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

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Introduction

LIFE LONG MOVE

- **Preventative healthcare** is key to well-being, reducing costs, and improving lifespan.
- It is commonly measured through:
  - Vaccinations, cancer screenings, regular chech-ups
- Another important aspect is whether healthcare is accessed in a *timely manner* to prevent serious health issues.

Introduction

- **Life-course factors** (e.g., poverty, parental separation, **residential instability**) shape preventative health behaviours (Abel & Frohlich, 2012; Kuh & Ben-Shlomo, 2004).
- Moves **disrupt relationships with healthcare providers**, reducing access to care (Busacker & Kasehagen, 2012; Hutchings et al., 2016; Nathan et al., 2022).
- Limitations in research:
  - Mobility is treated as a uniform experience
  - **Long-term effects** on preventative healthcare utilization remain underexplored.

Swedish context

- Universal, needs-based system
- Strategic placement of primary-care centers (pre-2010)
- No provider choice before 2010

Hypothesis

Frequency

- Higher mobility during childhood is associated with lower preventative healthcare use in adulthood due to disrupted healthcare continuity.

Timing of moves

- Moves during adolescence compared to early childhood have stronger negative effects on preventative healthcare engagement later in life.

Distance of moves

- Long-distance moves pose access challenges.

Socioeconomic context of moves

- Upward mobility mitigates negative effects of moving, while downward mobility exacerbates barriers to preventative healthcare.

Data

Swedish register data

- 1990 cohort
  - Lived in country during childhood (until 16)
  - followed until 2021
  - N = 22,236
- Mobility defined as change in DeSO

Variables

Residential mobility:

- stable in a non-disadvantaged area/disadvantaged area,
- 0–1 years since the move to a non-disadvantaged area/disadvantaged area,
- 2–5 years since the move to a non-disadvantaged area/disadvantaged area.

Preventative healthcare:

- potentially avoidable hospitalization
  - (1 = yes/0 = no) from 2007 to 2021

Method

Analysis for RQ1:

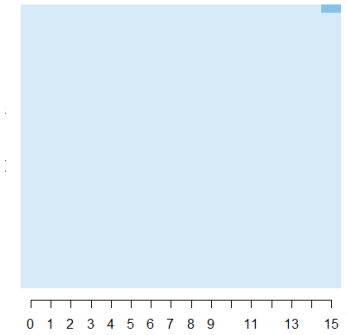
- Sequence analysis.
  - Dynamic Hamming Distance (DHD) algorithm,
- Clustering: Ward's method.

Analysis for RQ2:

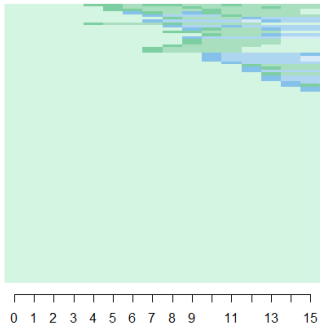
- Regression on key indicators—ever moved, frequency, age of move.
- Logistic regression to predict preventative healthcare use with typology.

Results

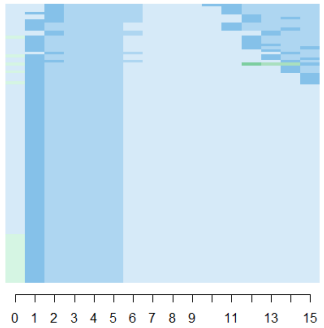
1. Stable in NDI area (N = 7,453)



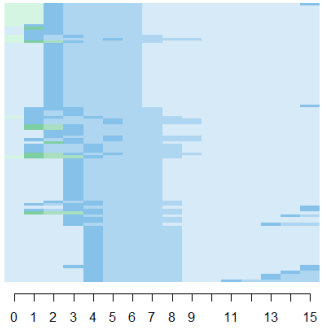
2. Stable in DI area (N = 2,091)



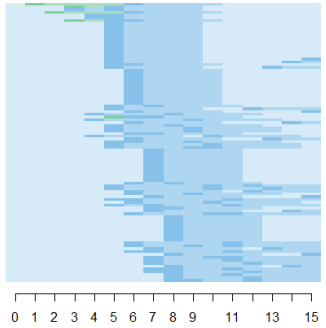
3. Moderate mobility in very early childhood in NDI area (N = 1,665)



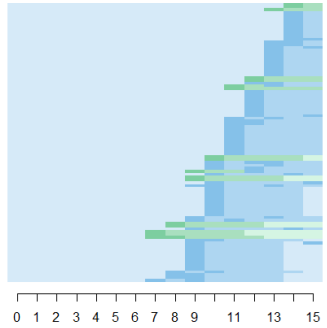
4. Moderate mobility, in early childhood in NDI area (N = 2,280)



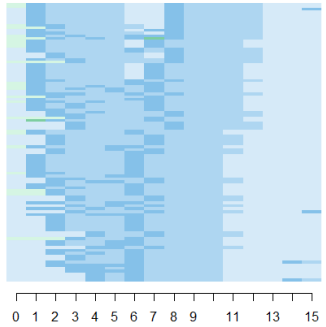
5. Moderate mobility, mid-childhood in NDI area (N = 1,928)



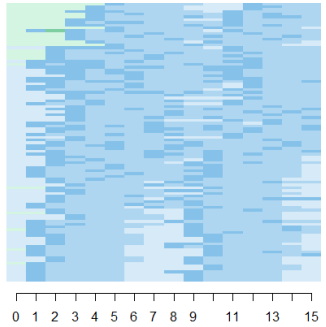
6. Moderate mobility, adolescence in NDI area (N = 1,747)



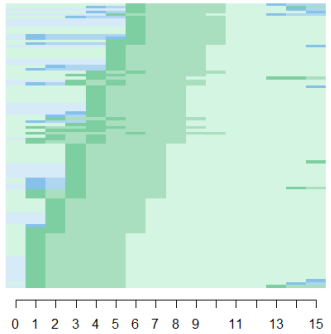
7. Frequent mobility, early and mid-childhood in NDI area (N = 844)



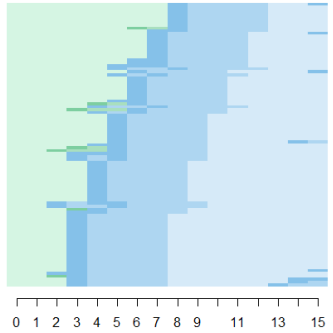
8. Frequent mobility in NDI area (N = 1,194)



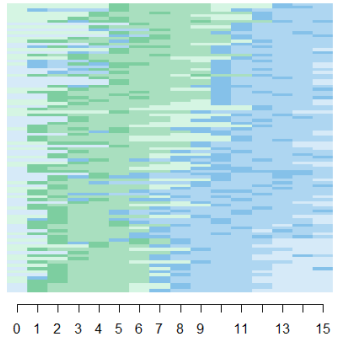
9. Moderate mobility in DI area (N = 984)



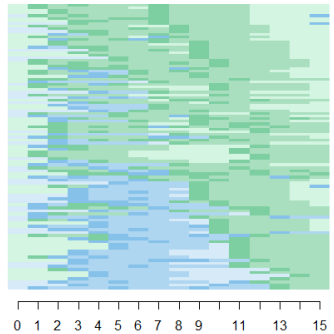
10. Upward mobility (N = 583)



11. Frequent mobility, upward (N = 818)



12. Frequent mobility, downward (N = 649)



Stable in non-disadvantaged area
0-1 years since move to non-disadvantaged area
2-5 years since move to non-disadvantaged area
Stable in disadvantaged area
0-1 years since move to disadvantaged area
2-5 years since move to disadvantaged area

Results

Table 1. Average marginal effects (AMEs) coefficients for basic indicators of mobility trajectories across logistic models predicting PAH

	Model 1	Model 2	Model 3
Ever moved (ref. no)	0.018***		
	(0.004)		
Number of moves (ref no moves)			
1 move		0.008	
		(0.005)	
2 moves		0.020***	
		(0.006)	
3 or more moves		0.030***	
		(0.005)	
Age at move (ref. Move between birth and 6)			
Move between 7 and 11			0.002
			(0.007)
Move between 12 and 16			-0.008
			(0.008)
Gender (ref. Male)			
Female	0.052***	0.052***	0.057***
	(0.004)	(0.004)	(0.005)
Nativity (ref. No migration background)			
Second-generation migrants	0.011*	0.010*	0.011
	(0.005)	(0.005)	(0.006)
Observations	22,236	22,236	13,879

*Standard errors in parentheses *** p<0.001, *** p<0.01, * p<0.05.*

Results

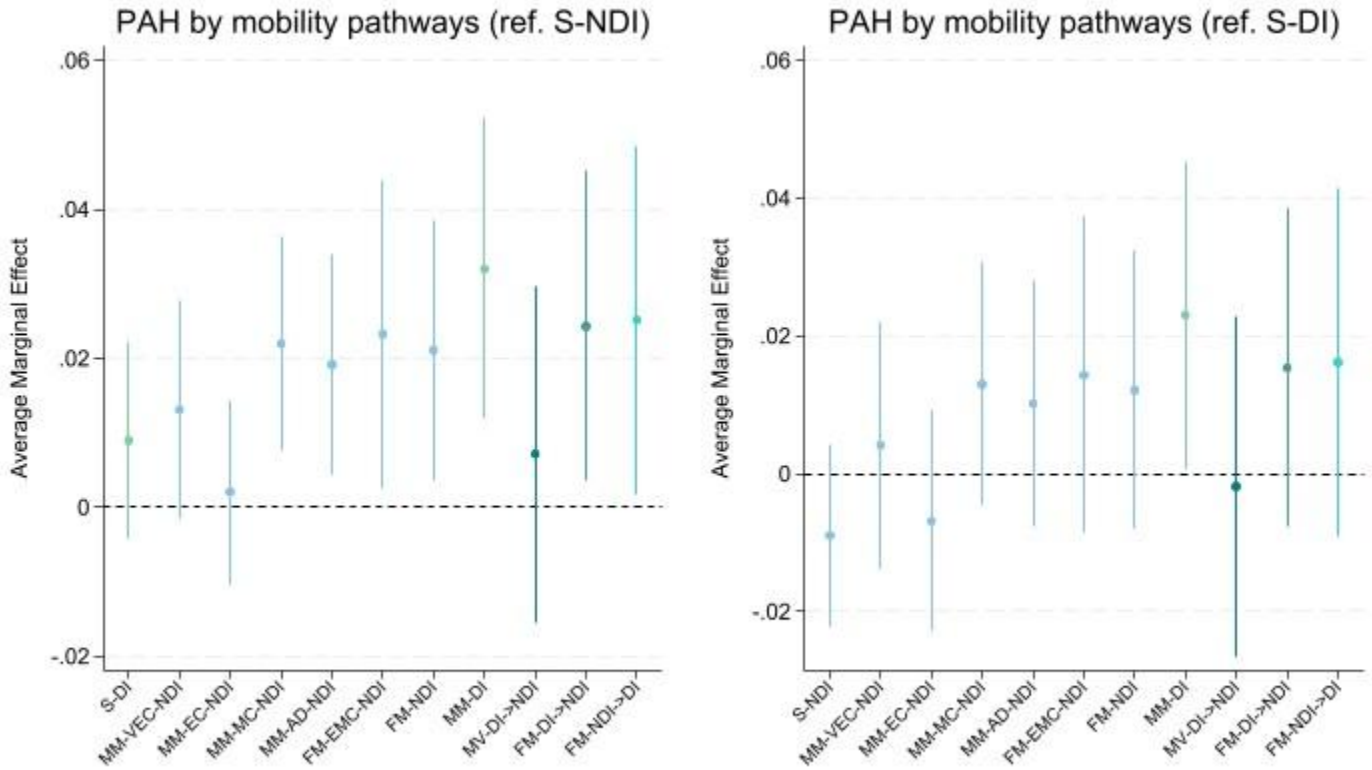
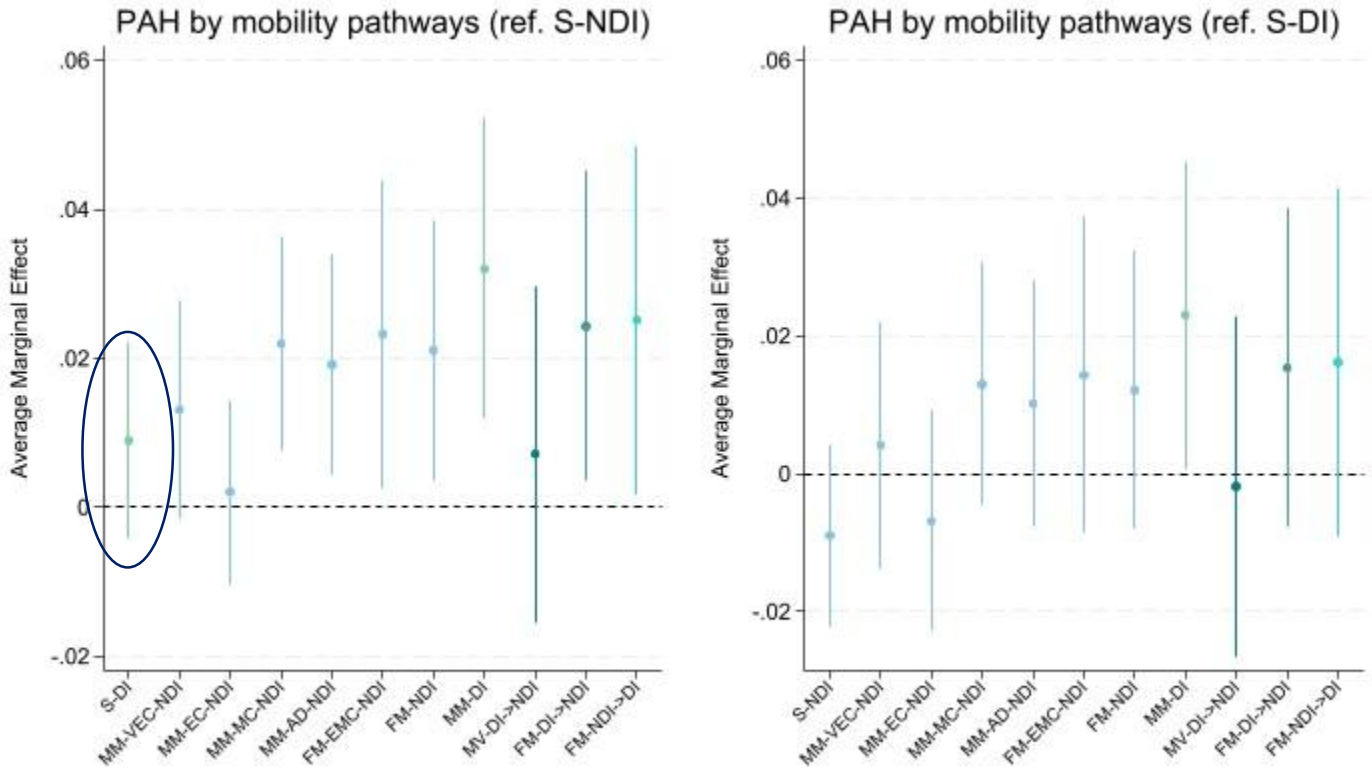


Figure 1. Average marginal effects (AMEs) coefficients for residential mobility in childhood typologies across nested logistic models predicting potentially avoidable hospitalisations using stability

Notes: gender and migration background are added as controls.

Results



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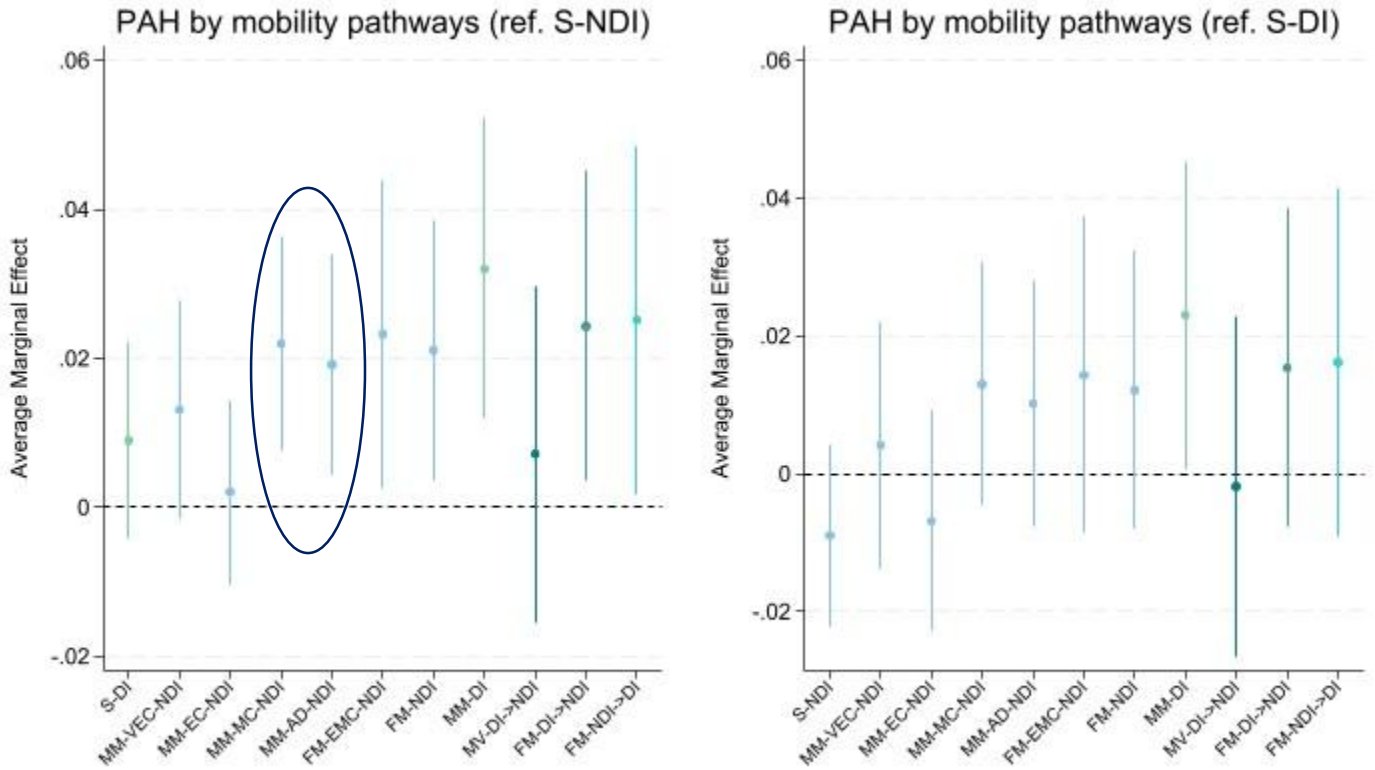

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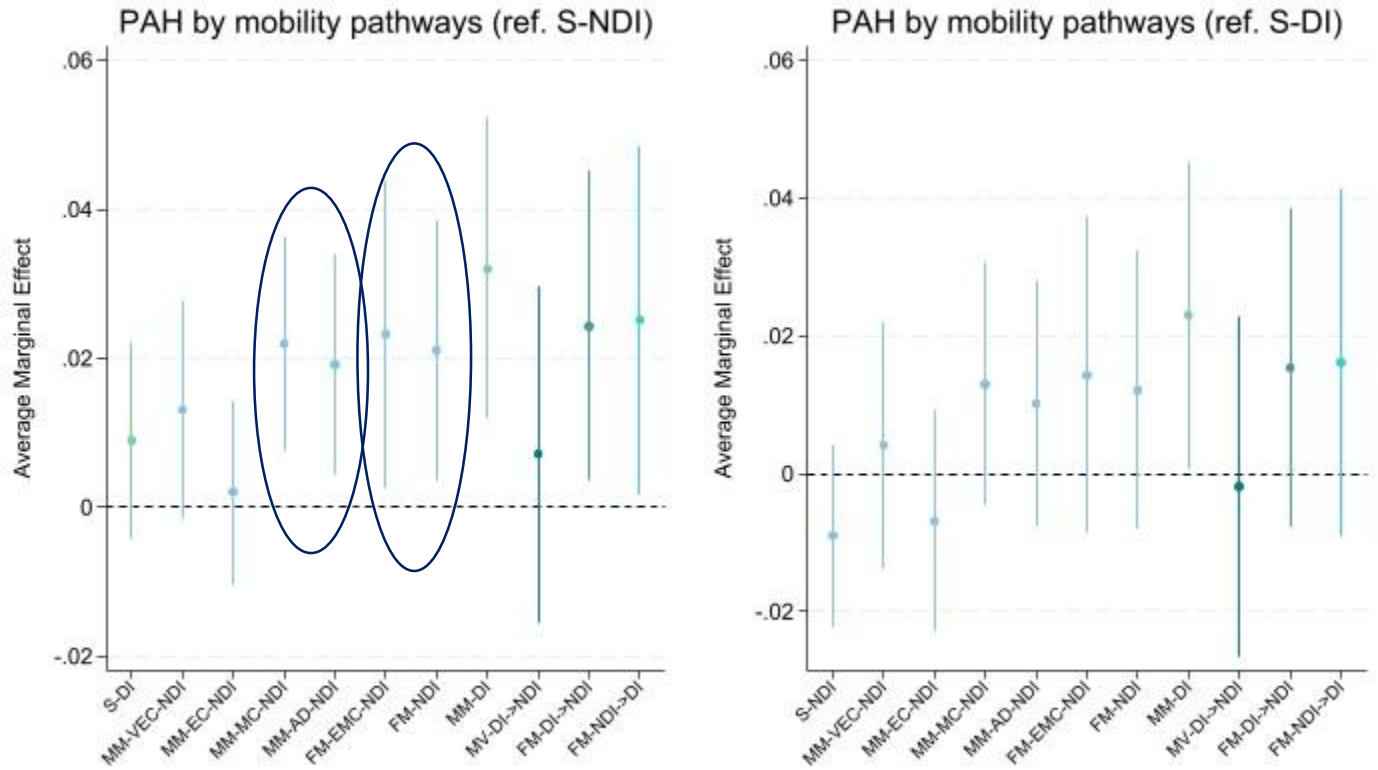

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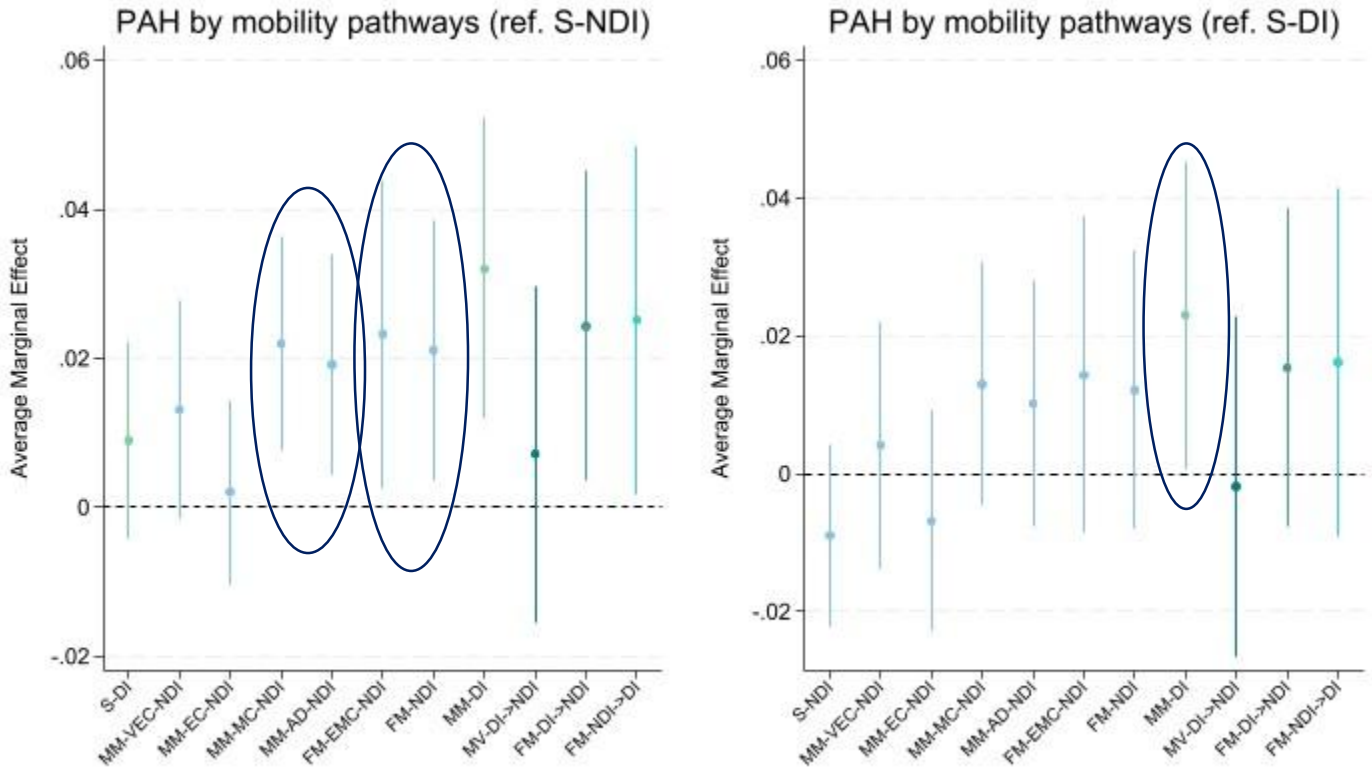

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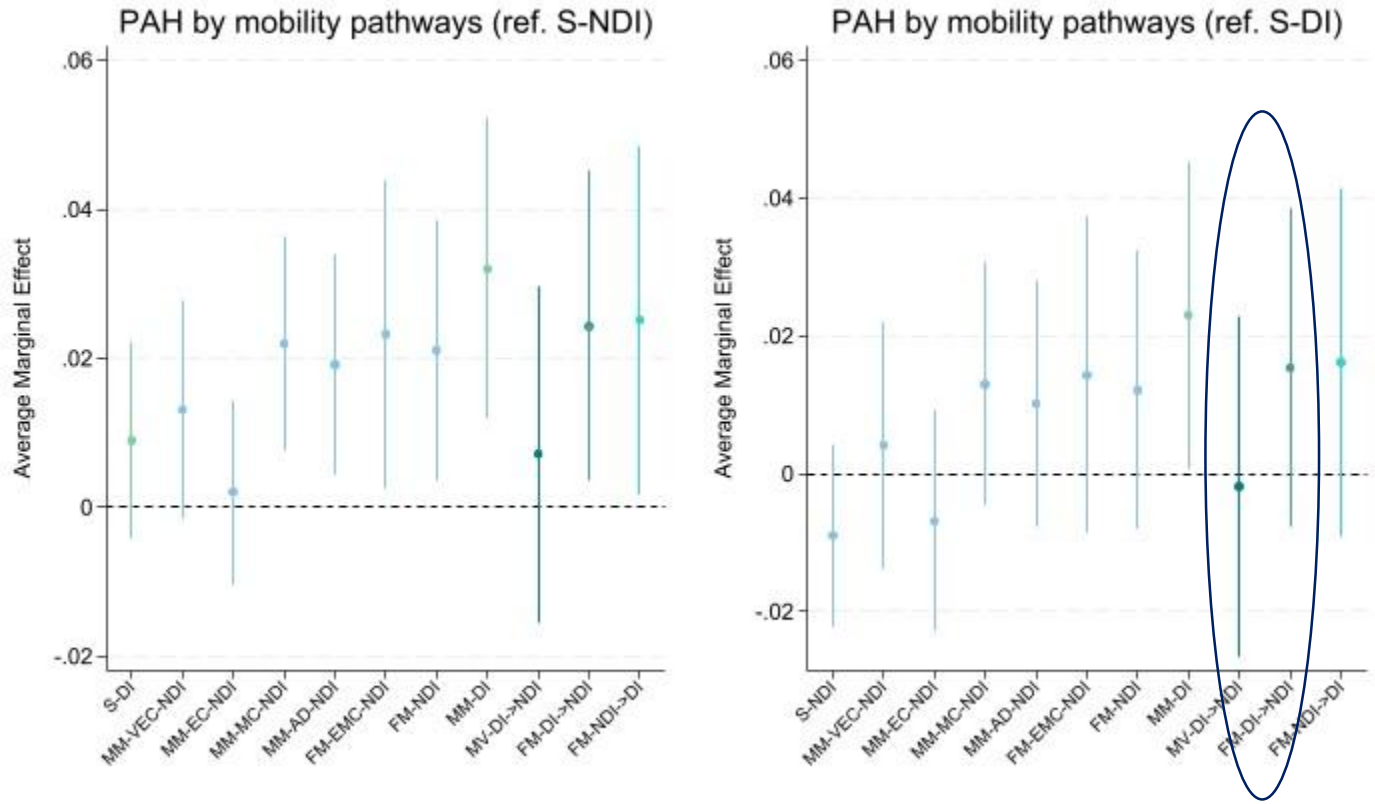

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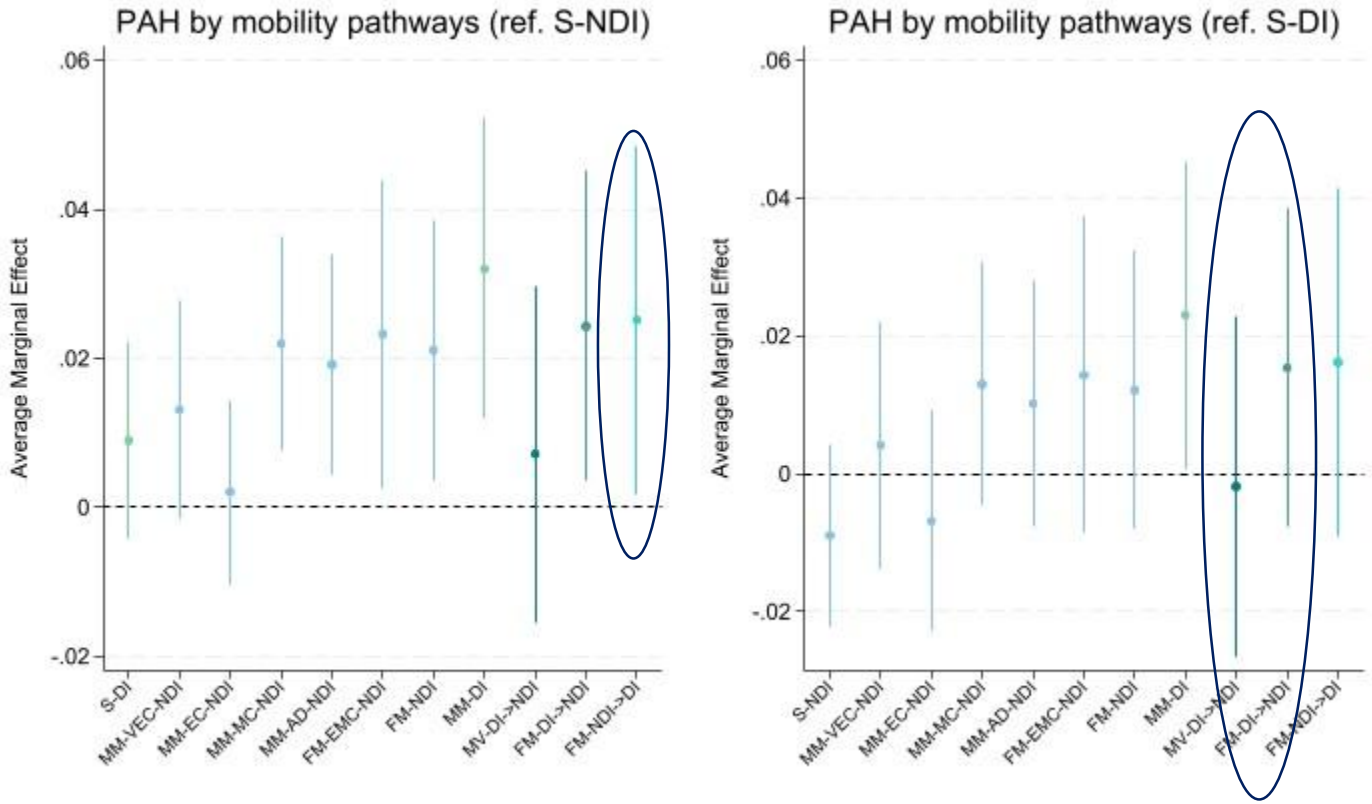

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Main takeaways

Childhood residential mobility is linked to lower engagement with preventative healthcare in adulthood.

Nature of moves is key:

- Frequent movers
- Moves in middle childhood/adolescence
- Downward movers

Thank you for your attention!

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LIFELONGMOVE

Understanding spatial mobility from early life into adulthood

European Research Council
Consolidator Grant (CoG)

Ref: 101043981
Period: Jan 2023 – Dec 2027

Appendix

Condition	ICD-10 coding
Chronic conditions	
Anemia	D501, D508, D509
Asthma	J45, J46
Diabetes	E101–E108, E110–E118, E130–E138, E140–E148
Congestive heart failure	I50, I110, J81
Hypertension	I10, I119
Chronic obstructive pulmonary disease	J41, J42, J43, J44, J47 J20 if secondary diagnosis J41, J42, J43, J44 or J47
Angina pectoris	I20, I240, I248, I249
Acute conditions	
Bleeding ulcer	K250, K251, K252, K254, K255, K256, K260, K261, K262, K264, K265, K266, K270, K271, K272, K274, K275, K276, K280, K281, K282, K284, K285, K286
Diarrhea	E86, K522, K528, K529
Epileptic seizure	O15, G40, G41, R56
Inflammatory diseases of female pelvic organs	N70, N73, N74
Renal tubulo-interstitial disease	N390, N10, N11, N12, N136
Ear, nose and throat infection	H66, H67, J02, J03, J06, J312

Deprivation index

- individuals aged 25–64 years:
  - low educational status (<10 years of formal education);
  - low income (income from all sources, including from interest and dividends), defined as <50% of the median individual income;
  - unemployment (excluding full-time students, those completing compulsory military service, and early retirees);
  - receipt of social welfare.
- Each indicator is standardised (converted to z-scores), and the z-scores are summed to create a composite deprivation score.
- DeSO areas falling within the top 25% of deprivation scores in a given year are classified as disadvantaged (coded 1), while all others are coded as non-disadvantaged (coded 0).