



# **Do work-family patterns over the life-course influence health at old age?**

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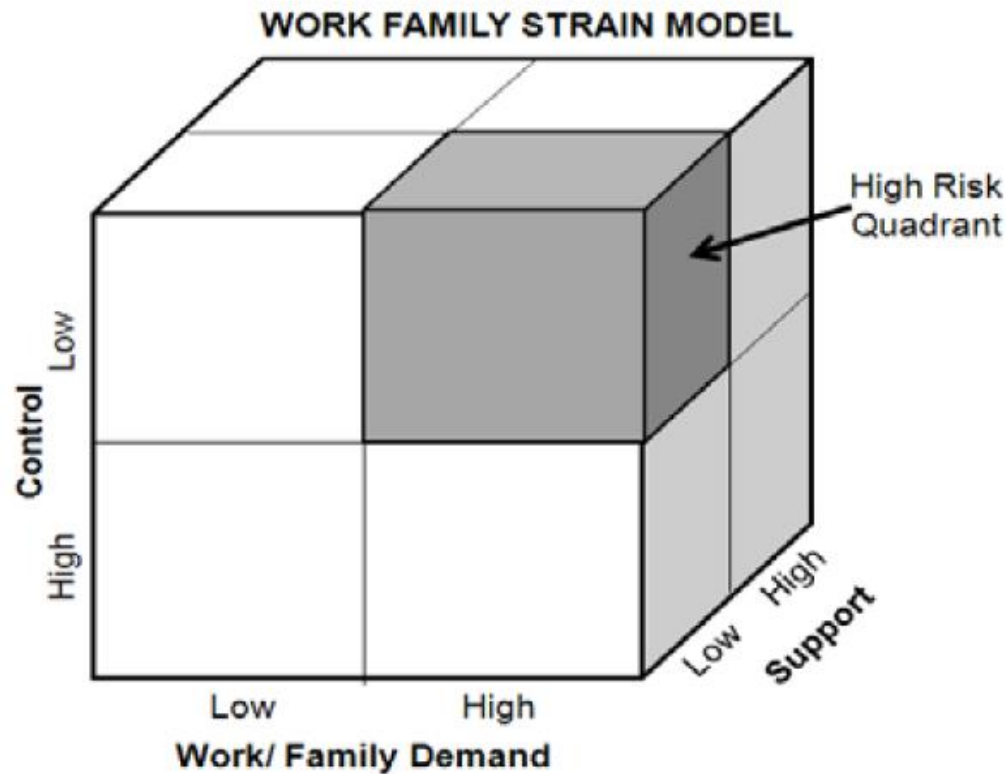
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# Work-family indicators and health

- Work-family indicators based on three dimensions:



# Work-family trajectories and health

- Multiple work and family demands are associated with an elevated risk of sickness absence
- Occupying multiple roles was positively associated with women's health
- Multiple roles can be linked to decreased negative outcomes, such as depression, distress, and psychological symptoms

## This study

- Using a life-course approach to link work-family trajectories to health outcomes, and comparing results from the United States and Europe
- We aim to assess how combining work and family responsibilities is associated with health at old age across the US and 13 European countries.
- Our hypothesis:
  - Different work-family trajectories may lead to different outcomes
  - The policy context might be important in helping people benefit more or less from employment

# Data

- Survey of Health, Ageing and Retirement in Europe
- Wave 3 SHARELIFE
  - Construct of the sequences
- Wave 4
  - Health outcomes
  - Covariates

# Life histories

**Life History (for 60 year old)**

Please look at SHOWCARD 3. Have you ever experienced any of the events on this card?  
**IWER: Please code all that apply.**

☐ 1. Lived in a children's home  
☐ 2. Been fostered with another family  
☐ 3. Evacuated or relocated during a war  
☐ 4. Lived in a prisoner of war camp  
☒ 5. Lived in prison  
☐ 6. Lived in a labor camp  
☐ 7. Lived in a concentration camp  
☐ 8. Been an inpatient in a TB institution  
☐ 9. Stayed in a psychiatric hospital  
☐ 10. Been homeless for 1 month or more  
☐ 96. None of these

Back (alt B) 5 Next (alt N) →

	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	
1 Children																																																		
2 Partners																																																		
3 Accommodation																																																		
4 Job																																																		
5 Health																																																		

Find events

- 1985: Heysel Stadium disaster
- 1985: Barry McGuigan wins World Boxing Title
- 1985: Anglo-Irish Agreement
- 1985: Dennis Taylor beats Steve Davis in the World Snooker Final
- 1985: Progressive Democrats party is founded
- 1985: Year of the 'moving status'
- 1985: Live Aid Concert organised by Bob Geldof in London

Unset search 1985 Eventgroups (alt E)

Personal events in 1973: —  
got married to CLARA

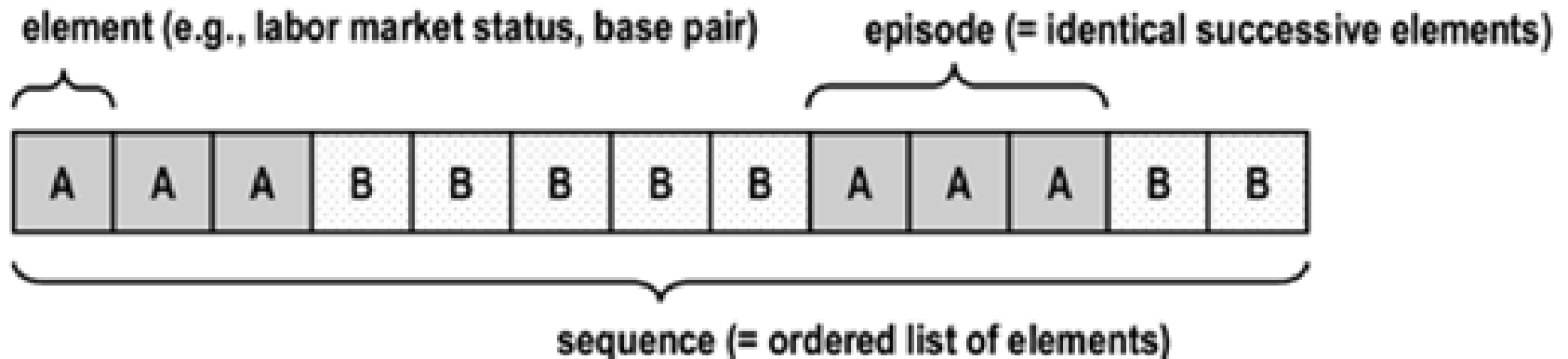
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# Sequence analysis

- Sequence: An ordered list of elements
- Elements of a sequence can be unique (nonrecurrent) or repeated (recurrent)
- Sequences are longitudinal structures: typically linear sequences of observations in a discrete state space.
- It allows researchers to apprehend the overall structure of complicated longitudinal data.

# Sequence analysis

- It typically defines pairwise distances between sequences and use them to construct data-driven typologies using cluster analysis





# Strategy to analyze sequence data

1. **Description.** Tabulation and calculation of indicators for the characteristics of the sequence;
2. **Visualization.** Using index plots or parallel-coordinates plots;
3. **Comparison.** Using distance measures (via f.e. optimal matching, etc.);
4. **Grouping.** “Similar sequences” are grouped using cluster analysis or multidimensional scaling;
5. **Application.** Use the grouped sequence as dependent or independent variables in “standard” analysis (regression, survival analysis, etc...)

# Variables

- Employment
  - Whether an individual had a job in that specific year
  
- Parity status
  - Whether an individual had at least one child under the age of 18 in that specific year (based on birth date of each child)
  
- Marital status
  - Whether an individual was married in that specific year (based on beginning/ending dates of each marriage)

# Work-family combinations

- W/M/K
  - Work, married and kids
- W/NM/K
  - Work, unmarried and kids
- NW/M/K
  - No work, married and kids
- NW/NM/K
  - No work, unmarried, kids

- W/NK
  - Work and no kids
- NW/NK
  - No work and no kids



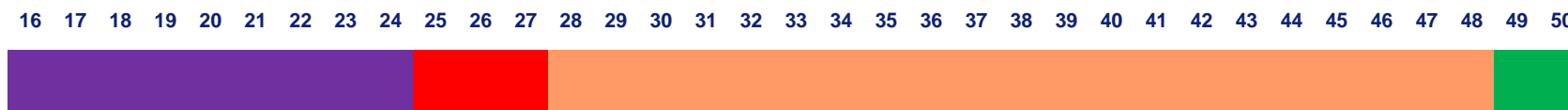
- We have taken together the married and unmarried by parity and marital status

# Sample

- Total sample for employment, marital and children histories:
  - $N = 21,678$
  
- Only women
  - $N = 11,138$
  
- Only complete cases
  - $N = 5,248$

# Sequences

- From age 16 to age 50



- NW/NM/K →
- NW/M/K →
- W/NM/K →
- W/M/K →
- NW/NK →
- W/NK →

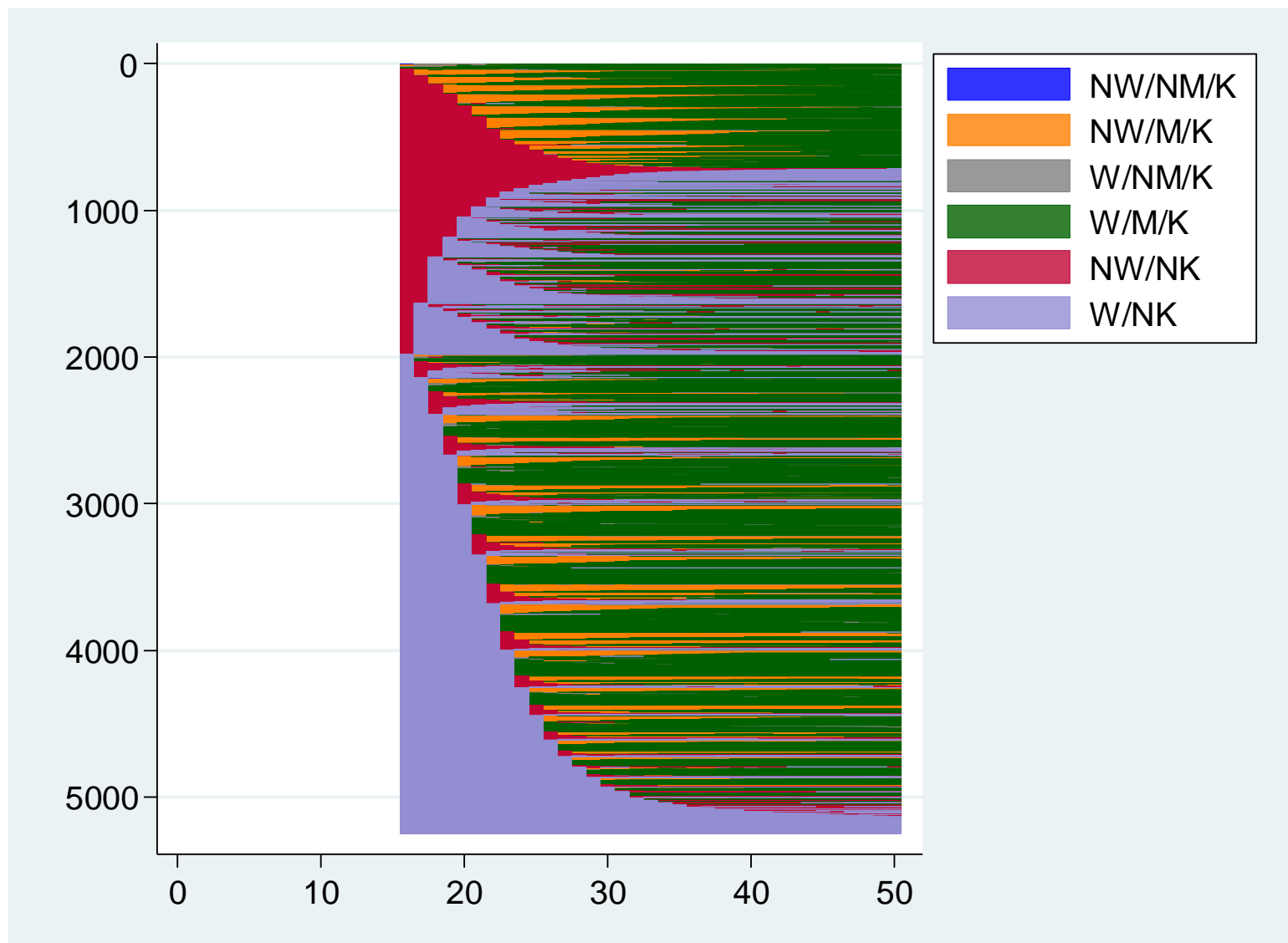
# Sequences

- From age 16 to age 50



- NW/NM/K →
- NW/M/K →
- W/NM/K →
- W/M/K →
- NW/NK →
- W/NK →

# Index plot



# Comparing sequences

- How to measure the difference between two sequences?
- Optimal matching
- The degree of dissimilarity between two sequences is determined by the least number of weighted edit operations that are necessary to turn one sequence into the other
- Data-based substitution costs

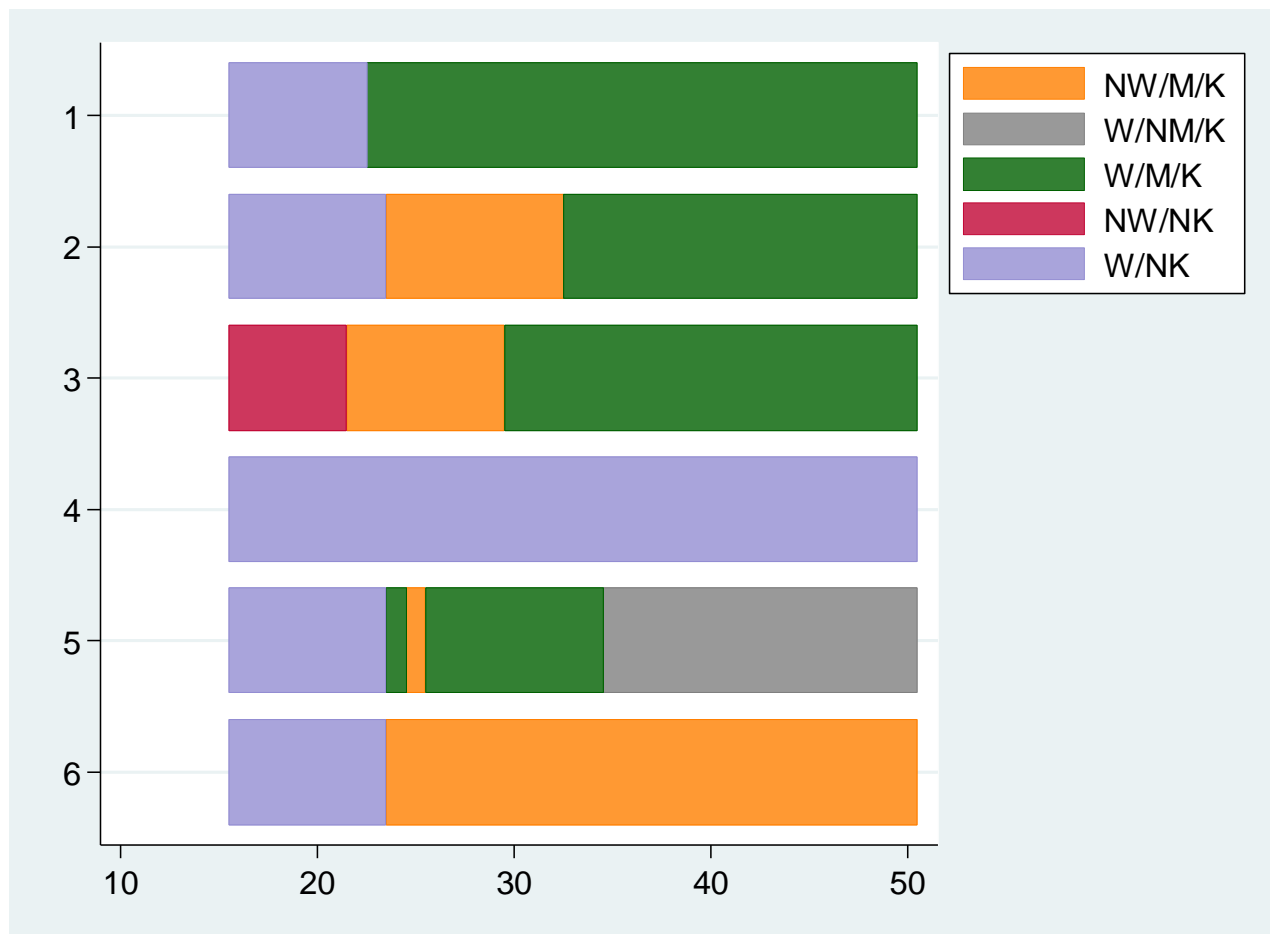


# Clustering: number of optimal clusters

- Defining homogenous groups of individuals
- Stopping rule: the Calinski/Harabasz pseudo-F
  - Select the number of clusters based on the highest F-value

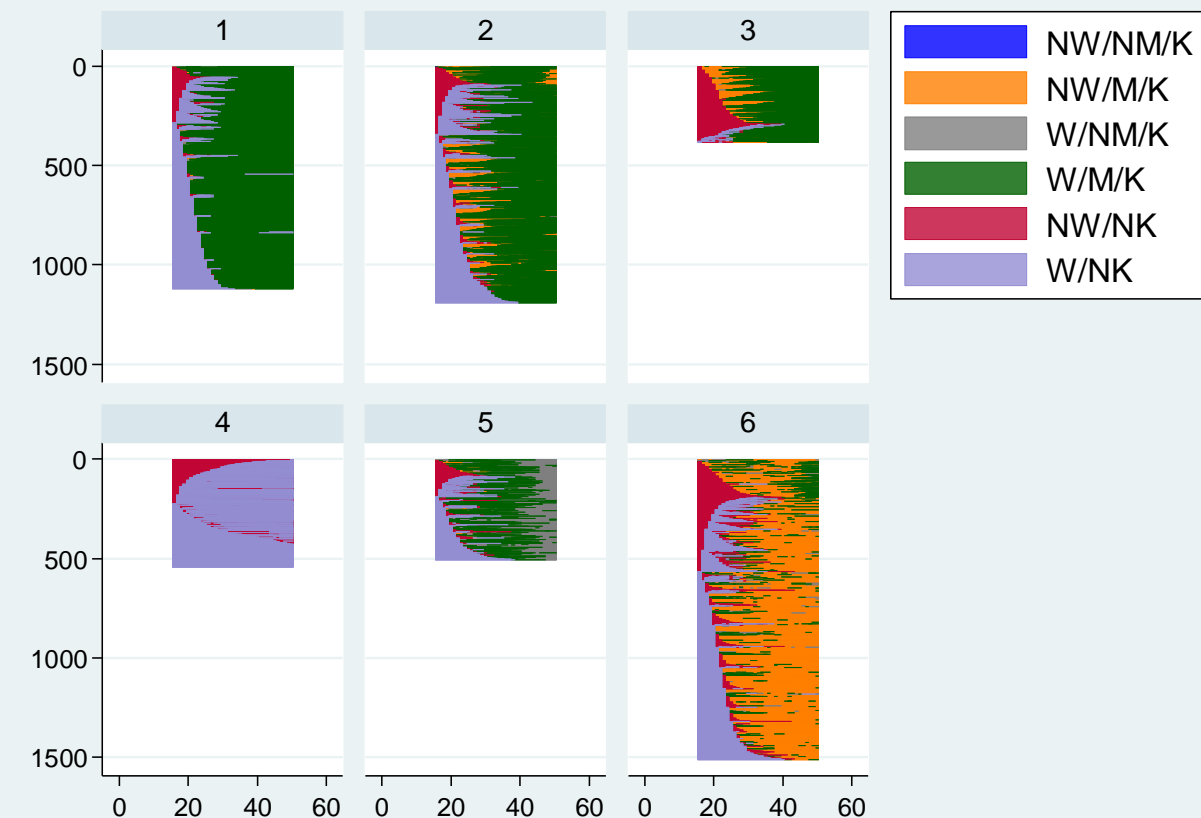
Number of clusters	Calinski/ Harabasz pseudo-F
5	8.12
<b>6</b>	<b>8.96</b>
7	7.59
8	7.66
9	8.34
10	7.41

# The 6 clusters



1. married, working mother
2. married mother, who returned to work after some years of not working
3. married mother, who started working
4. working woman without children
5. working mother, whose marriage ended after some years
6. married, non-working mother

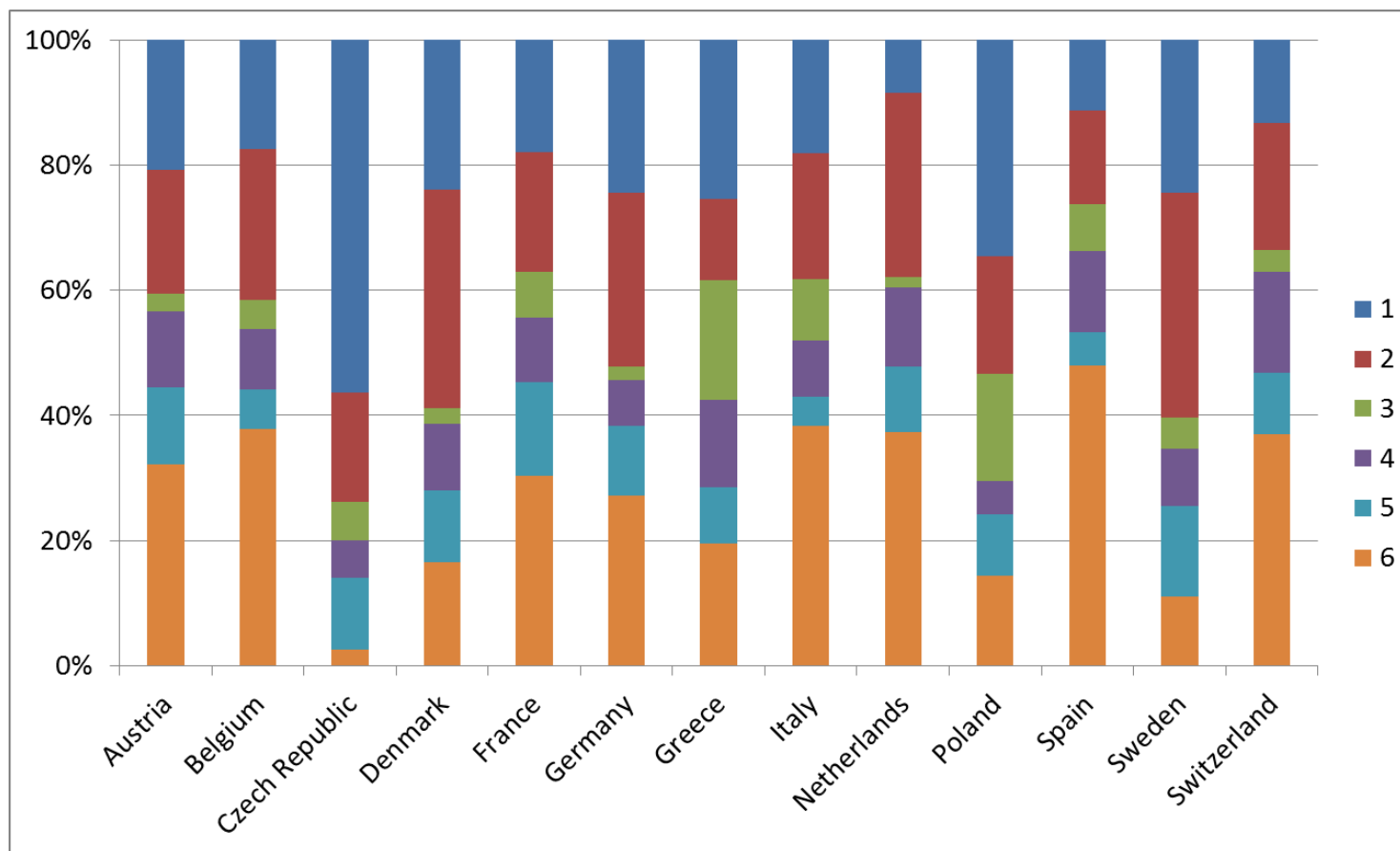
# The distributions of the observations



1. married, working mother
2. married mother, who returned to work after some years of not working
3. married mother, who started working
4. working woman without children
5. working mother, whose marriage ended after some years
6. married, non-working mother

	1	2	3	4	5	6
%	21%	23%	7%	10%	10%	29%

# Distribution of the 6 clusters across countries



1. married, working mother

3. married mother, who started working

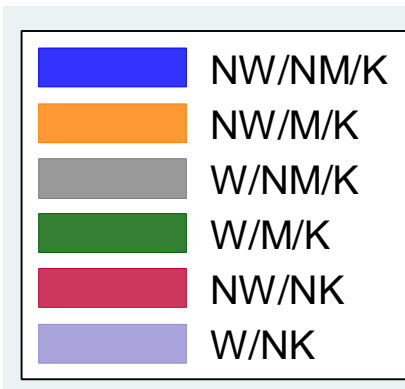
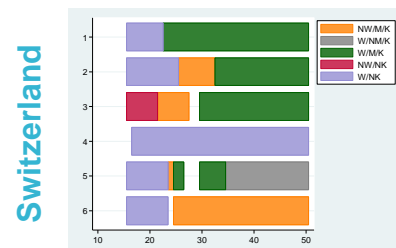
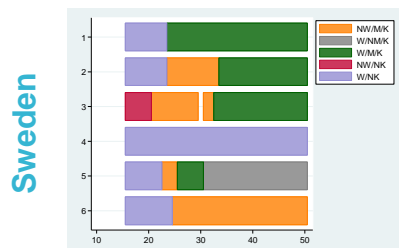
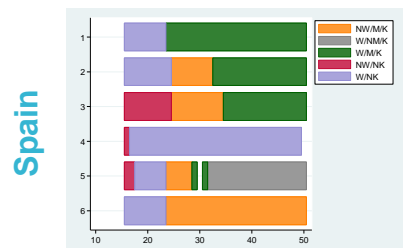
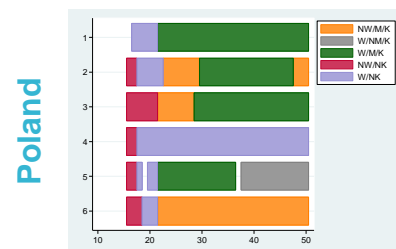
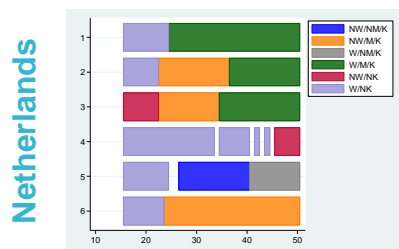
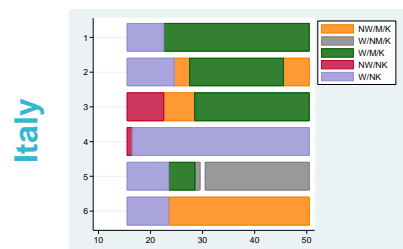
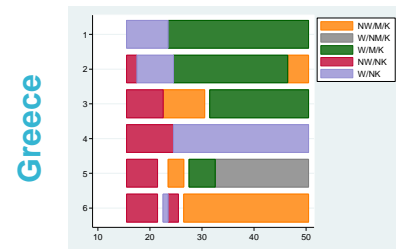
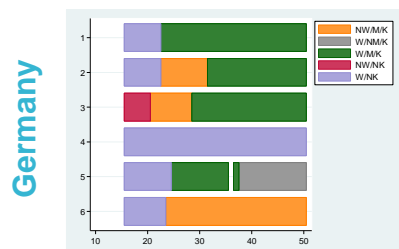
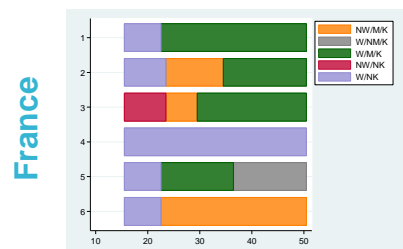
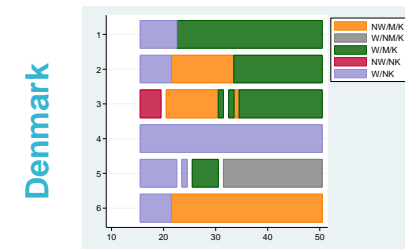
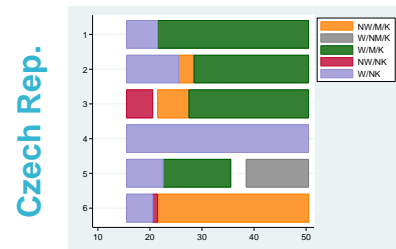
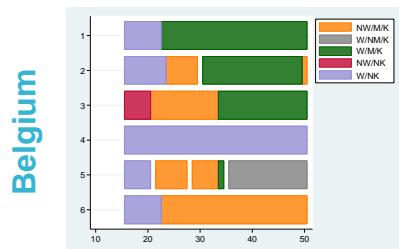
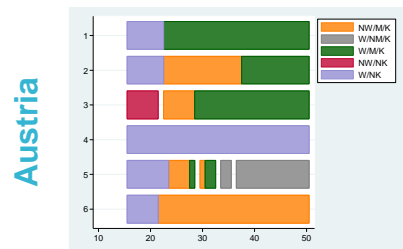
5. working mother, whose marriage ended after some years

2. married mother, who returned to work after some years of not working

4. working woman without children

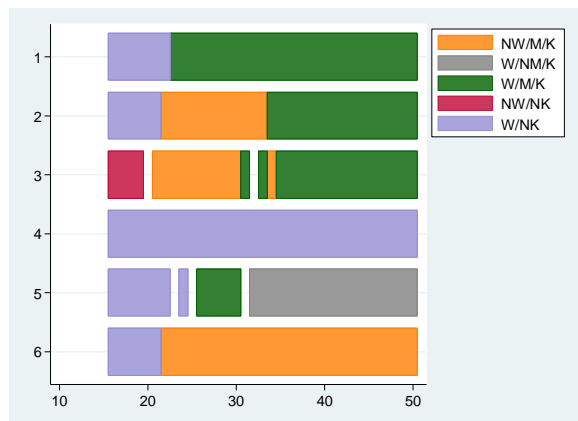
6. married, non-working mother

# Distribution of the 6 clusters across countries

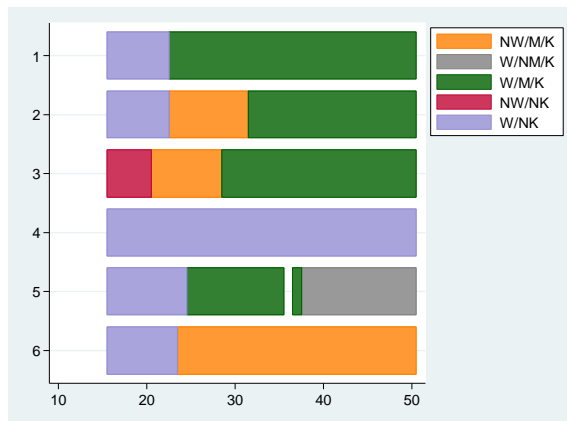


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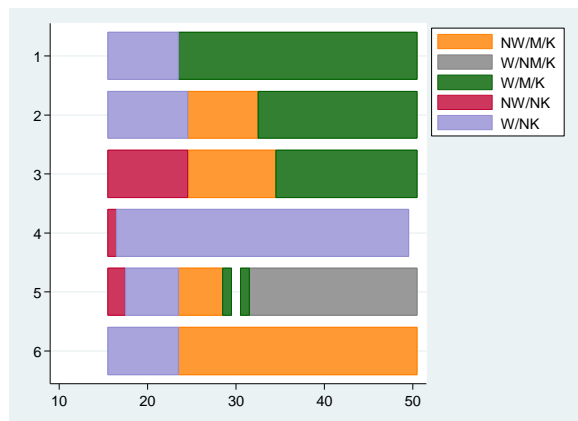
## Scandinavia: Denmark



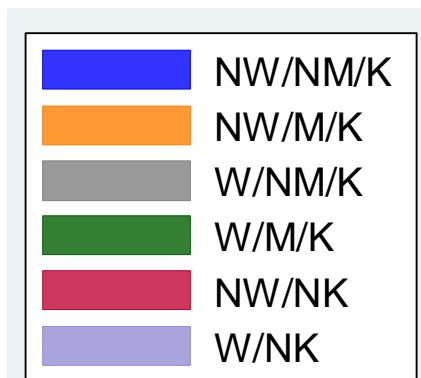
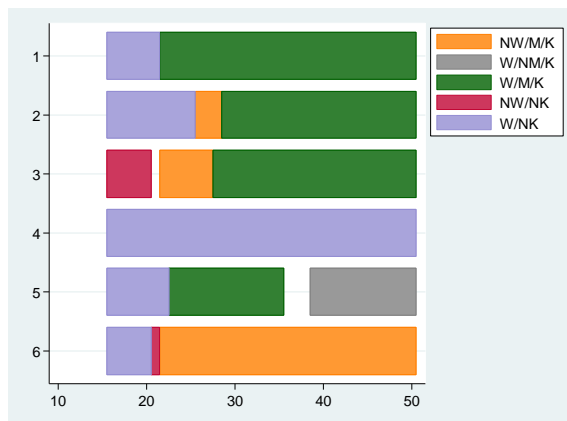
## Western Europe: Germany



## Southern Europe: Spain



## Eastern Europe: Czech Rep.



## Next steps

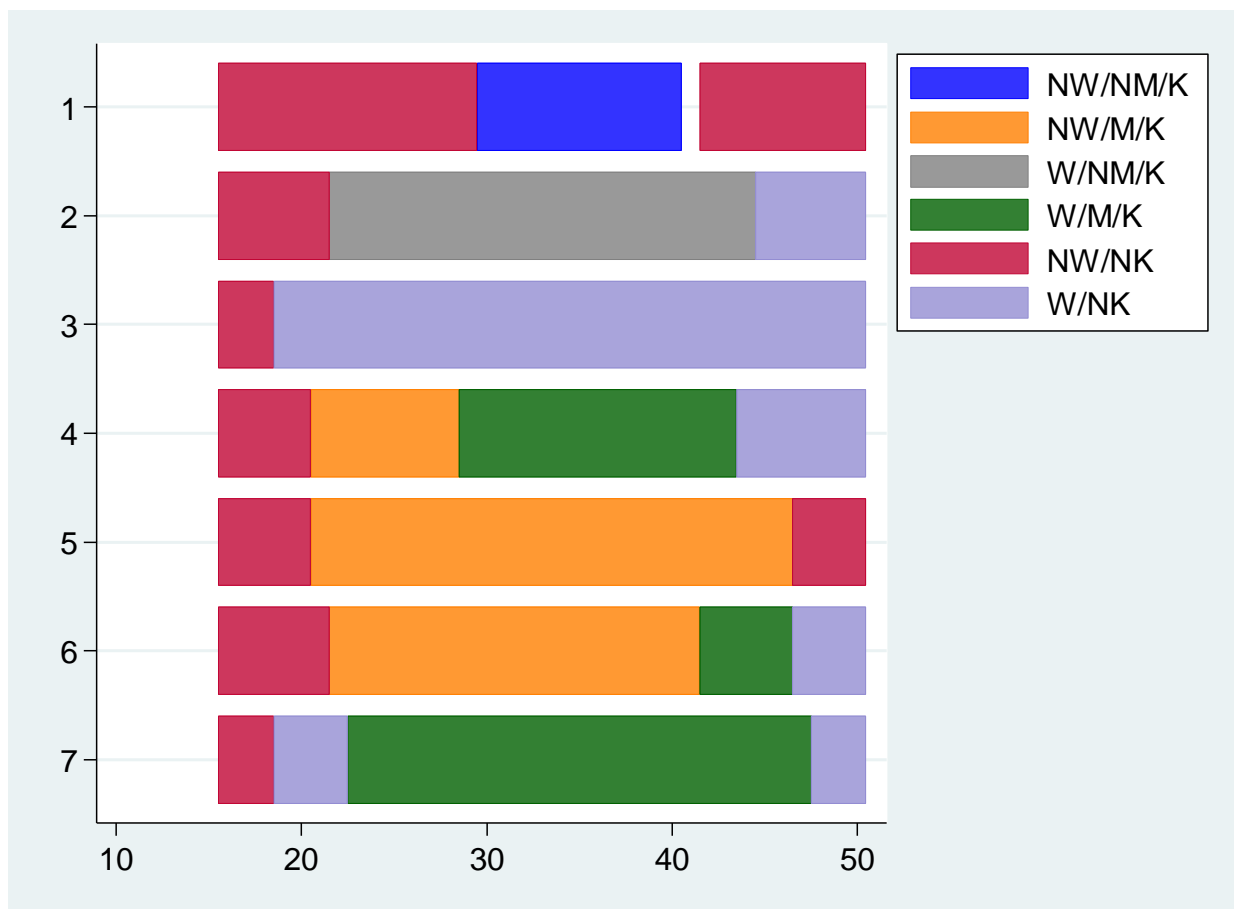
- Similar clusters across the different European countries
- Interesting and promising method for clustering of homogenous sequences
  
- Linking clusters to health outcomes
  - Self-assessed health
  - Limitations in basic activities of daily livings (ADLs)
  - other?

Any questions, comments or tips?

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# US: 7 clusters



1. single, non-working mother
2. single, working mother
3. working woman without children
4. married, non-working mother, who started working relative early
5. married, non-working mother
6. married, non-working mother, who started working relative late
7. married, working mother