Unpaid caregiving & paid work and over life-courses: different pathways, divergent outcomes and the role of social attitudes

1. Aims, summary of results and context
2. Data and Methods
3. Caregiving-employment pathways
4. Characteristics of people following different trajectories
5. Wealth, health and wellbeing outcomes
6. Summary

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AIMS

- **Persistence and interdependence**: Categorise the different ways people combine paid work, informal caring and childcare responsibilities over time.

- **Pre-determination**: Explore how gender, age-cohort and social attitudes shape the pathways that people follow

- **Diverging/converging outcomes ~ Path dependence**: Investigate how income, subjective wellbeing and health evolve along different employment-caregiving pathways.

- Summary of Results
  - **Persistence/interdependence**: 5 clusters of employment-caregiving pathways over 15-20yrs
  - **Pre-determination**: Employment-caregiving histories are pre-shaped by gender, age and social attitudes.
  - **Path dependence**: Income, wellbeing and health gaps between least and most caring intensive pathways widen

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CONTEXT– WHY THIS MATTERS

Context

- Demographic Ageing
  - Pensions crisis
    - **Working lives extended +increasing female employment participation**
  - Increase in degenerative diseases (e.g. dementia) + emphasis on cost-containment and efficiency in healthcare.
    - **Increased demand for informal care for older adults**

Policy issue/question

- Will the supply of unpaid care meet increased demand?

  - "understanding what motivates the provision of caring labor is a crucial element for sustainability and equitably meeting the needs of contemporary societies" Adams and Sharp 2013:101

DATA AND METHODS

- ## Data:

  - 20 waves of the British Household Panel Survey + UK Understanding Society (BHPS-US).

  - 4339 Caregiving-employment sequences over 15-20yrs

- ## Methods

  1. Persistence: 5 Pathways identified using OM and clustering (Brzinsky-Fay *et al.* 2006; Potârcă *et al.* 2014)

  2. Pre-determination: MNL Regression analysis to identify characteristics of people following pathways:

     - Gender, age-cohort, attitudes, income, health and wellbeing

  3. Diverging outcomes: Difference in differences analysis

     - **Income, wellbeing and health**, baseline-follow-up outcomes for the 5 clusters (~ control and treated)

1.1 SEQUENCE ANALYSIS: CODING

- **3 Employment status**: (i) Employed full-time (FT work); (ii) Employed part-time (PT work); (iii) Not Employed; (iv) Student.

- **3 Informal care status**: (i) Not undertaking informal care (IC=0); (ii) Caring for less than 20 hours a week (IC<20hrs); (iii) Caring at least 20 hours a week (IC>=20hrs).

  "Is there anyone living with you who is sick, handicapped or elderly whom you look after or give special help to (for example, a sick or handicapped (or elderly) relative/ husband/ wife/ friend, etc)?"

  "Do you provide some regular service or help for any sick, handicapped or elderly person not living with you?"

- **2 Responsibility for young children**: (i) Child aged seven or younger in household (Has child<8); (ii) No child aged seven or younger in household (No child<8).

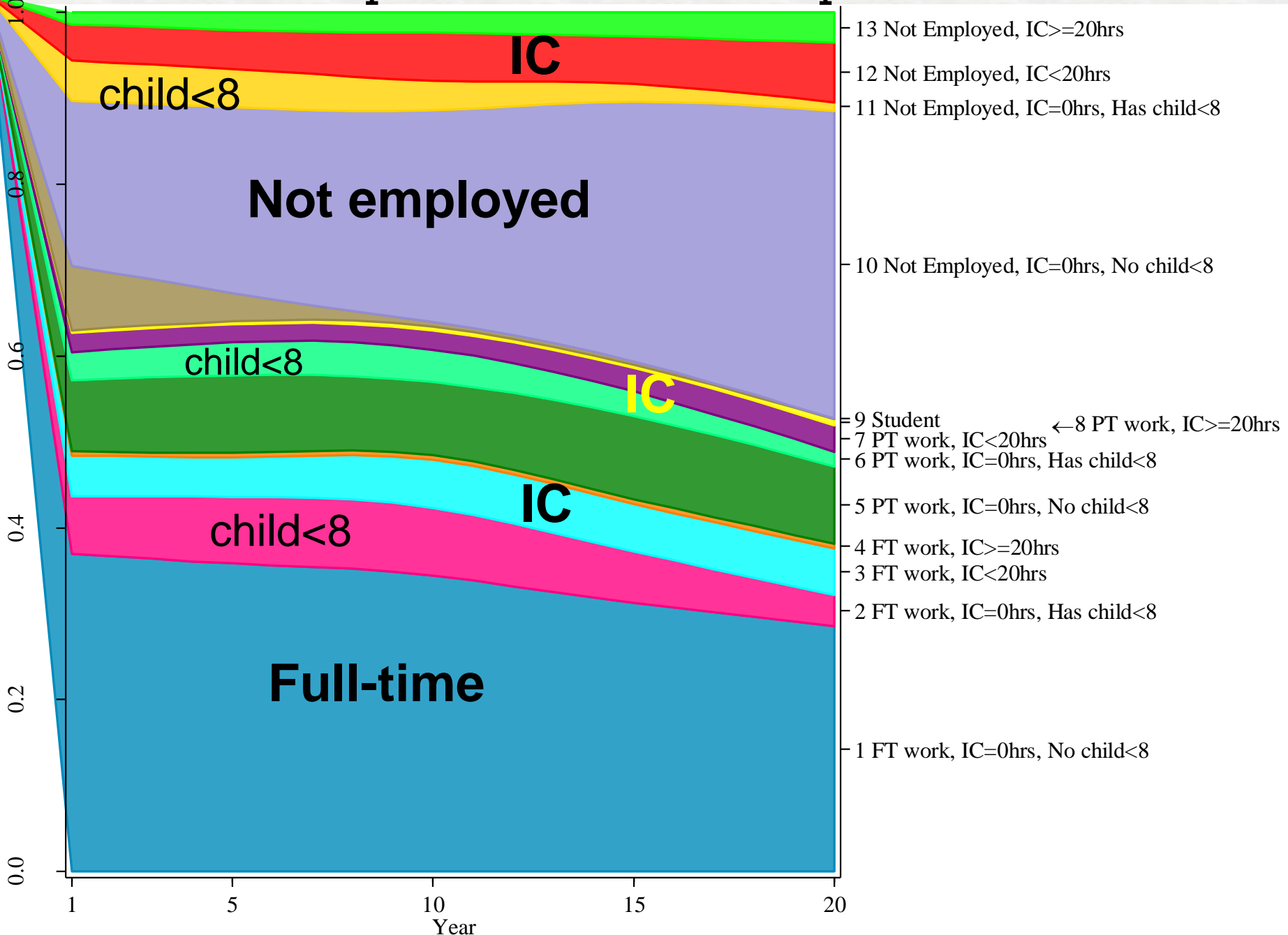- **23 interacted states but because of small numbers only use 13**

Observed state (person-years)	Frequency	Percent
1 FT work, IC=0, No child<8	27,491	33.7
2 FT work, IC=0, Has child<8	5,573	6.83
3 FT work, IC<20hrs	4,239	5.2
4 FT work, IC>=20hrs	436	0.53
5 PT work, IC=0, No child<8	7,327	8.98
6 PT work, IC=0, Has child<8	2,708	3.32
7 PT work, IC<20hrs	1,959	2.4
8 PT work, IC>=20hrs	333	0.41
9 Student	1,567	1.92
10 Not Employed, IC=0, No child<8	21,042	25.8
11 Not Employed, IC=0, Has child<8	2,650	3.25
12 Not Employed, IC<20hrs	4,296	5.27
13 Not Employed, IC>=20hrs	1,943	2.38
Total	81,564	100

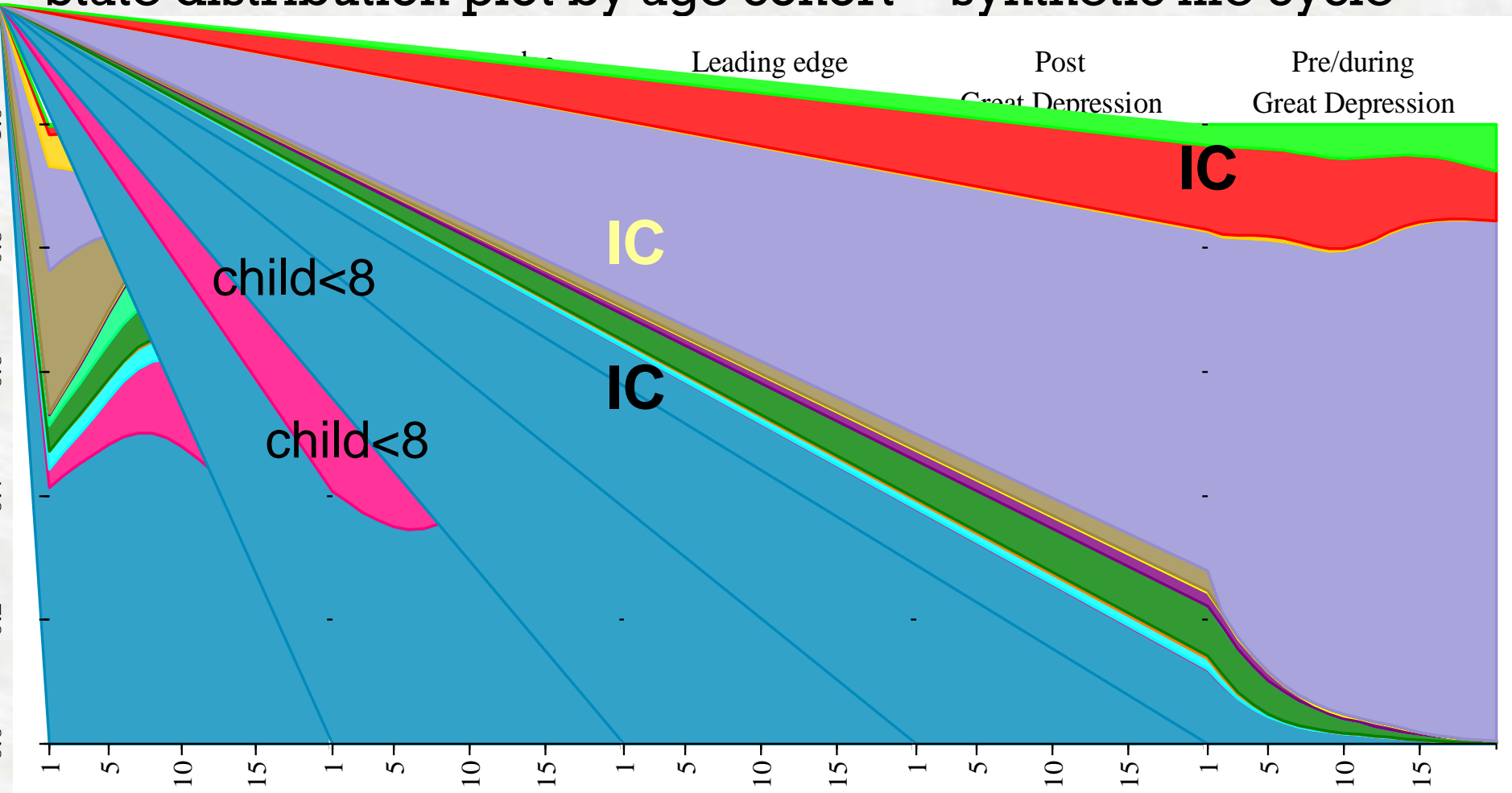16.19% of states involve caregiving (16.35% including student carers)
20.54% of caregiving is time intensive ($\geq$ 20 hrs p. wk)
38.74 % of participants had been caregivers for at least one year
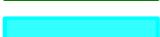
State distribution plot for the whole sample

State distribution plot by age cohort ~ synthetic life cycle

Leading edge

Post
Great Depression

Pre/during
Great Depression

IC

IC

IC

child<8

child<8

13 Not Employed, IC>=20hrs	12 Not Employed, IC<20hrs
11 Not Employed, IC=0hrs, Has child<8	10 Not Employed, IC=0hrs, No child<8
9 Student	8 PT work, IC>=20hrs
7 PT work, IC<20hrs	6 PT work, IC=0hrs, Has child<8
5 PT work, IC=0hrs, No child<8	4 FT work, IC>=20hrs
3 FT work, IC<20hrs	2 FT work, IC=0hrs, Has child<8
1 FT work, IC=0hrs, No child<8	

State distribution plot by gender
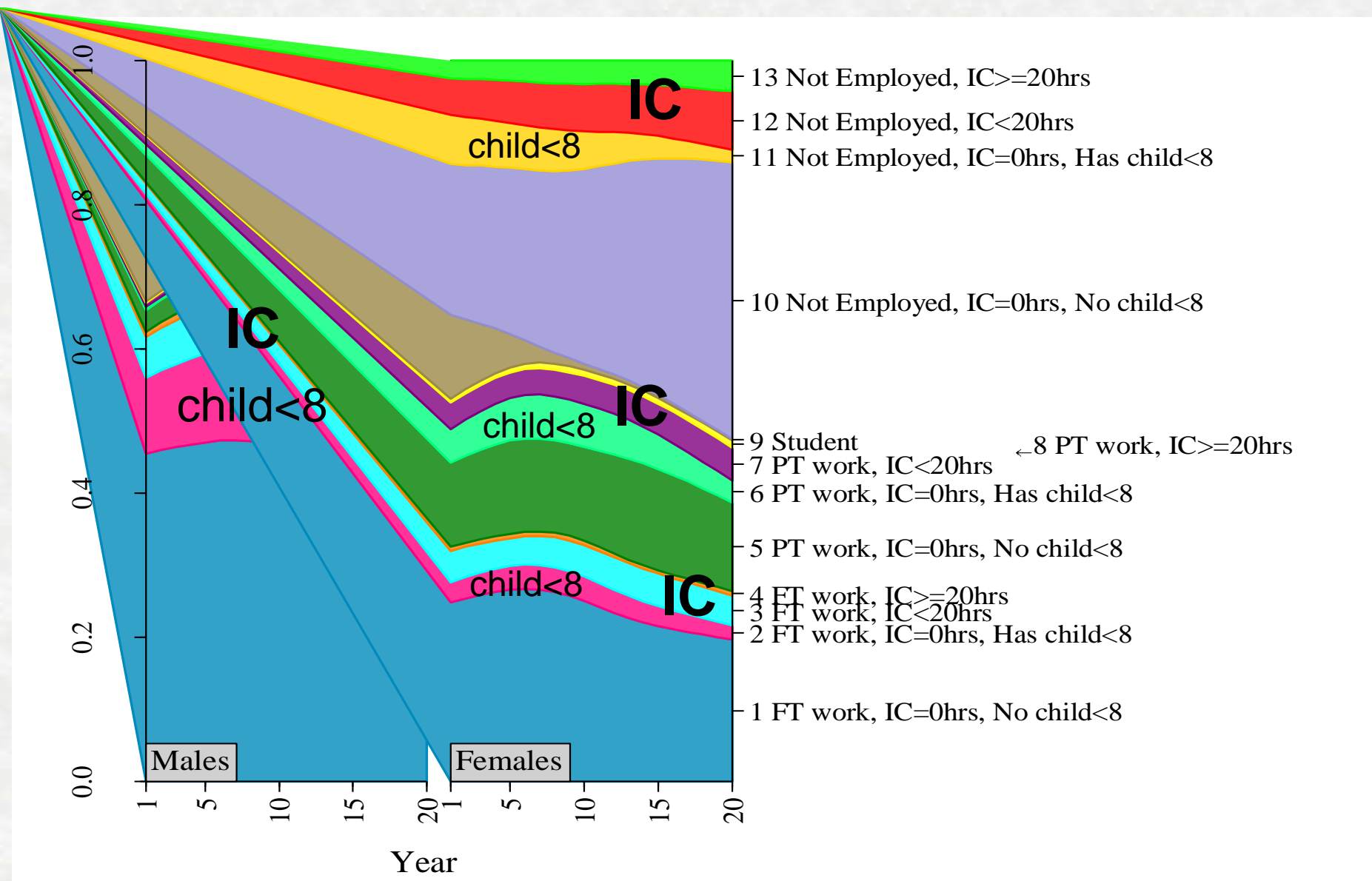
1.2 OM and cluster analysis

Cluster 2:
...ti... careers

Cluster 3:
Part-time careers

Full-time

Full-time

Pt-time

Cluster ...
Caring inte...

Cluster 5:
Decaying careers

IC

Not employed

5 CLUSTER SOLUTION

Color	Legend
Green	13 Not Employed, IC>=20hrs
Red	12 Not Employed, IC<20hrs
Yellow/Gold	11 Not Employed, IC=0hrs, Has child<8
Light purple	10 Not Employed, IC=0hrs, No child<8
Tan	9 Student
Yellow	8 PT work, IC>=20hrs
Purple	7 PT work, IC<20hrs
Spring green	6 PT work, IC=0hrs, Has child<8
Dark green	5 PT work, IC=0hrs, No child<8
Orange	4 FT work, IC>=20hrs
Cyan	3 FT work, IC<20hrs
Magenta	2 FT work, IC=0hrs, Has child<8
Blue	1 FT work, IC=0hrs, No child<8

CAREGIVING PREVALENCE BY CLUSTER

Cluster	No. of caregiving states	% of all caregiving states	% of all caregiving states $\geq$ 20hrs
1 FT careers	1,840	13.79	5.14
2 Evolving careers	2,854	21.40	8.85
3 PT careers	2,601	19.50	19.75
4 Caring intensive	4,447	33.34	54.99
5 Decaying careers	1,597	11.97	11.27
total	13,339	100.00	100.00
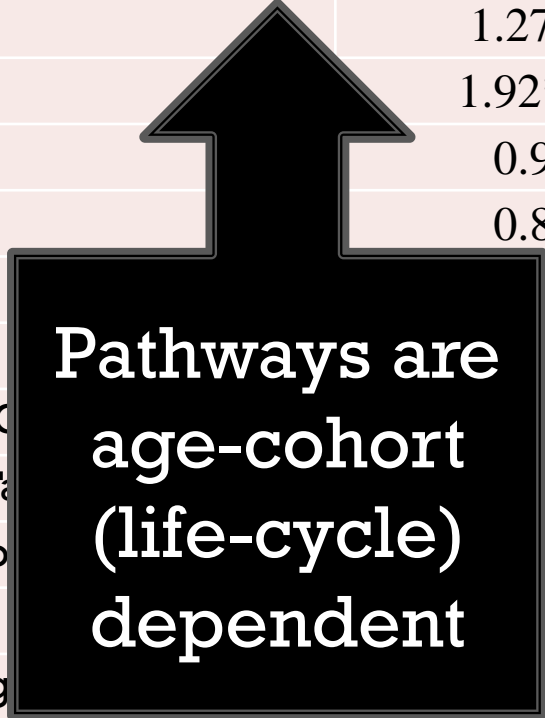
2. WHO IS IN THE CLUSTERS?

MNL log odds estimates for CLUSTER m (m=1-5) with base category cluster 1: $\ln\Omega_{m|1}(X) = \ln\frac{\Pr(CLUSTER=m|X)}{\Pr(CLUSTER=1|X)} = X\beta_{m|1}$

X = individual characteristics:
o age-cohort, gender, educational attainment, marital status

o 3 attitudinal indices constructed from 14 attitudinal variables: Traditional Gender Roles, Traditional Family, Working Women

o income, wellbeing, health

MNL dependent = CLUSTER Base category – Cluster 1	Cluster 2 Evolving careers	Cluster 3 Part-time careers	Cluster 4 Caring intensive	Cluster 5 Decaying careers
Age*Trailing-edge_BB	1.01**	1.00	1.02**	1.07***
Age*Leading-edge_BB	0.98***	0.98***	1.03***	1.06***
Age*Post-depression_preBB	0.98***	0.99	1.06***	1.11***
Age*Pre-depression_preBB	0.98*	1.01*	1.10***	1.13***
FEMALE	1.27**	15.9***	3.77***	3.60***
ms_MarCohCiv	1.92***	2.13***	1.67***	0.82
HighQ Degree	0.97	1.16	0.78	0.76
HighQ_OtherH	0.88	0.80	0.78	0.51***
HighQ_ALevel		0.77	0.81	0.73
HighQ_OLevel		0.83	0.81	0.76
A1:Traditional_C	06	1.22***	1.23***	1.17**
A2:Traditonal_Fa	05	1.20***	1.33***	1.28***
A3:Working_Wo	05	0.83***	0.84**	0.81***
Income_Tot	***	0.94***	0.96***	0.95***
GHQ_Wellbeing	9	0.98	0.97*	0.99
Health_status	1.08	0.91	0.74***	0.60***
Constant	0.85	0.42***	0.23***	0.18***
Observations		4105		
Log likelihood , LR χ^2 , Pseudo R^2	-4459.59	3942.28***	0.3065	

Pathways are age-cohort (life-cycle) dependent
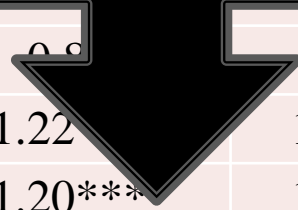
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HighQ_Degree	0.97	1.16	0.78	0.76
HighQ_OtherH	0.88	0.80	0.78	0.51***
HighQ_ALevel	0.96	0.77	0.81	0.73
HighQ_OLevel	1.36**	0.83	0.81	0.76
A1:Traditional_Gender_Roles	**1.06**	**1.22***	**1.23***	**1.17***
A2:Traditonal_Family	**1.05**	**1.20***	**1.33***	**1.28***
A3:Working_Women	**0.95**	**0.83***	**0.84***	**0.81***
Income_Tot	0.98***	0.94*	0.96***	0.95***
GHQ_Wellbeing	0.99		0.97*	0.99
Health_status	1.08	0.6	0.74***	0.60***
Constant				
Observations				
Log likelihood , LR χ^2 , Pseudo R^2				

Pathways are pre-determined by gender and social attitudes

MNL dependent = CLUSTER Base category – Cluster 1	Cluster 2 Evolving careers	Cluster 3 Part-time careers	Cluster 4 Caring intensive	Cluster 5 Decaying careers
Age*Trailing-edge_BB	1.01**	1.00	1.02**	1.07***
Age*Leading-edge_BB	0.98***	0.98***	1.03***	1.06***
Age*Post-depression_preBB	0.98***	0.99	1.06***	1.11***
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Income_Tot	**0.98*****	**0.94*****	**0.96*****	**0.95*****
GHQ_Wellbeing	**0.99**	**0.98**	**0.97***	**0.99**
Health_status	**1.08**	**0.91**	**0.74*****	**0.60*****
Constant	0.85	0.42***	0.23***	0.18***
Observations, Log likelihood , LR χ^2 , Pseudo R^2	4105	-4459.59	3942.28***	0.3065

Cluster 1 are richer than the rest from the start, healthier than Clusters 4-5 and marginally happier than Cluster 4

3. CAUSAL INFERENCE ANALYSIS: DIFFERENCE IN DIFFERENCES ESTIMATES FOR INCOME, WELLBEING, HEALTH

IncomeTot $= \beta_0 + \beta_L \text{LAST\_yr} + \Sigma\beta_i \text{CLUSTER}j + \Sigma\beta_j \text{CLUSTER}j{*}\text{LAST\_yr} + \Sigma\beta_n X_n$ \qquad (1)

GHQ_Wellbeing $= \beta_0 + \beta_L \text{LAST\_yr} + \Sigma\beta_i \text{CLUSTER}j + \Sigma\beta_j \text{CLUSTER}j{*}\text{LAST\_yr} + \Sigma\beta_n X_n$ (2)

Health $= \beta_0 + \beta_L \text{LAST\_yr} + \Sigma\beta_i \text{CLUSTER}j + \Sigma\beta_j \text{CLUSTER}j{*}\text{LAST\_yr} + \Sigma\beta_n X_n$ \qquad (3)

LAST_yr = 1 for the last, 'follow-up' year; = 0 for the first, 'baseline', year

CLUSTER*j* = 1 for 'treated' Clusters 2-5; Cluster 1 = 'control'

CLUSTER*j****LAST_yr** interacts CLUSTER*j* and the last, follow-up, year of the sequence → **difference-in-differences** effects

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Difference in difference	Income_Tot	GHQ_Wellbeing	Health
LAST_yr	4.01***	-0.69***	-0.26***
Cluster2 (Evolving)	-3.25***	-0.14	0.0052
Cluster3 (Part-time)	-5.93***	-0.45*	-0.14***
Cluster4 (Caring Intensive)	-4.23***	-1.17***	-0.17***
Cluster5 (Decaying)	-5.15***	-0.93***	-0.26***
Cluster2_LAST_yr	2.05***	-0.22	-0.0059
Cluster3_LAST_yr	-2.39***	-0.16	0.094*
Cluster4_LAST_yr	-4.99***	-0.98**	-0.24***
Cluster5_LAST_yr	-2.87***	-0.71**	-0.25***

Coefficients of Clusterj_LAST_yr → difference-in-difference (impact) of Cluster 2-5 pathways over 15-20 years (baseline →follow-up)

SUMMARY

- **Persistence:** 5 distinct employment-caregiving pathways
  - 1. Full-time careers; 2. Evolving careers; 3. Part-time careers; 4. Caring intensive; 5. Decaying careers

- **Pre-determination:** Age-cohort, gender & social attitudes shape trajectories
  - E.g. more traditional attitudes towards gender roles, family and working women → clusters 3, 4 and 5

- **Diverging/converging outcomes ~** cumulative (dis)advantage & path dependence: Some income, wellbeing and health gaps widen others narrow –)
  - Cluster 2: income gap with Cluster 1 narrows
  - Cluster 3: poorer but healthier relative to Cluster 1 – work-life balance?
  - Cluster 4: much poorer, much lower wellbeing, worse health - Caregiver burden (Adelman et al. 2014)?
  - Cluster 5: relatively poorer and much lower health status

LIMITATIONS

- The data
  - Only 15-20 years
  - Some lack of consistency between BHPS and US
  - Sample attrition
    - Alternatives: retrospective life history data, time-use data

- The methods
  - Discretion over substitution penalties and number of clusters (Halpin, 2010; Piccarreta 2012; Potârcă *et al.,* 2013)
  - **Advantage**: Retains the sequential character of life-histories as entities while enabling grouping of all different sequence element combinations
    - 'just about fishing for patterns' Potârcă *et al.* (2013:81)