Heterogeneity in Childhood Residential Mobility Trajectories: Implications for Adult Preventative Healthcare Use

Justė Lekštytė (UAB/CED)

Supervised by Claudia Brunori (UAB/CED), Sergi Vidal (UAB/CED)

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Introduction

- **Preventative healthcare** is key to well-being, reducing costs, and improving lifespan.

- Health-related knowledge develops early, influenced by childhood socioeconomic conditions (Abel, 2008).

- **Parental skills transfer** and **life-course factors** (e.g., poverty, parental separation, **residential instability**) shape preventative health behaviours (Abel & Frohlich, 2012; Kuh & Ben-Shlomo, 2004).

- Frequent moves **disrupt relationships with healthcare providers**, reducing access to care.

  - Children with frequent moves are less likely to have a **stable "medical home"** and face **higher risks of avoidable hospitalizations** (Busacker & Kasehagen, 2012; Hutchings et al., 2016; Nathan et al., 2022).

- Research often treats residential mobility as a uniform experience, ignoring **variations in frequency, timing, and neighbourhood context**.

- **Long-term effects** on preventative healthcare utilization remain underexplored.

Research questions:

- RQ1: How do residential mobility trajectories in childhood vary among individuals?

- RQ2: Do residential mobility trajectories in childhood influence patterns of preventative healthcare use in adulthood?

Data

Main data: Swedish register data

Preliminary analysis:

- Wave 3 of SHARE (Survey of Health, Ageing and Retirement in Europe) from 2008/09.

- Constructed mobility trajectories (up to 30 dwellings, more than six months since birth).

- Swedish sample: 1,567 individuals with lifetime residential histories (birth to age 18).

Variables

Residential mobility:

- stable in an urban/rural area,
- 0–1 years since the move to a urban/rural area,
- 2–5 years since the move to a urban/rural area.

Preventative healthcare:

- regular blood pressure checks,
- regular blood tests (e.g., cholesterol or blood sugar),
- regular vision tests.

Covariates: birth cohort, gender, childhood health status, childhood socio-economic status.

Method

Analysis for RQ1:

- Sequence & cluster analyses.
- sequence analysis: optimal matching algorithm for sequences of spells or episodes (OMspell),
- clustering: Ward's method.

Analysis for RQ2:

- regression on key indicators—ever moved, frequency, age of move, and rural/urban moves.
- Logistic regression to predict preventative healthcare use with typology.

Results

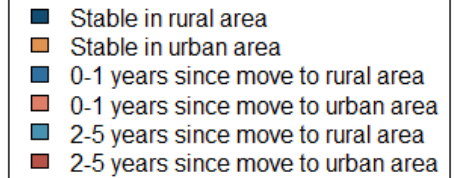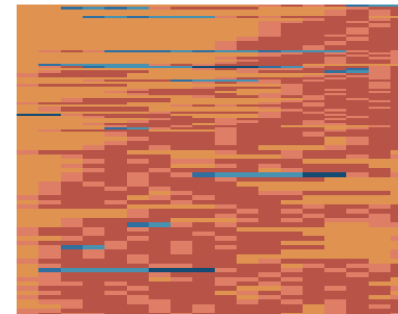1. Stable in urban area: Sequences medoids
2. Moving twice in urban area: Sequences medoids
3. Moving once in urban area: Sequences medoids
4. Frequent mobility in urban area: Sequences medoids
5. Stable in rural area: Sequences medoids
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7. Moving once in rural area: Sequences medoids
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9. Moving from rural to urban area: Sequences medoids
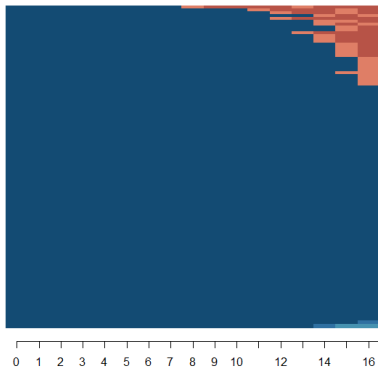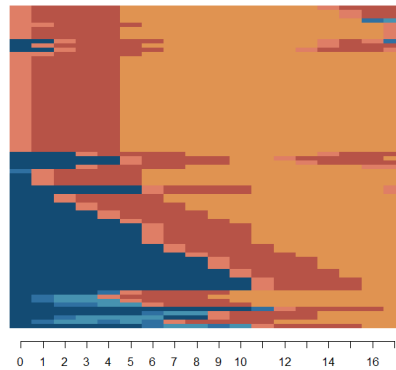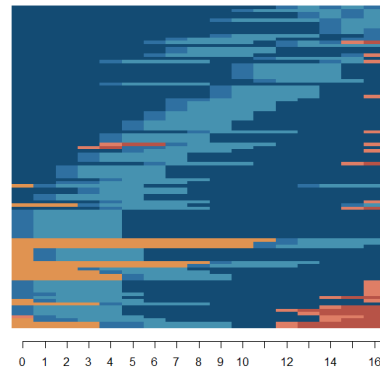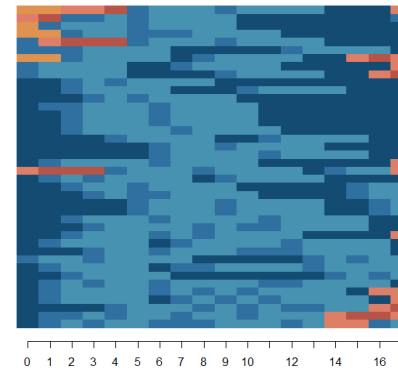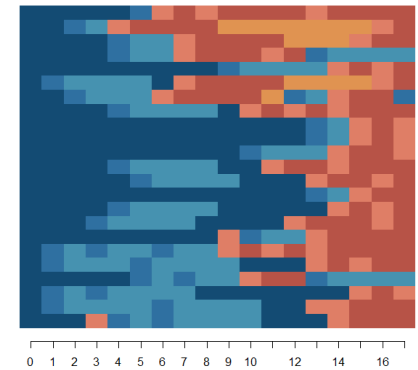
Legend:
- Stable in rural area
- Stable in urban area
- 0-1 years since move to rural area
- 0-1 years since move to urban area
- 2-5 years since move to rural area
- 2-5 years since move to urban area

Results

Table 2. Average marginal effects (AMEs) coefficients for basic indicators of mobility trajectories across nested logistic models predicting preventative healthcare use

	Vision tests	Blood pressure checks	Blood tests
Ever moved (ref. no)	-0.05*	-0.04	-0.05
	(0.03)	(0.03)	(0.03)
Number of moves (ref no moves)			
1 move	-0.06*	-0.05	-0.06
	(0.04)	(0.04)	(0.04)
2 moves	-0.04	-0.02	-0.03
	(0.04)	(0.04)	(0.04)
3 or more moves	-0.06	-0.03	-0.05
	(0.04)	(0.04)	(0.04)
Movement patterns (ref. stable in rural area)			
Stable in urban	0.10*	0.02	0.02
	(0.05)	(0.05)	(0.05)
Move from rural to urban	-0.03	-0.03	-0.05
	(0.06)	(0.06)	(0.06)
Move from urban to rural	0.08	0.05	0.10
	(0.09)	(0.08)	(0.09)
Move from urban to urban	-0.04	-0.05	-0.04
	(0.05)	(0.05)	(0.05)
Move from rural to rural	0.02	0.00	-0.05
	(0.06)	(0.06)	(0.06)
Age at move (ref. Move between 6 and 11)			
Move between birth and 5	-0.01	-0.02	0.02
	(0.05)	(0.05)	(0.05)
Move between 12 and 18	0.02	-0.01	0.02
	(0.05)	(0.05)	(0.05)

*Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Birth cohort, gender, childhood health status, and childhood socio-economic status are added as controls.*

Results

Table 3. Average marginal effects (AMEs) coefficients for residential mobility in childhood typologies across nested logistic models predicting preventative healthcare use

	Vision tests	Blood pressure checks	Blood tests
Mobility pathways (ref. stable in urban area)			
Moving twice in urban area	-0.04	-0.04	-0.04
	(0.06)	(0.06)	(0.06)
Moving once in urban area	-0.07	-0.06	-0.05
	(0.05)	(0.05)	(0.05)
Frequent mobility in urban area	-0.05	-0.01	0.01
	(0.05)	(0.05)	(0.05)
Stable in rural area	-0.04	0.01	0.00
	(0.04)	(0.04)	(0.04)
Moving from rural to urban area in early childhood	-0.07	-0.07	-0.05
	(0.06)	(0.07)	(0.06)
Moving once in rural area	-0.01	0.03	0.01
	(0.06)	(0.06)	(0.06)
Frequent mobility in rural area	-0.07	0.05	-0.04
	(0.09)	(0.09)	(0.08)
Observations	1,541	1,541	1,539

*Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Birth cohort, gender, childhood health status, and childhood socio-economic status are added as controls.*

Future steps

Data: Swedish register data, focusing on a 1990s birth cohort (younger cohort than SHARE).

Preventative healthcare measure: hospital-based outpatient physician visits (more precise than SHARE).

Residential mobility measures: number, timing, distance of moves, and neighbourhood Change (more detailed than SHARE).

Thank you for your attention!

Justė Lekštytė

Universitat Autònoma de Barcelona, Centro de Estudios Demográficos

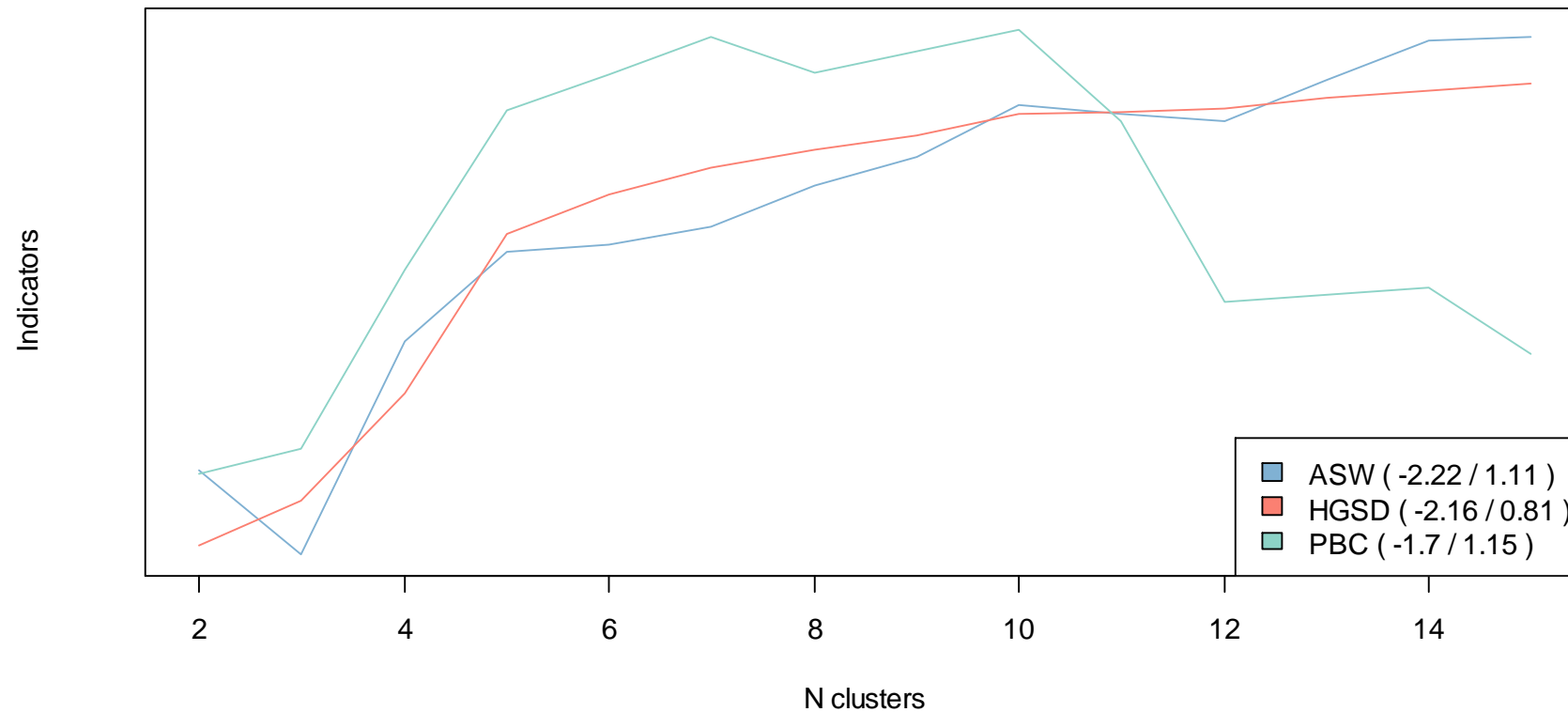jlekstyte@ced.uab.es

Appendix

Figure 1. Average silhouette width (ASW), Hubert's Sommers' D (HGSD) and Point bi-serial correlation (PBC).

Appendix

LIFE LONG MOVE

Table 1. Average marginal effects (AMEs) coefficients for having ever moved across nested logistic models predicting preventative healthcare use

	Vision tests			Blood pressure checks			Blood tests		
Ever moved (ref. no)	-0.06*	-0.05	-0.05*	-0.07**	-0.04	-0.04	-0.08**	-0.05	-0.05
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Gender (ref. male)		0.09***	0.08***		-0.09***	-0.09***		-0.12***	-0.13***
		(0.03)	(0.03)		(0.03)	(0.03)		(0.03)	(0.03)
Cohort (ref. 1932–1945 birth cohort)									
1910–1931 birth cohort		0.11***	0.12***		0.08**	0.08**		0.03	0.04
		(0.04)	(0.04)		(0.03)	(0.03)		(0.04)	(0.04)
1946 – 1965 birth cohort		-0.04	-0.04		-0.17***	-0.16***		-0.16***	-0.15***
		(0.03)	(0.03)		(0.03)	(0.03)		(0.03)	(0.03)
Childhood health (ref. no illnesses)									
1 illness			0.15**			0.10			0.08
			(0.06)			(0.07)			(0.06)
2 illnesses			0.13**			0.08			0.07
			(0.06)			(0.07)			(0.06)
3 or more illnesses			0.09			0.04			0.08
			(0.08)			(0.08)			(0.08)
Childhood socio-economic status (ref. white-collar high skilled)									
White-collar low skilled			0.13**			0.02			0.10*
			(0.05)			(0.05)			(0.05)
Blue-collar high skilled			0.05			0.07			0.05
			(0.04)			(0.04)			(0.04)
Blue-collar low skilled			0.05			0.01			0.02
			(0.05)			(0.05)			(0.05)
Other			0.15*			0.05			0.10
			(0.09)			(0.08)			(0.08)
Observations	1,564	1,564	1,564	1,564	1,564	1,564	1,563	1,563	1,563

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 2. Average marginal effects (AMEs) coefficients for frequency of moves across nested logistic models predicting preventative healthcare use

	Vision tests			Blood pressure checks			Blood tests		
Number of moves (ref no moves)									
1 move	-0.07*	-0.06	-0.06*	-0.09**	-0.05	-0.05	-0.09**	-0.06	-0.06
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
2 moves	-0.04	-0.03	-0.04	-0.06	-0.02	-0.02	-0.07	-0.03	-0.03
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
3 or more moves	-0.06	-0.05	-0.06	-0.06	-0.04	-0.03	-0.07*	-0.05	-0.05
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Gender (ref. male)		0.09***	0.08***		-0.09***	-0.09***		-0.12***	-0.13***
		(0.03)	(0.03)		(0.03)	(0.03)		(0.03)	(0.03)
Cohort (ref. 1932–1945 birth cohort)									
1910–1931 birth cohort		0.11***	0.12***		0.08**	0.08**		0.04	0.04
		(0.04)	(0.04)		(0.03)	(0.03)		(0.04)	(0.04)
1946 − 1965 birth cohort		-0.04	-0.04		-0.17***	-0.16***		-0.16***	-0.15***
		(0.03)	(0.03)		(0.03)	(0.03)		(0.03)	(0.03)
Childhood health (ref. no illnesses)									
1 illness			0.15**			0.11			0.08
			(0.06)			(0.07)			(0.06)
2 illnesses			0.13**			0.08			0.08
			(0.06)			(0.07)			(0.06)
3 or more illnesses			0.09			0.04			0.08
			(0.08)			(0.08)			(0.08)
Childhood socio-economic status (ref. white-collar high skilled)									
White-collar low skilled			0.12**			0.02			0.10*
			(0.05)			(0.05)			(0.05)
Blue-collar high skilled			0.05			0.07			0.05
			(0.04)			(0.04)			(0.04)
Blue-collar low skilled			0.05			0.01			0.02
			(0.05)			(0.05)			(0.05)
Other			0.15*			0.05			0.10
			(0.09)			(0.08)			(0.08)
Observations	1,564	1,564	1,564	1,564	1,564	1,564	1,563	1,563	1,563

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Appendix

Table 3. Average marginal effects (AMEs) coefficients for movement patterns across nested logistic models predicting preventative healthcare use

	Vision tests			Blood pressure checks			Blood tests		
Movement patterns (ref. stable in rural area)									
Stable in urban	0.08	0.09*	0.10*	-0.03	-0.01	0.02	-0.01	0.01	0.02
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Move from rural to urban	-0.03	-0.03	-0.03	-0.09	-0.04	-0.03	-0.11*	-0.06	-0.05
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Move from urban to rural	0.04	0.07	0.08	-0.02	0.02	0.05	0.05	0.09	0.10
	(0.09)	(0.09)	(0.09)	(0.09)	(0.08)	(0.08)	(0.09)	(0.09)	(0.09)
Move from urban to urban	-0.06	-0.03	-0.04	-0.14***	-0.08*	-0.05	-0.10**	-0.05	-0.04
	(0.05)	(0.04)	(0.05)	(0.04)	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)
Move from rural to rural	0.03	0.02	0.02	-0.03	-0.00	0.00	-0.07	-0.05	-0.05
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Gender (ref. male)		0.09***	0.09***		-0.09***	-0.09***		-0.12***	-0.12***
		(0.03)	(0.03)		(0.03)	(0.03)		(0.03)	(0.03)
Cohort (ref. 1932–1945 birth cohort)									
1910–1931 birth cohort		0.11***	0.11***		0.08**	0.08**		0.03	0.04
		(0.04)	(0.04)		(0.03)	(0.03)		(0.04)	(0.04)
1946 − 1965 birth cohort		-0.04	-0.04		-0.16***	-0.16***		-0.16***	-0.15***
		(0.03)	(0.03)		(0.03)	(0.03)		(0.03)	(0.03)
Childhood health (ref. no illnesses)									
1 illness			0.16***			0.11*			0.09
			(0.06)			(0.07)			(0.06)
2 illnesses			0.14**			0.08			0.08
			(0.06)			(0.07)			(0.06)
3 or more illnesses			0.09			0.04			0.08
			(0.08)			(0.08)			(0.08)
Childhood socio-economic status (ref. white-collar high skilled)									
White-collar low skilled			0.13**			0.02			0.10*
			(0.05)			(0.05)			(0.05)
Blue-collar high skilled			0.05			0.05			0.06
			(0.04)			(0.05)			(0.05)
Blue-collar low skilled			0.05			0.01			0.02
			(0.05)			(0.05)			(0.05)
Other			0.16*			0.05			0.11
Observations	1,564	1,564	1,564	1,564	1,564	1,564	1,563	1,563	1,563

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 4. Average marginal effects (AMEs) coefficients for the age of moves across nested logistic models predicting preventative healthcare use

	Vision tests			Blood pressure checks			Blood tests		
Age at move (ref. Move between 6 and 11)									
Move between birth and 5	-0.01	-0.01	-0.01	-0.03	-0.03	-0.02	0.01	0.02	0.02
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Move between 12 and 18	0.03	0.02	0.02	0.01	-0.00	-0.01	0.04	0.03	0.02
	(0.05)	(0.05)	(0.05)	(0.06)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Gender (ref. male)		0.10***	0.11***		-0.07*	-0.07*		-0.10***	-0.11***
		(0.04)	(0.04)		(0.04)	(0.04)		(0.04)	(0.04)
Cohort (ref. 1932–1945 birth cohort)									
1910–1931 birth cohort		0.03	0.03		0.03	0.03		-0.02	-0.02
		(0.05)	(0.05)		(0.05)	(0.05)		(0.05)	(0.05)
1946 − 1965 birth cohort		-0.07*	-0.06		-0.21***	-0.20***		-0.17***	-0.16***
		(0.04)	(0.04)		(0.04)	(0.04)		(0.04)	(0.04)
Childhood health (ref. no illnesses)									
1 illness			0.06			0.09			0.04
			(0.09)			(0.09)			(0.09)
2 illnesses			0.01			0.04			-0.01
			(0.09)			(0.09)			(0.09)
3 or more illnesses			-0.01			0.01			0.00
			(0.10)			(0.11)			(0.11)
Childhood socio-economic status (ref. white-collar high skilled)									
White-collar low skilled			0.12*			0.02			0.09
			(0.06)			(0.06)			(0.06)
Blue-collar high skilled			0.03			0.07			0.08*
			(0.05)			(0.05)			(0.05)
Blue-collar low skilled			0.05			0.01			0.02
			(0.06)			(0.06)			(0.06)
Other			0.18*			0.05			0.09
			(0.10)			(0.09)			(0.08)
Observations	1,009	1,009	1,009	1,009	1,009	1,009	1,009	1,009	1,009

Standard errors in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 5. Average marginal effects (AMEs) coefficients for residential mobility in childhood typologies across nested logistic models predicting preventative healthcare use

	Vision tests			Blood pressure checks			Blood tests		
Mobility pathways (ref. stable in urban area)									
Moving twice in urban area	-0.06	-0.04	-0.04	-0.08	-0.04	-0.04	-0.07	-0.04	-0.04
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Moving once in urban area	-0.08	-0.06	-0.07	-0.09*	-0.06	-0.06	-0.07	-0.05	-0.05
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Stable in rural area	-0.02	-0.04	-0.04	0.04	0.03	0.01	0.02	0.01	0.00
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Moving from rural to urban area in early childhood	-0.08	-0.07	-0.07	-0.07	-0.06	-0.07	-0.06	-0.05	-0.05
	(0.07)	(0.07)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.06)	(0.06)
Moving once in rural area	-0.00	-0.01	-0.01	0.04	0.04	0.03	0.01	0.01	0.01
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Frequent mobility in urban area	-0.06	-0.05	-0.05	-0.03	-0.02	-0.01	-0.00	0.01	0.01
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Frequent mobility in rural area	-0.04	-0.06	-0.07	0.10	0.06	0.05	0.01	-0.03	-0.04
	(0.09)	(0.09)	(0.09)	(0.08)	(0.09)	(0.09)	(0.09)	(0.08)	(0.08)
Gender (ref. male)		0.08***	0.08**		-0.10***	-0.10***		-0.13***	-0.13***
		(0.03)	(0.03)		(0.03)	(0.03)		(0.03)	(0.03)
Cohort (ref. 1932–1945 birth cohort)									
1910–1931 birth cohort		-0.11***	-0.12***		-0.08**	-0.08**		-0.03	-0.04
		(0.04)	(0.04)		(0.03)	(0.03)		(0.04)	(0.04)
1946 − 1965 birth cohort		-0.16***	-0.17***		-0.25***	-0.25***		-0.19***	-0.19***
		(0.04)	(0.04)		(0.04)	(0.04)		(0.04)	(0.04)
Childhood health (ref. no illnesses)									
1 illness			0.15**			0.11*			0.09
			(0.06)			(0.07)			(0.06)
2 illnesses			0.14**			0.08			0.08
			(0.06)			(0.07)			(0.06)
3 or more illnesses			0.09			0.05			0.09
			(0.08)			(0.08)			(0.08)
Childhood SES (ref. whit-collar high skilled)									
White-collar low skilled			0.12**			0.02			0.10*
			(0.05)			(0.05)			(0.05)
Blue-collar high skilled			0.05			0.05			0.05
			(0.04)			(0.05)			(0.05)
Blue-collar low skilled			0.05			0.00			0.01
			(0.05)			(0.05)			(0.05)
Other			0.15*			0.04			0.09
			(0.09)			(0.08)			(0.08)
Observations	1,541	1,541	1,541	1,541	1,541	1,541	1,539	1,539	1,539

*Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.*