

Swiss-SEP 2.0 index

Report 1.09 - data analysis

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1 PCA on n'hood aggregated characteristics

Principal components/correlation
 Number of obs = 1,527,173
 Number of comp. = 4
 Trace = 4
 Rho = 1.0000
 Rotation: (unrotated = principal)

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	1.95642	.776499	0.4891	0.4891
Comp2	1.17992	.731361	0.2950	0.7841
Comp3	.448564	.0334764	0.1121	0.8962
Comp4	.415087	.	0.1038	1.0000

Principal components (eigenvectors)

Variable	Comp1	Comp2	Comp3	Comp4	Unexplained
ocu1p	0.6054	-0.1324	0.4427	0.6481	0
edu1p	0.5902	0.2424	0.3022	-0.7082	0
ppr1	0.2401	0.7990	-0.4817	0.2680	0
rent	-0.4770	0.5341	0.6933	0.0812	0

(score assumed)

(3 components skipped)

Scoring coefficients

sum of squares(column-loading) = 1

Variable	Comp1	Comp2	Comp3	Comp4
ocu1p	0.6054	-0.1324	0.4427	0.6481
edu1p	0.5902	0.2424	0.3022	-0.7082
ppr1	0.2401	0.7990	-0.4817	0.2680
rent	-0.4770	0.5341	0.6933	0.0812

2 Building construction period

Construction period of the building is retrieved from STATPOP 2018 dataset. Detailed typology is recoded to binary indicator flagging buildings constructed on or after 2001. Buildings with missing information about age are treated as 'old' ones.

In case of small amount of buildings with same gisid but different buildid (spatial duplicates, n = 1886, 0.1%) when two different periods were recorded (old AND new) building is treated as new.

buildper2 — Building period (binary)

		Freq.	Percent	Valid	Cum.
Valid	0 Before 2000	1319272	86.39	86.39	86.39
	1 After 2000	207901	13.61	13.61	100.00
	Total	1527173	100.00	100.00	

3 Hybrid version of SEP

This solution is mixing versions 1.0 & 2.0. First the new buildings have value of index 1.0 assigned using the closest (linear distance) neighbour.

Then, construction period of the building is retrieved from STATPOP 2018 dataset and then buildings built before year 2000 have the values of 1.0 index assigned and buildings constructed after 2000 have new values assigned. Buildings without the defined period of construction keep values 1.0 also.

3.1 Index deciles

(SSEP 3.0 - user dataset of index and coordinates with variables used for PCA)

Summary for variables: ssep3
Group variable: ssep3_d (Swiss-SEP 3.0 - deciles)

ssep3_d	Min	Mean	Max
1	0.00	44.78	50.09
2	50.09	52.60	54.74
3	54.74	56.46	58.06
4	58.06	59.51	60.90
5	60.90	62.23	63.56
6	63.56	64.91	66.28
7	66.28	67.72	69.21
8	69.21	70.87	72.65
9	72.65	74.77	77.18
10	77.18	81.28	100.00
Total	0.00	63.51	100.00

3.2 Quantiles

Note that the deciles of third version in user dataset:

Swiss-SEP 3.0 - deciles	Freq.	Percent	Cum.
1	152,719	10.00	10.00
2	152,719	10.00	20.00
3	152,714	10.00	30.00
4	152,718	10.00	40.00
5	152,728	10.00	50.00
6	152,707	10.00	60.00
7	152,717	10.00	70.00
8	152,722	10.00	80.00
9	152,712	10.00	90.00
10	152,717	10.00	100.00
Total	1,527,173	100.00	

... are tad 'broken' in snc dataset :

(SSEP 3.0 - SNC user dataset of index and XY coordinates)

Swiss-SEP 3.0 - deciles	Freq.	Percent	Cum.
1	154,656	10.04	10.04
2	154,194	10.01	20.05
3	154,152	10.01	30.05
4	153,928	9.99	40.05
5	153,921	9.99	50.04
6	153,914	9.99	60.03
7	153,938	9.99	70.02
8	154,028	10.00	80.02
9	154,021	10.00	90.01
10	153,832	9.99	100.00

.	4	0.00	100.00
Total	1,540,588	100.00	

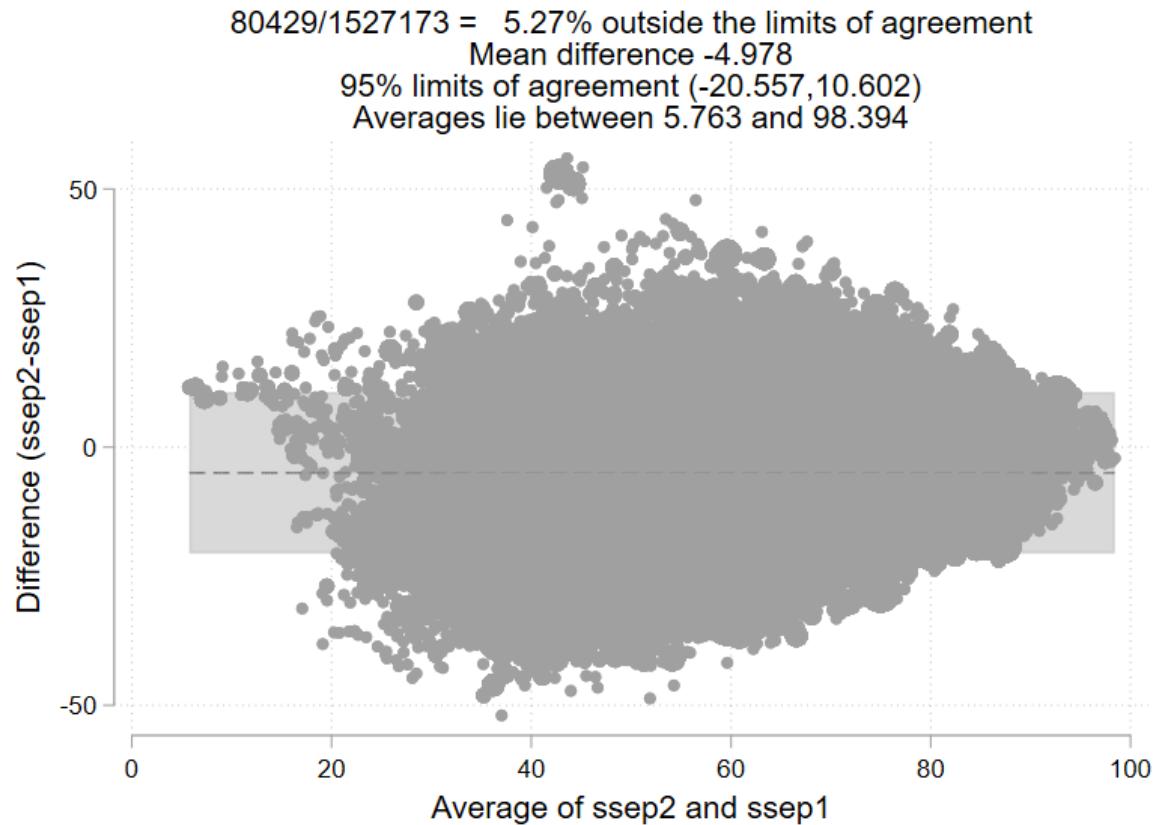
... This is expected behaviour since SNC dataset includes buildings with different BfS IDs but same coordinates. Same applies for missing data - there are few buildings where SEP could not have been calculated due to road network constraints.

Some transitions happened:

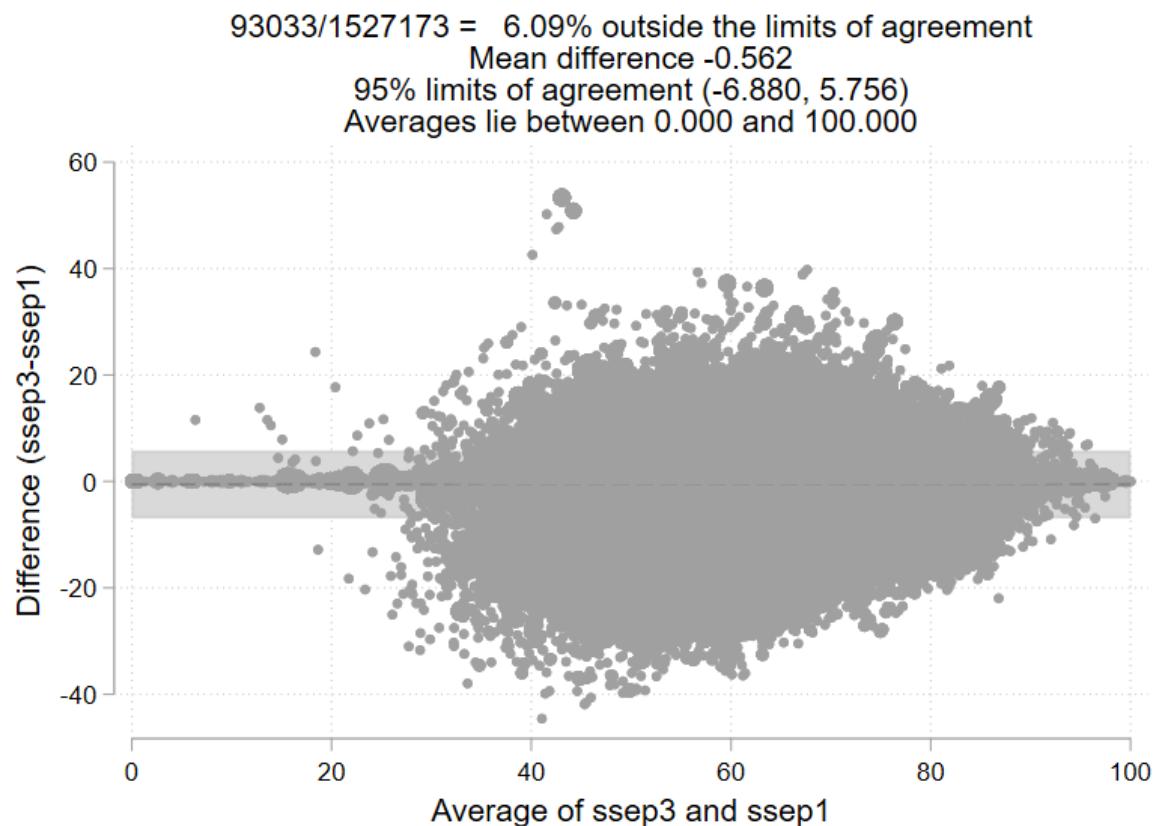
Swiss-SEP 2.0 - deciles		Swiss-SEP 3.0 - deciles								Total
		1	2	3	4	5	6	7	8	
1	68,628	33,911	20,868	13,355	7,906	4,548	2,209	955	152,718	
2	44,710	28,887	25,812	20,181	14,325	9,677	5,633	2,507	152,717	
3	20,383	37,599	24,137	21,690	18,351	13,677	9,562	4,882	152,718	
4	8,808	27,877	29,917	21,365	20,644	17,886	13,133	8,367	152,739	
5	5,394	10,882	28,864	27,550	21,343	20,266	17,411	12,875	152,695	
6	2,472	6,903	10,954	27,974	28,901	21,686	21,510	17,714	152,717	
7	1,257	3,908	6,563	10,837	24,934	33,422	23,358	23,917	152,718	
8	663	1,861	3,837	6,536	9,775	19,497	38,918	27,902	152,721	
9	296	649	1,320	2,495	5,012	8,997	14,783	41,192	152,722	
10	108	242	442	735	1,537	3,051	6,200	12,411	152,708	
Total	152,719	152,719	152,714	152,718	152,728	152,707	152,717	152,722	1,527,173	
Swiss-SEP 2.0 - deciles		Swiss-SEP 3.0 - deciles								
		9	10	Total						
1		300	38	152,718						
2		784	201	152,717						
3		2,074	363	152,718						
4		3,958	784	152,739						
5		6,647	1,463	152,695						
6		11,391	3,212	152,717						
7		18,333	6,189	152,718						
8		28,982	14,750	152,721						
9		43,571	34,407	152,722						
10		36,672	91,310	152,708						
Total	152,712	152,717	1,527,173							

3.3 Bland Altman plots of diffs

3.3.1 SEP2 vs. SEP1



3.3.2 SEP3 vs. SEP1



4 Tables

4.1 Old index

Characteristic	levels	1	5	10	Total
Gender	Male	49968 (48.5)	42903 (47.4)	33836 (47.3)	424130 (47.5)
	Female	53047 (51.5)	47541 (52.6)	37669 (52.7)	467997 (52.5)
Age	19-34	26683 (25.9)	20790 (23.0)	12117 (16.9)	200604 (22.5)
	35-49	29196 (28.3)	25898 (28.6)	20871 (29.2)	255462 (28.6)
	50-64	25627 (24.9)	22774 (25.2)	19335 (27.0)	228477 (25.6)
	Above 65	21509 (20.9)	20982 (23.2)	19182 (26.8)	207584 (23.3)
Civil status	Single	26699 (25.9)	24463 (27.0)	17603 (24.6)	235941 (26.4)
	Married	59801 (58.1)	51439 (56.9)	44029 (61.6)	517255 (58.0)
	Widowed	6479 (6.3)	5600 (6.2)	3834 (5.4)	53453 (6.0)
	Divorced	10035 (9.7)	8942 (9.9)	6039 (8.4)	85477 (9.6)
	(Missing)	1 (0.0)	0 (0.0)	0 (0.0)	1 (0.0)
Nationality	Swiss	69806 (67.8)	72576 (80.2)	58776 (82.2)	703676 (78.9)
	Foreigner	33209 (32.2)	17868 (19.8)	12729 (17.8)	188451 (21.1)
Language	German	40440 (39.3)	54545 (60.3)	50657 (70.8)	518985 (58.2)
	French	33954 (33.0)	21221 (23.5)	14331 (20.0)	226063 (25.3)
	Italian	12965 (12.6)	7721 (8.5)	1153 (1.6)	69155 (7.8)
	Other language	15656 (15.2)	6957 (7.7)	5364 (7.5)	77924 (8.7)
Education	Primary education or less	38536 (37.4)	18785 (20.8)	5790 (8.1)	188309 (21.1)
	Upper secondary level	46775 (45.4)	46689 (51.6)	29278 (40.9)	434965 (48.8)
	Tertiary level	17704 (17.2)	24970 (27.6)	36437 (51.0)	268853 (30.1)
Professional status	Top management and independent professions	1282 (1.2)	1638 (1.8)	3660 (5.1)	20548 (2.3)
	Other self-employed	3530 (3.4)	2914 (3.2)	2348 (3.3)	29047 (3.3)
	Professionals and senior management	3511 (3.4)	5490 (6.1)	8537 (11.9)	60297 (6.8)
	Supervisors/low level management and skilled labour	23765 (23.1)	24116 (26.7)	14030 (19.6)	223131 (25.0)
	Unskilled employees and workers	7320 (7.1)	3022 (3.3)	736 (1.0)	31914 (3.6)
	In paid employment, not classified elsewhere	4102 (4.0)	2703 (3.0)	1453 (2.0)	26426 (3.0)
	Unemployed/job-seeking	3478 (3.4)	1986 (2.2)	1182 (1.7)	20377 (2.3)
	Not in paid employment (Missing)	26684 (25.9)	22589 (25.0)	18772 (26.3)	225064 (25.2)
	Urban	28855 (28.0)	23490 (26.0)	23357 (32.7)	249565 (28.0)
	Peri-urban	30685 (29.8)	40542 (44.8)	46993 (65.7)	408700 (45.8)
	Rural	43475 (42.2)	26412 (29.2)	1155 (1.6)	233862 (26.2)

4.2 New index

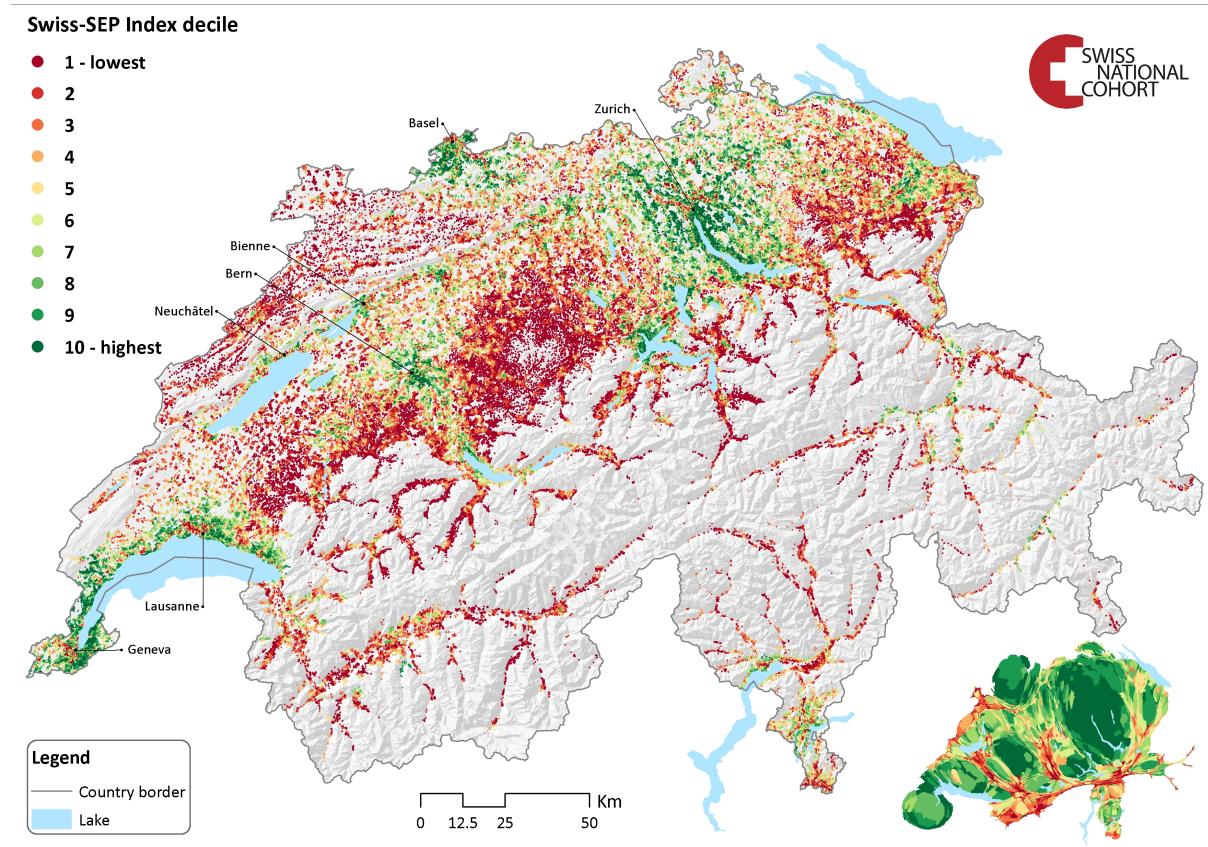
Characteristic	levels	1	5	10	Total
Gender	Male	53978 (48.0)	40053 (47.4)	41146 (47.5)	424130 (47.5)
	Female	58579 (52.0)	44374 (52.6)	45516 (52.5)	467997 (52.5)
Age	19-34	27621 (24.5)	19176 (22.7)	16808 (19.4)	200604 (22.5)
	35-49	30967 (27.5)	23918 (28.3)	26062 (30.1)	255462 (28.6)
	50-64	27659 (24.6)	21810 (25.8)	22465 (25.9)	228477 (25.6)
	Above 65	26310 (23.4)	19523 (23.1)	21327 (24.6)	207584 (23.3)
Civil status	Single	27506 (24.4)	22107 (26.2)	24839 (28.7)	235941 (26.4)
	Married	65548 (58.2)	49181 (58.3)	49833 (57.5)	517255 (58.0)
	Widowed	8129 (7.2)	5115 (6.1)	4444 (5.1)	53453 (6.0)
	Divorced	11373 (10.1)	8024 (9.5)	7546 (8.7)	85477 (9.6)
	(Missing)	1 (0.0)	0 (0.0)	0 (0.0)	1 (0.0)
Nationality	Swiss	76472 (67.9)	68497 (81.1)	69190 (79.8)	703676 (78.9)
	Foreigner	36085 (32.1)	15930 (18.9)	17472 (20.2)	188451 (21.1)
Language	German	41423 (36.8)	52094 (61.7)	56743 (65.5)	518985 (58.2)
	French	42044 (37.4)	18554 (22.0)	19876 (22.9)	226063 (25.3)
	Italian	11885 (10.6)	7625 (9.0)	2942 (3.4)	69155 (7.8)
	Other language	17205 (15.3)	6154 (7.3)	7101 (8.2)	77924 (8.7)
Education	Primary education or less	44688 (39.7)	17422 (20.6)	6381 (7.4)	188309 (21.1)
	Upper secondary level	50480 (44.8)	44209 (52.4)	34142 (39.4)	434965 (48.8)
	Tertiary level	17389 (15.4)	22796 (27.0)	46139 (53.2)	268853 (30.1)
Professional status	Top management and independent professions	1250 (1.1)	1581 (1.9)	4511 (5.2)	20548 (2.3)
	Other self-employed	3462 (3.1)	2771 (3.3)	2867 (3.3)	29047 (3.3)
	Professionals and senior management	3136 (2.8)	5018 (5.9)	11477 (13.2)	60297 (6.8)
	Supervisors/low level management and skilled labour	24915 (22.1)	22759 (27.0)	17023 (19.6)	223131 (25.0)
	Unskilled employees and workers	8702 (7.7)	2831 (3.4)	744 (0.9)	31914 (3.6)
	In paid employment, not classified elsewhere	4199 (3.7)	2547 (3.0)	1775 (2.0)	26426 (3.0)
	Unemployed/job-seeking	3672 (3.3)	1801 (2.1)	1575 (1.8)	20377 (2.3)
	Not in paid employment (Missing)	31174 (27.7)	21082 (25.0)	21381 (24.7)	225064 (25.2)
	Urban	32047 (28.5)	24037 (28.5)	25309 (29.2)	255323 (28.6)
	Peri-urban	35834 (31.8)	20315 (24.1)	34765 (40.1)	249565 (28.0)
	Rural	31357 (27.9)	37340 (44.2)	50607 (58.4)	408700 (45.8)
		45366 (40.3)	26772 (31.7)	1290 (1.5)	233862 (26.2)

4.3 Hybrid index

Characteristic	levels	1	5	10	Total
Gender	Male	49782 (48.6)	41660 (47.3)	36229 (47.3)	424130 (47.5)
	Female	52601 (51.4)	46325 (52.7)	40309 (52.7)	467997 (52.5)
Age	19-34	26569 (26.0)	20018 (22.8)	13510 (17.7)	200604 (22.5)
	35-49	30416 (29.7)	25099 (28.5)	21905 (28.6)	255462 (28.6)
	50-64	25016 (24.4)	22338 (25.4)	20522 (26.8)	228477 (25.6)
	Above 65	20382 (19.9)	20530 (23.3)	20601 (26.9)	207584 (23.3)
Civil status	Single	25912 (25.3)	23574 (26.8)	19571 (25.6)	235941 (26.4)
	Married	60671 (59.3)	50077 (56.9)	46283 (60.5)	517255 (58.0)
	Widowed	6156 (6.0)	5561 (6.3)	4120 (5.4)	53453 (6.0)
	Divorced	9643 (9.4)	8773 (10.0)	6564 (8.6)	85477 (9.6)
	(Missing)	1 (0.0)	0 (0.0)	0 (0.0)	1 (0.0)
Nationality	Swiss	69874 (68.2)	70681 (80.3)	62514 (81.7)	703676 (78.9)
	Foreigner	32509 (31.8)	17304 (19.7)	14024 (18.3)	188451 (21.1)
Language	German	40613 (39.7)	52825 (60.0)	53580 (70.0)	518985 (58.2)
	French	34020 (33.2)	20684 (23.5)	15712 (20.5)	226063 (25.3)
	Italian	12614 (12.3)	7659 (8.7)	1355 (1.8)	69155 (7.8)
	Other language	15136 (14.8)	6817 (7.7)	5891 (7.7)	77924 (8.7)
Education	Primary education or less	37232 (36.4)	18745 (21.3)	6134 (8.0)	188309 (21.1)
	Upper secondary level	46845 (45.8)	45382 (51.6)	31333 (40.9)	434965 (48.8)
	Tertiary level	18306 (17.9)	23858 (27.1)	39071 (51.0)	268853 (30.1)
Professional status	Top management and independent professions	1320 (1.3)	1582 (1.8)	3833 (5.0)	20548 (2.3)
	Other self-employed	3480 (3.4)	2872 (3.3)	2491 (3.3)	29047 (3.3)
	Professionals and senior management	3599 (3.5)	5233 (5.9)	9250 (12.1)	60297 (6.8)
	Supervisors/low level management and skilled labour	24398 (23.8)	23411 (26.6)	15025 (19.6)	223131 (25.0)
	Unskilled employees and workers	7165 (7.0)	3000 (3.4)	749 (1.0)	31914 (3.6)
	In paid employment, not classified elsewhere	4005 (3.9)	2648 (3.0)	1545 (2.0)	26426 (3.0)
	Unemployed/job-seeking	3319 (3.2)	1981 (2.3)	1293 (1.7)	20377 (2.3)
	Not in paid employment (Missing)	25702 (25.1)	22239 (25.3)	20098 (26.3)	225064 (25.2)
	Level of urbanisation	29395 (28.7)	25019 (28.4)	22254 (29.1)	255323 (28.6)
	Urban	27683 (27.0)	22694 (25.8)	26015 (34.0)	249565 (28.0)
	Peri-urban	30417 (29.7)	39056 (44.4)	49218 (64.3)	408700 (45.8)
	Rural	44283 (43.3)	26235 (29.8)	1305 (1.7)	233862 (26.2)

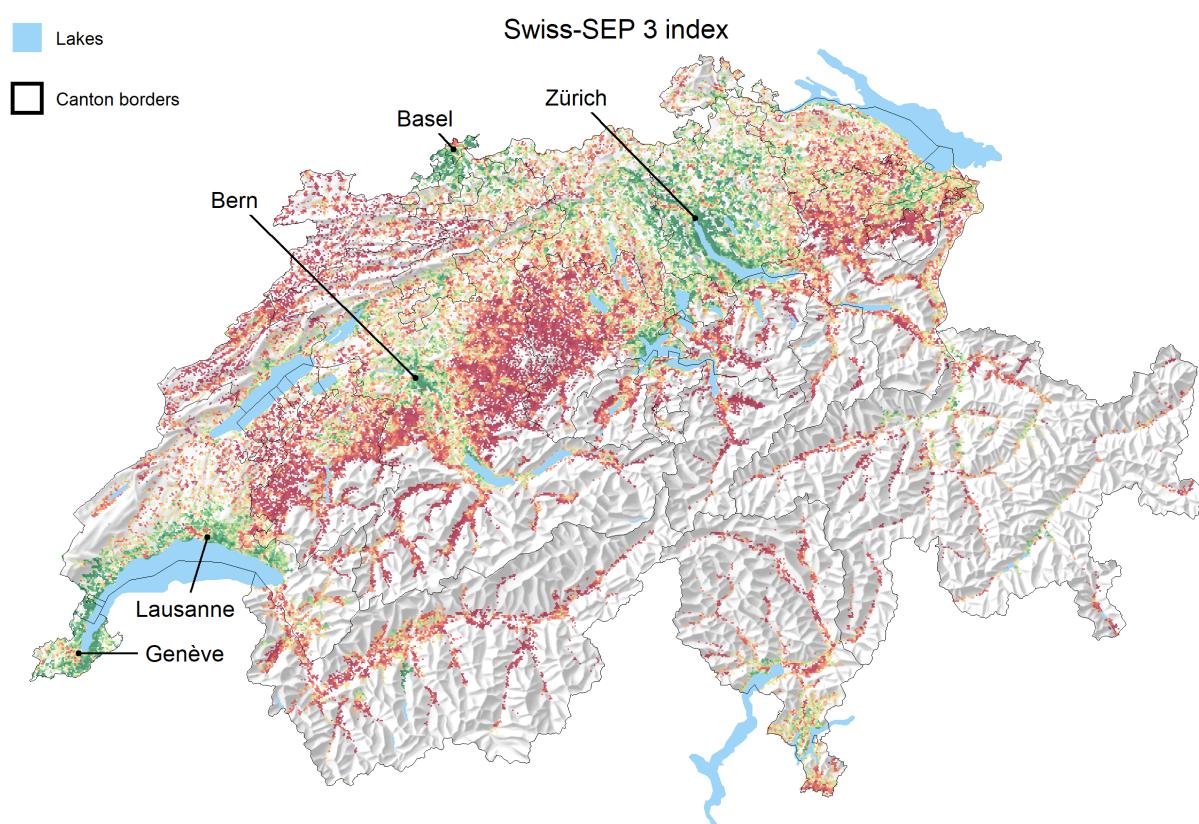
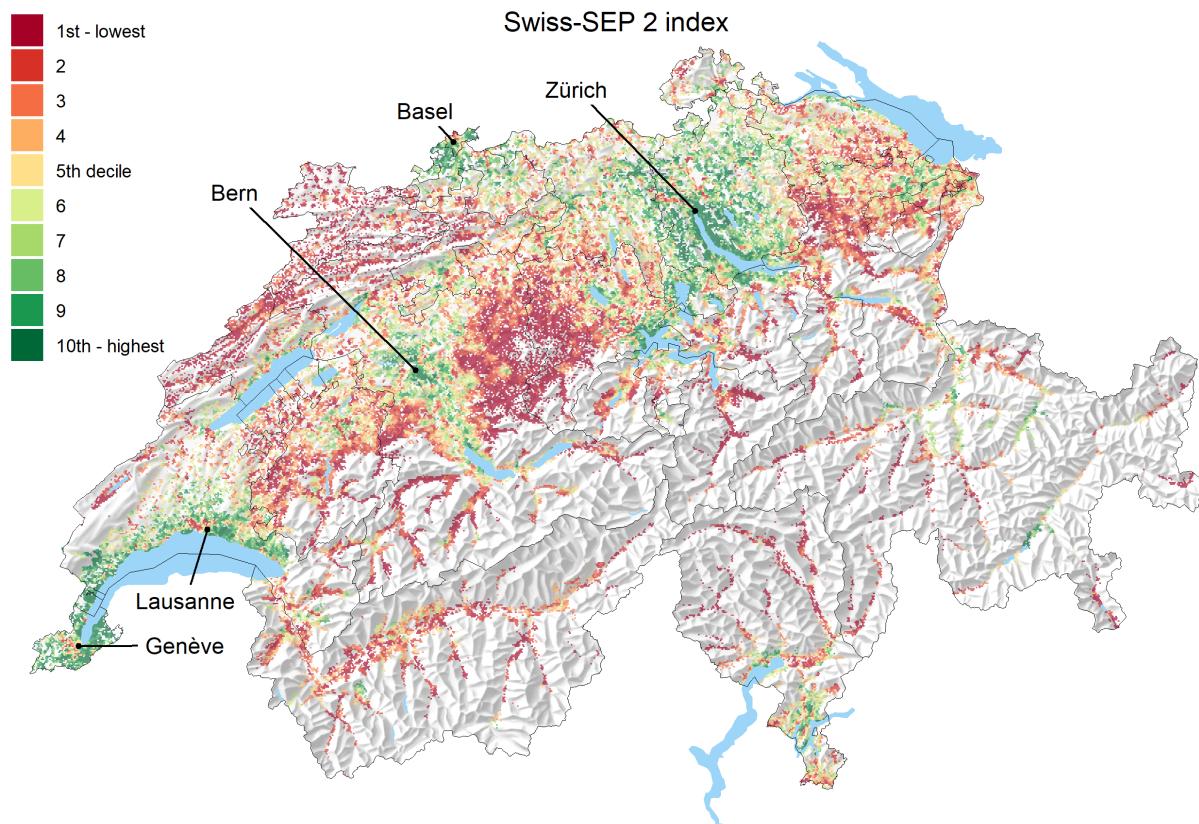
5 Maps

5.1 Original map

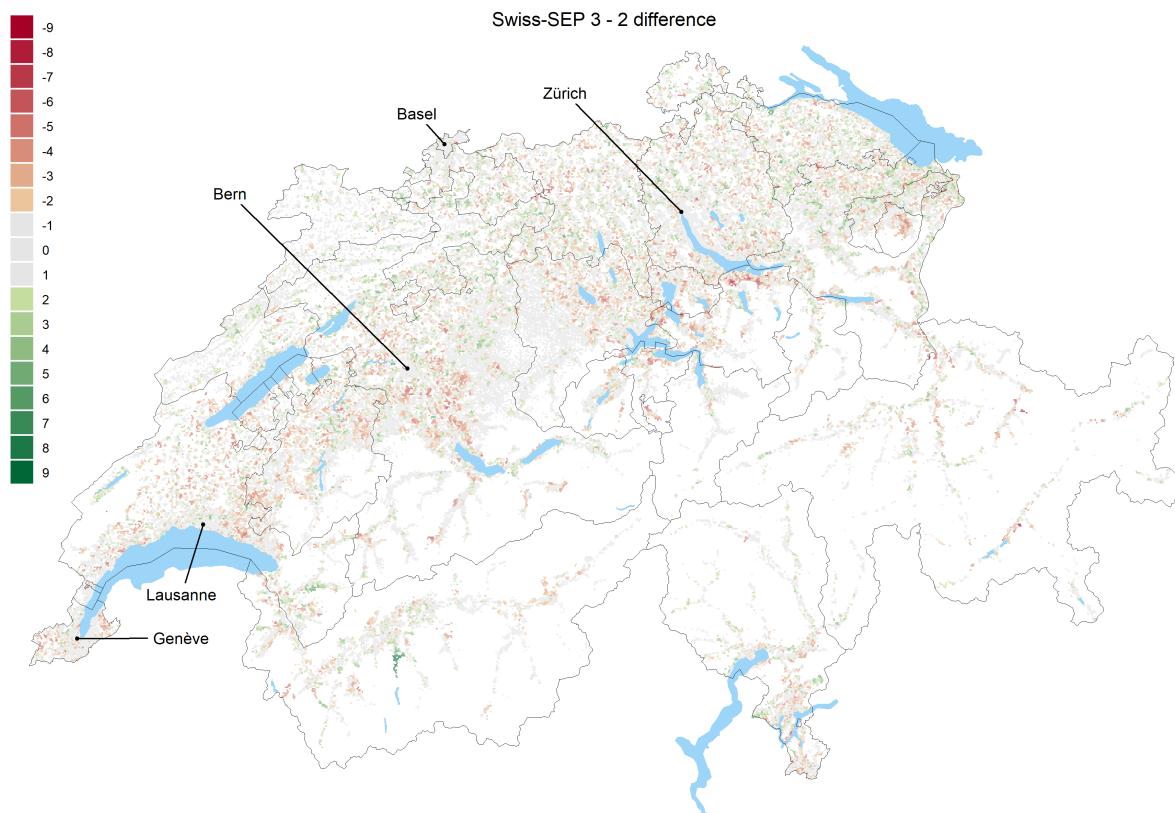


5.2 SEP 2 & 3 index

Using hexagonal grid 500m size.

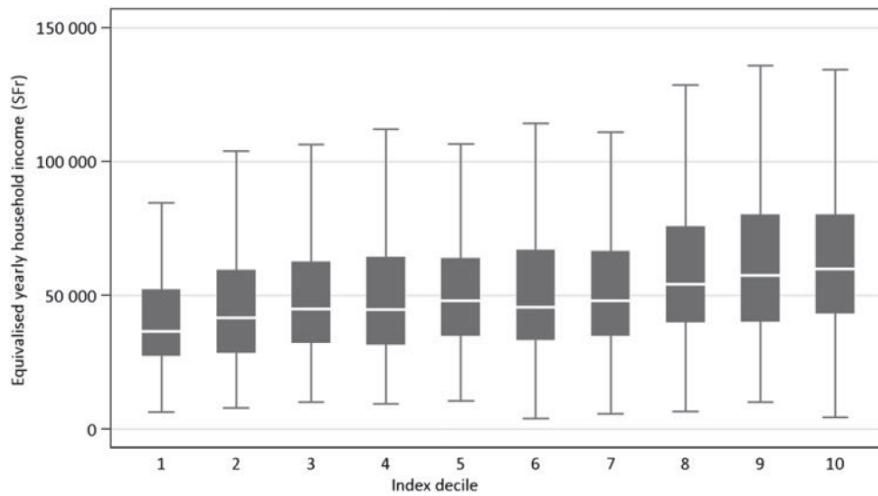


5.3 Differences

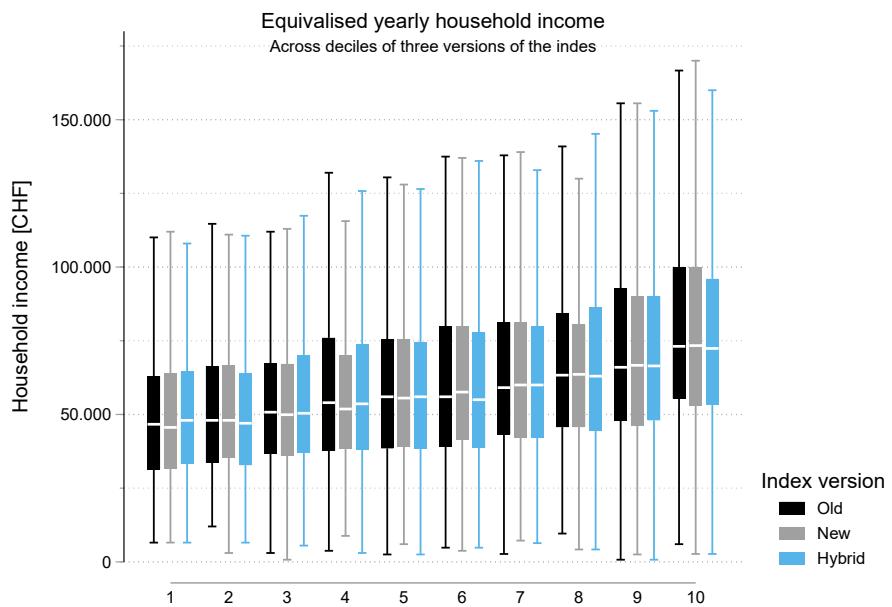


6 Validation - SHP data

6.1 Income graph - original



6.2 Income graph - new indices



6.3 Financial variables table - original

Characteristic	Index decile			Total N (%)	p Value
	1 N (%)	5 N (%)	10 N (%)		
Number of households	437 (100.0)	447 (100.0)	426 (100.0)	4460 (100.0)	—
Mean yearly equivalised* household net income in SFr (SD)	42 329 (21 253)	54 785 (33 488)	72 074 (56 796)	55 372 (38 781)	<0.0001
Saving at least 100 SFr/month					
No answer/does not know	4 (0.9)	5 (1.1)	6 (1.4)	54 (1.2)	<0.0001
Yes	329 (75.3)	366 (81.9)	363 (85.2)	3629 (81.4)	
No	104 (23.8)	76 (17.0)	57 (13.4)	777 (17.4)	
Reason why not saving at least 100 SFr/month					
Inapplicable	333 (76.2)	371 (83.0)	369 (86.6)	3683 (82.6)	<0.0001
Because you cannot afford it	88 (20.1)	66 (14.8)	47 (11.0)	642 (14.4)	
For another reason	16 (3.7)	10 (2.2)	10 (2.3)	135 (3.0)	
Voluntary private pension scheme					
No answer/does not know	9 (2.1)	8 (1.8)	4 (0.9)	67 (1.5)	<0.0001
Yes	210 (48.1)	266 (59.5)	266 (62.4)	2581 (57.9)	
No	218 (49.9)	173 (38.7)	156 (36.6)	1812 (40.6)	
Reason why no voluntary private pension scheme					
Inapplicable	219 (50.1)	274 (61.3)	270 (63.4)	2648 (59.4)	<0.0001
No answer/does not know	1 (0.2)	0 (0.0)	2 (0.5)	25 (0.6)	
Because you cannot afford it	81 (18.5)	53 (11.9)	30 (7.0)	553 (12.4)	
For another reason	136 (31.1)	120 (26.8)	124 (29.1)	1234 (27.7)	
Reception of financial help					
No answer/does not know	1 (0.2)	5 (1.1)	1 (0.2)	23 (0.5)	0.002
Yes	102 (23.3)	75 (16.8)	56 (13.1)	765 (17.2)	
No	334 (76.4)	367 (82.1)	369 (86.6)	3672 (82.3)	
Assessment of household income and expenses					
No answer/does not know	2 (0.5)	3 (0.7)	7 (1.6)	38 (0.9)	<0.0001
Your household can save money	189 (43.2)	233 (52.1)	239 (56.1)	2262 (50.7)	
Your household spends what it earns	212 (48.5)	170 (38.0)	152 (35.7)	1821 (40.8)	
Your household eats into its assets and savings	27 (6.2)	39 (8.7)	23 (5.4)	296 (6.6)	
Your household gets into debt	7 (1.6)	2 (0.4)	5 (1.2)	43 (1.0)	
Financial situation manageable, mean (SD)†	6.6 (2.6)	7.5 (2.3)	8.0 (2.1)	7.3 (2.3)	<0.0001

6.4 Financial variables table - 1.0

Swiss-SEP 1.0 - deciles	mean(i13eqon)
1	50,686
5	61,177
10	85,368
Total	65,335

Swiss-SEP 1.0 - deciles	mean(h13i51)
1	7
5	7
10	8
Total	7

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,303

Number of obs = 2,303
Population size = 2,343,6978
Design df = 2,302

Savings min. 500 SFrs monthly	Swiss-SEP 1.0 - deciles			
	1	5	10	Total
no answe	22.92 2.959	19.97 2.442	17.41 2.319	60.31 2.573
yes	356.2 45.97	482.3 58.97	535.1 71.25	1374 58.61
no	395.7 51.07	315.6 38.59	198.5 26.43	909.8 38.82
Total	774.8 100	817.9 100	751 100	2344 100

Key: Weighted count
Column percentage

Pearson:
Uncorrected chi2(4) = 100.2160
Design-based F(3.99, 9175.15) = 18.4581 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,303

Number of obs = 2,303
Population size = 2,343,6978
Design df = 2,302

Reason why no savings min. 500 Sfrs monthly	Swiss-SEP 1.0 - deciles			
	1	5	10	Total
inapplic	379.1 48.93	502.3 61.41	552.5 73.57	1434 61.18
no answe	2.482 .3203	0 0	0 0	2.482 .1059
no answe	0	.178	0	.178

	0	.0218	0	.0076
because	331.9	239.8	146.3	718
	42.84	29.32	19.48	30.63
for anot	61.29	75.65	52.21	189.1
	7.911	9.249	6.952	8.07
Total	774.8	817.9	751	2344
	100	100	100	100

Key: Weighted count
Column percentage

Pearson:

Uncorrected $\chi^2(8)$ = 112.4932
Design-based $F(6.72, 15476.96) = 10.7742$ P = 0.0000

Savings into 3rd pillar	Swiss-SEP 1.0 - deciles			Total
	1	5	10	
does not know	18 2.42	8 0.97	8 1.10	34 1.48
yes	379 50.94	500 60.31	448 61.37	1,327 57.62
no	347 46.64	321 38.72	274 37.53	942 40.90
Total	744 100.00	829 100.00	730 100.00	2,303 100.00

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,303

Number of obs = 2,303
Population size = 2,343.6978
Design df = 2,302

Savings into 3rd pillar	Swiss-SEP 1.0 - deciles			
	1	5	10	Total
does not	20.06 2.589	10.51 1.286	9.274 1.235	39.85 1.7
yes	372.5 48.07	493 60.27	469.2 62.47	1335 56.94
no	382.3 49.34	314.4 38.44	272.5 36.29	969.2 41.36
Total	774.8 100	817.9 100	751 100	2344 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 39.2960
Design-based F(3.97, 9148.38) = 7.2269 P = 0.0000

Reasons why no savings into 3rd pillar	Swiss-SEP 1.0 - deciles				Total
	1	5	10		
inapplicable	397 53.36	508 61.28	456 62.47		1,361 59.10
no answer / doesn't k	9 1.21	3 0.36	1 0.14		13 0.56
because you cannot af	134 18.01	84 10.13	41 5.62		259 11.25
for another reason	204 27.42	234 28.23	232 31.78		670 29.09
Total	744 100.00	829 100.00	730 100.00		2,303 100.00

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,303

Number of obs = 2,303
Population size = 2,343.6978
Design df = 2,302

Reasons why no savings into 3rd pillar	Swiss-SEP 1.0 - deciles				Total
	1	5	10		
inapplic	392.5 50.66	503.5 61.56	478.4 63.71	1374 58.64	

no answe	12.5 1.613	2.29 .28	1.126 .15	15.92 .6791
because	157 20.27	84.69 10.35	42.19 5.618	283.9 12.11
for anot	212.8 27.46	227.5 27.81	229.2 30.52	669.4 28.56
Total	774.8 100	817.9 100	751 100	2344 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(6) = 98.3777
Design-based F(5.96, 13716.23) = 13.2482 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,303

Number of obs = 2,303
Population size = 2,343.6978
Design df = 2,302

Financial help: health insurance	Swiss-SEP 1.0 - deciles			
	1	5	10	Total
inaplica	8.841 1.141	7.444 .9101	4.72 .6285	21.01 .8962
yes	211.1 27.25	172 21.03	100.6 13.39	483.7 20.64
no	554.8 71.61	638.5 78.06	645.7 85.98	1839 78.47
Total	774.8 100	817.9 100	751 100	2344 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 45.9477
Design-based F(3.91, 8991.39) = 8.3715 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,303

Number of obs = 2,303
Population size = 2,343.6978
Design df = 2,302

Income: Assessmen t of income and expenses	Swiss-SEP 1.0 - deciles			
	1	5	10	Total
inaplica	8.465 1.093	11.05 1.351	9.192 1.224	28.71 1.225
your hou	371.9 47.99	458.3 56.03	466.7 62.15	1297 55.33
your hou	302.2 39	271.2 33.15	200.5 26.7	773.8 33.02
your hou	71.24 9.195	56.12 6.861	68.24 9.087	195.6 8.346
your hou	21.06 2.718	21.33 2.608	6.335 .8436	48.73 2.079
Total	774.8 100	817.9 100	751 100	2344 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(8) = 42.8296
Design-based F(7.87, 18106.59) = 3.8207 P = 0.0002

6.5 Financial variables table - 2.0

Swiss-SEP 2.0 - deciles	mean(i13eqon)
1	50,634
5	62,526
10	86,535
Total	66,721

Swiss-SEP 2.0 - deciles	mean(h13i51)
1	7
5	7
10	8
Total	7

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,462

Number of obs = 2,462
Population size = 2,489.8813
Design df = 2,461

Savings min. 500 SFrs monthly	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
no answe	28.72 3.377	10.5 1.34	22.4 2.618	61.62 2.475
yes	385.6 45.34	429 54.72	584.3 68.3	1399 56.18
no	436.1 51.28	344.5 43.94	248.8 29.08	1029 41.34
Total	850.4 100	784 100	855.5 100	2490 100

Key: Weighted count
Column percentage

Pearson:
Uncorrected chi2(4) = 98.9597
Design-based F(3.97, 9764.93) = 19.2013 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,462

Number of obs = 2,462
Population size = 2,489.8813
Design df = 2,461

Reason why no savings min. 500 Sfrs monthly	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
inapplic	414.3 48.72	439.5 56.06	606.7 70.92	1461 58.66
no answe	0 0	.9084 .1159	0 0	.9084 .0365
no answe	0	1.042	0	1.042

	0	.1329	0	.0419
because	353.3	272	185.7	810.9
	41.54	34.69	21.71	32.57
for anot	82.83	70.56	63.1	216.5
	9.74	9	7.376	8.695
Total	850.4	784	855.5	2490
	100	100	100	100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(8) = 96.2503
Design-based F(6.86, 16883.74) = 11.2097 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,462

Number of obs = 2,462
Population size = 2,489.8813
Design df = 2,461

Savings into 3rd pillar	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
does not	28.31 3.33	10.19 1.3	15.46 1.807	53.97 2.167
yes	404.8 47.6	471.6 60.15	532.6 62.26	1409 56.59
no	417.3 49.07	302.2 38.55	307.4 35.93	1027 41.24
Total	850.4 100	784 100	855.5 100	2490 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 46.6136
Design-based F(3.89, 9569.78) = 7.7240 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,462

Number of obs = 2,462
Population size = 2,489.8813
Design df = 2,461

Reasons why no savings into 3rd pillar	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
inapplic	433.1 50.93	481.8 61.45	548.1 64.07	1463 58.76
no answe	10.02 1.178	3.208 .4092	2.883 .337	16.11 .647
because	154.3 18.14	86.97 11.09	59 6.896	300.2 12.06
for anot	253 29.75	212 27.04	245.5 28.7	710.5 28.54
Total	850.4 100	784 100	855.5 100	2490 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(6) = 65.5004
Design-based F(5.85, 14402.96) = 8.6626 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,462

Number of obs = 2,462
Population size = 2,489.8813
Design df = 2,461

Financial help: health insurance	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
inaplica	6.669 .7842	2.915 .3718	8.635 1.009	18.22 .7317
yes	222.7 26.18	151.4 19.31	102.5 11.98	476.6 19.14
no	621.1 73.03	629.7 80.32	744.3 87.01	1995 80.13
Total	850.4 100	784 100	855.5 100	2490 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 57.0005
Design-based F(3.91, 9620.56) = 10.6407 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,462

Number of obs = 2,462
Population size = 2,489.8813
Design df = 2,461

Income: Assessment of income and expenses	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
inaplica	7.249 .8524	6.803 .8678	9.672 1.131	23.72 .9529
your hou	396.8 46.66	402.9 51.39	528.2 61.75	1328 53.33
your hou	349.2 41.06	286 36.47	239.2 27.97	874.4 35.12
your hou	69.9 8.22	74.79 9.54	72.41 8.465	217.1 8.72
your hou	27.28 3.207	13.54 1.727	5.913 .6912	46.73 1.877
Total	850.4 100	784 100	855.5 100	2490 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(8) = 55.6459
Design-based F(7.53, 18521.34) = 4.5232 P = 0.0000

6.6 Financial variables table - 3.0

Swiss-SEP 3.0 - deciles	mean(i13eqon)
1	52,544
5	60,833
10	83,877
Total	65,492

Swiss-SEP 3.0 - deciles	mean(h13i51)
1	7
5	7
10	8
Total	7

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,341

Number of obs = 2,341
Population size = 2,334.0495
Design df = 2,340

Savings min. 500 SFrs monthly	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
no answe	20.47 2.618	13.64 1.755	15.18 1.959	49.29 2.112
yes	372.3 47.6	450.5 57.96	547.5 70.68	1370 58.71
no	389.3 49.78	313.1 40.28	212 27.36	914.4 39.18
Total	782.1 100	777.3 100	774.7 100	2334 100

Key: Weighted count
Column percentage

Pearson:
Uncorrected chi2(4) = 87.4534
Design-based F(3.95, 9250.93) = 17.4313 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,341

Number of obs = 2,341
Population size = 2,334.0495
Design df = 2,340

Reason why no savings min. 500 Sfrs monthly	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
inapplic	392.7 50.22	464.2 59.72	562.7 72.64	1420 60.82
no answe	2.482 .3174	0 0	0 0	2.482 .1063
because	323.7	233	157.3	714

	41.39	29.98	20.31	30.59
for anot	63.15	80.1	54.67	197.9
	8.075	10.31	7.057	8.48
Total	782.1	777.3	774.7	2334
	100	100	100	100

Key: Weighted count
 Column percentage

Pearson:

Uncorrected chi2(6) = 99.3459
 Design-based F(5.54, 12966.35) = 10.9368 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,341

Number of obs = 2,341
Population size = 2,334.0495
Design df = 2,340

Savings into 3rd pillar	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
does not	24.22 3.097	10.26 1.319	9.274 1.197	43.75 1.875
yes	388.7 49.7	464.6 59.77	480.5 62.02	1334 57.15
no	369.1 47.2	302.4 38.91	284.9 36.78	956.5 40.98
Total	782.1 100	777.3 100	774.7 100	2334 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 32.7882
Design-based F(3.99, 9343.24) = 6.3289 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,341

Number of obs = 2,341
Population size = 2,334.0495
Design df = 2,340

Reasons why no savings into 3rd pillar	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
inapplic	412.9 52.8	474.9 61.09	489.8 63.22	1378 59.02
no answe	10.35 1.323	3.826 .4922	1.822 .2352	15.99 .6853
because	154.2 19.72	70 9.005	46.62 6.017	270.8 11.6
for anot	204.6 26.16	228.6 29.41	236.5 30.53	669.7 28.69
Total	782.1 100	777.3 100	774.7 100	2334 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(6) = 88.1424
Design-based F(5.94, 13910.01) = 11.6292 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,341

Number of obs = 2,341
Population size = 2,334.0495
Design df = 2,340

Financial help: health insurance	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
inaplica	8.841 1.131	8.195 1.054	4.72 .6092	21.76 .9321
yes	211.9 27.09	158.8 20.43	97.47 12.58	468.2 20.06
no	561.3 71.78	610.3 78.51	672.5 86.81	1844 79.01
Total	782.1 100	777.3 100	774.7 100	2334 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 53.5953
Design-based F(3.90, 9132.52) = 9.5962 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,341

Number of obs = 2,341
Population size = 2,334.0495
Design df = 2,340

Income: Assessment of income and expenses	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
inaplica	9.365 1.197	10.71 1.377	9.964 1.286	30.03 1.287
your hou	376.5 48.14	450.5 57.95	475.7 61.4	1303 55.81
your hou	304.4 38.92	234.8 30.21	214 27.62	753.2 32.27
your hou	71.49 9.141	60.73 7.813	68.77 8.877	201 8.611
your hou	20.35 2.602	20.55 2.644	6.335 .8178	47.23 2.024
Total	782.1 100	777.3 100	774.7 100	2334 100

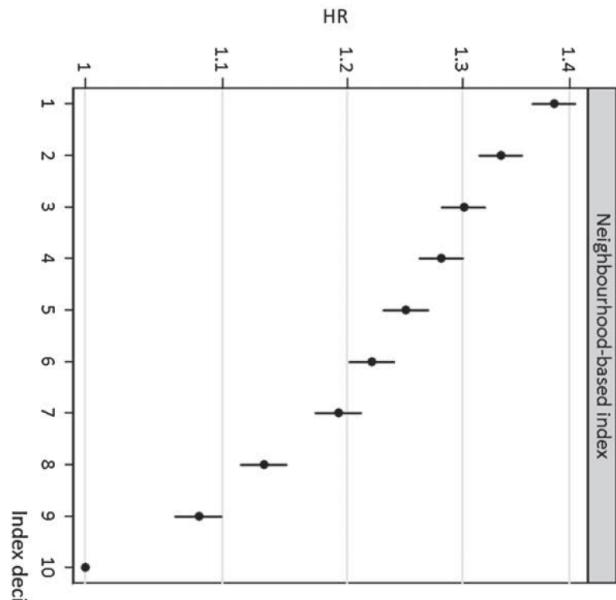
Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(8) = 39.6132
Design-based F(7.84, 18334.16) = 3.5356 P = 0.0005

7 Validation - SNC mortality

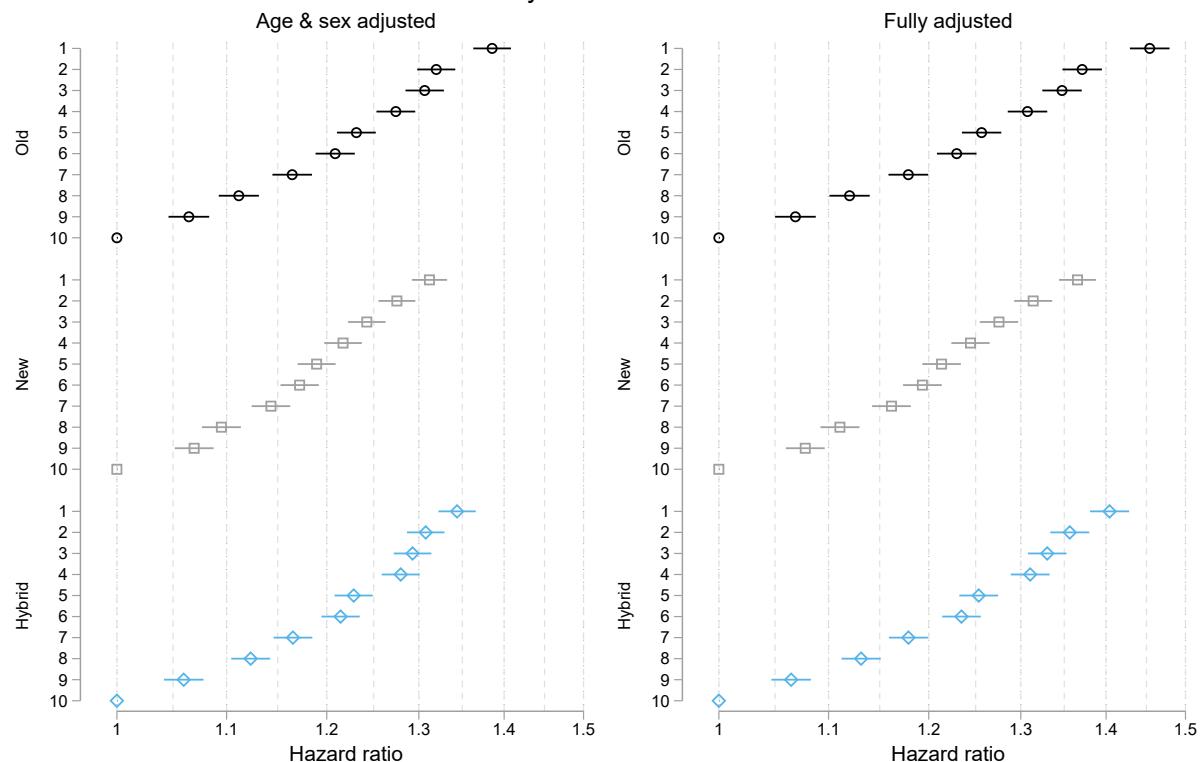
7.1 All cause mortality - original



Note: Calculations from 'old' SNC data from the **2001 - 2008 period**, as described in original paper!

7.2 All cause mortality - new indices

Hazard ratios of all cause mortality across deciles of three versions of the indices



Note: Results from Cox models. Calculations from 'new' SNC data from the **2012 - 2018 period!** 'Age & sex' - adjusted for age (via `stset`) and sex (as in original figure above); 'Adjusted' - additionally adjusted

for civil status, nationality, level of urbanization and language region. This is not the same adjustment as in
adjusted models in original papers since we are missing some crucial variables.

7.3 Cause specific mortality - original

Cause	Age and sex adjusted
	HR (95% CI)
All-causes	1.38 (1.36 to 1.41)
Lung cancer	1.83 (1.71 to 1.95)
Breast cancer	0.93 (0.85 to 1.02)
Prostate cancer	1.17 (1.07 to 1.28)
Cardiovascular diseases	1.48 (1.44 to 1.51)
Myocardial infarction	1.68 (1.57 to 1.80)
Stroke	1.28 (1.20 to 1.36)
Respiratory diseases	1.99 (1.87 to 2.12)
Traffic accidents	2.42 (1.94 to 3.01)
Suicide	0.86 (0.78 to 0.95)

7.4 Cause specific mortality - 1.0

	Age & sex HR	95% CI	Adjusted HR	95% CI
Lung cancer	1.93 (1.79, 2.08)		2.00 (1.84, 2.16)	
Breast can-r	1.09 (0.97, 1.22)		1.13 (1.00, 1.28)	
Prostate c-r	1.15 (1.03, 1.29)		1.18 (1.05, 1.33)	
Cardiovasc-r	1.49 (1.44, 1.54)		1.56 (1.51, 1.61)	
Myocardial-n	1.64 (1.48, 1.80)		1.79 (1.62, 1.99)	
Stroke	1.25 (1.14, 1.36)		1.29 (1.18, 1.42)	
Respiratory	1.81 (1.68, 1.94)		1.78 (1.65, 1.92)	
Traffic ac-s	1.80 (1.36, 2.39)		1.47 (1.09, 1.97)	
Suicide	1.32 (1.14, 1.51)		1.38 (1.19, 1.59)	

Note for both tables: HRs for the 10th (lowest SEP) decile compared to 1st (highest SEP). Breast and prostate cancer: for men and women respectively.

7.5 Cause specific mortality - 2.0 results

	Age & sex HR	95% CI	Adjusted HR	95% CI
Lung cancer	1.79 (1.67, 1.92)		1.84 (1.71, 1.98)	
Breast can-r	1.01 (0.91, 1.13)		1.05 (0.94, 1.17)	
Prostate c-r	1.13 (1.02, 1.26)		1.14 (1.02, 1.27)	
Cardiovasc-r	1.38 (1.34, 1.43)		1.44 (1.39, 1.48)	
Myocardial-n	1.53 (1.40, 1.67)		1.67 (1.52, 1.83)	
Stroke	1.25 (1.15, 1.35)		1.28 (1.18, 1.40)	
Respiratory	1.63 (1.53, 1.74)		1.60 (1.49, 1.72)	
Traffic ac-s	2.13 (1.59, 2.86)		1.80 (1.33, 2.43)	
Suicide	1.31 (1.15, 1.49)		1.37 (1.20, 1.57)	

Note for both tables: HRs for the 10th (lowest SEP) decile compared to 1st (highest SEP). Breast and prostate cancer: for men and women respectively.

7.6 Cause specific mortality - 3.0 results

	Age & sex HR	95% CI	Adjusted HR	95% CI
Lung cancer	1.82 (1.69, 1.96)		1.88 (1.74, 2.04)	
Breast can-r	1.04 (0.93, 1.17)		1.08 (0.95, 1.21)	
Prostate c-r	1.14 (1.02, 1.27)		1.16 (1.03, 1.30)	
Cardiovasc-r	1.44 (1.39, 1.49)		1.50 (1.45, 1.55)	
Myocardial-n	1.55 (1.41, 1.70)		1.68 (1.52, 1.86)	
Stroke	1.22 (1.12, 1.33)		1.26 (1.15, 1.38)	
Respiratory	1.72 (1.60, 1.85)		1.69 (1.57, 1.82)	
Traffic ac-s	1.89 (1.43, 2.51)		1.55 (1.15, 2.08)	
Suicide	1.29 (1.12, 1.48)		1.36 (1.18, 1.57)	

Note for both tables: HRs for the 10th (lowest SEP) decile compared to 1st (highest SEP). Breast and prostate cancer: for men and women respectively.