MCA factor map

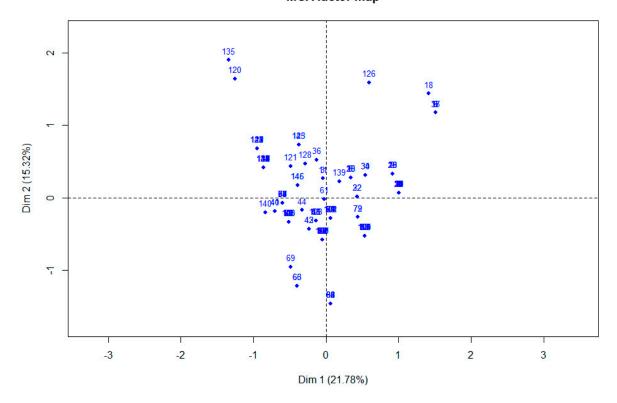


Figure S1: MCA factor map in two-dimensions (Dim1 x Dim2) among the young population.

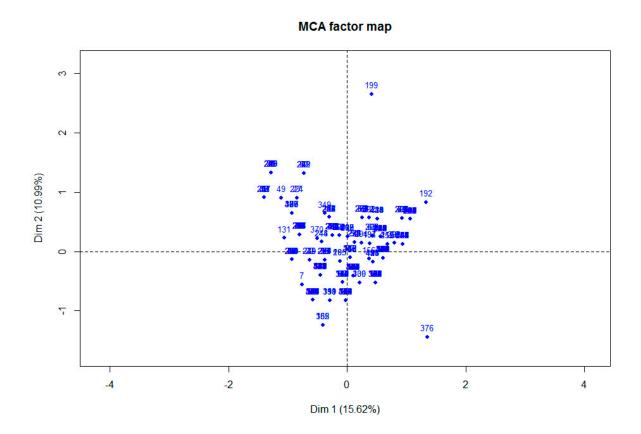


Figure S2: MCA factor map in two-dimensions (Dim1 x Dim2) among the middle-age population.

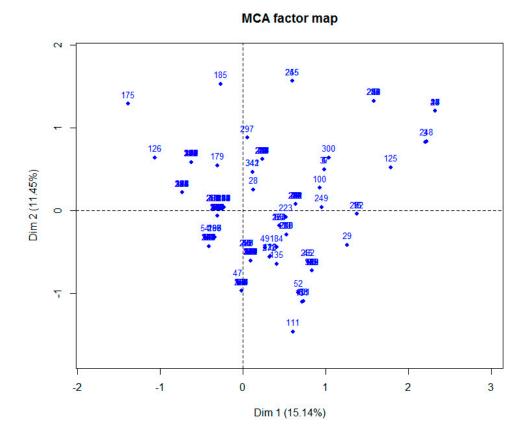


Figure S3: MCA factor map in two-dimensions (Dim1 x Dim2) among the older population.

Table S1a: Description of the **profile 1** among the youngest (18–29 years)

Variable: modality	Cla/Mod ^ф	Mod/Cla [¥]	Global §	p value
Travel mean: Car	55.81	77.42	29.45	< 0.00001
Perceived Air quality: Totally agree	58.33	67.74	24.66	< 0.00001
Housing: House	57.14	51.61	19.18	< 0.00001
Satisfaction with the residential place: Totally agree	36.92	77.42	44.52	< 0.0001
Living in another place: No	32.10	83.87	55.48	<0.001
Gender: Man	32.43	77.42	50.68	<0.001
Work location: In a municipality not in the Rhône-Alpes department	39.53	54.84	29.45	<0.001
Work location: Other place of work	100.00	12.90	2.74	< 0.01
Occupational status: Employed	32.81	67.74	43.84	<0.01
Number years living in Lyon: >10 years	27.78	80.65	61.64	< 0.05
Respiratory health problem: No	25.47	87.10	72.60	< 0.05
Level of Education: Baccalaureat	0.00	0.00	10.27	< 0.05
Heating mode: Electric	10.20	16.13	33.56	< 0.05
Respiratory health problem: Yes	7.69	9.68	26.71	< 0.05
Number years living in Lyon: 5–9 years	3.85	3.23	17.81	< 0.05
Work location: In the municipality of residence	11.27	25.81	48.63	< 0.01
Living in another place: Yes	8.77	16.13	39.04	<0.01

Perceived Air quality: Not agree	5.13	6.45	26.71	<0.01
Table S1b : Description of the profile 2 among the youngest (18–29 years)				
Variable: modality	Cla/Mod [∳]	Mod/Cla [¥]	Global §	p value
Living in another place: Yes	61.40	81.40	39.04	< 0.00001
Occupational status: Employed	56.25	83.72	43.84	< 0.00001
Number years living in Lyon: 5–9 years	76.92	46.51	17.81	< 0.00001
Housing: Apartment	36.44	100.00	80.82	< 0.0001
Travel mean: Bicycle	84.62	25.58	8.90	< 0.0001
Perceived Air quality: not agree	56.41	51.16	26.71	< 0.0001
Family status: Live with partner without children	65.22	34.88	15.75	<0.001
Satisfaction with the residential place: Not agree	100.00	16.28	4.79	<0.001
Level of education: High	61.11	25.58	12.33	< 0.01
Family status: Live alone without children	57.89	25.58	13.01	< 0.01
Occupation: Tradespeople-Shopkeepers	100.00	9.30	2.74	< 0.01
Occupation: Employees	50.00	34.88	20.55	< 0.01
Level of education: Low	6.25	2.33	10.96	< 0.05
Occupational status: Unemployed	0.00	0.00	8.22	< 0.05
Level of education: Baccalaureat	0.00	0.00	8.22	< 0.05

Satisfaction with the residential place: Totally agree	15.38	23.26	44.52	<0.001
Occupational status: Student	12.07	16.28	39.73	<0.001
Perceived Air quality: Totally agree	5.56	4.65	24.66	< 0.001

Table S1c: Description of the **profile 3** among the youngest (18–29 years)

Variable: modality	Cla/Mod ^ф	Mod/Cla [¥]	Global [§]	p value
Occupational status: Student	70.69	85.42	39.73	<0.00001
Family status: With parent	56.96	93.75	54.11	<0.00001
Occupation: Missing value	59.42	85.42	47.26	< 0.00001
Travel mean: Public transport	63.46	68.75	35.62	<0.00001
Number years living in Lyon: >10 years	46.67	87.50	61.64	< 0.00001
Work location: In the municipality of residence	50.70	75.00	48.63	< 0.00001
Level of education: Low	75.00	25.00	10.96	< 0.001
Level of education: Baccalaureat	73.33	22.92	10.27	< 0.001
Respiratory health problem: Yes	48.72	39.58	26.71	< 0.05
Travel mean: Bicycle	7.69	2.08	8.90	< 0.05
Level of education: High	11.11	4.17	12.33	< 0.05
Occupation: Employee	16.67	10.42	20.55	< 0.05

Respiratory health problem: No	27.36	60.42	72.60	<0.05
Occupation: Manual worker	6.67	2.08	10.27	< 0.05
Occupation: Manager	0.00	0.00	7.53	<0.05
Occupation: Non-manual worker	5.88	2.08	11.64	<0.01
Occupational status: unemployed	0.00	0.00	8.22	<0.01
Travel mean: Car	16.28	14.58	29.45	<0.01
Living in another place: Yes	19.30	22.92	39.04	<0.01
Family status: Live alone without children	5.26	2.08	13.01	<0.01
Family status: Live with partner with children	0.00	0.00	12.33	< 0.001
Number years living in Lyon: 5–9 years	3.85	2.08	17.81	< 0.001
Family status: Live with partner without children	0.00	0.00	15.75	<0.0001

Table S1d: Description of the **profile 4** among the youngest (18–29 years)

Variable: modality	Cla/Mod [∳]	Mod/Cla [¥]	Global [§]	p value
Work location: Missing value	100.00	100.00	16.44	<0.00001
Travel mean: Missing value	96.00	100.00	17.12	<0.00001
Occupational status: Unemployed	100.00	50.00	8.22	< 0.00001
Occupational status: Inactive	100.00	16.67	2.74	<0.001
Family status: Live with partner with children	44.44	33.33	12.33	<0.001
Level of education: Baccalaureat	50.00	25.00	8.22	< 0.01
Level of education: Low	57.14	16.67	4.79	< 0.05
Occupation: Manual worker	40.00	25.00	10.27	< 0.05
Perceived Air quality: Somewhat agree	24.24	66.67	45.21	< 0.05
Family status: Live alone without children	0.00	0.00	13.01	< 0.05
Heating mode: Gas	9.76	33.33	56.16	< 0.05
Travel mean: Car	0.00	0.00	29.45	< 0.00001
Location of work: In a municipality not in the Rhône-Alpes department	0.00	0.00	29.45	<0.00001
Travel mean: Public transport	0.00	0.00	35.62	< 0.00001
Occupational status: Student	0.00	0.00	39.73	<0.00001
Occupational status: Employed	0.00	0.00	43.84	< 0.00001

Location of work: In my residential municipality	0.00	0.00	48.63	< 0.00001

Legend: Percentage of individuals with the modality belonging to the profile; Percentage of individuals of the profile with the modality; Percentage of the modality among the oldest.

Table S2a: Description of the **profile 1** among the middle age (ages 30 to 59)

Variable: modality	Cla/Mod [†]	Mod/Cla [¥]	Global §	p value
Travel mean: Car	50.53	79.34	40.51	<0.00001
Occupation: Manager	68.42	53.72	20.26	< 0.00001
Occupational status: Employed	33.52	100.00	76.97	< 0.00001
Level of education: High	50.00	48.76	25.16	< 0.00001
Housing: House	47.29	50.41	27.51	< 0.00001
Work location: In a municipality not in the Rhône-Alpes department	41.46	56.20	34.97	< 0.00001
Work location: Other place of work	70.83	14.05	5.12	< 0.00001
Knowledge about air quality: Yes	38.22	49.59	33.48	< 0.0001
Gender: Man	35.50	58.68	42.64	< 0.0001
Level of education: Intermediate	48.78	16.53	8.74	< 0.001
Travel mean: Motorbike	85.71	4.96	1.49	< 0.01
Living in another place: No	31.20	68.60	56.72	< 0.01
Family status: Live with partner with children	31.71	64.46	52.45	< 0.01
Occupation: Tradespeople-Shopkeepers	54.55	9.92	4.69	< 0.01

Satisfaction with the residential place: Totally agree	32.80	50.41	39.66	<0.01
Perceived Air quality: Totally agree	37.36	28.10	19.40	<0.01
Occupational status: Retired	0.00	0.00	2.99	<0.05
Living in another place: Yes	18.92	28.93	39.45	<0.01
Level of education: Baccalaureat	7.50	2.48	8.53	<0.01
Family status: Live alone without children	11.43	6.61	14.93	<0.01
Perceived Air quality: Not agree	14.81	16.53	28.78	< 0.001
Satisfaction with the residential place: Not agree	2.78	0.83	7.68	< 0.001
Occupation: Manual worker	7.94	4.13	13.43	< 0.001
Level of education: Low	10.23	7.44	18.76	< 0.0001
Travel mean: Public transport	1.52	0.83	14.07	<0.00001
Housing: Apartment	17.40	48.76	72.28	<0.00001
Occupation: Employee	1.77	1.65	24.09	<0.00001

Table S2b: Description of the **profile 2** among the middle age (ages 30 to 59)

Variable: modality	Cla/Mod ^ф	Mod/Cla [¥]	Global §	p value
Work location: In the municipality of residence	63.43	68.55	28.57	< 0.00001
Housing: House	35.40	96.77	72.28	< 0.00001
Occupational status: Employed	33.80	98.39	76.97	< 0.00001
Perceived Air quality: Not agree	49.63	54.03	28.78	< 0.00001
Living in another place: Yes	43.78	65.32	39.45	< 0.00001
Travel mean: By foot	64.10	20.16	8.32	< 0.00001
Occupation: Non-manual worker	45.05	40.32	23.67	< 0.00001
Satisfaction with the residential place: Somewhat agree	35.37	70.16	52.45	< 0.00001
Satisfaction with the residential place: Not agree	58.33	16.94	7.68	< 0.0001
Level of education: Intermediate	43.16	33.06	20.26	< 0.0001
Travel mean: Public transport	46.97	25.00	14.07	< 0.001
Travel mean: Bicycle	65.00	10.48	4.26	< 0.001
Respiratory health problem: Yes	37.19	36.29	25.80	< 0.01
Level of education: Baccalaureat	83.33	4.03	1.28	< 0.01
Occupational status: Retired	0.00	0.00	2.99	< 0.05
Level of education: Low	4.17	0.81	5.12	< 0.01
Respiratory health problem: No	22.67	62.90	73.35	< 0.01

Heating mode: Wood	0.00	0.00	5.12	<0.001
Work location: In a municipality of the Rhône-Alpes department	15.85	20.97	34.97	<0.001
Occupational status: Unemployed	0.00	0.00	8.53	< 0.00001
Occupational status: Inactive	0.00	0.00	9.17	<0.00001
Living in another place: No	13.91	29.84	56.72	<0.00001
Satisfaction with the residential place: Totally agree	8.60	12.90	39.66	<0.00001
Perceived Air quality: Totally agree	0.00	0.00	19.40	<0.00001
Housing: House	3.10	3.23	27.51	<0.00001

Table S2c: Description of the **profile 3** among the middle age (ages 30 to 59)

Variable: modality	Cla/Mod [†]	Mod/Cla [¥]	Global §	p value
Occupation: Employee	61.06	57.02	24.09	<0.00001
Occupational status: Employed	32.69	97.52	76.97	<0.00001
Work location: In the municipality of residence	42.68	57.85	34.97	< 0.00001
Work location: At home	68.75	18.18	6.82	< 0.00001
Living in another place: No	34.59	76.03	56.72	< 0.00001
Level of education: Low	47.73	34.71	18.76	< 0.00001
Occupation: Manual worker	52.38	27.27	13.43	<0.00001

Travel mean: Public transport	51.52	28.10	14.07	< 0.00001
Level of education: Baccalaureat	60.00	19.83	8.53	< 0.00001
Satisfaction with the residential place: Totally agree	37.10	57.02	39.66	< 0.00001
Perceived Air quality: Totally agree	43.96	33.06	19.40	< 0.0001
Heating mode: Other	70.59	9.92	3.62	< 0.001
Respiratory health problem: No	29.36	83.47	73.35	< 0.01
Work location: Other place of work	4.17	0.83	5.12	< 0.01
Respiratory health problem: Yes	15.70	15.70	25.80	< 0.01
Level of education: Intermediate	12.63	9.92	20.26	< 0.001
Occupational status: Unemployed	5.00	1.65	8.53	< 0.001
Satisfaction with the residential place: Somewhat agree	19.11	38.84	52.45	< 0.001
Occupation: non manual worker	12.61	11.57	23.67	< 0.001
Occupational status: Inactive	0.00	0.00	9.17	< 0.00001
Living in another place: Yes	13.51	20.66	39.45	< 0.00001
Perceived Air quality: Not agree	9.63	10.74	28.78	< 0.00001
Level of education: High	7.63	7.44	25.16	< 0.00001
Occupation: Manager	2.11	1.65	20.26	< 0.00001

Table S2d: Description of the **profile 4** among the middle age (ages 30 to 59)

Variable: modality	Cla/Mod [†]	Mod/Cla [¥]	Global §	p value
Work location: Missing value	96.23	100.00	22.60	<0.00001
Travel mean: Missing value	74.45	100.00	29.21	<0.00001
Occupation: Missing value	93.85	59.80	13.86	<0.00001
Occupational status: Inactive	100.00	42.16	9.17	<0.00001
Occupational status: Unemployed	95.00	37.25	8.53	<0.00001
Occupational status: Retired	100.00	13.73	2.99	< 0.00001
Level of education: Low	54.17	12.75	5.12	<0.001
Knowledge about air quality: Yes	15.29	23.53	33.48	< 0.05
Travel mean: Bicycle	0.00	0.00	4.26	<0.01
Work location: Other place of work	0.00	0.00	5.12	< 0.01
Work location: At home	0.00	0.00	6.82	< 0.001
Occupation: Non-manual worker	9.01	9.80	23.67	< 0.0001
Travel mean: By foot	0.00	0.00	8.32	< 0.0001
Occupation: Manager	7.37	6.86	20.26	< 0.0001
Occupation: Employee	6.19	6.86	24.09	< 0.00001
Travel mean: Public transport	0.00	0.00	14.07	<0.00001

Work location: In the municipality of residence	0.00	0.00	28.57	<0.00001
Work location: In a municipality of the Rhône-Alpes department	0.00	0.00	34.97	<0.00001
Travel mean: Car	0.00	0.00	40.51	<0.00001
Occupational status: Employed	0.00	0.00	76.97	< 0.00001

Legend: $^{\phi}$ Percentage of individuals with the modality belonging to the profile; $^{\Psi}$ Percentage of individuals of the profile with the modality; § Percentage of the modality among the oldest.

Table S3a: Description of the **profile 1** among the oldest (≥60 years)

Variable: modality	Cla/Mod [†]	Mod/Cla [¥]	Global §	p value
Work location: Missing value	100.00	100.00	91.05	<0.00001
Occupation: Missing value	100.00	99.71	90.79	< 0.00001
Travel mean: Missing value	99.14	100.00	91.84	<0.00001
Occupational status: Retired	100.00	93.35	85.00	< 0.00001
Level of education: Low	98.39	17.63	16.32	<0.05
Perceived Air quality: Totally agree	94.06	59.54	57.63	< 0.05
Perceived Air quality: Somewhat agree	86.33	34.68	36.58	<0.05
Work location: At home	0.00	0.00	0.79	<0.001
Occupation: Tradespeople - Shopkeepers	0.00	0.00	0.79	<0.001
Work location: other place of work	0.00	0.00	1.32	< 0.00001

Work location: In a municipality not in the Rhône-Alpes department	0.00	0.00	1.58	<0.00001
Occupation: Manual worker	0.00	0.00	1.58	<0.00001
Occupation: Non-manual worker	12.50	0.29	2.11	<0.00001
Travel mean: Public transport	0.00	0.00	2.11	<0.00001
Travel mean: by foot	0.00	0.00	2.11	<0.00001
Occupation: Employee	0.00	0.00	2.11	<0.00001
Occupation: Manager	0.00	0.00	2.63	<0.00001
Travel mean: Car	0.00	0.00	3.42	<0.00001
Work location: In the municipality of residence	0.00	0.00	5.00	<0.00001
Occupational status: Employed	0.00	0.00	8.95	<0.00001

Table S3b: Description of the **profile 2** among the oldest (≥60 years)

Variable: modality	Cla/Mod [∳]	Mod/Cla [¥]	Global §	p value
Satisfaction with the residential place: Totally agree	48.96	94.95	59.44	<0.00001
Perceived Air quality: Totally agree	72.84	59.60	25.08	<0.00001
Living in another place: No	35.13	98.99	86.38	<0.00001
Cardiovascular health problem: No	36.58	94.95	79.57	<0.00001
Respiratory health problem: No	37.07	86.87	71.83	<0.0001
Level of education: Low	55.10	27.27	15.17	< 0.001
Knowledge about air quality: No	34.85	92.93	81.73	< 0.001
Level of education: Baccalaureat	87.50	7.07	2.48	<0.01
Heating mode: Other	71.43	10.10	4.33	<0.01
Heating mode: Electric	17.81	13.13	22.60	<0.01
Satisfaction with the residential place: Not agree	0.00	0.00	4.33	<0.01
Family status: With partner with children	0.00	0.00	5.57	< 0.01
Perceived Air quality: Not agree	10.53	6.06	17.65	<0.001
Knowledge about air quality: Yes	8.77	5.05	17.65	< 0.0001
Respiratory health problem: Yes	13.33	12.12	27.86	<0.0001
Living in another place: Yes	2.63	1.01	11.76	<0.00001

Level of education: Low	6.78	4.04	18.27	<0.00001
Cardiovascular health problem: Yes	7.58	5.05	20.43	<0.00001
Perceived Air quality: Somewhat agree	16.77	27.27	49.85	<0.00001
Satisfaction with the residential place: Somewhat agree	3.51	4.04	35.29	< 0.00001

Table S3c: Description of the **profile 3** among the oldest (≥60 years)

Variable: modality	Cla/Mod [†]	Mod/Cla [¥]	Global §	p value
Gender: man	48.67	86.90	46.44	<0.00001
Knowledge about air quality: Yes	64.91	44.05	17.65	< 0.00001
Family status: With partner without children	37.74	71.43	49.23	<0.00001
Family status: With partner with children	77.78	16.67	5.57	< 0.00001
Housing: House	43.96	47.62	28.17	<0.00001
Satisfaction with the residential place: Somewhat agree	40.35	54.76	35.29	< 0.0001
Level of education: Intermediate	53.13	20.24	9.91	< 0.001
Level of education: High	47.62	23.81	13.00	<0.01
Respiratory health problem: No	30.17	83.33	71.83	<0.01
Heating mode: Gas	30.53	69.05	58.82	< 0.05
Perceived Air quality: Somewhat agreed	31.06	59.52	49.85	<0.05
Heating mode: Other	0.00	0.00	4.33	< 0.05

Respiratory health problem: Yes	15.56	16.67	27.86	<0.01
Satisfaction with the residential place: Totally agree	19.27	44.05	59.44	< 0.001
Level of education: Low	8.16	4.76	15.17	< 0.001
Housing: Apartment	18.97	52.38	71.83	<0.00001
Knowledge about air quality: No	17.80	55.95	81.73	<0.00001
Family status: Live alone without children	7.19	11.90	43.03	< 0.00001

Table S3d: Description of the **profile 4** among the oldest (≥60 years)

Variable: modality	Cla/Mod [∳]	Mod/Cla [¥]	Global §	p value
Level of education: Low	79.66	45.63	18.27	< 0.00001
Gender: Woman	49.13	82.52	53.56	<0.00001
Perceived Air quality: Somewhat agree	47.20	73.79	49.85	<0.00001
Family status: Live alone without children	46.04	62.14	43.03	<0.00001
Respiratory health problem: Yes	47.78	41.75	27.86	<0.001
Satisfaction with the residential place: Somewhat agree	42.98	47.57	35.29	<0.01
Heating mode: Fuel oil	55.56	19.42	11.15	<0.01
Level of education: High	85.71	5.83	2.17	<0.01
Number years living in Lyon: >10 years	33.67	98.06	92.88	<0.01
Family status: With partner with children	5.56	0.97	5.57	<0.01

Living in another place: Yes	13.16	4.85	11.76	<0.01
Satisfaction with the residential place: Not agree	0.00	0.00	4.33	<0.01
Family status: With partner without children	23.27	35.92	49.23	<0.01
Respiratory health problem: No	25.86	58.25	71.83	< 0.001
Level of education: Low	6.12	2.91	15.17	<0.00001
Level of education: High	2.38	0.97	13.00	<0.00001
Gender: Man	12.00	17.48	46.44	<0.00001
Perceived Air quality: Totally agree	2.47	1.94	25.08	< 0.00001

Table S3e: Description of the **profile 5** (among the oldest (≥60 years)

Variable: modality	Cla/Mod ^ф	Mod/Cla [¥]	Global §	p value
Perceived Air quality: Not agree	49.12	80.00	17.65	<0.00001
Satisfaction with the residential place: Not agree	92.86	37.14	4.33	<0.00001
Living in another place: Yes	52.63	57.14	11.76	<0.00001
Level of education: Low	30.61	42.86	15.17	<0.0001
Respiratory health problem: Yes	23.33	60.00	27.86	<0.0001
Housing: Apartment	14.66	97.14	71.83	< 0.0001
Cardiovascular health problem: Yes	24.24	45.71	20.43	<0.001
Family status: Living alone with children	50.00	8.57	1.86	< 0.05

Level of education: High	0.00	0.00	13.0	<0.01
Cardiovascular health problem: No	7.39	54.29	79.57	< 0.001
Satisfaction with the residential place: Somewhat agree	4.35	20.00	49.85	<0.001
Housing: House	1.10	2.86	28.17	< 0.0001
Respiratory health problem: No	6.03	40.00	71.83	< 0.0001
Perceived Air quality: Totally agree	0.00	0.00	25.08	< 0.0001
Satisfaction with the residential place: Totally agree	3.13	17.14	59.44	< 0.00001
Living in another place: No	5.02	40.00	86.38	<0.00001

Legend: $^{\phi}$ Percentage of individuals with the modality belonging to the profile; $^{\Psi}$ Percentage of individuals of the profile with the modality; $^{\$}$ Percentage of the modality among the oldest.