (5.27%)	121 (3.27%)	20
DNK	1999	96 (2.99%)	319 (9.94%)	170 (5.3%)	215 (6.7%)	198 (6.17%)	127 (3.96%)	16
DNK	2009	192 (4.26%)	211 (4.68%)	224 (4.97%)	208 (4.61%)	200 (4.44%)	172 (3.82%)	19
DNK	2016	305 (4.88%)	328 (5.24%)	331 (5.29%)	308 (4.92%)	324 (5.18%)	284 (4.54%)	29
DNW	2016	26 (1.79%)	24 (1.65%)	35 (2.41%)	25 (1.72%)	36 (2.48%)	22 (1.52%)	37
DOM	2009	850 (18.52%)	907 (19.76%)	899 (19.59%)	897 (19.55%)	912 (19.87%)	638 (13.9%)	87
DOM	2016	469 (11.91%)	473 (12.01%)	461 (11.71%)	457 (11.61%)	474 (12.04%)	346 (8.79%)	52
ENG	1999	189 (6.21%)	330 (10.84%)	361 (11.86%)	234 (7.69%)	312 (10.25%)	227 (7.46%)	24
ENG	2009	70 (2.4%)	75 (2.57%)	67 (2.3%)	55 (1.89%)	70 (2.4%)	54 (1.85%)	61
ESP	2009	43 (1.3%)	53 (1.6%)	57 (1.72%)	47 (1.42%)	51 (1.54%)	41 (1.24%)	57
EST	1999	113 (3.29%)	229 (6.67%)	139 (4.05%)	152 (4.43%)	177 (5.15%)	99 (2.88%)	11
EST	2009	34 (1.24%)	41 (1.49%)	32 (1.17%)	33 (1.2%)	35 (1.28%)	31 (1.13%)	42
EST	2016	24 (0.84%)	27 (0.95%)	29 (1.02%)	19 (0.67%)	26 (0.91%)	21 (0.74%)	23
FIN	1999	36 (1.29%)	153 (5.5%)	154 (5.54%)	75 (2.7%)	112 (4.03%)	79 (2.84%)	65
FIN	2009	38 (1.15%)	48 (1.45%)	44 (1.33%)	38 (1.15%)	39 (1.18%)	37 (1.12%)	45
FIN	2016	52 (1.64%)	57 (1.8%)	57 (1.8%)	50 (1.58%)	50 (1.58%)	45 (1.42%)	53
GRC	1999	82 (2.37%)	138 (3.99%)	146 (4.22%)	183 (5.29%)	123 (3.55%)	99 (2.86%)	11
GRC	2009	82 (2.6%)	95 (3.01%)	94 (2.98%)	86 (2.73%)	92 (2.92%)	72 (2.28%)	11
GTM	2009	163 (4.07%)	168 (4.2%)	161 (4.02%)	211 (5.27%)	185 (4.62%)	128 (3.2%)	21
HKG	1999	333 (6.66%)	641 (12.83%)	509 (10.19%)	401 (8.02%)	518 (10.37%)	415 (8.3%)	56
HKG	2009	86 (2.96%)	84 (2.89%)	86 (2.96%)	85 (2.93%)	85 (2.93%)	86 (2.96%)	88
HKG	2016	54 (2.04%)	56 (2.11%)	58 (2.19%)	63 (2.37%)	56 (2.11%)	51 (1.92%)	54
HRV	2016	48 (1.23%)	60 (1.54%)	60 (1.54%)	42 (1.08%)	48 (1.23%)	32 (0.82%)	67
HUN	1999	15 (0.47%)	32 (1.01%)	31 (0.98%)	41 (1.29%)	46 (1.45%)	16 (0.51%)	30
IDN	2009	128 (2.53%)	136 (2.68%)	131 (2.58%)	125 (2.47%)	133 (2.62%)	104 (2.05%)	13
IRL	2009	88 (2.62%)	75 (2.24%)	86 (2.56%)	70 (2.09%)	78 (2.32%)	52 (1.55%)	77
ITA	1999	50 (1.31%)	224 (5.88%)	249 (6.54%)	131 (3.44%)	106 (2.78%)	101 (2.65%)	12
ITA	2009	14 (0.42%)	28 (0.83%)	31 (0.92%)	17 (0.51%)	21 (0.62%)	22 (0.65%)	28
ITA	2016	35 (1.01%)	42 (1.22%)	54 (1.57%)	35 (1.01%)	45 (1.3%)	26 (0.75%)	37
KOR	2009	19 (0.36%)	24 (0.46%)	26 (0.49%)	18 (0.34%)	21 (0.4%)	16 (0.3%)	17
KOR	2016	20 (0.77%)	20 (0.77%)	22 (0.85%)	20 (0.77%)	22 (0.85%)	20 (0.77%)	19
LIE	2009	2 (0.56%)	4 (1.12%)	3 (0.84%)	7 (1.96%)	6 (1.68%)	2 (0.56%)	3
LTU	1999	134 (3.84%)	202 (5.78%)	202 (5.78%)	254 (7.27%)	238 (6.81%)	120 (3.43%)	16
LTU	2009	24 (0.62%)	32 (0.82%)	42 (1.08%)	28 (0.72%)	31 (0.79%)	25 (0.64%)	36
LTU	2016	58 (1.6%)	59 (1.62%)	49 (1.35%)	51 (1.4%)	54 (1.49%)	35 (0.96%)	61
LUX	2009	83 (1.71%)	109 (2.25%)	113 (2.33%)	95 (1.96%)	105 (2.16%)	74 (1.53%)	99
LVA	1999	103 (4%)	192 (7.47%)	154 (5.99%)	130 (5.05%)	159 (6.18%)	104 (4.04%)	13

COUNTRY	ICCS_year	obey	rights	local	work	envir	vote	hi
LVA	2009	38 (1.38%)	42 (1.52%)	45 (1.63%)	42 (1.52%)	46 (1.67%)	32 (1.16%)	43
LVA	2016	75 (2.33%)	76 (2.36%)	90 (2.79%)	69 (2.14%)	77 (2.39%)	60 (1.86%)	70
MEX	2009	161 (2.45%)	237 (3.6%)	240 (3.65%)	144 (2.19%)	220 (3.35%)	160 (2.43%)	29
MEX	2016	189 (3.42%)	176 (3.18%)	183 (3.31%)	195 (3.53%)	187 (3.38%)	136 (2.46%)	22
MLT	2009	41 (1.91%)	51 (2.38%)	54 (2.52%)	51 (2.38%)	52 (2.43%)	33 (1.54%)	57
MLT	2016	144 (3.83%)	149 (3.96%)	152 (4.04%)	150 (3.99%)	152 (4.04%)	117 (3.11%)	16
NLD	2009	72 (3.67%)	71 (3.62%)	77 (3.92%)	70 (3.56%)	73 (3.72%)	64 (3.26%)	66
NLD	2016	50 (1.78%)	50 (1.78%)	59 (2.1%)	51 (1.81%)	52 (1.85%)	43 (1.53%)	50
NOR	1999	108 (3.25%)	179 (5.39%)	209 (6.29%)	170 (5.12%)	141 (4.25%)	118 (3.55%)	16
NOR	2009	152 (5.04%)	148 (4.91%)	150 (4.98%)	149 (4.95%)	140 (4.65%)	125 (4.15%)	14
NOR	2016	200 (3.19%)	219 (3.49%)	227 (3.62%)	216 (3.44%)	215 (3.43%)	175 (2.79%)	21
NZL	2009	120 (3.02%)	141 (3.54%)	146 (3.67%)	121 (3.04%)	137 (3.44%)	111 (2.79%)	13
PER	2016	169 (3.27%)	152 (2.94%)	151 (2.92%)	161 (3.12%)	158 (3.06%)	97 (1.88%)	15
POL	1999	54 (1.6%)	154 (4.56%)	88 (2.61%)	150 (4.44%)	112 (3.32%)	68 (2.01%)	88
POL	2009	12 (0.37%)	29 (0.89%)	24 (0.74%)	19 (0.58%)	18 (0.55%)	11 (0.34%)	31
PRT	1999	82 (2.51%)	220 (6.75%)	99 (3.04%)	169 (5.18%)	108 (3.31%)	147 (4.51%)	13
PRY	2009	324 (9.53%)	328 (9.65%)	343 (10.09%)	337 (9.91%)	330 (9.71%)	273 (8.03%)	30
ROM	1999	90 (3.01%)	171 (5.71%)	176 (5.88%)	345 (11.53%)	149 (4.98%)	124 (4.14%)	15
RUS	1999	37 (1.74%)	85 (3.99%)	55 (2.58%)	48 (2.25%)	38 (1.78%)	28 (1.32%)	45
RUS	2009	39 (0.91%)	48 (1.12%)	51 (1.19%)	39 (0.91%)	51 (1.19%)	22 (0.51%)	94
RUS	2016	46 (0.63%)	54 (0.74%)	47 (0.64%)	41 (0.56%)	53 (0.73%)	26 (0.36%)	54
SVK	1999	29 (0.84%)	71 (2.05%)	93 (2.69%)	49 (1.41%)	42 (1.21%)	36 (1.04%)	58
SVK	2009	11 (0.37%)	25 (0.84%)	21 (0.71%)	16 (0.54%)	21 (0.71%)	11 (0.37%)	28
SVN	1999	55 (1.79%)	173 (5.64%)	178 (5.8%)	142 (4.63%)	128 (4.17%)	51 (1.66%)	11
SVN	2009	33 (1.07%)	49 (1.6%)	44 (1.43%)	37 (1.21%)	37 (1.21%)	28 (0.91%)	42
SVN	2016	32 (1.13%)	33 (1.16%)	40 (1.41%)	35 (1.23%)	37 (1.3%)	15 (0.53%)	50
SWE	1999	74 (2.41%)	233 (7.58%)	191 (6.22%)	154 (5.01%)	187 (6.09%)	108 (3.51%)	14
SWE	2009	78 (2.25%)	86 (2.48%)	80 (2.31%)	75 (2.17%)	74 (2.14%)	64 (1.85%)	73
SWE	2016	135 (4.14%)	133 (4.07%)	136 (4.17%)	125 (3.83%)	147 (4.5%)	96 (2.94%)	14
THA	2009	25 (0.48%)	39 (0.74%)	37 (0.7%)	30 (0.57%)	36 (0.68%)	20 (0.38%)	54
TWN	2009	28 (0.54%)	34 (0.66%)	35 (0.68%)	30 (0.58%)	34 (0.66%)	30 (0.58%)	37
TWN	2016	11 (0.28%)	11 (0.28%)	10 (0.25%)	11 (0.28%)	12 (0.3%)	10 (0.25%)	17
USA	1999	98 (3.49%)	209 (7.44%)	141 (5.02%)	131 (4.66%)	186 (6.62%)	123 (4.38%)	15

Write tables to excel.

```
write_xlsx(list(means = means, missing = missing), "output/citizenship-norm-indicator-tables.xlsx")
```

Figures:

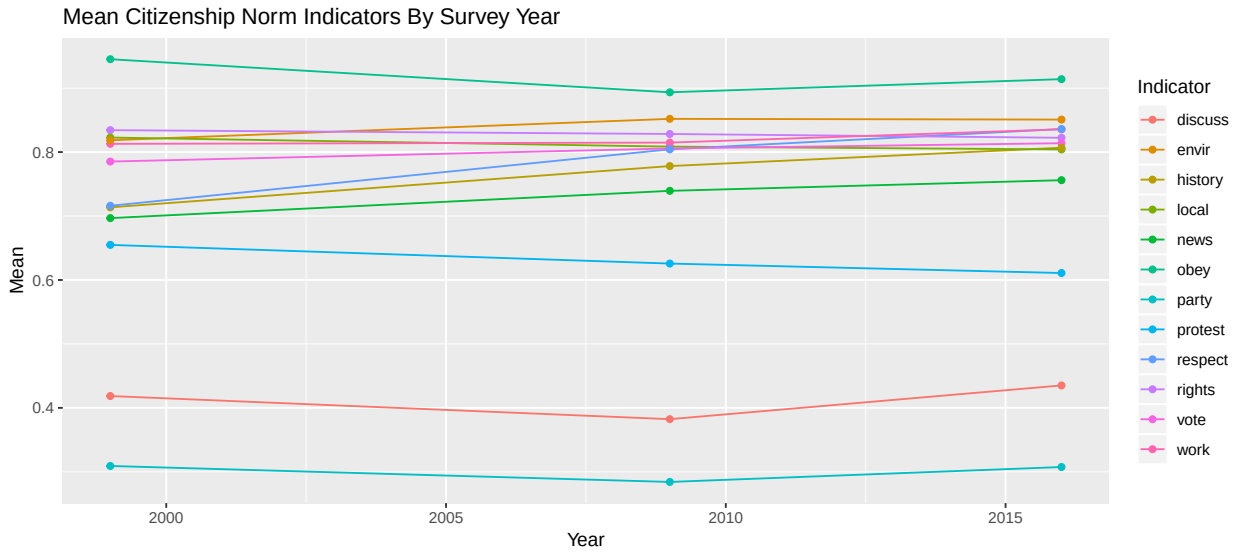
Means for twelve citizenship norm indicators for only the 14 countries that are included in all three waves of the survey.

```
all_wave_countries <- tbl %>%
  count(COUNTRY, ICCS_year) %>%
  count(COUNTRY) %>%
  filter(nn == 3) %>%
  pull(COUNTRY)

plot_tbl <- tbl %>%
  filter(COUNTRY %in% all_wave_countries) %>%
  group_by(ICCS_year) %>%
```

```
  summarize_at(cit_norm_indicators, funs(mean(., na.rm = TRUE)))

plot_tbl %>%
  knitr::kable()
```

ICCS_year	obey	rights	local	work	envir	vote	history	respect	news
1999	0.9452247	0.8342748	0.8227005	0.8128673	0.8184639	0.7851758	0.7135590	0.7160464	0.6967499
2009	0.8934649	0.8283053	0.8085325	0.8148389	0.8519541	0.8056155	0.7781203	0.8042819	0.7393888
2016	0.9140386	0.8223837	0.8041600	0.8356167	0.8508127	0.8138835	0.8068230	0.8360684	0.7560593

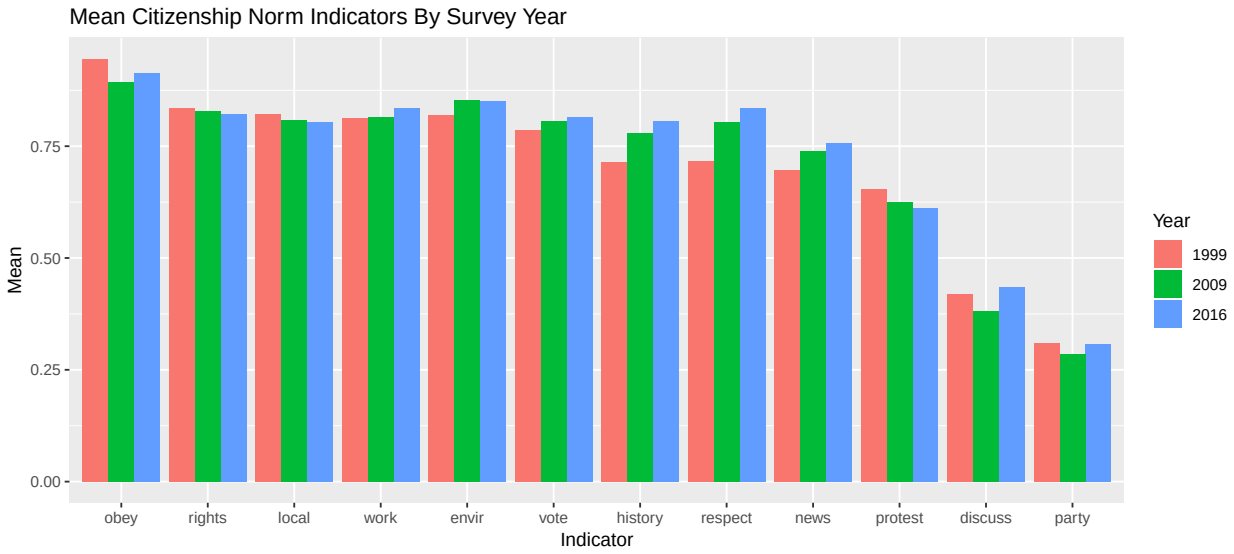
```
# line plot with year on x-axis, lines colored by indicator type
plot_tbl %>%
  gather(Indicator, value, -ICCS_year) %>%
  ggplot(aes(x = ICCS_year, y = value, group = Indicator, colour = Indicator)) +
  geom_line() +
  geom_point() +
  labs(x = "Year", y = "Mean", title = "Mean Citizenship Norm Indicators By Survey Year")
```




```
ggsave("output/mean-citizenship-norm-line-plot-by-year.png")
```

```
## Saving 10 x 4.5 in image
```

```
# bar plot with indicators on x-axis, lines colored by year
plot_tbl %>%
  gather(Indicator, value, -ICCS_year) %>%
  mutate(Year = as.factor(ICCS_year),
         Indicator = factor(Indicator, ordered = TRUE, levels = c("obey", "rights", "local", "work", "en
                                                                  "respect", "news", "protest", "discuss
  ggplot(aes(x = Indicator, y = value, fill = Year)) +
  geom_bar(stat = "identity", position = position_dodge()) +
  labs(x = "Indicator", y = "Mean", title = "Mean Citizenship Norm Indicators By Survey Year")
```




```
ggsave("output/mean-citizenship-norm-bar-plot-by-indicator.png")
```

```
## Saving 10 x 4.5 in image
```