

Homework 1

Exercise 1

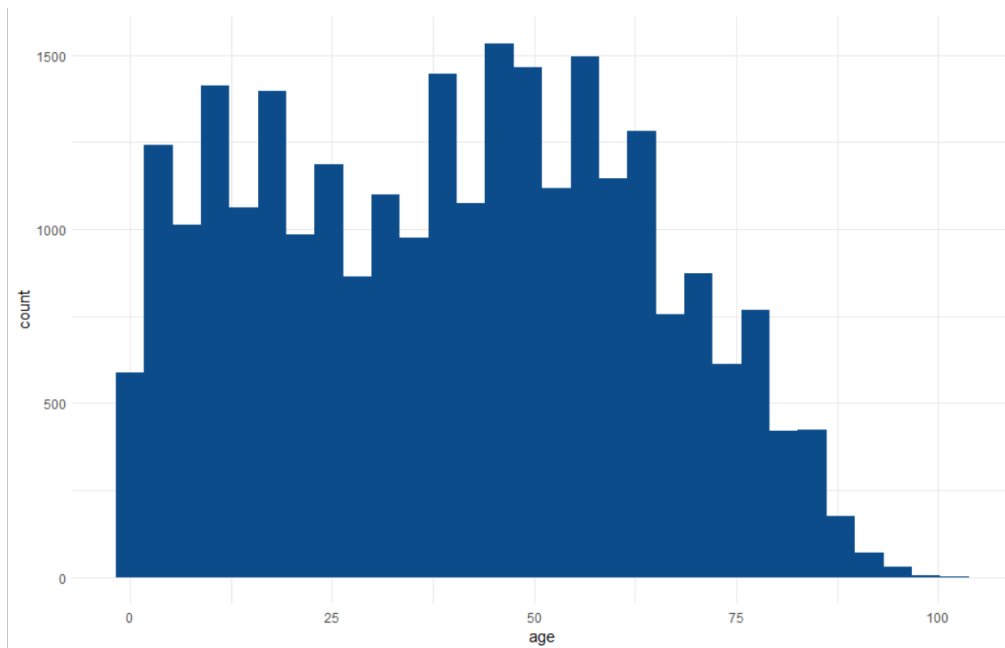
- (1) Number of households surveyed in 2007 is 10498.
- (2) Number of households with marital status “Couple with kids” in 2005 is 3374.
- (3) Number of individuals surveyed in 2008 is 25510.
- (4) Number of individuals aged between 25 and 35 in 2016 is 2765.
- (5) The Table below shows,

	0	11	12	13	21	22	23	31	33	34	35	37	38	42	43	44	45	46	47	48	52	53	54	55	56	62	63	64	65
Female	11	30	8	29	63	65	8	68	85	184	50	179	78	258	437	1	153	410	82	22	782	27	584	353	696	64	35	29	19
Male	19	57	19	78	213	114	48	98	107	142	59	260	368	110	117	2	95	340	429	215	169	182	98	101	74	443	520	246	159
	67	68	69																										
Female	147	120	40																										
Male	237	177	82																										

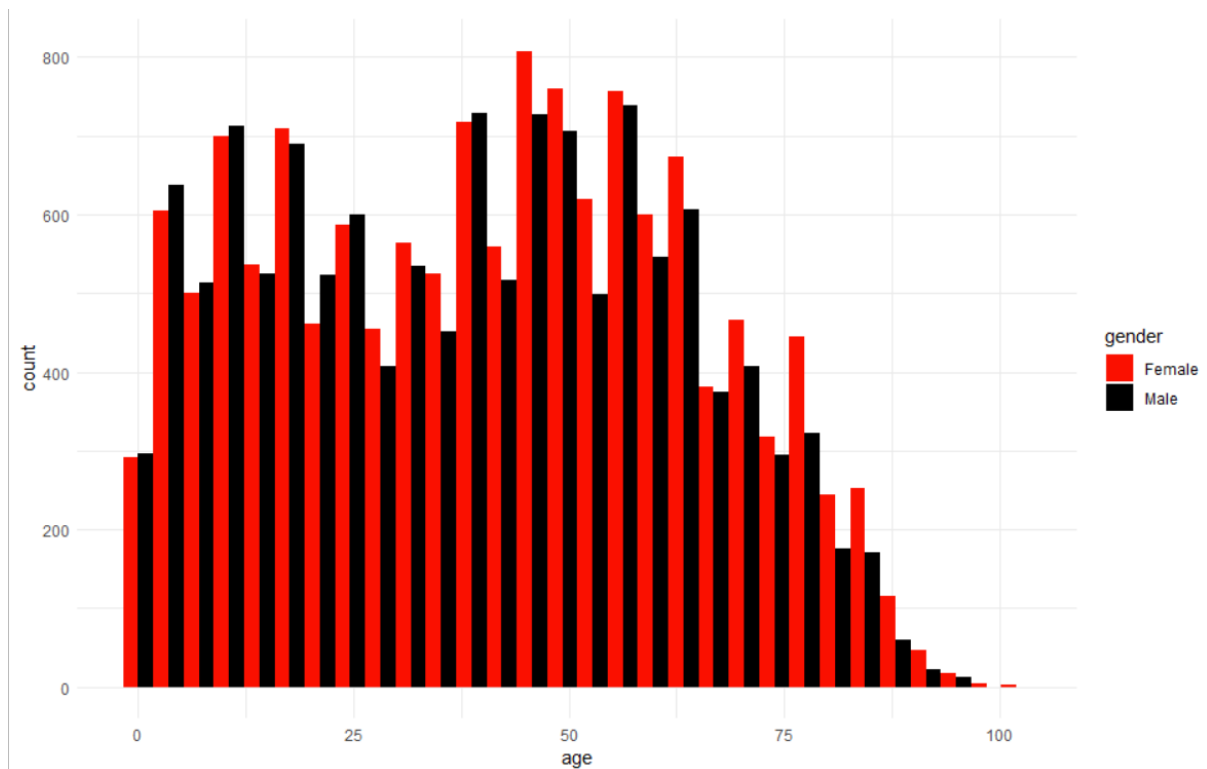
- (6) In 2005, mean is 11992; standard deviation is approximately 17318.56; D1 is 0; D9 is 271962 and thus $D9/D1$ is infinity, Gini coefficient is approximately 0.6671.

In 2019, mean is 15350; standard deviation is approximately 23207.18; D1 is 0; D9 is 1068556 and thus $D9/D1$ is infinity, Gini coefficient is approximately 0.6655.

- (7) The following figure shows the general age distribution,



The following figure shows men and women's age distribution, the difference is quite small.



(8) Number of individuals in Paris in 2011 is 3514.

Exercise 2

The first part is shown in the code.

(5) Number of households in which there are more than four family members in each year is

	Var2	ng4
1	2004	745
2	2005	814
3	2006	862
4	2007	874
5	2008	814
6	2009	810
7	2010	821
8	2011	785
9	2012	816
10	2013	754
11	2014	783
12	2015	763
13	2016	753
14	2017	703
15	2018	647
16	2019	692

(6) Number of households in which at least one member is unemployed in each year is

	year	unemploy
1	2004	950
2	2005	1039
3	2006	1030
4	2007	975
5	2008	909
6	2009	1045
7	2010	1109
8	2011	1071
9	2012	1205
10	2013	1177
11	2014	1187
12	2015	1227
13	2016	1137
14	2017	1103
15	2018	991
16	2019	1086

(7) Number of households in which at least two members are of the same profession in each year is (“nd” in my code)

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
445	496	480	490	459	452	475	491	517	457	475	468	473	457	454	497

(8) Number of individuals in the panel that are from household-Couple with kids in each year

	year	nwkids
1	2004	11993
2	2005	13217
3	2006	13637
4	2007	13963
5	2008	13481
6	2009	13286
7	2010	13726
8	2011	13801
9	2012	14403
10	2013	13114
11	2014	13228
12	2015	13008
13	2016	12967
14	2017	11963
15	2018	11444
16	2019	12151

(9) Number of individuals in the panel that are from Paris in each year is

	year	nparis
1	2004	3494
2	2005	3734
3	2006	3658
4	2007	3735
5	2008	3559
6	2009	3524
7	2010	3607
8	2011	3514
9	2012	3679
10	2013	2288
11	2014	2576
12	2015	3033
13	2016	2946
14	2017	2836
15	2018	2797
16	2019	2924

(10) Find the household with the most number of family members. Report its idmen.

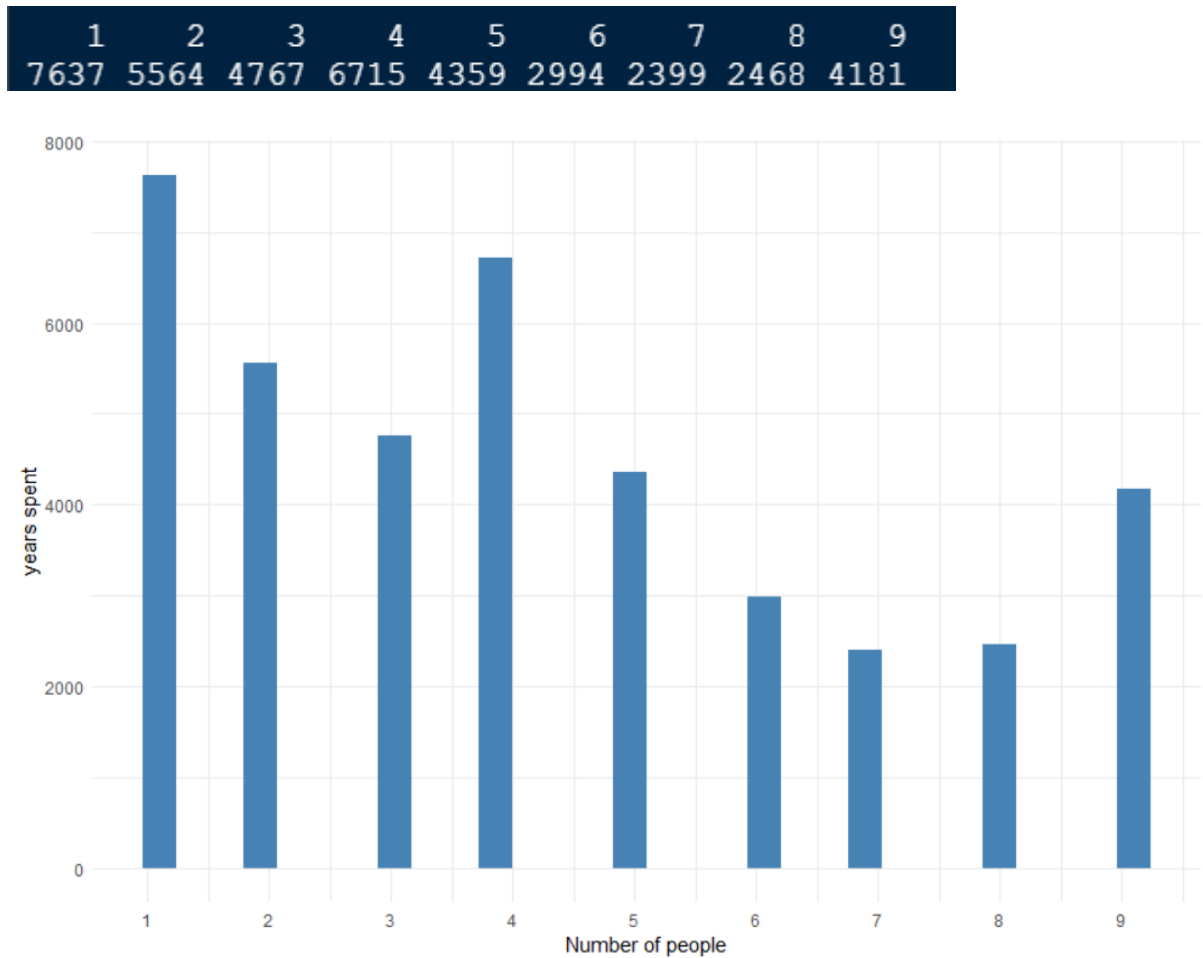
l1	list [16]	List of length 16
2004	character [4]	'1208045118450100' '1607839058220100' '1610263040580100' '1804363114960100'
2005	character [1]	'1607839058220100'
2006	character [2]	'1607839058220100' '1811109095380100'
2007	character [1]	'2207811124040100'
2008	character [3]	'1700707001000100' '1811109095380100' '2006865025180100'
2009	character [1]	'1700707001000100'
2010	character [1]	'2510263102990100'
2011	character [2]	'1905191114960100' '2202243098040100'
2012	character [2]	'1905191114960100' '2202243098040100'
2013	character [1]	'2202243098040100'
2014	character [8]	'2106457101960100' '2200896118640100' '2209201025180100' '2701042078730100' '2701042078730100' '2701042078730100' '2701042078730100' '2701042078730100'
2015	character [1]	'3000896115750100'
2016	character [1]	'3000896115750100'
2017	character [1]	'3000896115750100'
2018	character [1]	'3000896115750100'
2019	character [4]	'2806477001000100' '3200528124040100' '3300896124060100' '3402178051020100'

In year 2014, households with most members are "2106457101960100", "2200896118640100", "2209201025180100", "2701042078730100", "2707811117610100", "2710263020060100", "2905191059550100", "2905459051770100"

(11) Number of households present in 2010 and 2011 is 8984.

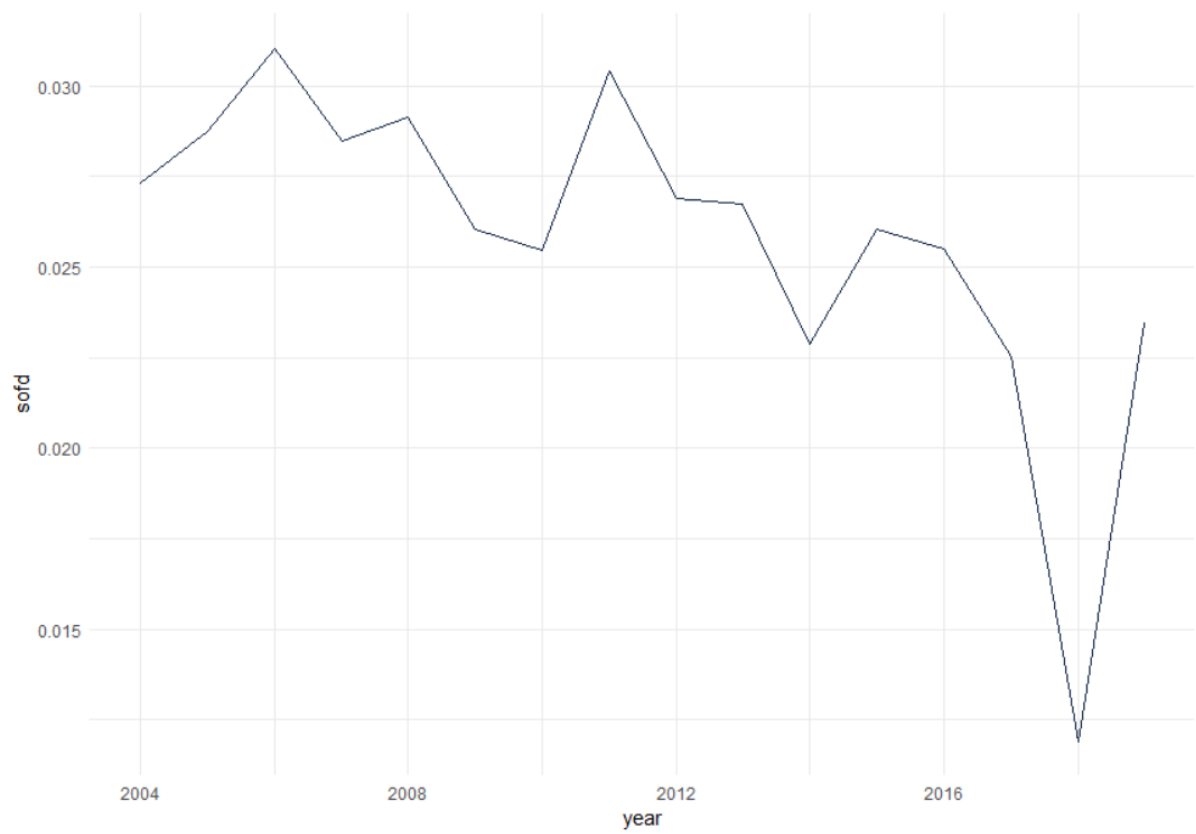
Exercise 3

(1) The distribution of years spent in the panel is shown by following figures,



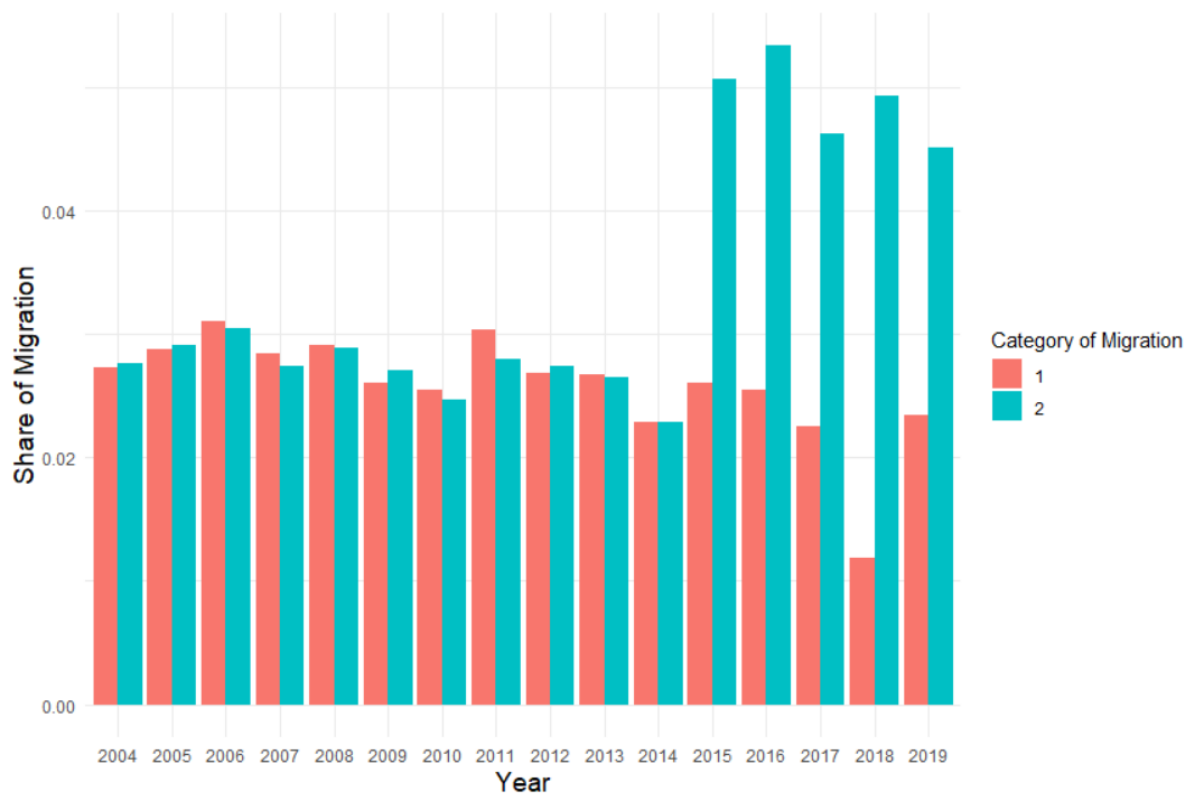
(2)

	idmen	year	idind	datenttrue
1	1200010012930100	2004	1120001001293010001	0
2	1200010040580100	2004	1120001004058010001	0
3	1200010040580100	2004	1120001004058010002	0
4	1200010040580100	2005	1120001004058010001	0
5	1200010040580100	2005	1120001004058010002	0
6	1200010066630100	2004	1120001006663010001	0
7	1200010066630100	2004	1120001006663010002	0
8	1200010066630100	2005	1120001006663010001	1
9	1200010066630100	2005	1120001006663010002	1
10	1200010082450100	2004	1120001008245010001	0



(3)

	idmen	year	idind	movetrue
1	1200010012930100	2004	1120001001293010001	0
2	1200010040580100	2004	1120001004058010001	0
3	1200010040580100	2004	1120001004058010002	0
4	1200010040580100	2005	1120001004058010001	0
5	1200010040580100	2005	1120001004058010002	0
6	1200010066630100	2004	1120001006663010001	0
7	1200010066630100	2004	1120001006663010002	0
8	1200010066630100	2005	1120001006663010001	1
9	1200010066630100	2005	1120001006663010002	1
10	1200010082450100	2004	1120001008245010001	0



1: Migration defined in 3.2 2: Migration defined in 3.3

(4)

The definition in 3.2 is too narrow for migration since it only regards people moving to his dwelling place at the year of survey as migrants. However, I believe that people moving his dwelling place in recent years should all be regarded as migrants.

The definition in 3.3, is broader than that in 3.2. If an individual migrates but misses a survey, he will still be defined as migrants according to criteria in 3.3.

(5)

The number of households that had at least one family member changed his/her profession or employment status in each year is as follows,

	▲	V1	◆	V2	◆
1		2005		80	
2		2006		93	
3		2007		86	
4		2008		81	
5		2009		93	
6		2010		81	
7		2011		94	
8		2012		97	
9		2013		78	
10		2014		67	
11		2015		162	
12		2016		180	
13		2017		135	
14		2018		154	
15		2019		128	

Exercise 4

The attrition rate between 2005 and 2019 is as follows,

	▲	V1	⬆️	V2	⬆️
1		2005		0.1352962	
2		2006		0.2000743	
3		2007		0.1787089	
4		2008		0.2266955	
5		2009		0.2056056	
6		2010		0.1837882	
7		2011		0.1936068	
8		2012		0.1698866	
9		2013		0.2546436	
10		2014		0.2211952	
11		2015		0.2192481	
12		2016		0.2172722	
13		2017		0.2507599	
14		2018		0.2441934	
15		2019		0.2433395	