

Title: Neighbourhood Environment and Cognitive Vulnerability – A cross-sectional analysis of the role of age and urbanity levels

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Supplementary File 1 – Regression analyses

Cognitive failures – Neighbourhood pleasantness

Table S1. Cognitive failures based on neighbourhood pleasantness, age and urbanity level.

Measure	Model 1			Model 2			Predictor effect <i>chi</i> ²	
	IRR	95% C.I.		IRR	95% C.I.			
Neighbourhood								
Pleasantness (NP)	1.25	0.63	2.49	0.42	1.32	0.72	2.43	0.81
Age group (Ref.: Young)								
				3.13				3.73
2 (Middle aged)	5.98	0.22	161.88		9.64	0.52	179.03	
3 (Older)	16.52	0.56	488.26		40.97	0.91	1834.37	
Urbanity (Ref: Countryside)								
				3.16				4.92
2 (Village)	13.04	0.19	889.95		14.48	0.35	594.35	
3 (Town)	3.90	0.11	142.79		2.63	0.11	63.01	
4 (City suburbs)	5.00	0.21	121.81		6.94	0.41	117.72	
5 (Inner city)	2.48	0.10	61.50		3.05	0.17	54.00	
3-way Age#Urbanity#NP (Ref: Young#Countryside#NP=1)								
				12.45				21.51**
2#2	3.23	1.06	9.80		3.98*	1.44	10.99	
2#3	1.47	0.57	3.78		1.38	0.60	3.20	
2#4	1.77	0.81	3.86		2.23*	1.10	4.50	
2#5	2.05	0.84	4.99		2.31*	1.04	5.15	
3#2	7.65*	1.72	34.01		14.48***	3.41	61.49	
3#3	2.62	0.77	8.88		2.85	0.83	9.78	
3#4	2.72*	1.18	6.25		3.47*	1.39	8.65	
3#5	1.54	0.56	4.23		1.62	0.57	4.59	
2-way Age#NP (Ref: Young#NP=1)								
				3.51				4.27
2 (Middle aged)	0.64	0.31	1.33		0.59	0.31	1.12	
3 (Older)	0.51	0.24	1.08		0.42*	0.18	0.96	

2-way Urbanity#NP (Ref: Countryside#NP=1)				3.26			5.6
2 (Village)	0.52	0.20	1.35		0.50	0.22	1.15
3 (Town)	0.73	0.32	1.68		0.82	0.40	1.72
4 (City suburbs)	0.68	0.33	1.38		0.62	0.33	1.17
5 (Inner city)	0.82	0.40	1.72		0.79	0.41	1.54
2-way Age#Urbanity (Ref: Young#Countryside)				11.86			19.68*
2#2	0.01	0.00	1.17		0.001*	0.00	0.30
2#3	0.18	0.00	11.42		0.20	0.01	7.68
2#4	0.10	0.00	3.04		0.04*	0.00	0.86
2#5	0.05	0.00	2.28		0.03*	0.00	0.95
3#2	0.01*	0.00	0.13		0.001*	0.00	0.01
3#3	0.02	0.00	3.86		0.01	0.00	2.57
3#4	0.02*	0.00	0.61		0.01*	0.00	0.35
3#5	0.17	0.00	12.35		0.12	0.00	10.45
Health					0.87***	0.82	0.93
Gender (Ref: Male)					1.03	0.90	1.19
Education (Ref: Primary)							
2 (Secondary)					0.74*	0.55	0.99
3 (Third/higher)					0.81	0.60	1.10
NeighbSocialNetwork (Ref: No family or friends)							
1 (Family or friends)					0.88	0.73	1.05
2 (Family and friends)					0.91	0.75	1.11
Residence duration (Ref: <1 year)							
2 (1-5 years)					0.98	0.81	1.20
3 (5-10 years)					0.95	0.72	1.25
4 (10-20 years)					0.98	0.78	1.22
5 (>20 years)					0.89	0.71	1.12
Likelihood ratio chi2	30.15				56.48*		
Pseudo R2	0.02				0.04		

Notes. CI = Confidence interval; IRR = Incidence Risk Ratio; NP: Neighbourhood pleasantness. Predictor χ^2 refers to a Wald chi-squared test of significance. Pseudo- R^2 refers to McFadden's pseudo R-squared.

Statistically significant effects are shown as * $p < .05$, ** $p < .01$, *** $p < .001$

Cognitive failures – Neighbourhood streetscape

Table S2. Cognitive failures based on neighbourhood streetscape, age and urbanity level.

Measure	Model 1				Model 2			
	IRR	95% C.I.		Predictor effect chi2	IRR	95% C.I.		Predictor effect chi2
Neighbourhood								
Streetscape (NS)	0.84	0.68	1.02	3.03	0.83*	0.69	1.00	3.95*
Age group (Ref.: Young)				8.70*	12.83**			
2 (Middle aged)	0.47*	0.26	0.86		0.51*	0.30	0.87	
3 (Older)	0.37*	0.17	0.81		0.25**	0.11	0.57	
Urbanity (Ref: Countryside)				1.36	2.41			
2 (Village)	0.64	0.22	1.86		0.54	0.20	1.44	
3 (Town)	1.30	0.33	5.20		0.93	0.27	3.20	
4 (City suburbs)	1.02	0.47	2.19		0.97	0.47	1.97	
5 (Inner city)	1.32	0.51	3.43		1.38	0.59	3.26	
3-way Age#Urbanity#NS (Ref: Young#Countryside#NS=1)				7.05	13.62			
2#2	0.62*	0.40	0.98		0.62*	0.41	0.94	
2#3	0.72	0.39	1.33		0.66	0.38	1.14	
2#4	0.87	0.59	1.28		0.96	0.67	1.38	
2#5	0.95	0.56	1.63		0.99	0.60	1.61	
3#2	0.74	0.38	1.46		0.78	0.40	1.53	
3#3	0.81	0.38	1.72		0.82	0.40	1.67	
3#4	0.83	0.51	1.35		0.71	0.42	1.20	
3#5	0.60	0.31	1.15		0.49*	0.26	0.93	
2-way Age#NS (Ref: Young#NS=1)				7.59*	9.69**			
2 (Middle aged)	1.36*	1.03	1.79		1.34*	1.04	1.72	
3 (Older)	1.57*	1.09	2.26		1.79*	1.19	2.71	
2-way Urbanity#NS (Ref: Countryside#NS=1)				0.82	1.57			
2 (Village)	1.14	0.80	1.63		1.17	0.84	1.62	
3 (Town)	1.03	0.69	1.53		1.12	0.78	1.60	
4 (City suburbs)	1.08	0.83	1.41		1.08	0.85	1.38	
5 (Inner city)	1.00	0.74	1.36		0.98	0.74	1.30	
2-way Age#Urbanity (Ref: Young#Countryside)				7.17	12.99			
2#2	4.34*	1.10	17.06		4.47*	1.27	15.72	
2#3	2.05	0.18	22.78		2.96	0.34	25.76	

2#4	1.04	0.33	3.34	0.75	0.25	2.24	
2#5	0.85	0.17	4.16	0.82	0.20	3.44	
3#2	1.62	0.14	18.48	1.22	0.13	11.93	
3#3	0.96	0.05	18.58	0.68	0.05	10.03	
3#4	0.85	0.18	4.10	1.53	0.32	7.31	
3#5	4.28	0.43	42.22	7.74	0.97	61.83	
Health				0.87***	0.83	0.93	17.66***
Gender (Ref: Male)				0.99	0.86	1.13	0.05
Education (Ref: Primary)							4.13
2 (Secondary)				0.75	0.55	1.02	
3 (Third/higher)				0.81	0.60	1.11	
NeighbSocialNetwork (Ref: No family or friends)							0.67
1 (Family or friends)				0.95	0.79	1.15	
2 (Family and friends)				1.00	0.83	1.22	
Residence duration (Ref: <1 year)							4.1
2 (1-5 years)				1.05	0.85	1.29	
3 (5-10 years)				1.08	0.82	1.44	
4 (10-20 years)				0.97	0.77	1.22	
5 (>20 years)				0.88	0.70	1.12	
Likelihood ratio chi2	25.18			55.33*			
Pseudo R2	0.02			0.04			

Notes. CI = Confidence interval; IRR = Incidence Risk Ratio; NS: Neighbourhood streetscape. Predictor chi^2 refers to a Wald chi-squared test of significance. Pseudo- R^2 refers to McFadden's pseudo R-squared.

Statistically significant effects are shown as * $p < .05$, ** $p < .01$, *** $p < .001$

Sensory sensitivity – Neighbourhood pleasantness

Table S3. Sensory Sensitivity based on Neighbourhood Pleasantness, age and urbanity level.

Measure	Model 1			Model 2				
	IRR	95% C.I.		Predictor effect chi2	IRR	95% C.I.		Predictor effect chi2
Neighbourhood								
Pleasantness (NP)	1.17	0.78	1.74	0.56	1.21	0.82	1.77	0.95
Age group (Ref.: Young)				4.07				1.1
2 (Middle aged)	0.91	0.12	6.66		0.99	0.15	6.57	
3 (Older)	2.75	0.38	19.89		2.56	0.24	27.86	
Urbanity (Ref: Countryside)				9.5				7.37
2 (Village)	16.35*	1.45	184.84		13.94*	1.41	137.53	
3 (Town)	4.71	0.57	39.19		4.09	0.54	31.03	
4 (City suburbs)	2.55	0.39	16.66		2.73	0.46	16.36	
5 (Inner city)	1.73	0.26	11.54		2.02	0.32	12.58	
3-way Age#Urbanity#NP (Ref: Young#Countryside#NP=1)				11.7				7.2
2#2	1.52	0.77	3.00		1.40	0.72	2.70	
2#3	1.11	0.62	1.99		1.02	0.58	1.77	
2#4	1.16	0.72	1.87		1.22	0.77	1.92	
2#5	1.03	0.62	1.70		1.16	0.71	1.90	
3#2	2.38*	1.19	4.80		2.40*	1.14	5.05	
3#3	1.66	0.77	3.61		1.58	0.70	3.56	
3#4	1.76*	1.07	2.89		1.79	1.00	3.19	
3#5	1.48	0.78	2.82		1.42	0.71	2.84	
2-way Age#NP (Ref: Young#NP=1)				2.96				0.92
2 (Middle aged)	0.97	0.63	1.51		0.95	0.63	1.44	
3 (Older)	0.79	0.51	1.23		0.80	0.47	1.35	
2-way Urbanity#NP (Ref: Countryside#NP=1)				9.47				7.71
2 (Village)	0.49*	0.28	0.85		0.51*	0.30	0.85	
3 (Town)	0.68	0.42	1.11		0.72	0.45	1.15	
4 (City suburbs)	0.78	0.51	1.18		0.76	0.51	1.14	
5 (Inner city)	0.86	0.56	1.34		0.82	0.54	1.25	
2-way Age#Urbanity (Ref: Young#Countryside)				11.81				6.5
2#2	0.22	0.01	4.25		0.35	0.02	6.24	
2#3	0.76	0.06	9.63		1.01	0.09	11.24	

2#4	0.74	0.09	6.02	0.64	0.09	4.82	
2#5	1.05	0.12	9.26	0.72	0.09	5.84	
3#2	0.03*	0.00	0.63	0.03*	0.00	0.83	
3#3	0.11	0.00	3.82	0.12	0.00	5.06	
3#4	0.11*	0.01	0.94	0.10	0.01	1.34	
3#5	0.23	0.02	3.34	0.28	0.01	5.52	
Health				0.92***	0.88	0.96	16.61***
Gender (Ref: Male)				0.94	0.86	1.03	1.53
Education (Ref: Primary)							2.16
2 (Secondary)				0.90	0.75	1.09	
3 (Third/higher)				0.96	0.80	1.16	
NeighbSocialNetwork (Ref: No family or friends)							3.65
1 (Family or friends)				0.99	0.87	1.13	
2 (Family and friends)				0.91	0.80	1.04	
Residence duration (Ref: <1 year)							2.55
2 (1-5 years)				0.92	0.80	1.05	
3 (5-10 years)				0.93	0.77	1.12	
4 (10-20 years)				0.94	0.81	1.09	
5 (>20 years)				0.98	0.84	1.14	
Likelihood ratio chi2		38.08		59.06*			
Pseudo R2		0.03		0.05			

Notes. CI = Confidence interval; IRR = Incidence Risk Ratio; NP: Neighbourhood pleasantness. Predictor *chi*² refers to a Wald chi-squared test of significance. Pseudo-*R*² refers to McFadden's pseudo R-squared.

Statistically significant effects are shown as * *p* < .05, ** *p* < .01, *** *p*

Sensory sensitivity – Neighbourhood streetscape

Table S4. Sensory Sensitivity based on Neighbourhood Streetscape, age and urbanity level.

Measure	Model 1			Model 2				
	IRR	95% C.I.		Predictor effect chi2	IRR	95% C.I.		Predictor effect chi2
Neighbourhood								
Streetscape (NS)	0.86*	0.74	0.99	4.03*	0.88	0.77	1.01	3.19
Age group (Ref.: Young)				7.61*	6.33*			
2 (Middle aged)	0.50**	0.30	0.80		0.63*	0.43	0.94	
3 (Older)	0.57**	0.39	0.85		0.59	0.33	1.05	
Urbanity (Ref: Countryside)				2.46	2.72			
2 (Village)	0.76	0.37	1.59		0.76	0.37	1.56	
3 (Town)	1.52	0.64	3.63		1.42	0.61	3.33	
4 (City suburbs)	0.85	0.50	1.43		0.76	0.46	1.25	
5 (Inner city)	0.77	0.40	1.47		0.84	0.45	1.57	
3-way Age#Urbanity#NS (Ref: Young#Countryside#NS=1)				4.03	5.57			
2#2	0.77	0.54	1.09		0.95	0.69	1.29	
2#3	0.73	0.48	1.13		0.76	0.51	1.12	
2#4	0.80	0.58	1.09		1.05	0.81	1.35	
2#5	1.46	0.78	2.72		1.20	0.82	1.75	
3#2	0.88	0.65	1.21		0.95	0.64	1.40	
3#3	0.83	0.53	1.29		1.08	0.65	1.80	
3#4	1.03	0.81	1.31		0.93	0.65	1.33	
3#5	0.99	0.73	1.34		0.94	0.60	1.47	
2-way Age#NS (Ref: Young#NS=1)				5.94	2.64			
2 (Middle aged)	1.37*	1.08	1.73		1.12	0.93	1.35	
3 (Older)	1.23*	1.03	1.46		1.24	0.93	1.66	
2-way Urbanity#NS (Ref: Countryside#NS=1)				1.99	1.54			
2 (Village)	1.06	0.83	1.36		1.04	0.81	1.33	
3 (Town)	0.96	0.74	1.24		0.97	0.75	1.25	
4 (City suburbs)	1.08	0.90	1.30		1.10	0.92	1.31	
5 (Inner city)	1.12	0.90	1.38		1.06	0.86	1.30	
2-way Age#Urbanity (Ref: Young#Countryside)				3.63	5.75			
2#2	2.03	0.75	5.55		1.59	0.62	4.05	

2#3	2.26	0.46	11.22	3.02	0.68	13.52	
2#4	1.71	0.69	4.23	0.97	0.45	2.08	
2#5	0.24	0.04	1.54	0.62	0.20	1.92	
3#2	1.46	0.54	3.91	1.08	0.35	3.29	
3#3	1.55	0.26	9.26	0.42	0.06	2.88	
3#4	0.73	0.35	1.51	1.01	0.35	2.90	
3#5	0.89	0.34	2.37	1.09	0.24	5.01	
Health				0.92***	0.88	0.95	17.88***
Gender (Ref: Male)				0.92	0.84	1.01	3.09
Education (Ref: Primary)							3.23
2 (Secondary)				0.86	0.70	1.06	
3 (Third/higher)				0.91	0.74	1.13	
NeighbSocialNetwork (Ref: No family or friends)							0.34
1 (Family or friends)				1.00	0.88	1.14	
2 (Family and friends)				0.97	0.85	1.12	
Residence duration (Ref: <1 year)							1.37
2 (1-5 years)				0.94	0.81	1.08	
3 (5-10 years)				0.96	0.78	1.17	
4 (10-20 years)				0.92	0.78	1.08	
5 (>20 years)				0.95	0.81	1.13	
Likelihood ratio chi2	42.82						55.56*
Pseudo R2	0.03						0.04

Notes. CI = Confidence interval; IRR = Incidence Risk Ratio; NS: Neighbourhood streetscape. Predictor χ^2 refers to a Wald chi-squared test of significance. Pseudo- R^2 refers to McFadden's pseudo R-squared.

Statistically significant effects are shown as * $p < .05$, ** $p < .01$, *** $p < .001$