

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.

buildper2 — Building period (binary)

		Freq.	Percent	Valid	Cum.
Valid	0 Before 2000	1330347	86.35	86.35	86.35
	1 After 2000	210237	13.65	13.65	100.00
	Total	1540584	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	44.76	50.07
2	50.07	52.58	54.72
3	54.72	56.45	58.05
4	58.05	59.49	60.89
5	60.89	62.22	63.55
6	63.55	64.90	66.27
7	66.27	67.71	69.20
8	69.20	70.86	72.64
9	72.64	74.77	77.17
10	77.17	81.27	100.00
Total	0.00	63.50	100.00

3.2 Quantiles

Note that the deciles of third version in full dataset:

Swiss-SEP 3.0 - deciles	Freq.	Percent	Cum.
1	154,059	10.00	10.00
2	154,058	10.00	20.00
3	154,059	10.00	30.00
4	154,061	10.00	40.00
5	154,055	10.00	50.00
6	154,061	10.00	60.00
7	154,058	10.00	70.00
8	154,057	10.00	80.00
9	154,074	10.00	90.00
10	154,042	10.00	100.00
Total	1,540,584	100.00	

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

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

Swiss-SEP 3.0 - deciles	Freq.	Percent	Cum.
1	152,198	9.97	9.97
2	152,613	9.99	19.96
3	152,612	9.99	29.95
4	152,839	10.01	39.96
5	152,847	10.01	49.97
6	152,842	10.01	59.98
7	152,821	10.01	69.98
8	152,737	10.00	79.98
9	152,772	10.00	89.99
10	152,892	10.01	100.00

Total	1,527,173	100.00
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... This is expected behaviour since user dataset excludes buildings with different IDs but same coordinates.

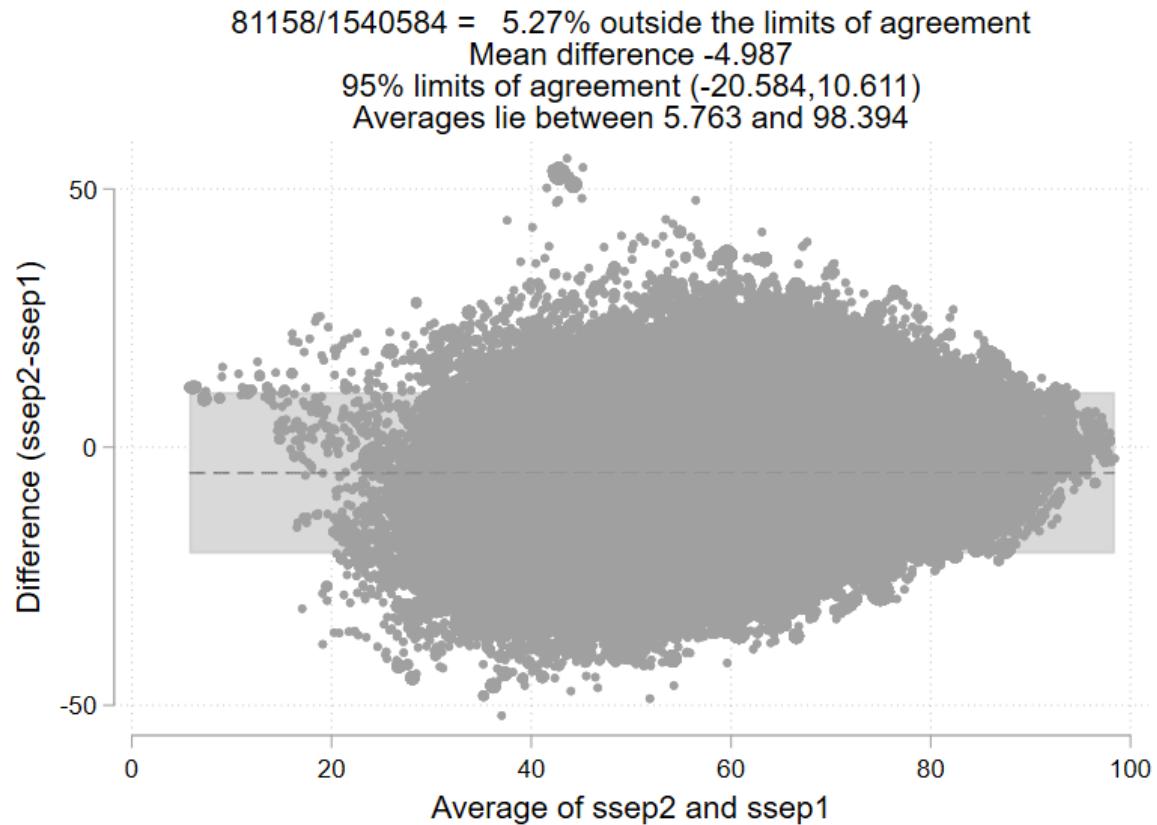
Some transitions happened:

Swiss-SEP 2.0 - deciles		Swiss-SEP 3.0 - deciles								Total
		1	2	3	4	5	6	7	8	
1	69,571	34,353	21,317	13,583	8,054	4,626	2,247	965	155,058	
2	45,064	29,146	26,050	20,388	14,494	9,780	5,698	2,524	154,139	
3	20,355	38,025	24,310	21,863	18,509	13,792	9,665	4,923	153,908	
4	8,844	27,964	30,189	21,503	20,854	18,031	13,269	8,462	153,922	
5	5,409	10,929	29,027	27,838	21,501	20,412	17,562	13,023	153,874	
6	2,485	6,953	10,974	28,115	29,171	21,880	21,660	17,896	153,858	
7	1,264	3,920	6,586	10,944	25,047	33,763	23,513	24,109	153,926	
8	662	1,872	3,845	6,568	9,886	19,649	39,291	28,136	153,974	
9	297	651	1,318	2,526	5,040	9,062	14,916	41,482	154,108	
10	108	245	443	733	1,549	3,066	6,237	12,537	153,817	
Total	154,059	154,058	154,059	154,061	154,055	154,061	154,058	154,057	1,540,584	

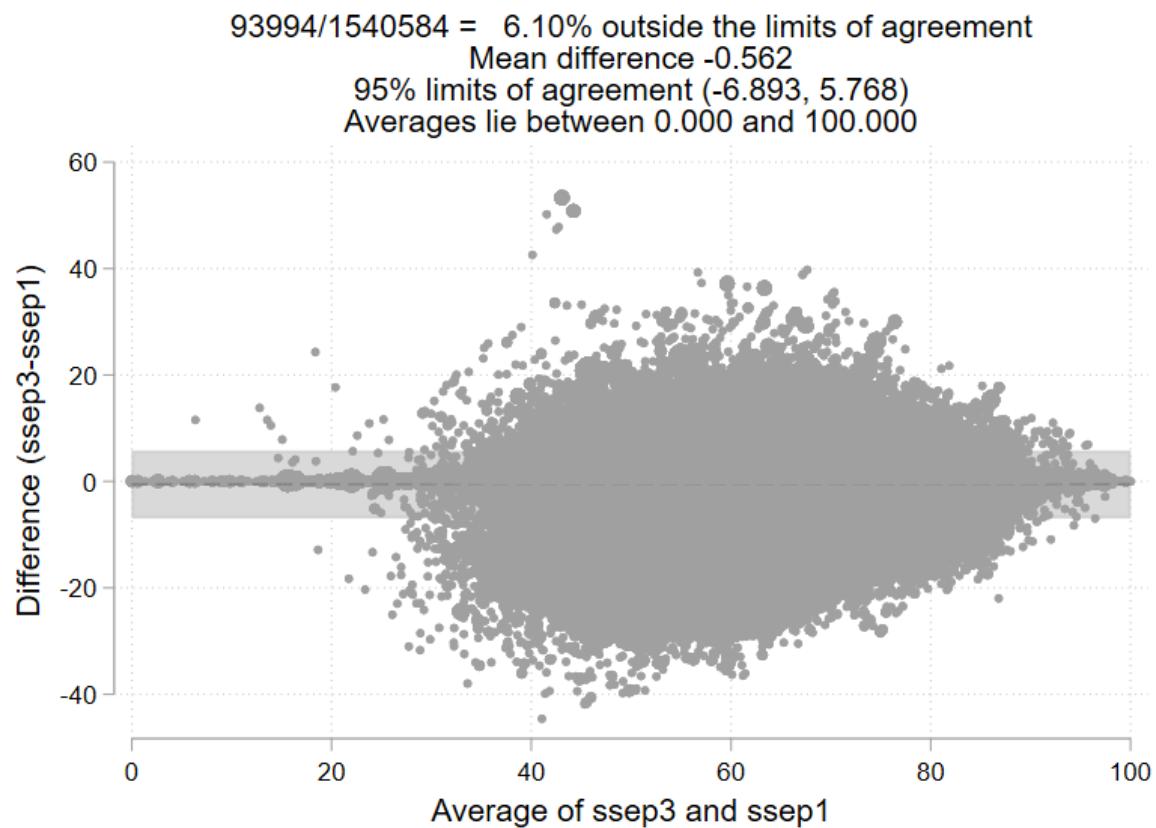
Swiss-SEP 2.0 - deciles		Swiss-SEP 3.0 - deciles			Total	
		9	10			
1	304	38	38	155,058		
2	794	201	184,139			
3	2,097	369	153,908			
4	4,014	792	153,922			
5	6,704	1,469	153,874			
6	11,885	3,239	153,858			
7	18,478	6,302	153,926			
8	29,234	14,881	153,974			
9	44,021	34,795	154,108			
10	36,943	91,956	153,817			
Total	154,074	154,042	1,540,584			

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 (55.7)	408700 (45.8)
	Rural	43475 (42.2)	26412 (29.2)	1155 (1.6)	233862 (26.2)

4.2 New index

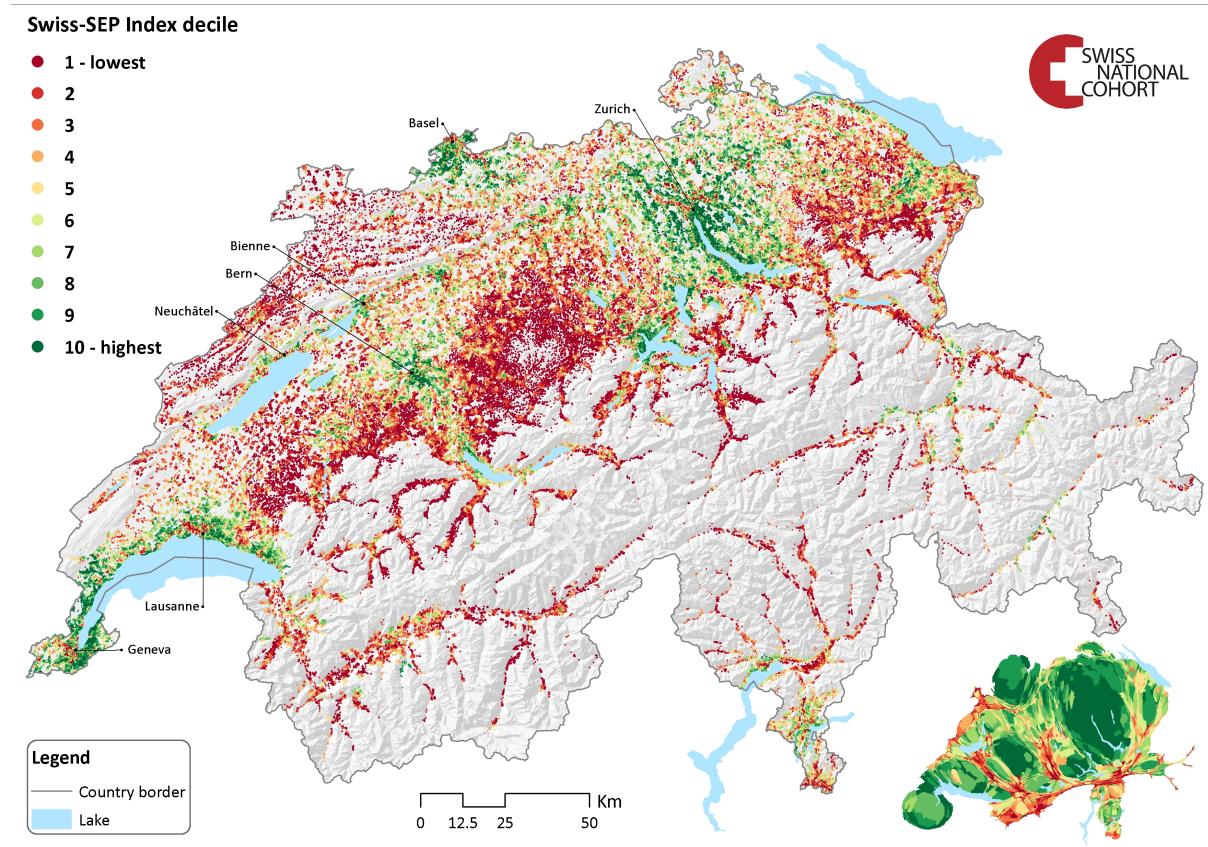
Characteristic	levels	1	5	10	Total
Gender	Male	53978 (48.0)	40053 (47.4)	41146 (47.5)	424130 (47.5)
	Female	58579 (52.0)	44374 (52.6)	45516 (52.5)	467997 (52.5)
Age	19-34	27621 (24.5)	19176 (22.7)	16808 (19.4)	200604 (22.5)
	35-49	30967 (27.5)	23918 (28.3)	26062 (30.1)	255462 (28.6)
	50-64	27659 (24.6)	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)
		32047 (28.5)	24037 (28.5)	25309 (29.2)	255323 (28.6)
Level of urbanisation	Urban	35834 (31.8)	20315 (24.1)	34765 (40.1)	249565 (28.0)
	Peri-urban	31357 (27.9)	37340 (44.2)	50607 (58.4)	408700 (45.8)
	Rural	45366 (40.3)	26772 (31.7)	1290 (1.5)	233862 (26.2)

4.3 Hybrid index

Characteristic	levels	1	5	10	Total
Gender	Male	49640 (48.6)	41702 (47.3)	36282 (47.4)	424130 (47.5)
	Female	52441 (51.4)	46392 (52.7)	40341 (52.6)	467997 (52.5)
Age	19-34	26502 (26.0)	20055 (22.8)	13527 (17.7)	200604 (22.5)
	35-49	30325 (29.7)	25122 (28.5)	21934 (28.6)	255462 (28.6)
	50-64	24948 (24.4)	22361 (25.4)	20545 (26.8)	228477 (25.6)
	Above 65	20306 (19.9)	20556 (23.3)	20617 (26.9)	207584 (23.3)
Civil status	Single	25847 (25.3)	23606 (26.8)	19591 (25.6)	235941 (26.4)
	Married	60479 (59.2)	50148 (56.9)	46339 (60.5)	517255 (58.0)
	Widowed	6135 (6.0)	5567 (6.3)	4123 (5.4)	53453 (6.0)
	Divorced	9619 (9.4)	8773 (10.0)	6570 (8.6)	85477 (9.6)
	(Missing)	1 (0.0)	0 (0.0)	0 (0.0)	1 (0.0)
Nationality	Swiss	69653 (68.2)	70766 (80.3)	62581 (81.7)	703676 (78.9)
	Foreigner	32428 (31.8)	17328 (19.7)	14042 (18.3)	188451 (21.1)
Language	German	40465 (39.6)	52918 (60.1)	53629 (70.0)	518985 (58.2)
	French	33941 (33.2)	20672 (23.5)	15738 (20.5)	226063 (25.3)
	Italian	12567 (12.3)	7678 (8.7)	1358 (1.8)	69155 (7.8)
	Other language	15108 (14.8)	6826 (7.7)	5898 (7.7)	77924 (8.7)
Education	Primary education or less	37132 (36.4)	18777 (21.3)	6144 (8.0)	188309 (21.1)
	Upper secondary level	46708 (45.8)	45453 (51.6)	31367 (40.9)	434965 (48.8)
	Tertiary level	18241 (17.9)	23864 (27.1)	39112 (51.0)	268853 (30.1)
Professional status	Top management and independent professions	1315 (1.3)	1586 (1.8)	3836 (5.0)	20548 (2.3)
	Other self-employed	3468 (3.4)	2873 (3.3)	2492 (3.3)	29047 (3.3)
	Professionals and senior management	3589 (3.5)	5232 (5.9)	9255 (12.1)	60297 (6.8)
	Supervisors/low level management and skilled labour	24320 (23.8)	23456 (26.6)	15043 (19.6)	223131 (25.0)
	Unskilled employees and workers	7148 (7.0)	3012 (3.4)	750 (1.0)	31914 (3.6)
	In paid employment, not classified elsewhere	3996 (3.9)	2654 (3.0)	1549 (2.0)	26426 (3.0)
	Unemployed/job-seeking	3313 (3.2)	1985 (2.3)	1295 (1.7)	20377 (2.3)
	Not in paid employment (Missing)	25620 (25.1)	22254 (25.3)	20123 (26.3)	225064 (25.2)
	Urban	27598 (27.0)	22692 (25.8)	26027 (34.0)	249565 (28.0)
	Peri-urban	30348 (29.7)	39132 (44.4)	49289 (64.3)	408700 (45.8)
	Rural	44135 (43.2)	26270 (29.8)	1307 (1.7)	233862 (26.2)

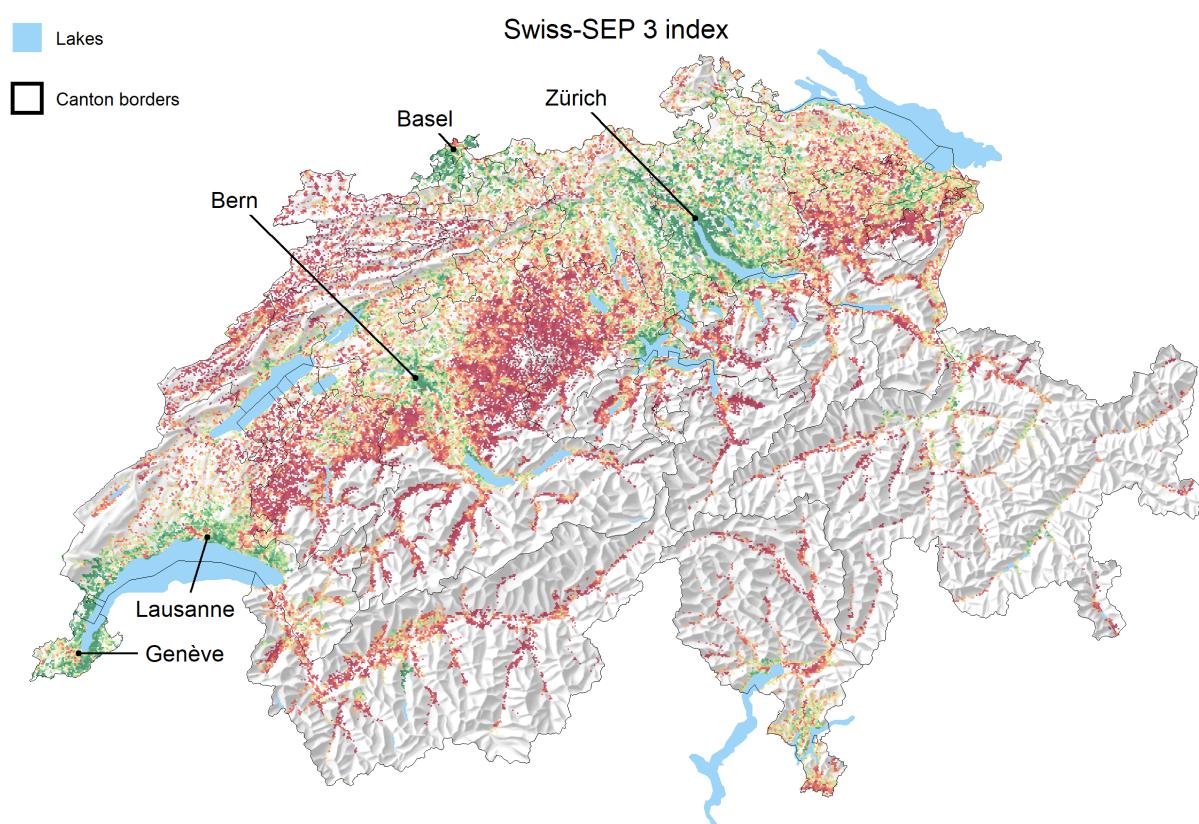
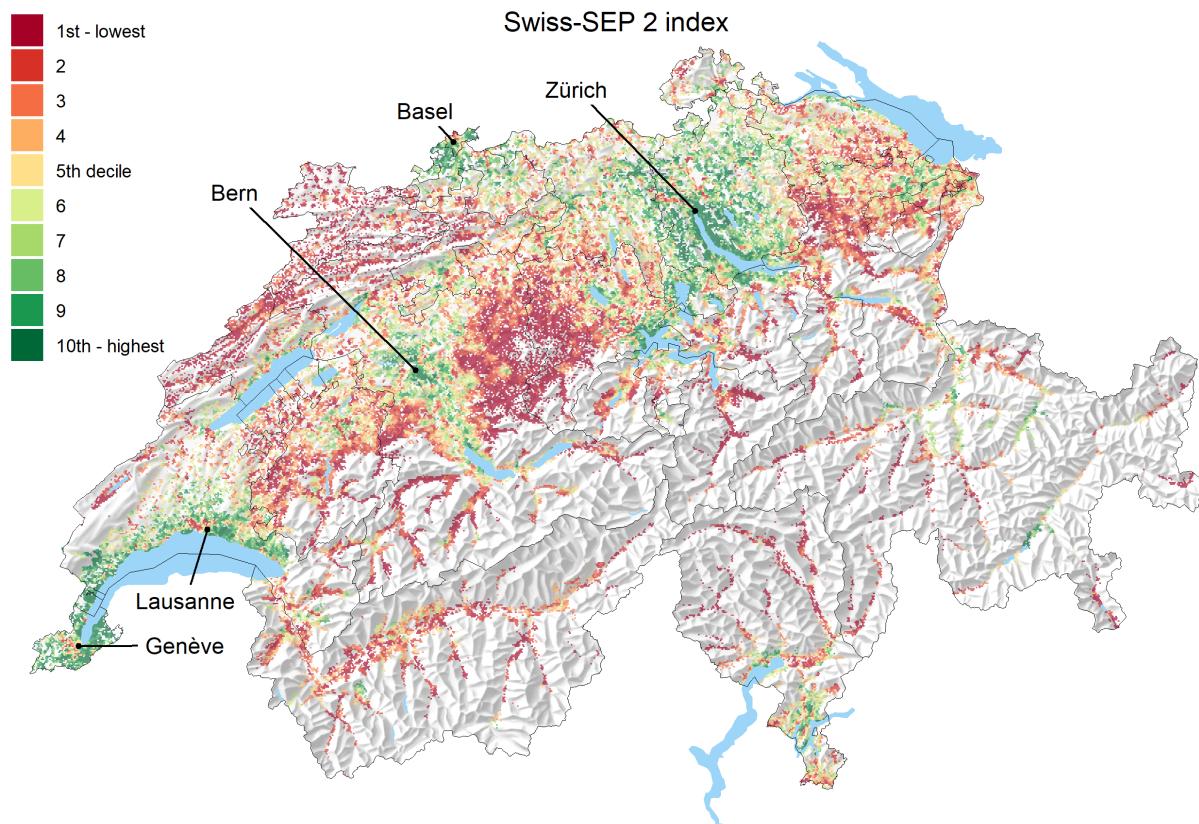
5 Maps

5.1 Original map

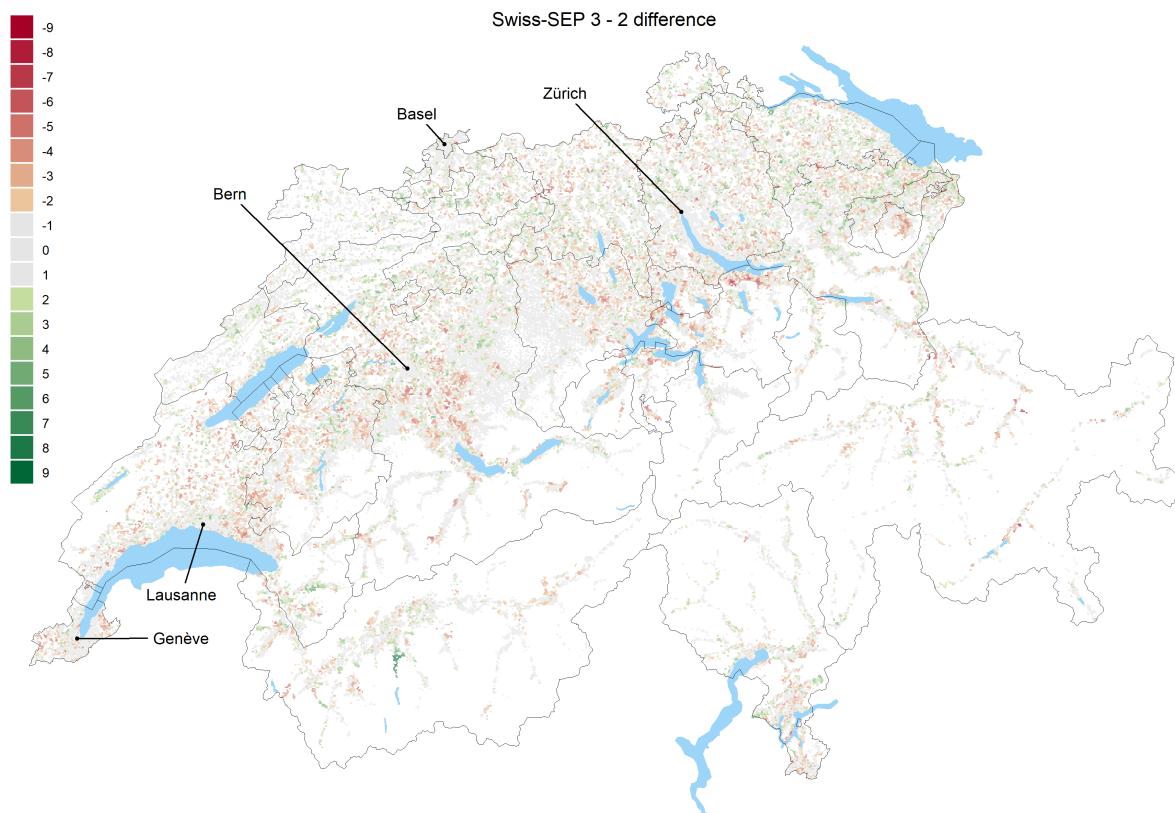


5.2 SEP 2 3 index

Using hexagonal grid 500m size.

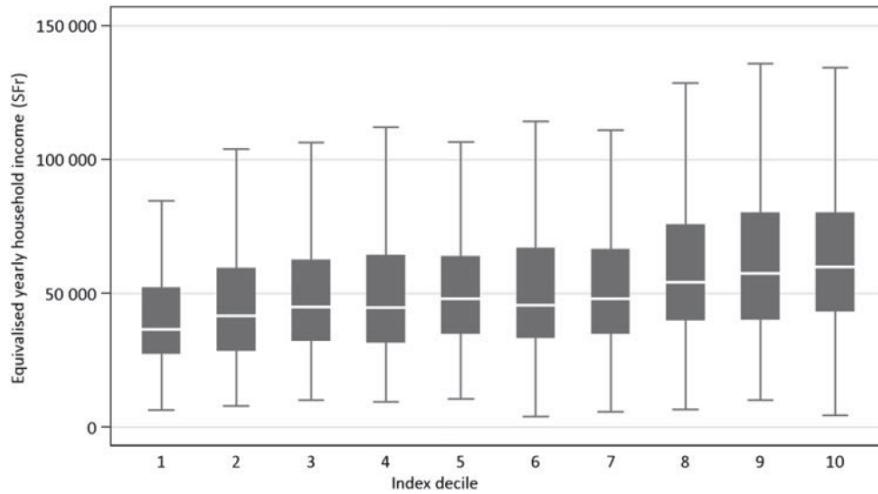


5.3 Differences

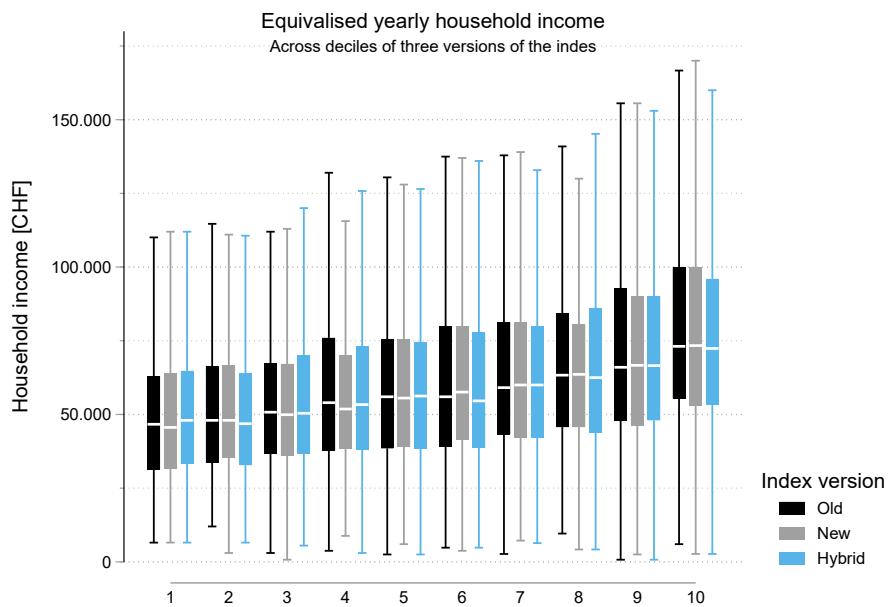


6 Validation - SHP data

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 $F(6.72, 15476.96) = 10.7742 \quad P = 0.0000$

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	52,625
5	60,891
10	83,877
Total	65,546

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 = 2,342

Number of obs = 2,342
Population size = 2,334,9153
Design df = 2,341

Savings min. 500 Sfrs monthly	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
no answe	20.47 2.626	13.64 1.748	15.18 1.959	49.29 2.111
yes	372.3 47.75	453.8 58.14	547.5 70.68	1374 58.83
no	386.9 49.63	313.1 40.12	212 27.36	912 39.06
Total	779.6 100	780.6 100	774.7 100	2335 100

Key: Weighted count
Column percentage

Pearson:
Uncorrected chi2(4) = 86.2689
Design-based F(3.95, 9254.72) = 17.1937 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,342

Number of obs = 2,342
Population size = 2,334,9153
Design df = 2,341

Reason why no savings min. 500 Sfrs monthly	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
inapplic	392.7 50.37	467.4 59.88	562.7 72.64	1423 60.94
no answe	2.482 .3183	0 0	0 0	2.482 .1063
because	321.3	233	157.3	711.6

	41.21	29.85	20.31	30.48
for anot	63.15	80.1	54.67	197.9
	8.1	10.26	7.057	8.477
Total	779.6	780.6	774.7	2335
	100	100	100	100

Key: Weighted count
 Column percentage

Pearson:

Uncorrected chi2(6) = 97.8126
 Design-based F(5.54, 12971.67) = 10.7677 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,342

Number of obs = 2,342
Population size = 2,334.9153
Design df = 2,341

Savings into 3rd pillar	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
does not	24.22 3.107	10.26 1.314	9.274 1.197	43.75 1.874
yes	388.7 49.86	467.2 59.85	480.5 62.02	1336 57.24
no	366.7 47.04	303.1 38.83	284.9 36.78	954.7 40.89
Total	779.6 100	780.6 100	774.7 100	2335 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 32.2868
Design-based F(3.99, 9347.04) = 6.2314 P = 0.0001

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,342

Number of obs = 2,342
Population size = 2,334.9153
Design df = 2,341

Reasons why no savings into 3rd pillar	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
inapplic	412.9 52.96	477.4 61.17	489.8 63.22	1380 59.11
no answe	10.35 1.327	3.826 .4902	1.822 .2352	15.99 .685
because	153.1 19.64	70 8.968	46.62 6.017	269.7 11.55
for anot	203.3 26.07	229.3 29.38	236.5 30.53	669 28.65
Total	779.6 100	780.6 100	774.7 100	2335 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(6) = 87.5151
Design-based F(5.94, 13915.32) = 11.5425 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,342

Number of obs = 2,342
Population size = 2,334.9153
Design df = 2,341

Financial help: health insurance	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
inaplica	8.841 1.134	8.195 1.05	4.72 .6092	21.76 .9318
yes	209.8 26.91	158.8 20.35	97.47 12.58	466.1 19.96
no	561 71.96	613.5 78.6	672.5 86.81	1847 79.11
Total	779.6 100	780.6 100	774.7 100	2335 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 52.4148
Design-based F(3.90, 9136.67) = 9.3815 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,342

Number of obs = 2,342
Population size = 2,334.9153
Design df = 2,341

Income: Assessment of income and expenses	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
inaplica	9.365 1.201	10.71 1.372	9.964 1.286	30.03 1.286
your hou	375.5 48.16	450.7 57.74	475.7 61.4	1302 55.76
your hou	303.3 38.9	236.7 30.32	214 27.62	753.9 32.29
your hou	71.16 9.128	61.92 7.933	68.77 8.877	201.9 8.645
your hou	20.35 2.61	20.55 2.632	6.335 .8178	47.23 2.023
Total	779.6 100	780.6 100	774.7 100	2335 100

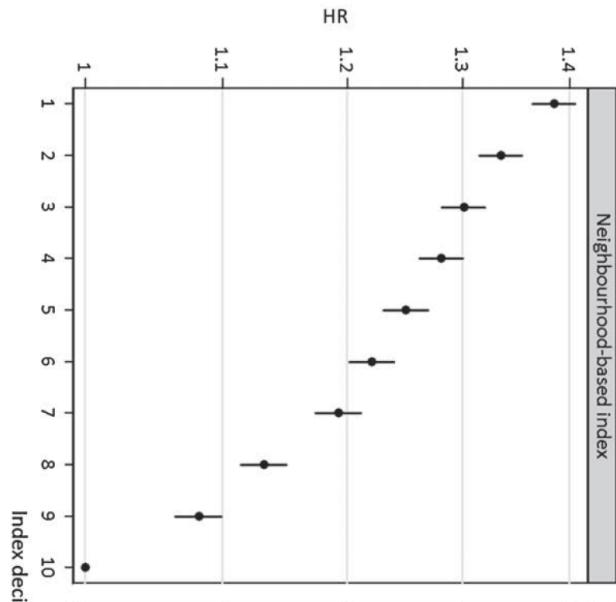
Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(8) = 39.0279
Design-based F(7.84, 18342.08) = 3.4826 P = 0.0006

7 Validation - SNC mortality

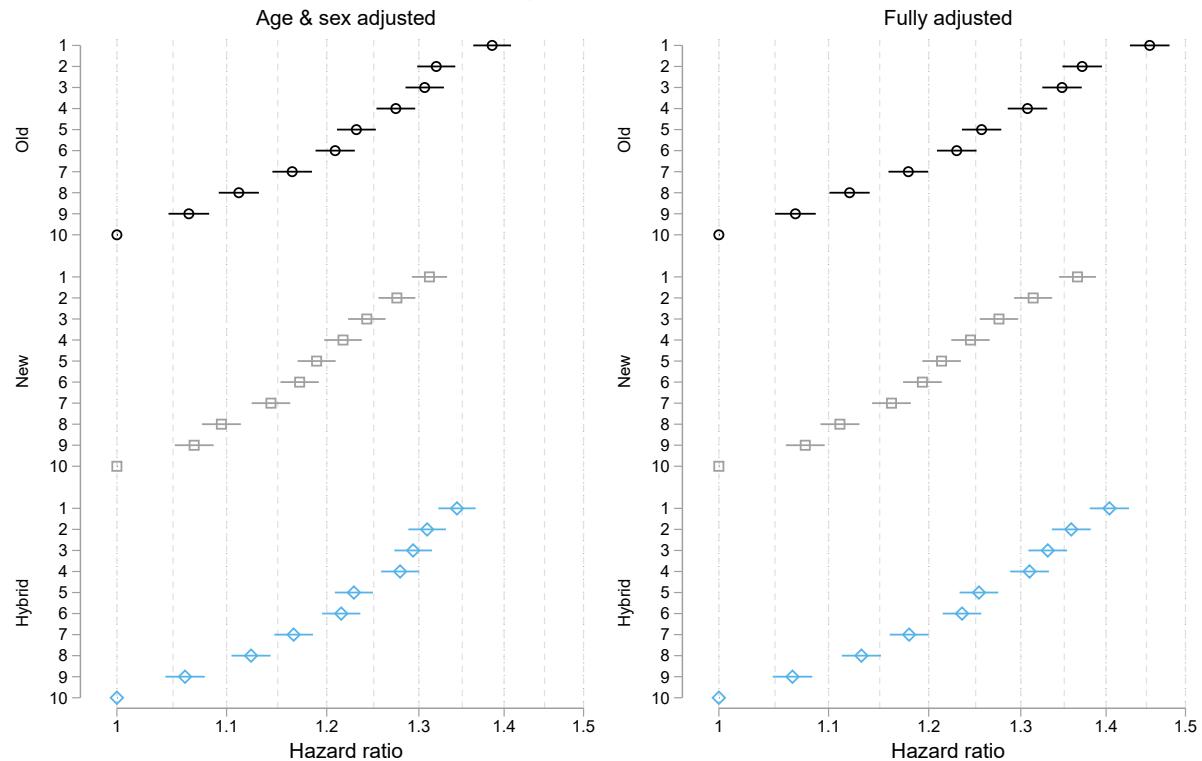
7.1 All cause mortality - original



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, 2.03)	
Breast can-r	1.04 (0.93, 1.17)		1.08 (0.96, 1.22)	
Prostate c-r	1.14 (1.02, 1.27)		1.16 (1.03, 1.30)	
Cardiovasc-r	1.44 (1.40, 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, 1.34)		1.26 (1.15, 1.38)	
Respiratory	1.72 (1.60, 1.85)		1.69 (1.57, 1.82)	
Traffic ac-s	1.90 (1.43, 2.52)		1.55 (1.15, 2.09)	
Suicide	1.29 (1.13, 1.48)		1.36 (1.18, 1.58)	

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.