

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	152,720	10.00	20.00
3	152,713	10.00	30.00
4	152,721	10.00	40.00
5	152,724	10.00	50.00
6	152,708	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	154,195	10.01	20.05
3	154,151	10.01	30.05
4	153,931	9.99	40.05
5	153,917	9.99	50.04
6	153,915	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	

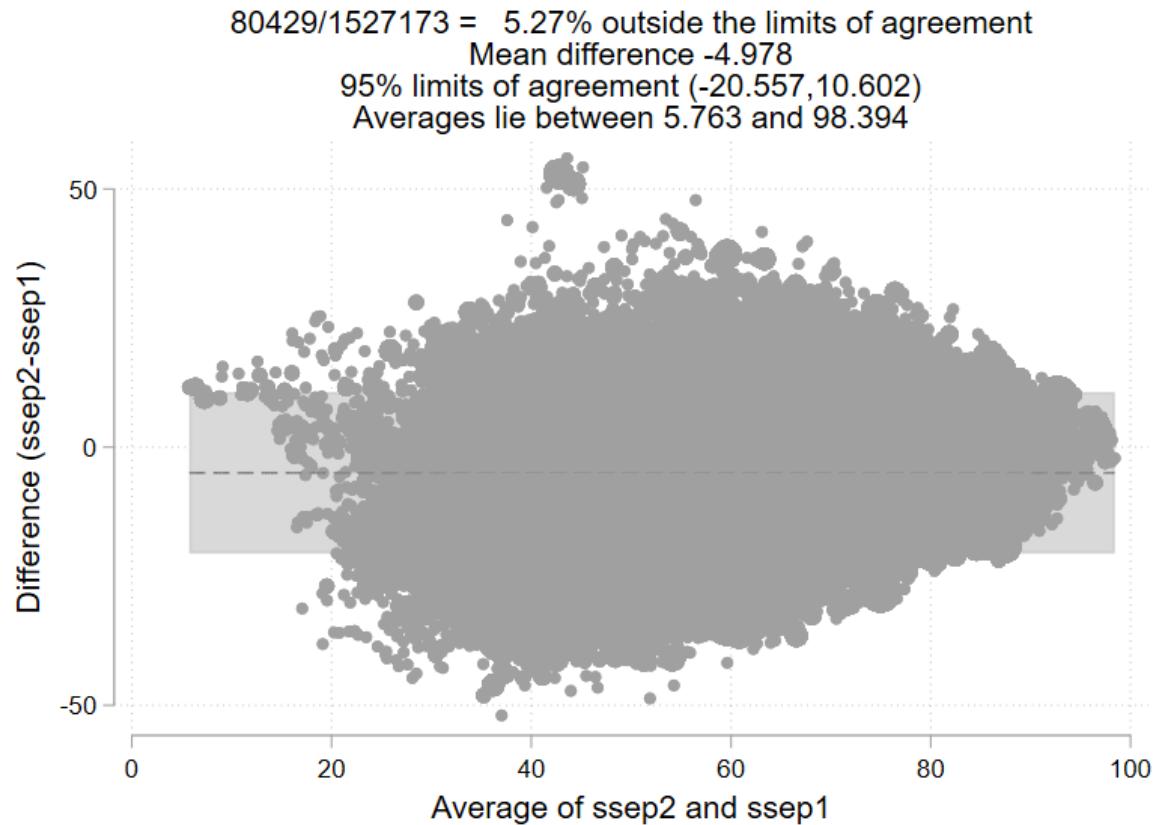
... This is expected behaviour since SNC dataset includes buildings with different BfS IDs but same coordinates. Same applies for missing data - there are few buildings where SEP could not have been calculated due to road network constraints.

Some transitions happened:

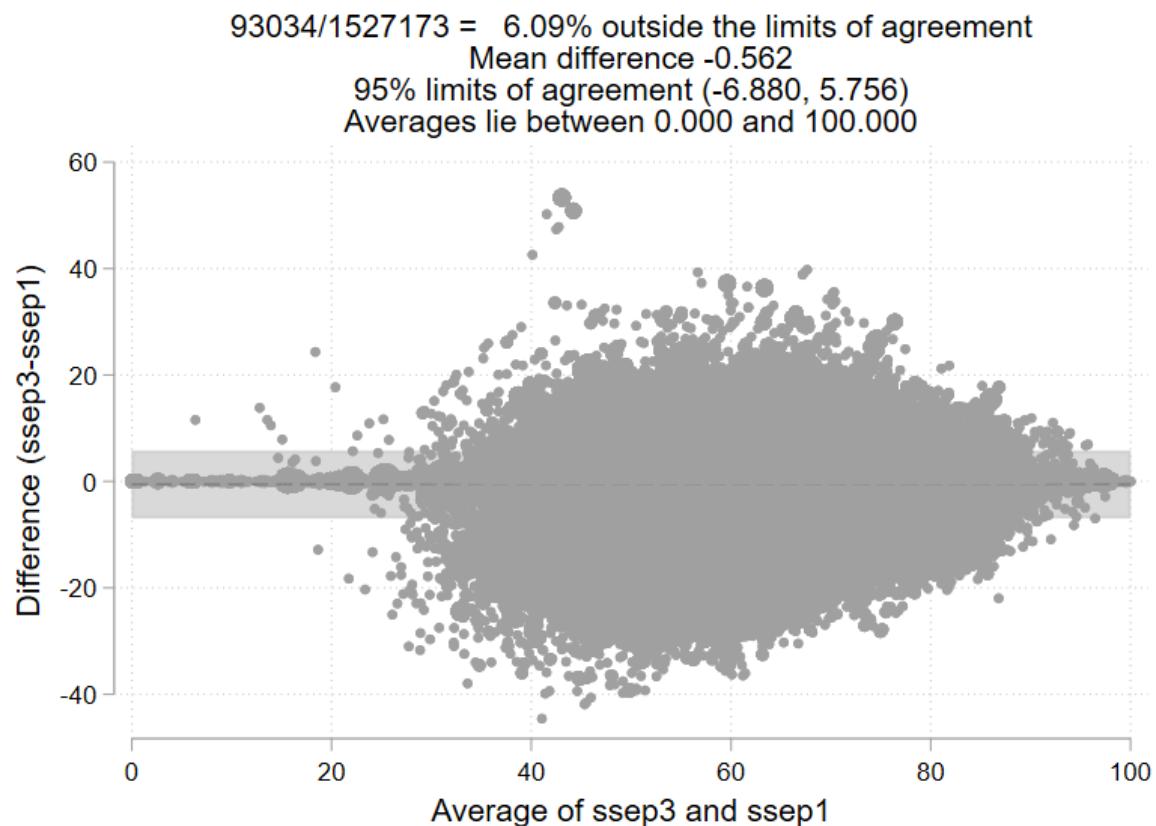
Swiss-SEP 2.0 - deciles		Swiss-SEP 3.0 - deciles								
		1	2	3	4	5	6	7	8	Total
1	68,628	33,911	20,868	13,355	7,906	4,548	2,209	955		152,718
2	44,710	28,887	25,812	20,181	14,325	9,677	5,633	2,507		152,717
3	20,383	37,600	24,136	21,690	18,351	13,677	9,562	4,882		152,718
4	8,808	27,877	29,917	21,365	20,644	17,886	13,133	8,367		152,739
5	5,394	10,882	28,864	27,551	21,342	20,266	17,411	12,875		152,695
6	2,472	6,903	10,954	27,974	28,901	21,687	21,508	17,716		152,717
7	1,257	3,908	6,563	10,840	24,931	33,422	23,358	23,917		152,718
8	663	1,861	3,837	6,536	9,775	19,497	38,920	27,900		152,721
9	296	649	1,320	2,494	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	152,720	152,713	152,721	152,724	152,708	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		11,390	3,212	152,717						
7		18,333	6,189	152,718						
8		28,982	14,750	152,721						
9		43,571	34,408	152,722						
10		36,673	91,309	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	49973 (48.5)	42902 (47.4)	33835 (47.3)	424130 (47.5)
	Female	53051 (51.5)	47540 (52.6)	37667 (52.7)	467997 (52.5)
Age	19-34	26684 (25.9)	20789 (23.0)	12117 (16.9)	200604 (22.5)
	35-49	29199 (28.3)	25897 (28.6)	20870 (29.2)	255462 (28.6)
	50-64	25629 (24.9)	22774 (25.2)	19333 (27.0)	228477 (25.6)
	Above 65	21512 (20.9)	20982 (23.2)	19182 (26.8)	207584 (23.3)
Civil status	Single	26700 (25.9)	24462 (27.0)	17601 (24.6)	235941 (26.4)
	Married	59804 (58.0)	51438 (56.9)	44029 (61.6)	517255 (58.0)
	Widowed	6481 (6.3)	5600 (6.2)	3834 (5.4)	53453 (6.0)
	Divorced	10038 (9.7)	8942 (9.9)	6038 (8.4)	85477 (9.6)
	(Missing)	1 (0.0)	0 (0.0)	0 (0.0)	1 (0.0)
Nationality	Swiss	69811 (67.8)	72574 (80.2)	58774 (82.2)	703676 (78.9)
	Foreigner	33213 (32.2)	17868 (19.8)	12728 (17.8)	188451 (21.1)
Language	German	40440 (39.3)	54543 (60.3)	50654 (70.8)	518985 (58.2)
	French	33961 (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	15658 (15.2)	6957 (7.7)	5364 (7.5)	77924 (8.7)
Education	Primary education or less	38542 (37.4)	18785 (20.8)	5790 (8.1)	188309 (21.1)
	Upper secondary level	46778 (45.4)	46688 (51.6)	29277 (40.9)	434965 (48.8)
	Tertiary level	17704 (17.2)	24969 (27.6)	36435 (51.0)	268853 (30.1)
Professional status	Top management and independent professions	1282 (1.2)	1638 (1.8)	3659 (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	23768 (23.1)	24116 (26.7)	14029 (19.6)	223131 (25.0)
	Unskilled employees and workers	7321 (7.1)	3022 (3.3)	736 (1.0)	31914 (3.6)
	In paid employment, not classified elsewhere	4102 (4.0)	2702 (3.0)	1453 (2.0)	26426 (3.0)
	Unemployed/job-seeking	3479 (3.4)	1986 (2.2)	1182 (1.7)	20377 (2.3)
	Not in paid employment (Missing)	26686 (25.9)	22589 (25.0)	18772 (26.3)	225064 (25.2)
		29345 (28.5)	25985 (28.7)	20786 (29.1)	255323 (28.6)
Level of urbanisation	Urban	28855 (28.0)	23490 (26.0)	23355 (32.7)	249565 (28.0)
	Peri-urban	30685 (29.8)	40541 (44.8)	46992 (55.7)	408700 (45.8)
	Rural	43484 (42.2)	26411 (29.2)	1155 (1.6)	233862 (26.2)

4.2 New index

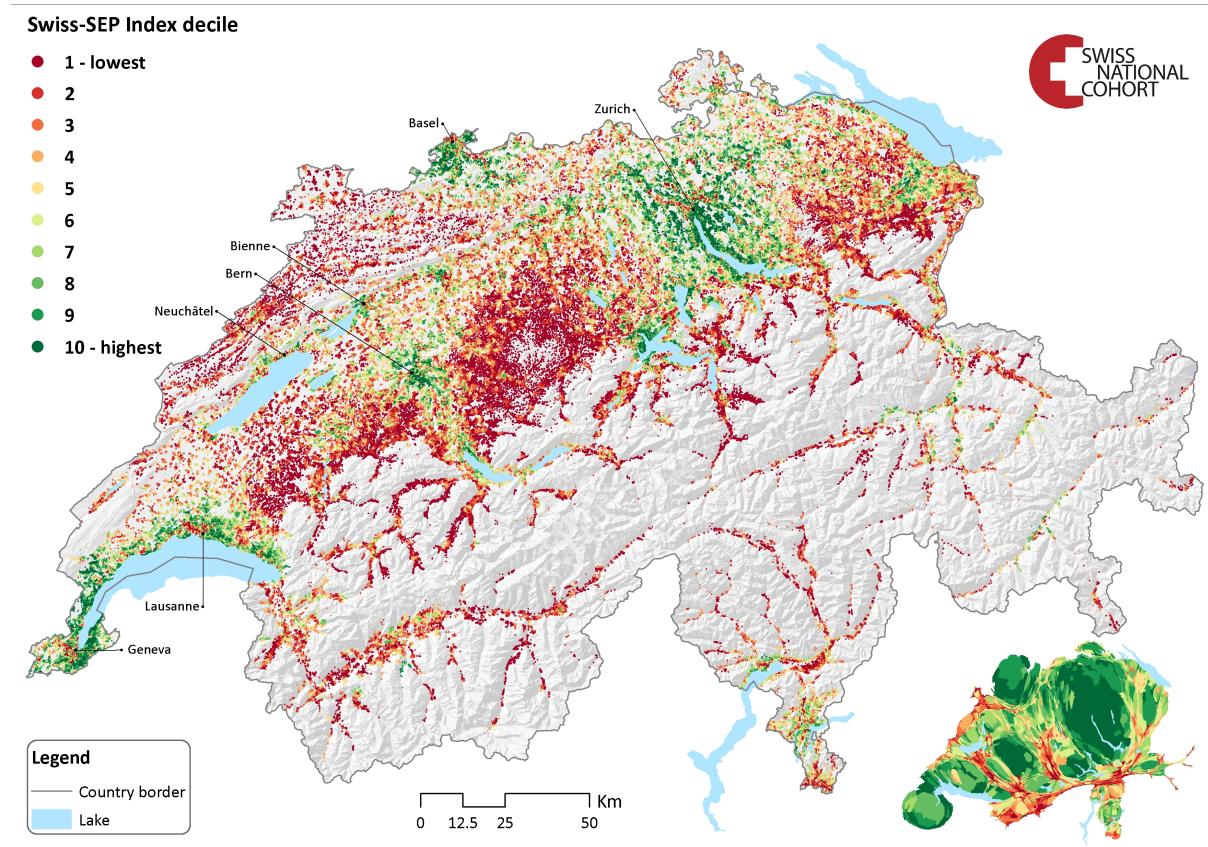
Characteristic	levels	1	5	10	Total
Gender	Male	53978 (48.0)	40053 (47.4)	41146 (47.5)	424130 (47.5)
	Female	58579 (52.0)	44374 (52.6)	45516 (52.5)	467997 (52.5)
Age	19-34	27621 (24.5)	19176 (22.7)	16808 (19.4)	200604 (22.5)
	35-49	30967 (27.5)	23918 (28.3)	26062 (30.1)	255462 (28.6)
	50-64	27659 (24.6)	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)	41659 (47.3)	36229 (47.3)	424130 (47.5)
	Female	52601 (51.4)	46326 (52.7)	40308 (52.7)	467997 (52.5)
Age	19-34	26569 (26.0)	20017 (22.8)	13509 (17.7)	200604 (22.5)
	35-49	30416 (29.7)	25100 (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)	46282 (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)	62513 (81.7)	703676 (78.9)
	Foreigner	32509 (31.8)	17304 (19.7)	14024 (18.3)	188451 (21.1)
Language	German	40613 (39.7)	52824 (60.0)	53579 (70.0)	518985 (58.2)
	French	34020 (33.2)	20684 (23.5)	15712 (20.5)	226063 (25.3)
	Italian	12614 (12.3)	7660 (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)	45383 (51.6)	31332 (40.9)	434965 (48.8)
	Tertiary level	18306 (17.9)	23857 (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)	5232 (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)	22240 (25.3)	20097 (26.3)	225064 (25.2)
		29395 (28.7)	25019 (28.4)	22254 (29.1)	255323 (28.6)
Level of urbanisation	Urban	27683 (27.0)	22695 (25.8)	26015 (34.0)	249565 (28.0)
	Peri-urban	30417 (29.7)	39055 (44.4)	49217 (64.3)	408700 (45.8)
	Rural	44283 (43.3)	26235 (29.8)	1305 (1.7)	233862 (26.2)

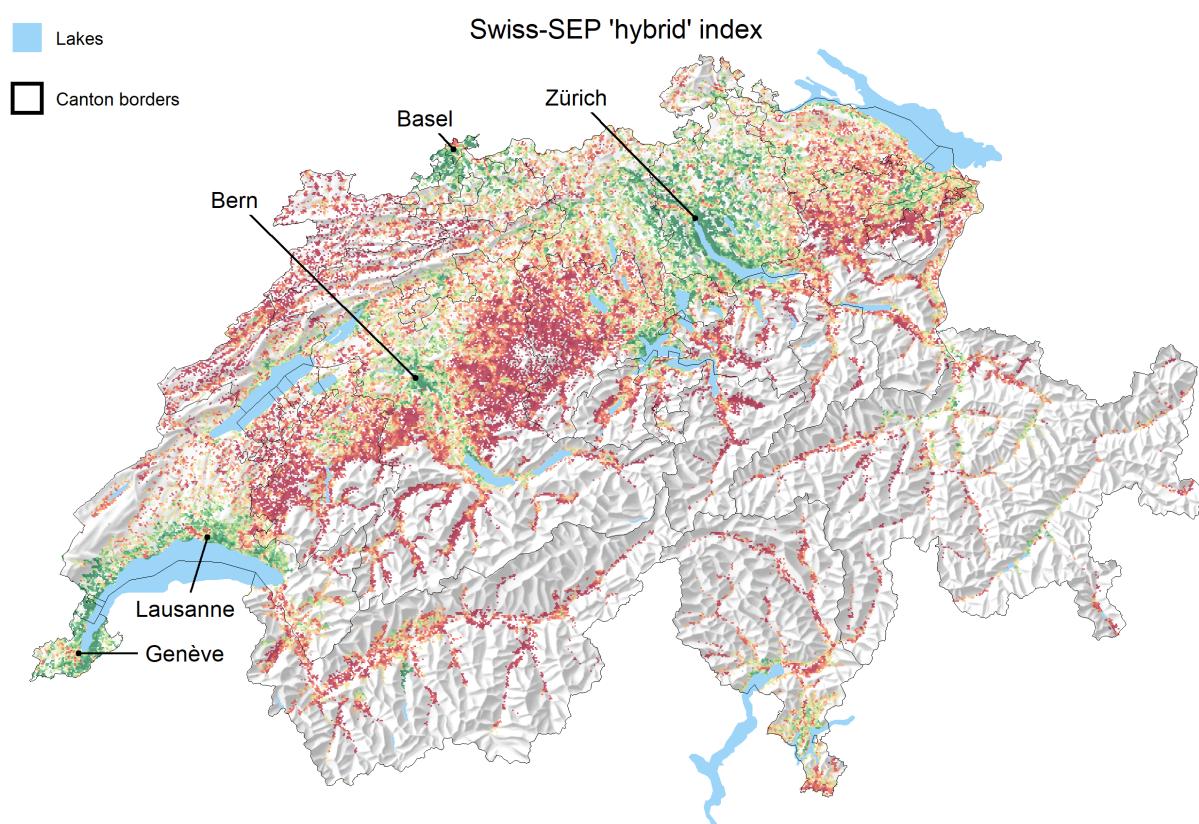
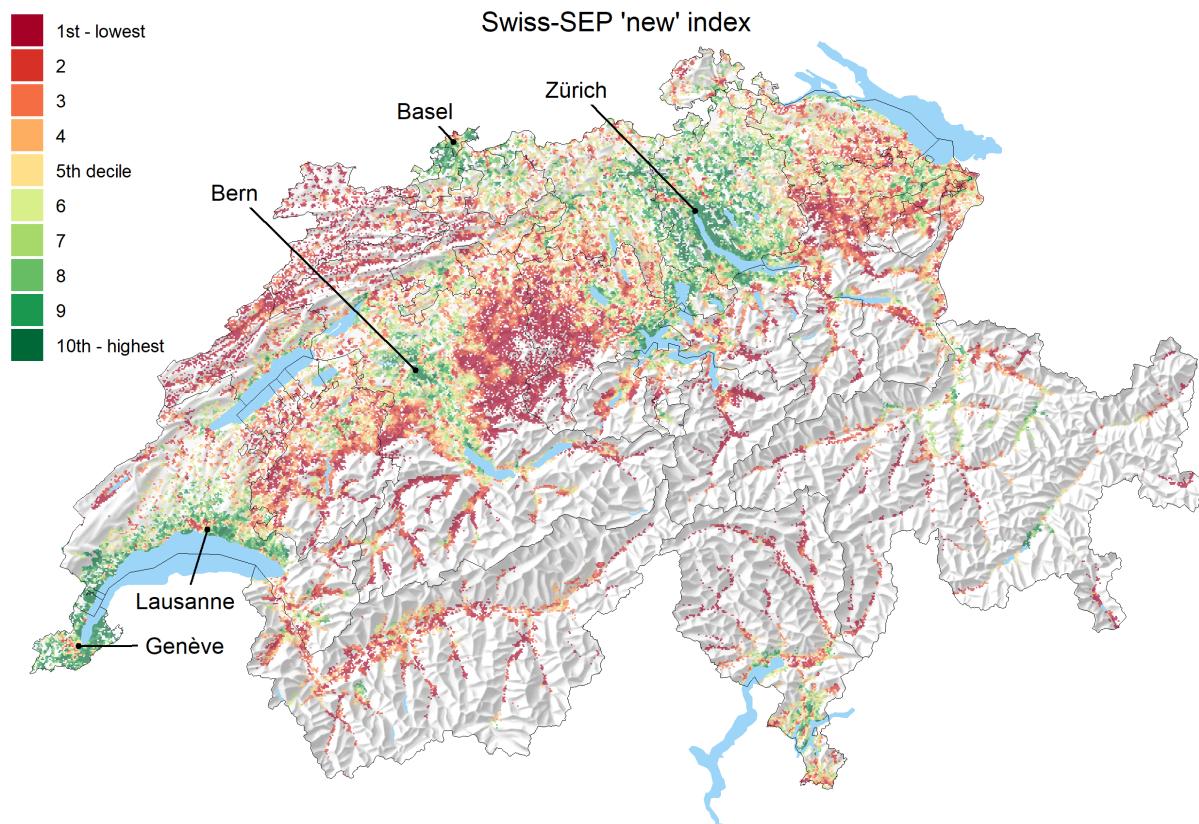
5 Maps

5.1 Original map

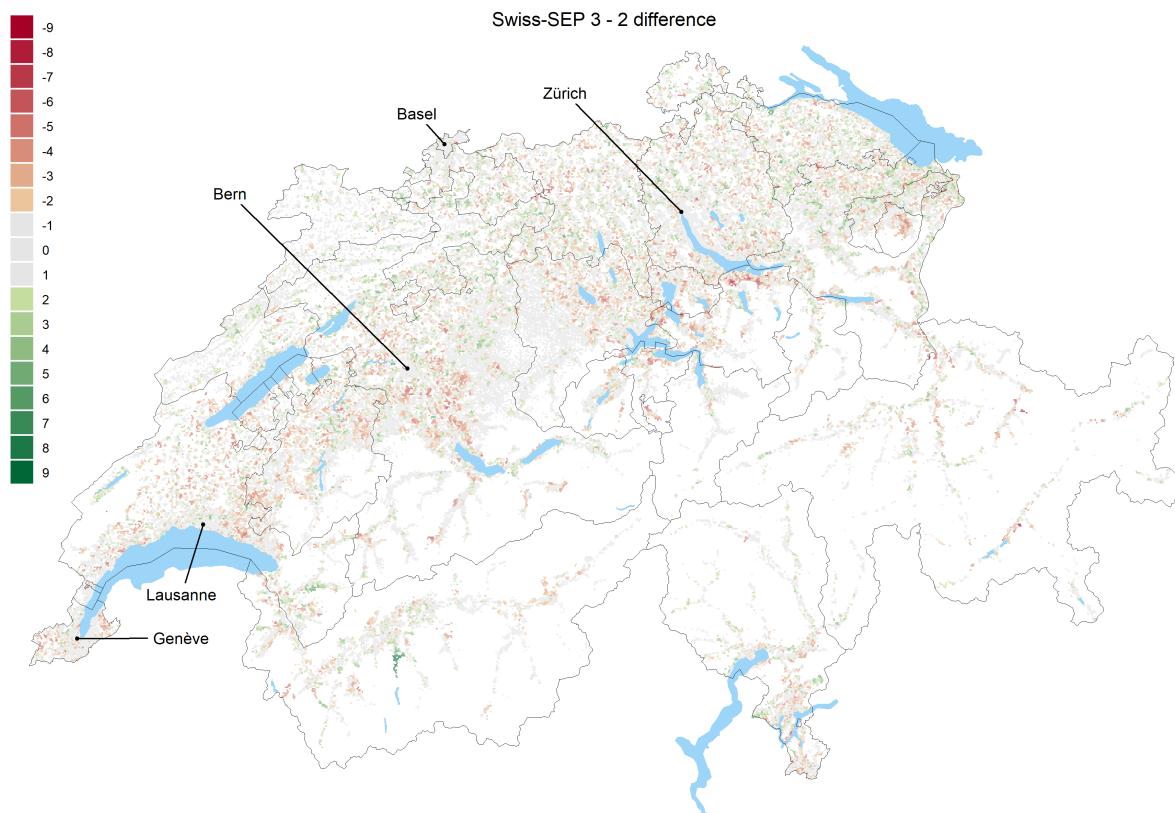


5.2 SEP 2 & 3 index

Using hexagonal grid 500m size.

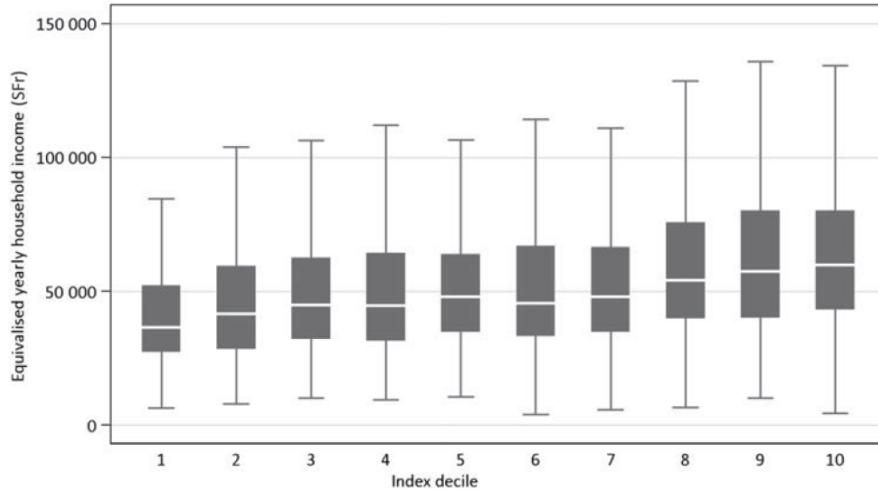


5.3 Differences

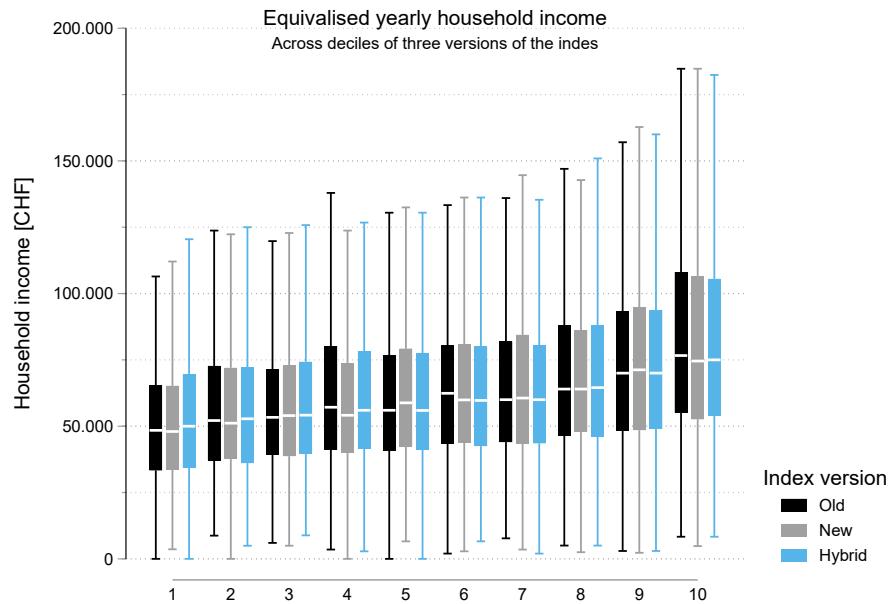


6 Validation - SHP data

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(eq_iht~i)
1	52,135
5	62,682
10	89,538
Total	67,164

Swiss-SEP 1.0 - deciles	mean(h14i51)
1	7
5	7
10	8
Total	7

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,006

Number of obs = 2,006
Population size = 2,040,9249
Design df = 2,005

Savings min. 500 SFrs monthly	Swiss-SEP 1.0 - deciles			
	1	5	10	Total
does not	18.08 2.595	5.908 .8046	10.27 1.684	34.26 1.679
yes	348.1 49.96	434.8 59.21	437 71.65	1220 59.77
no	330.5 47.45	293.6 39.98	162.7 26.67	786.8 38.55
Total	696.7 100	734.3 100	610 100	2041 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 68.3199
Design-based F(3.88, 7770.00) = 13.5816

P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,006

Number of obs = 2,006
Population size = 2,040,9249
Design df = 2,005

Reason why no savings min. 500 Sfrs monthly	Swiss-SEP 1.0 - deciles			
	1	5	10	Total
inapplic	366.1 52.55	440.7 60.02	447.3 73.33	1254 61.45
no answe	0 0	.6665 .0908	.4093 .0671	1.076 .0527
does not	0	2.334	0	2.334

	0	.3179	0	.1144
because	278.3	229.9	114.9	623.1
	39.94	31.31	18.84	30.53
for anot	52.27	60.7	47.34	160.3
	7.503	8.267	7.762	7.855
Total	696.7	734.3	610	2041
	100	100	100	100

Key: Weighted count
 Column percentage

Pearson:

Uncorrected chi2(8) = 74.6246
 Design-based F(7.18, 14397.70) = 8.3679 P = 0.0000

Savings into 3rd pillar	Swiss-SEP 1.0 - deciles			Total
	1	5	10	
does not know	12 1.91	9 1.20	2 0.32	23 1.15
yes	302 48.09	437 58.50	388 61.49	1,127 56.18
no	314 50.00	301 40.29	241 38.19	856 42.67
Total	628 100.00	747 100.00	631 100.00	2,006 100.00

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,006

Number of obs = 2,006
Population size = 2,040.9249
Design df = 2,005

Savings into 3rd pillar	Swiss-SEP 1.0 - deciles			
	1	5	10	Total
does not	14.34 2.058	12.65 1.723	1.901 .3117	28.89 1.416
yes	296.4 42.55	421.1 57.34	373.2 61.18	1091 53.44
no	385.9 55.39	300.6 40.93	234.9 38.51	921.4 45.14
Total	696.7 100	734.3 100	610 100	2041 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 56.2102
Design-based F(3.83, 7680.61)= 9.9485 P = 0.0000

Reasons why no savings into 3rd pillar	Swiss-SEP 1.0 - deciles				Total
	1	5	10		
inapplicable	314 50.00	446 59.71	390 61.81		1,150 57.33
does not know	8 1.27	0 0.00	2 0.32		10 0.50
because you cannot af	109 17.36	83 11.11	38 6.02		230 11.47
for another reason	197 31.37	218 29.18	201 31.85		616 30.71
Total	628 100.00	747 100.00	631 100.00		2,006 100.00

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,006

Number of obs = 2,006
Population size = 2,040.9249
Design df = 2,005

Reasons why no savings into 3rd pillar	Swiss-SEP 1.0 - deciles			
	1	5	10	Total
inapplic	310.8 44.61	433.7 59.07	375.1 61.49	1120 54.86

does not	12.71	0	1.845	14.56
	1.825	0	.3025	.7133
because	163.4	93.39	40.83	297.7
	23.46	12.72	6.693	14.58
for anot	209.7	207.2	192.2	609.2
	30.11	28.21	31.52	29.85
Total	696.7	734.3	610	2041
	100	100	100	100

Key: Weighted count
 Column percentage

Pearson:

Uncorrected chi2(6) = 104.2012
 Design-based F(5.69, 11415.55) = 11.8847 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,006

Number of obs = 2,006
Population size = 2,040.9249
Design df = 2,005

Financial help: health insurance	Swiss-SEP 1.0 - deciles			
	1	5	10	Total
does not	6.035 .8663	8.28 1.128	3.104 .509	17.42 .8535
yes	210.1 30.16	151.2 20.59	75.96 12.45	437.3 21.42
no	480.5 68.97	574.8 78.28	530.9 87.04	1586 77.72
Total	696.7 100	734.3 100	610 100	2041 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 62.1069
Design-based F(3.89, 7796.26) = 9.4544 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,006

Number of obs = 2,006
Population size = 2,040.9249
Design df = 2,005

Income: Assessment of income and expenses	Swiss-SEP 1.0 - deciles			
	1	5	10	Total
does not	9.64 1.384	1.86 .2534	5.081 .8329	16.58 .8124
your hou	324 46.51	383.2 52.19	378.7 62.09	1086 53.21
your hou	284.8 40.89	282.2 38.44	172.5 28.29	739.6 36.24
your hou	64.11 9.202	57.71 7.86	47.89 7.85	169.7 8.315
your hou	14.09 2.022	9.247 1.259	5.738 .9407	29.07 1.424
Total	696.7 100	734.3 100	610 100	2041 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(8) = 39.6660
Design-based F(7.65, 15330.81) = 3.5962 P = 0.0005

6.5 Financial variables table - 2.0

Swiss-SEP 2.0 - deciles	mean(eq_iht~i)
1	52,325
5	64,668
10	93,014
Total	69,741

Swiss-SEP 2.0 - deciles	mean(h14i51)
1	7
5	7
10	8
Total	7

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,193

Number of obs = 2,193
Population size = 2,230,6207
Design df = 2,192

Savings min. 500 SFrs monthly	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
does not	17.17 2.209	7.29 1.008	17.36 2.378	41.82 1.875
yes	353.3 45.46	433.8 59.98	509.7 69.8	1297 58.14
no	406.8 52.34	282.1 39.01	203.1 27.82	892 39.99
Total	777.2 100	723.2 100	730.2 100	2231 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 98.5097
Design-based F(3.90, 8552.46)= 17.0803

P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,193

Number of obs = 2,193
Population size = 2,230,6207
Design df = 2,192

Reason why no savings min. 500 Sfrs monthly	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
inapplic	370.5 47.66	441.1 60.99	527 72.18	1339 60.01
no answe	0 0	0 .0561	.4093 .0183	.4093
does not	0	3.197	0	3.197

	0	.4421	0	.1433
because	334.4	239.6	143.5	717.5
	43.02	33.13	19.66	32.17
for anot	72.37	39.32	59.2	170.9
	9.311	5.436	8.108	7.661
Total	777.2	723.2	730.2	2231
	100	100	100	100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(8) = 115.2485
Design-based F(7.39, 16201.91) = 11.6781 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,193

Number of obs = 2,193
Population size = 2,230.6207
Design df = 2,192

Savings into 3rd pillar	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
does not	6.867 .8836	7.748 1.071	6.762 .926	21.38 .9583
yes	353 45.42	415.3 57.43	461.7 63.24	1230 55.15
no	417.3 53.69	300.1 41.5	261.7 35.84	979.1 43.9
Total	777.2 100	723.2 100	730.2 100	2231 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 50.6939
Design-based F(3.90, 8556.36)= 9.2348 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,193

Number of obs = 2,193
Population size = 2,230.6207
Design df = 2,192

Reasons why no savings into 3rd pillar	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
inapplic	359.9 46.31	423.1 58.5	468.5 64.16	1251 56.1
does not	8.272 1.064	0 0	2.032 .2783	10.3 .4619
because	134.5 17.31	86.59 11.97	40.58 5.558	261.7 11.73
for anot	274.5 35.32	213.5 29.53	219.1 30	707.1 31.7
Total	777.2 100	723.2 100	730.2 100	2231 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(6) = 80.3954
Design-based F(5.55, 12159.09)= 7.2706 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,193

Number of obs = 2,193
Population size = 2,230.6207
Design df = 2,192

Financial help: health insurance	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
does not	5.028 .647	2.335 .3228	2.737 .3748	10.1 .4528
yes	205.8 26.48	142.4 19.69	79.24 10.85	427.5 19.17
no	566.4 72.87	578.4 79.98	648.2 88.77	1793 80.38
Total	777.2 100	723.2 100	730.2 100	2231 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 60.0216
Design-based F(3.94, 8629.38) = 11.0789 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,193

Number of obs = 2,193
Population size = 2,230.6207
Design df = 2,192

Income: Assessment of income and expenses	Swiss-SEP 2.0 - deciles			
	1	5	10	Total
does not	4.364 .5615	2.713 .3751	7.818 1.071	14.9 .6678
your hou	376.4 48.43	390 53.92	451.1 61.78	1218 54.58
your hou	292.8 37.67	249.1 34.44	207.8 28.46	749.7 33.61
your hou	81.64 10.5	65.85 9.105	54.73 7.495	202.2 9.065
your hou	21.97 2.827	15.58 2.155	8.733 1.196	46.29 2.075
Total	777.2 100	723.2 100	730.2 100	2231 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(8) = 32.9997
Design-based F(7.54, 16538.23) = 2.7945 P = 0.0052

6.6 Financial variables table - 3.0

Swiss-SEP 3.0 - deciles	mean(eq_iht~i)
1	54,631
5	62,823
10	87,923
Total	67,897

Swiss-SEP 3.0 - deciles	mean(h14i51)
1	7
5	7
10	8
Total	7

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,052

Number of obs = 2,052
Population size = 2,072,3182
Design df = 2,051

Savings min. 500 SFrs monthly	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
does not	19.02 2.609	5.908 .8568	12 1.836	36.93 1.782
yes	364.4 49.99	400 58.01	454.4 69.5	1219 58.81
no	345.5 47.4	283.6 41.14	187.4 28.67	816.6 39.41
Total	729 100	689.5 100	653.8 100	2072 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 59.4245
Design-based F(3.89, 7980.95) = 11.5973

P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,052

Number of obs = 2,052
Population size = 2,072,3182
Design df = 2,051

Reason why no savings min. 500 Sfrs monthly	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
inapplic	383.4 52.6	405.9 58.86	466.4 71.33	1256 60.59
no answe	0 0	.6665 .0967	.4093 .0626	1.076 .0519
does not	0	2.334	0	2.334

	0	.3385	0	.1126
because	292.1	216.2	134.9	643.2
	40.07	31.36	20.63	31.04
for anot	53.45	64.4	52.14	170
	7.331	9.34	7.975	8.203
Total	729	689.5	653.8	2072
	100	100	100	100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(8) = 68.9298
Design-based F(7.21, 14786.45) = 7.4610 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,052

Number of obs = 2,052
Population size = 2,072.3182
Design df = 2,051

Savings into 3rd pillar	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
does not	12.25 1.681	8.788 1.275	1.901 .2908	22.94 1.107
yes	337.6 46.31	383.1 55.55	393.8 60.23	1114 53.78
no	379.1 52.01	297.7 43.17	258.1 39.48	934.9 45.12
Total	729 100	689.5 100	653.8 100	2072 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 31.8437
Design-based F(3.88, 7952.69)= 5.7343 P = 0.0002

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,052

Number of obs = 2,052
Population size = 2,072.3182
Design df = 2,051

Reasons why no savings into 3rd pillar	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
inapplic	349.9 47.99	391.8 56.83	395.7 60.52	1137 54.88
does not	11.61 1.592	.8937 .1296	1.845 .2822	14.34 .6922
because	160.1 21.97	92.14 13.36	47.18 7.216	299.5 14.45
for anot	207.4 28.45	204.6 29.68	209.1 31.98	621.1 29.97
Total	729 100	689.5 100	653.8 100	2072 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(6) = 77.2839
Design-based F(5.81, 11906.96)= 9.7647 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,052

Number of obs = 2,052
Population size = 2,072.3182
Design df = 2,051

Financial help: health insurance	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
does not	5.277 .7239	5.524 .8012	3.104 .4748	13.91 .671
yes	206.1 28.28	140.3 20.35	77.75 11.89	424.2 20.47
no	517.6 71	543.7 78.85	573 87.63	1634 78.86
Total	729 100	689.5 100	653.8 100	2072 100

Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(4) = 57.3109
Design-based F(3.94, 8089.74) = 9.4410 P = 0.0000

(running tabulate on estimation sample)

Number of strata = 1
Number of PSUs = 2,052

Number of obs = 2,052
Population size = 2,072.3182
Design df = 2,051

Income: Assessment of income and expenses	Swiss-SEP 3.0 - deciles			
	1	5	10	Total
does not	8.21 1.126	5.049 .7323	6.81 1.042	20.07 .9684
your hou	355.7 48.79	367 53.22	389 59.5	1112 53.65
your hou	287.4 39.42	246.4 35.73	195.9 29.96	729.6 35.21
your hou	63.61 8.726	57.97 8.407	55.27 8.453	176.8 8.534
your hou	14.09 1.933	13.17 1.91	6.818 1.043	34.08 1.644
Total	729 100	689.5 100	653.8 100	2072 100

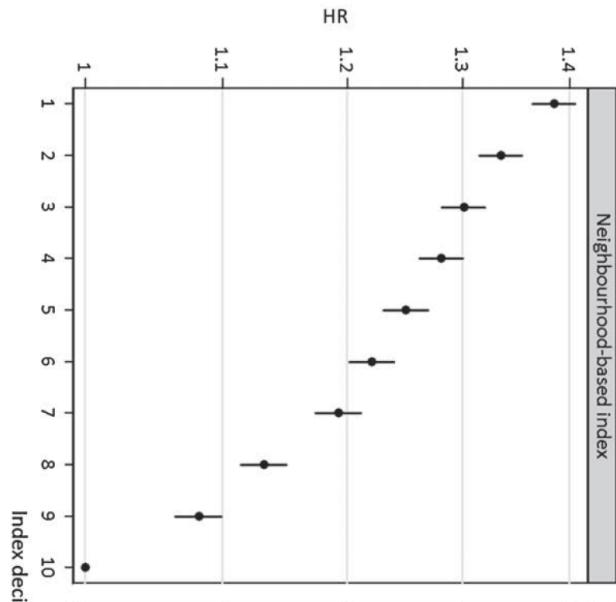
Key: Weighted count
Column percentage

Pearson:

Uncorrected chi2(8) = 18.8303
Design-based F(7.80, 15990.53) = 1.6433 P = 0.1092

7 Validation - SNC mortality

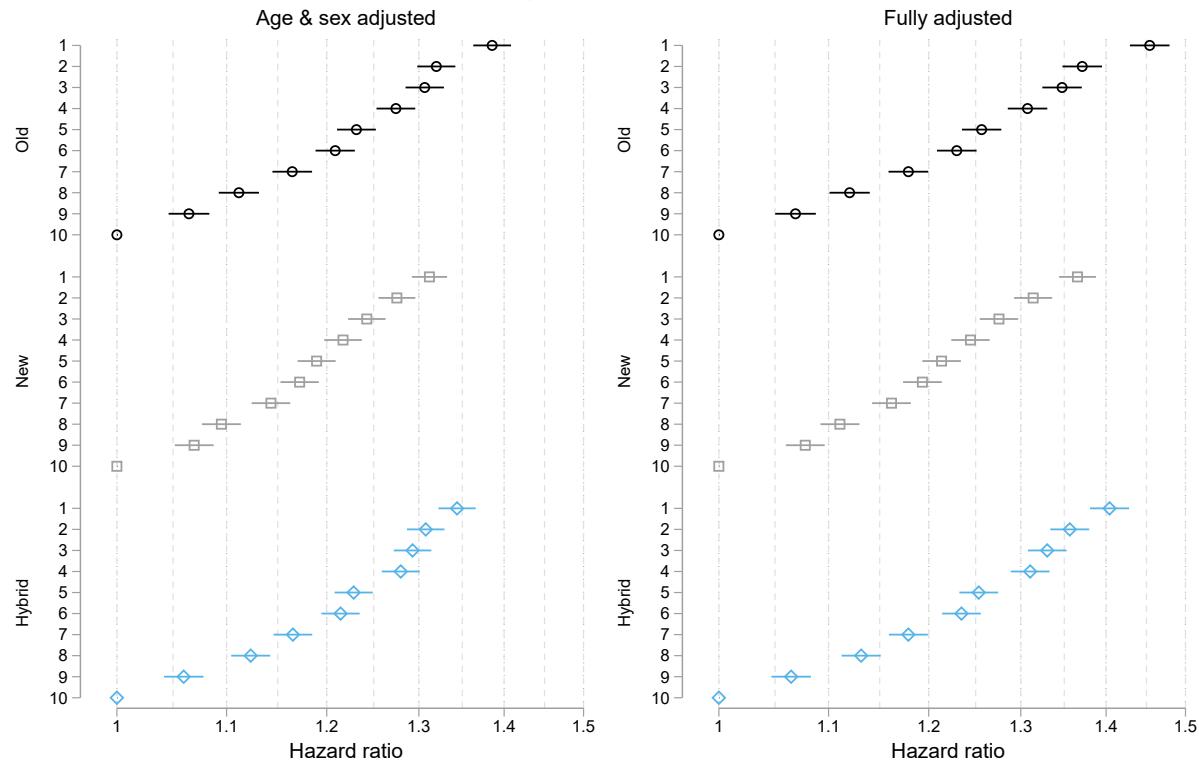
7.1 All cause mortality - original



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, 1.23)		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.