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Estimating the Relationship between Time-varying Covariates and Trajectories: The Sequence Analysis Multistate Model Procedure

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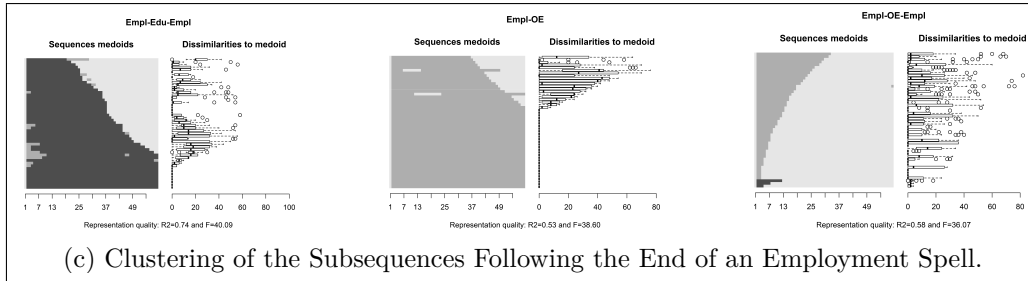
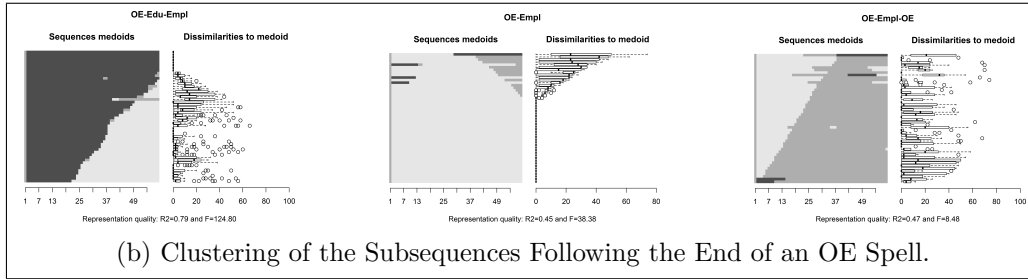
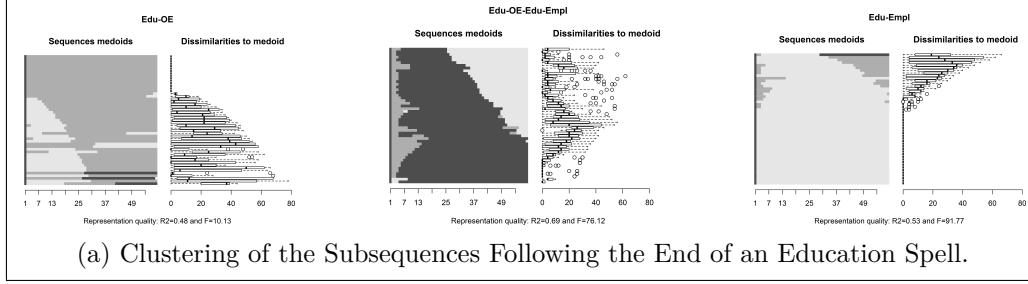
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Online Appendixes

Appendix A Within-cluster Homogeneity

The following graphics present the relative frequency plots of the clustering solution. These figures allow visualizing the within cluster heterogeneity of each cluster while still avoiding over-plotting (Fasang and Liao 2014). We used $k = 50$ sequences to represent the diversity of each cluster. The subsequences are sorted using multidimensional scaling as suggested by Fasang and Liao (2014).



■ Education ■ OE (Out of Employment) □ Employment

Figure A1: Subsequences Clusters: Relative frequency plots of the subsequences following each state. The subsequences are sorted using multidimensional scaling. Source: NEPS data.

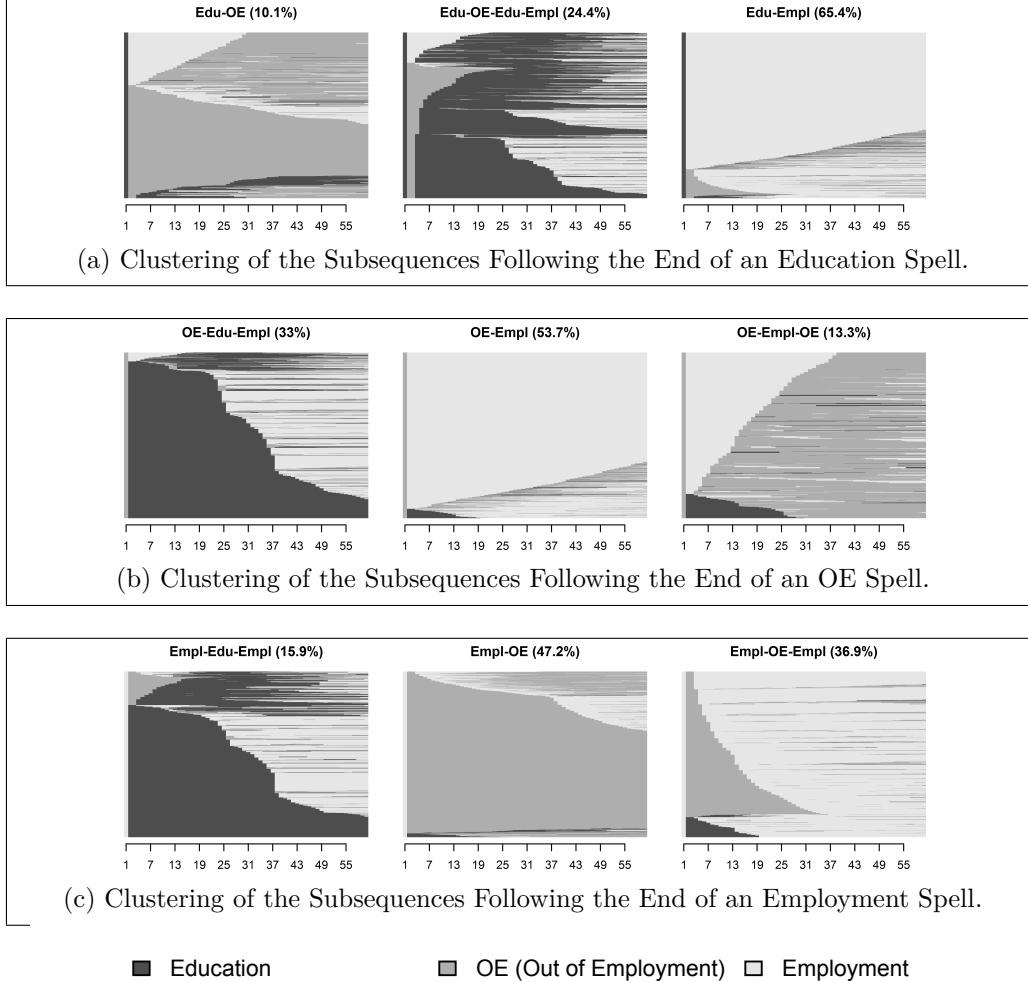


Figure A2: Subsequences Clusters: Index plots of the subsequences in each cluster departing from a specific state sorted by the observed state at the successive positions starting from the beginning of the sequences. Source: NEPS data.

The subsequences are clustered irrespective of the starting age of the subsequences included in each cluster. Figures A3 present index plots of each cluster ordered by age. As it should be, within cluster heterogeneity seems not to be linked to age. In other words, within each cluster, we do not find different types of subsequences according to ages.

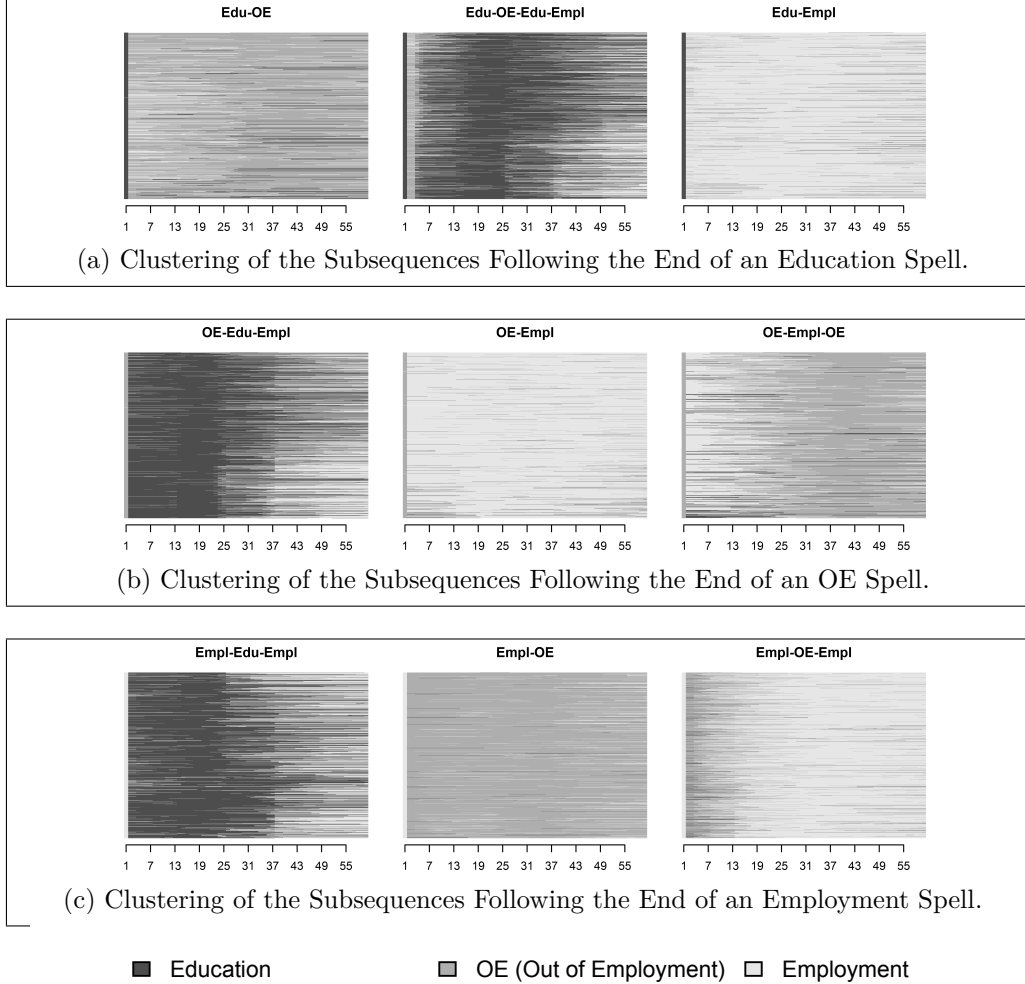


Figure A3: Subsequences Clusters: Index plots of the subsequences in each cluster departing from a specific state sorted by age at the beginning of the subsequence. Source: NEPS data.

Appendix B Robustness Checks Details

We checked whether each statement made in our interpretation of the SAMM procedure's results holds with different subsequence length ℓ . The following table summarizes these

robustness checks.

Statement	Subsequence length ℓ				
	12	24	36	48	72
Lowering of the “Edu–OE” (col. 2) and “Edu–Empl” (col. 4) subsequences in a later period and increase of “Edu–OE–Edu–Empl”.	Yes, except Edu–OE.	Yes, except Edu–OE.	Yes, except Edu–OE.	Yes, except Edu–OE.	Yes
Increase of subsequences “OE–Edu–Empl” and “Empl–Edu–Empl” in a later period.	Yes	Yes	Yes	Yes	Yes
Union increases hazard of “Edu–OE”.	Yes	Yes	Yes	Yes	Yes
Union decreases “Edu–OE–Edu–Empl”.	Yes	Yes	Yes	Yes	Yes
Union increases the hazard to leave the labor market for a long period of time.	Yes	Yes	Yes	Yes	Yes
Almost no effect of the German reunification in the West.	Yes, except less OE–Work–OE	Yes	Yes, except less OE–Work–OE	Yes	Yes
Shorter and less frequent OE spells among EB.	Yes	Yes	Yes	Yes	Yes
Decrease of OE–Empl after the Reunification in the East.	Yes	Yes	Yes	Yes	Yes
Increase of Empl–OE after the Reunification in the East.	Yes	Yes	Yes	Yes	Yes
Increase of Empl–OE–Empl after the Reunification in the East.	Yes	Yes	Yes	Yes	Yes
Increase of OE–Empl–OE after the Reunification in the East.	No	Yes	Yes	No	Yes
OE–Empl is higher in EA than in WA.	Yes	Yes	Yes	Yes	Yes
Empl–OE is lower in EA than in WA.	No	No	Yes	Yes	Yes
Longer OE spells in WA than in EA.	Yes	Yes	Yes	Yes	Yes
OE–Empl–OE or Empl–OE–Empl more common in EA than in WA.	Only for OE–Empl–OE	Yes	Yes	Yes	Yes

Table B1: Conclusion on each statement for different subsequence length ℓ .

REFERENCES

Fasang, Anette Eva and Tim Futing Liao. 2014. “Visualizing Sequences in the Social Sciences.” *Sociological Methods & Research* 43:643–676.