

## Geographic Proximity to Siblings in Older Adulthood

*An Online Appendix*

**Table A1.** Model 1: Characteristics of older adults and their sibling groups associated with living nearby at least one sibling, distance thresholds

	AME	10 km 95% conf. interval	AME	15 km 95% conf. interval	AME	20 km 95% conf. interval
<b>Characteristics of older persons</b>						
<b>Parental vital status and location (ref: no parents alive)</b>						
At least one parent alive but far	-0.066	-0.068 -0.063	-0.068	-0.071 -0.064	-0.062	-0.065 -0.059
At least one parent nearby	0.279	0.274 0.284	0.267	0.262 0.272	0.247	0.242 0.252
<b>Parenthood state (ref: at least one child)</b>						
No children	0.013	0.011 0.015	0.012	0.009 0.014	0.008	0.006 0.011
<b>Marital state (ref: married/partnered)</b>						
Unmarried/unpartnered	0.033	0.031 0.035	0.033	0.031 0.036	0.031	0.028 0.034
Divorced/separated	0.006	0.004 0.007	0.001	-0.001 0.002	-0.002	-0.003 0.000
Widowed	0.007	0.005 0.009	0.006	0.004 0.008	0.006	0.003 0.008
<b>Age</b>	-0.001	-0.002 -0.001	-0.002	-0.002 -0.002	-0.003	-0.003 -0.002
<b>Gender (ref: man)</b>						
Woman	-0.001	-0.002 0.001	-0.001	-0.003 0.000	-0.001	-0.002 0.001
<b>Education (ref: primary)</b>						
Secondary	-0.029	-0.030 -0.027	-0.038	-0.040 -0.036	-0.043	-0.044 -0.041
Postsecondary	-0.068	-0.069 -0.066	-0.090	-0.092 -0.088	-0.104	-0.106 -0.102
No information	-0.049	-0.060 -0.038	-0.063	-0.076 -0.050	-0.068	-0.082 -0.054
<b>Living in a county of birth (ref: does not live in a birth county)</b>						
Lives in a birth county	0.151	0.149 0.153	0.200	0.198 0.202	0.234	0.232 0.235
<b>Urbanization of index's place of residence (ref: metropolitan area)</b>						
Smaller town or suburb	-0.043	-0.045 -0.041	-0.058	-0.060 -0.056	-0.059	-0.061 -0.057
Sparsely populated area	-0.067	-0.069 -0.065	-0.087	-0.089 -0.085	-0.092	-0.094 -0.090
<b>Characteristics of sibling groups</b>						
<b>Size of a sibling group (ref: 2)</b>						
3	0.101	0.099 0.103	0.131	0.129 0.134	0.135	0.132 0.137
4	0.179	0.175 0.182	0.206	0.203 0.210	0.201	0.198 0.205
5 or more	0.248	0.243 0.252	0.258	0.254 0.262	0.246	0.242 0.250
<b>Gender composition of a sibling group (ref: mixed)</b>						
Only brothers	0.030	0.028 0.033	0.033	0.030 0.036	0.032	0.029 0.035

	<b>10 km</b>			<b>15 km</b>			<b>20 km</b>		
	<b>AME</b>	<b>95% conf. interval</b>		<b>AME</b>	<b>95% conf. interval</b>		<b>AME</b>	<b>95% conf. interval</b>	
Only sisters	0.021	0.018	0.023	0.017	0.015	0.020	0.016	0.013	0.019
<b>Type of sibling in the group (ref: at least one half-sibling)</b>									
All full siblings	0.043	0.039	0.046	0.051	0.047	0.055	0.055	0.051	0.060
<b>Variance of random effect: sibling group level</b>	20.395	0.218 (SE)		17.261	0.159 (SE)		16.324	0.142 (SE)	
<b>ICC: sibling group level</b>	0.861	0.001 (SE)		0.840	0.001 (SE)		0.832	0.001 (SE)	
<b>Log likelihood</b>	-491180.49			-513284.00			-517825.12		
<b>Wald chi2(20), Prob &gt; chi2</b>	51926.41, p < .001			60061.80, p < .001			64805.59, p < .001		
<b>N of observations</b>	987,486								
<b>N of groups</b>	475,644								

**Table A2.** Model 1: Characteristics of older adults and their sibling groups associated with a logarithm of the distance to the closest sibling

	<b>AME</b>	<b>95% conf. interval</b>	
<b>Characteristics of older persons</b>			
<b>Parental vital status and location (ref: no parents alive)</b>			
At least one parent alive but far	0.406	0.381	0.432
At least one parent nearby	-1.525	-0.177	-0.138
<b>Parenthood state (ref: at least one child)</b>			
No children	-0.158	-0.177	-0.138
<b>Marital state (ref: married/partnered)</b>			
Unmarried/unpartnered	-0.377	-0.398	-0.356
Divorced/separated	0.012	-0.004	0.027
Widowed	-0.042	-0.060	-0.024
<b>Age (ref: younger than 75)</b>			
75-84	0.088	0.074	0.101
<b>Gender (ref: man)</b>			
Woman	0.027	0.015	0.040
<b>Education (ref: primary)</b>			
Secondary	0.362	0.348	0.376
Postsecondary	0.770	0.754	0.787
No information	0.481	0.371	0.592
<b>Living in a county of birth (ref: does not live in a birth county)</b>			
Lives in a birth county	-1.502	-1.515	-1.489
<b>Urbanization of index's place of residence (ref: metropolitan area)</b>			
Smaller town or suburb	-0.138	-0.153	-0.123
Sparsely populated area	-0.358	-0.374	-0.341
<b>Characteristics of sibling groups</b>			
<b>Size of a sibling group (ref: 2)</b>			
3	-0.950	-0.970	-0.930
4	-1.516	-1.544	-1.488
5 or more	-2.142	-2.176	-2.109
<b>Gender composition of a sibling group (ref: mixed)</b>			
Only brothers	-0.268	-0.293	-0.244
Only sisters	-0.144	-0.168	-0.120
<b>Type of sibling in the group (ref: at least one half-sibling)</b>			
All full siblings	-0.557	-0.592	-0.522
<b>Variance of random effect: sibling group level</b>	5.676	0.018 (SE)	
<b>Variance (Residual)</b>	5.515	0.011 (SE)	
<b>ICC: sibling group level</b>	0.507	0.001 (SE)	
<b>Log likelihood</b>	-2505691.7		
<b>Wald chi2(20), Prob &gt; chi2</b>	113551.77, p < .001		
<b>N of observations</b>	987,486		
<b>N of groups</b>	475,644		

**Table A3.** Model 2: Characteristics of dyads of siblings associated with living close to each other, distance thresholds

	10 km			15 km			20 km		
	AME	95% conf. interval		AME	95% conf. interval		AME	95% conf. interval	
<b>Parental vital status and location (ref: neither has biological parents alive)</b>									
At least one parent alive but far from both	-0.021	-0.025	-0.018	-0.031	-0.034	-0.028	-0.038	-0.042	-0.035
At least one parent nearby	0.069	0.065	0.073	0.083	0.079	0.087	0.094	0.090	0.097
<b>Parenthood status composition (ref: both index person and a sibling have children)</b>									
Both without children	0.063	0.058	0.069	0.057	0.051	0.063	0.049	0.043	0.055
One without a child	0.017	0.015	0.019	0.017	0.015	0.019	0.015	0.012	0.017
<b>Partnership status composition (ref: both index person and a sibling with partners)</b>									
Both without partners	0.024	0.022	0.027	0.013	0.011	0.016	0.007	0.004	0.009
One without a partner	0.004	0.002	0.005	-0.001	-0.002	0.002	-0.002	-0.004	0.001
<b>Age composition of a dyad (ref: age difference &gt; 5 years)</b>									
Around the same age ( $\pm 5$ years)	-0.003	-0.005	-0.002	-0.005	-0.007	-0.004	-0.007	-0.008	-0.005
<b>Gender composition of a dyad (ref: brother-brother)</b>									
Sister-sister	-0.014	-0.016	-0.011	-0.019	-0.021	-0.016	-0.019	-0.022	-0.017
Different gender	-0.027	-0.029	-0.025	-0.028	-0.030	-0.026	-0.027	-0.029	-0.025
<b>Type of sibling (ref: full)</b>									
Half	-0.030	-0.033	-0.026	-0.031	-0.035	-0.027	-0.034	-0.038	-0.029
<b>Education composition (ref: both without higher education)</b>									
Both with higher education	-0.062	-0.065	-0.060	-0.085	-0.088	-0.082	-0.104	-0.107	-0.101
One with higher education	-0.049	-0.051	-0.047	-0.062	-0.064	-0.060	-0.071	-0.073	-0.069
No information for at least one sibling	-0.031	-0.043	-0.019	-0.039	-0.052	-0.026	-0.046	-0.060	-0.033
<b>Origin composition (ref: both live outside of the counties of birth)</b>									
Both live in counties of birth	0.151	0.149	0.153	0.197	0.195	0.200	0.241	0.238	0.244
One lives in a county of birth	-0.115	-0.117	-0.113	-0.139	-0.141	-0.136	-0.156	-0.158	-0.153
<b>Urbanity composition (ref: both live in less urban areas)</b>									
Both live in more urban areas	0.204	0.201	0.207	0.251	0.248	0.255	0.268	0.265	0.271
One lives in a more urban area	-0.242	-0.244	-0.241	-0.254	-0.256	-0.252	-0.241	-0.243	-0.239
<b>Size of a sibling group (ref: 2)</b>									
3	-0.014	-0.017	-0.012	-0.014	-0.016	-0.012	-0.014	-0.016	-0.012
4	-0.025	-0.028	-0.022	-0.024	-0.027	-0.021	-0.025	-0.028	-0.022
5 or more	-0.042	-0.045	-0.039	-0.044	-0.047	-0.041	-0.044	-0.048	-0.041

	<b>10 km</b>		<b>15 km</b>		<b>20 km</b>	
	<b>AME</b>	<b>95% conf. interval</b>	<b>AME</b>	<b>95% conf. interval</b>	<b>AME</b>	<b>95% conf. interval</b>
<b>Variance of random effect: sibling group level</b>	3.360	0.040 (SE)	3.672	0.041 (SE)	4.070	0.043 (SE)
<b>ICC: sibling group level</b>	0.505	0.003 (SE)	0.527	0.003 (SE)	0.553	0.003 (SE)
<b>Log likelihood</b>	-340676.49		-366208.87		-379156.49	
<b>Wald chi2(20), Prob &gt; chi2</b>	60327.70, p < .001		70427.05, p < .001		74504.44, p < .001	
<b>N of observations</b>	814,506					
<b>N of groups</b>	475,644					

**Table A4.** Model 2: Characteristics of dyads of siblings associated with a logarithm of the dyadic distance between siblings

	AME	95% conf. interval	
<b>Parental vital status and location (ref: neither has biological parents alive)</b>			
At least one parent alive but far from both	0.150	0.127	0.173
At least one parent nearby	-0.468	-0.492	-0.443
<b>Parenthood status composition (ref: both index person and a sibling have children)</b>			
Both without children	-0.815	-0.855	-0.774
One without a child	-0.155	-0.171	-0.140
<b>Partnership status composition (ref: both index person and a sibling with partners)</b>			
Both without partners	-0.111	-0.129	-0.091
One without a partner	0.054	0.040	0.067
<b>Age composition of a dyad (ref: age difference &gt; 5 years)</b>			
Around the same age ( $\pm 5$ years)	0.001	-0.010	0.013
<b>Gender composition of a dyad (ref: brother-brother)</b>			
Sister-sister	0.162	0.144	0.179
Different gender	0.264	0.249	0.278
<b>Type of sibling (ref: full)</b>			
Half	0.331	0.303	0.358
<b>Education composition (ref: both without higher education)</b>			
Both with higher education	0.664	0.645	0.684
One with higher education	0.480	0.465	0.494
No information for at least one sibling in a dyad	0.273	0.185	0.362
<b>Origin composition (ref: both live outside of the counties of birth)</b>			
Both live in counties of birth	-1.615	-1.631	-1.599
One lives in a county of birth	0.958	0.942	0.974
<b>Urbanity composition (ref: both live in less urban areas)</b>			
Both live in more urban areas	-0.369	-0.387	-0.350
One lives in a more urban area	1.429	1.414	1.443
<b>Size of a sibling group (ref: 2)</b>			
3	0.082	0.066	0.098
4	0.143	0.122	0.163
5 or more	0.251	0.228	0.274
<b>Variance of random effect: sibling group level</b>	2.115	0.013 (SE)	
<b>Variance (Residual)</b>	5.407	0.012 (SE)	
<b>ICC: sibling group level</b>	0.281	0.001 (SE)	
<b>Log likelihood</b>	-1959025.00		
<b>Wald chi2(20), Prob &gt; chi2</b>	227948.32, p < .001		
<b>N of observations</b>	814,506		
<b>N of groups</b>	475,644		