More on Ambition Types

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Outline

1. Primer on ambition types
2. Ambition types on German data (joint work with Mads Gerding)
3. Sorting and hypergamy (joint work with Frederik Almar)

Primer on ambition types

The Idea

- Ambition Types are a categorization of individuals.
- Developed jointly with Ana, Ben, Frederik and Rune (AFRSV, two papers).
- We show significant advantages over using the level of education in the context of marriage market models.

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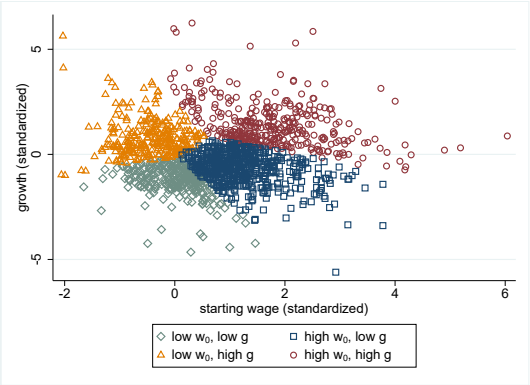
- It reflects the lifetime career prospects of pre-marital traits.
  1. Expected future career-investments and labor supply.
  2. Expected future time commitments to the family.

$\rightarrow$ Important for partner choice.

Ambition types vs. Educational level

- We construct the ambition type by clustering labor market outcomes (k-means) at the educational-program level (avg. starting wages and wage growth across graduates).

Educational Ambition, All Programs



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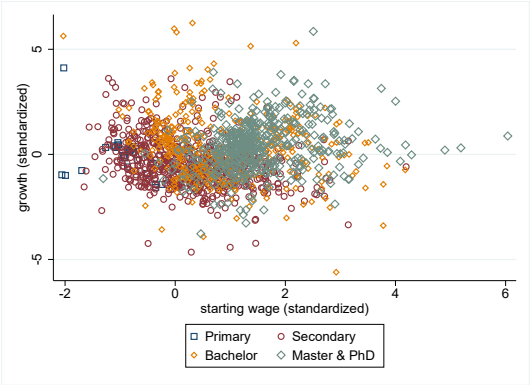

Ambition types on German data

joint work with Mads Gerding

The Idea

- In AFRSV, we construct the ambition types based on unique Danish data, which is both granular and has universal coverage.
- Information on virtually all graduates for narrow educational programs at all levels (primary, secondary, tertiary, vocational degrees).
- We would like other researchers to adopt our new categorization of marriage market types, but this type of data is typically unavailable for other countries.
- Most research uses household-survey data, which has its own advantages.
- How can we construct an ambition-type categorization with survey data and/or for other countries?

Approach

- In AFRSV (2024), we document that aggregating programs to the level of *educational level* $\times$ *field of study* and clustering labor market outcomes at that level leads to broadly similar conclusions in terms of sorting trends and inequality contribution.

MM types	N (1,000s)		Sorting			Gini, data		Gini, (i)	$\frac{\Delta_{Gini,(i)}}{\Delta_{Gini,data}}$
	1980	2018	1980	2018	Change	1980	2018	2018	
Educational Level	1,758	1,653	1.45	1.50	4%	0.241	0.307	0.301	91%
Educational Field	1,758	1,653	1.44	1.52	6%	0.240	0.307	0.299	87%
Benchmark	1,758	1,653	1.17	1.48	25.9%	0.241	0.307	0.279	57%
Sub-field level	1,854	1,630	1.19	1.45	21.8%	0.243	0.304	0.279	60%

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  1. Take the Danish mapping from *field* $\times$ *level* to the four ambition types.
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  3. Verify that group-level characteristics are not too different.

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  1. In the German data, field of study is only available for people with tertiary degrees. Solution: Impute using occupational codes.

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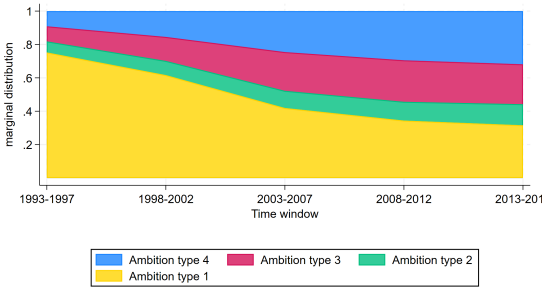
  1. In the German data, field of study is only available for people with tertiary degrees. Solution: Impute using occupational codes.
  2. More problems: occupational codes might be less informative about ambition type for older individuals. Solution: apply age threshold, age < 36. But: This oversamples individuals with primary/secondary education, no field necessary to impute ambition.

Results - Descriptives

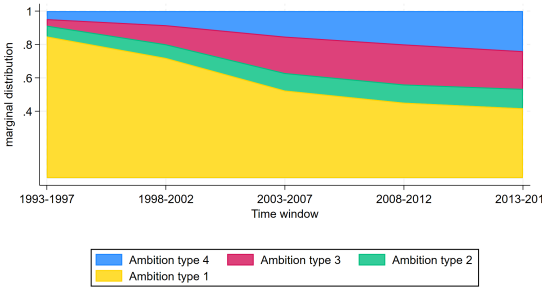
Table: Basic Descriptive Statistics for Educational Ambition Types
Germany vs. Denmark

	(low, low)	(high, low)	(low, high)	(high, high)	Population
Population share	.603	.119	.115	.163	
	.202	.227	.475	.097	
Female share	.611	.645	.302	.363	.523
	.648	.310	.560	.334	.499
Annual Earnings (EUR)	17362	18981	28060	42851	24043
(sd)	211	371	410	719	199
Personal wealth (EUR)	83780	96493	94921	182658	113133
(sd)	2297	5719	4752	8643	2632

Results - Marginal Distributions

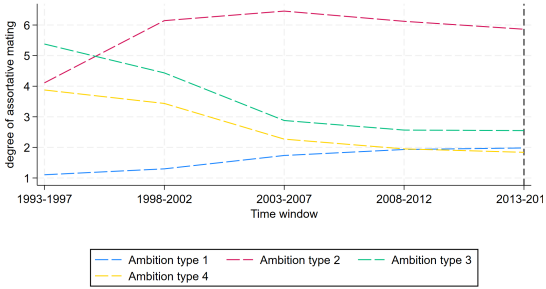


Male marginal distribution

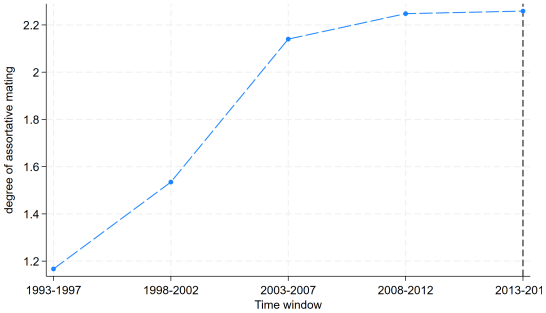


Female marginal distribution

Results - Sorting by Ambition

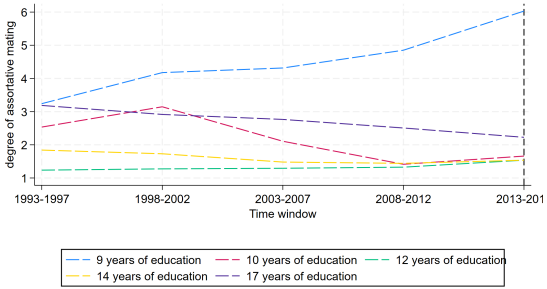


Likelihood ratios



Sorting (weighted sum of likelihood ratios)

Results - Sorting by Education Level



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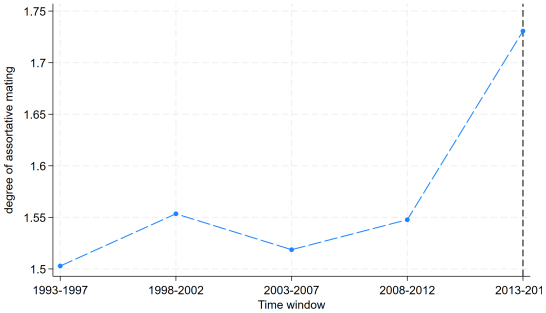

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Sorting and hypergamy

joint work with Frederik Almar

Idea

- The marriage market sorting literature focuses on same-type matches (homophily).
- Somewhat narrow. Same-type couples are typically a minority.
- Why are “ambitious” women “marrying up” or staying single instead of “marrying down”? Looking at same-type couples is insufficient to answer such questions.

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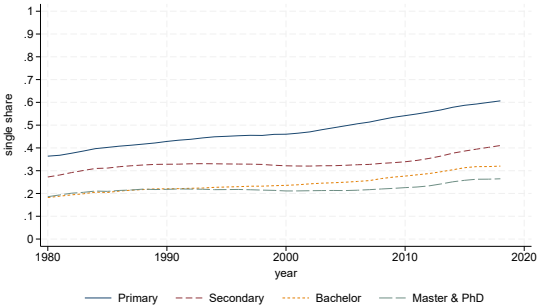
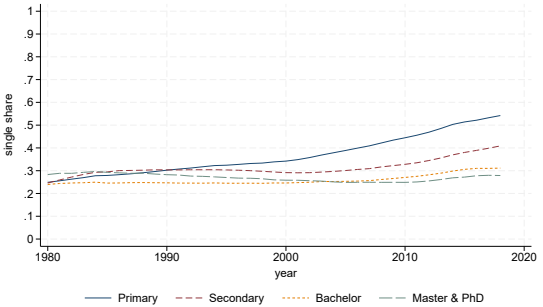
- Why are “ambitious” women “marrying up” or staying single instead of “marrying down”? Looking at same-type couples is insufficient to answer such questions.
- Motivation: single shares over time.
- Measurement: hypergamy (marry up) and hypogamy (marry down) vs. sorting.
- Our Approach: develop new measures of hypergamy/hypogamy and combine with ambition types (for now).
- Contribution: compared to educational levels, capturing individual heterogeneity by ambition types reveal interesting (expected?) patterns of female hypogamy.

Singles by Education Level

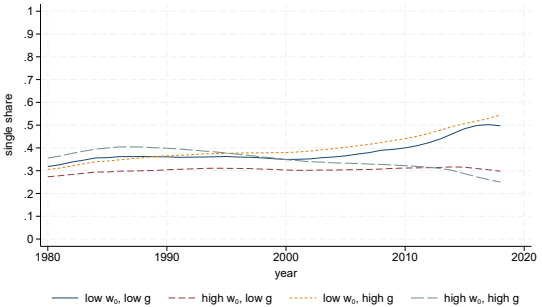


Male Single Shares



Female Single Shares

Singles by Ambition



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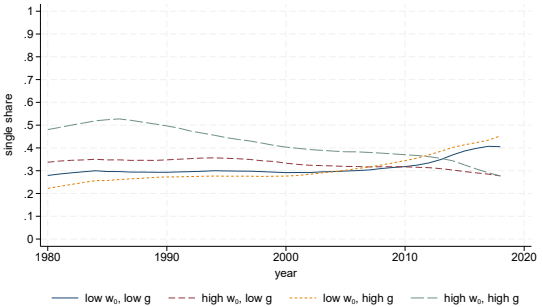

Female Single Shares

Contingency Table

Male\Female	$t_{i,f}=1$	$t_{i,f}=2$	$\cdots$	$t_{i,f}=N$	Marginal
$t_{i,m}=1$	$P(1,1)$	$P(1,2)$	$\cdots$	$P(1,N)$	$P(t_{i,m}=1)$
$t_{i,m}=2$	$P(2,1)$	$P(2,2)$	$\cdots$	$P(2,N)$	$P(t_{i,m}=2)$
$\vdots$	$\vdots$	$\vdots$	$\ddots$	$\vdots$	$\vdots$
$t_{i,m}=N$	$P(N,1)$	$P(N,2)$	$\cdots$	$P(N,N)$	$P(t_{i,m}=N)$
Marginal	$P(t_{i,f}=1)$	$P(t_{i,f}=2)$	$\cdots$	$P(t_{i,f}=N)$	1

- Likelihood ratio

$$s\left(j,j'\right)=\frac{P\left(t_{i,m}=j,t_{i,f}=j'\right)}{P\left(t_{i,m}=j\right)P\left(t_{i,f}=j'\right)}$$

- The weighted sum of likelihood indices

$$\mathcal{S}=s\left(1,1\right)\times w_1+s\left(2,2\right)\times w_2+\cdots+s\left(N,N\right)\times w_N$$

- Weights: see Almar & Schulz (2024).

Ideas for New Measures

- The measure above (the main diagonal) $\rightarrow$ hypergamy of men, hypogamy of women

Male\Female	$t_{i,f}=1$	$t_{i,f}=2$	$\cdots$	$t_{i,f}=N$	Marginal
$t_{i,m}=1$	$P(1,1)$	$P(1,2)$	$\cdots$	$P(1,N)$	$P(t_{i,m}=1)$
$t_{i,m}=2$	$P(2,1)$	$P(2,2)$	$\cdots$	$P(2,N)$	$P(t_{i,m}=2)$
$\vdots$	$\vdots$	$\vdots$	$\ddots$	$\vdots$	$\vdots$
$t_{i,m}=N$	$P(N,1)$	$P(N,2)$	$\cdots$	$P(N,N)$	$P(t_{i,m}=N)$
Marginal	$P(t_{i,f}=1)$	$P(t_{i,f}=2)$	$\cdots$	$P(t_{i,f}=N)$	1

- The measure above (the main diagonal) $\rightarrow$ hypergamy of women, hypogamy of men

Male\Female	$t_{i,f}=1$	$t_{i,f}=2$	$\cdots$	$t_{i,f}=N$	Marginal
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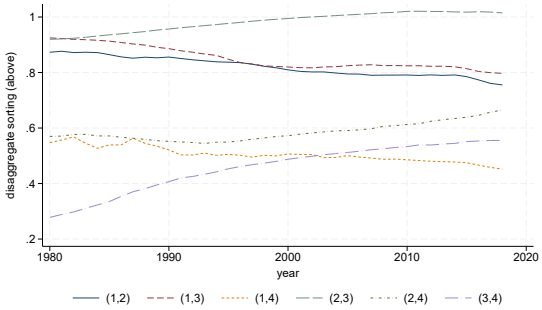
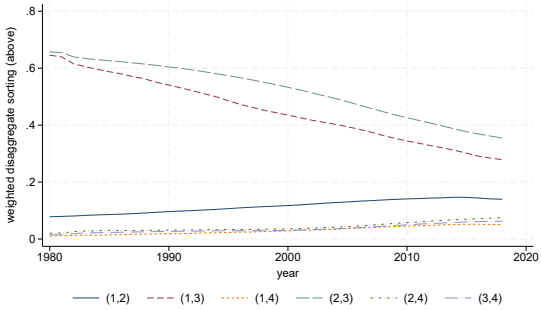
$t_{i,m}=2$	$P(2,1)$	$P(2,2)$	$\cdots$	$P(2,N)$	$P(t_{i,m}=2)$
$\vdots$	$\vdots$	$\vdots$	$\ddots$	$\vdots$	$\vdots$
$t_{i,m}=N$	$P(N,1)$	$P(N,2)$	$\cdots$	$P(N,N)$	$P(t_{i,m}=N)$
Marginal	$P(t_{i,f}=1)$	$P(t_{i,f}=2)$	$\cdots$	$P(t_{i,f}=N)$	1

The Measure Above

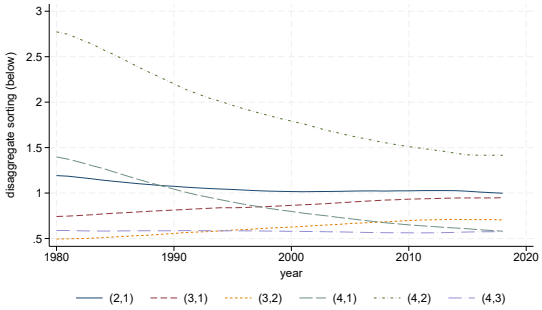


Likelihood Ratios



Likelihood Ratios (weighted)

The Measure Below



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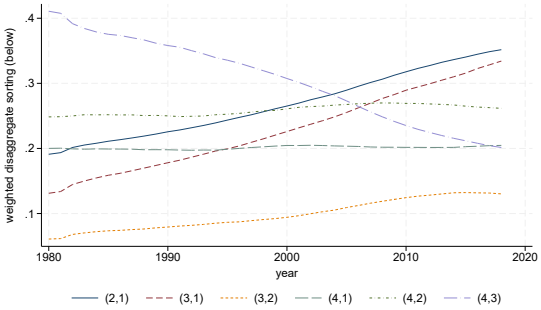
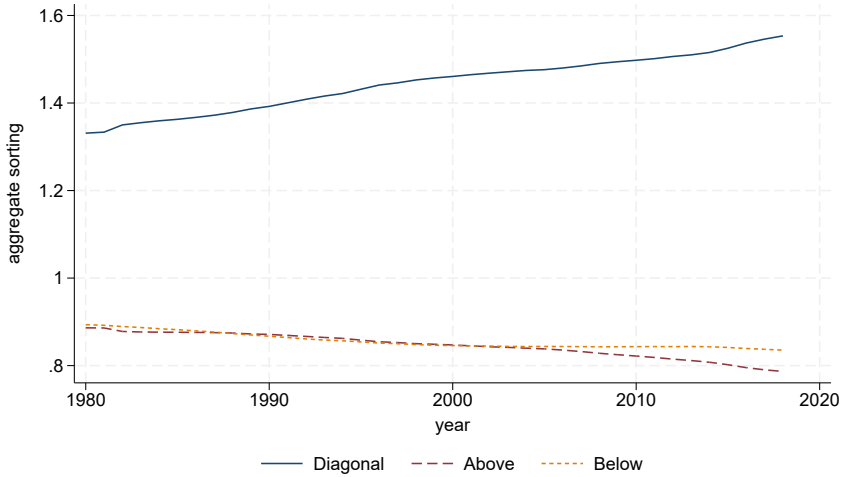


Likelihood Ratios (weighted)

All three measures (aggregated)



Thank you for your attention.

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