

*Early work in progress findings – Ideas welcome!*

# **What happens to those with a common job aspirations by age 14?**

## **Gender stereotypes and outcomes in England**

- UCL SRI gender equality workshop, 21 April 2022
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# Having a Common Job Aspiration = “Career Concentration/Originality”

- High vs low adolescent career aspirations...
  - ... are a significant predictor of later occupational attainment (Mello, 2008; Schoon et al., 2002, 2007, 2011; Sikora, 2011, 2018)
  - ...are shaped by social background, sex/gender, and ethnicity
  - ...tend to concentrate on a small range of options (Mann, 2020; OECD, 2021)
- A common aspiration may reflect “following the crowd” for some students:
  - Ideas that have been poorly thought through with little useful career guidance
  - Risks poor pathway decisions that become costly to reverse later – or missed opportunities to explore other options properly
- England is an interesting context, as youth aspirations have been shown highly disconnected from labour market demand, albeit slightly less so if they reported more value from school / career support at school
- **If proves important: guidance practitioners could incorporate extra challenge/support for such students**  
*(to help with back-up plans, ways to explore options, understanding reality/LMI of seemingly popular jobs)*

# What do we know already about “career concentration”?

OECD (2021) synthesis of existing evidence (esp. PISA data) on the likely impact of career concentration is inconsistent, but points towards adverse relationships in some subgroups (and largely neutral elsewhere)

- **Denmark:** Less common aspirations were associated with higher earnings at age 25, but only among those expecting to be managers/professionals later or those from more privileged SES
- **Australia:** Less common aspirations were associated with higher earnings at age 25, but only among those with non-managerial ambitions.
- **Switzerland:** No relationships found under any subgroups
- **In general:** Concentration is generally higher for girls, high SES, high achievers, and those with professional/managerial ambitions, but lower in countries with stronger VET (e.g. DE, NL, CH, FR).

# This Study – Research questions

- What is the association between adolescent career aspirations that fall within the “top ten job categories” and later occupational attainment measured by income?
  - Based on previous evidence we expect that more common aspirations are associated with a wage penalty
  - But this is likely to be contextually determined / average effects may vary by subgroup
- What is the association between adolescent career aspirations that fall within the “top ten job categories” and later occupational attainment measured by subjective evaluation of one’s life?
  - Limited empirical work: Mixed hypotheses from theory, e.g. career identity (Porfeli, 2011), foreclosure etc.
  - Balance of “achieved identity” (+ve) & “early foreclosure” (-ive), e.g. number of job ideas being considered?
- Differences in the associations by gender
  - PISA suggests career concentration is more prevalent among women, but uncertain on outcome patterns

# This Study – Data overview

## Next Steps (formerly known as Longitudinal Study of Young People in England; LSYPE<sub>1</sub>)

- A representative sample of c.15,000 students in secondary schools in England in 2004 (born in 1989/90)
- First surveyed age 13/14, then annual follow-ups till 2010 + adult survey in 2015 at age 25 (n=7707)
- Control variables for: socioeconomic background, risky behaviour, HE plans, academic self-conception / locus of control, academic achievement, demographics, location, & family structure aged 25

### Key input/outcome variables:

#### Career aspirations among adolescents aged 13/14:

- “Do you have any ideas about what sort of job you want to do after you've finished full-time education altogether?” (if no: indicator of career uncertainty; if yes: “What job is that?” open-ended)

#### Common career choice:

- One of the top ten choices by sex, via 4-digit SOC coding (binary variable, exclude those with no idea)

#### Career flexibility:

- More than one job aspiration

#### Early career outcomes:

- Subjective: Life satisfaction reported at age 25
- Objective: Gross weekly wage if in FT employment at age 25 (natural log; excl. n=6 claiming > £1m a year)

# Career aspirations at age 13/14

Number of jobs mentioned at age 13/14 by sex (full w1 sample; don't know responses excluded)

	Description (see, e.g. Porfeli 2011)	Possible <u>positive</u> interpretation for labour market outcomes	Possible <u>negative</u> interpretation for labour market outcomes	Women (n=7340; additional n for don't know or could not specify: 239)	Men (n=7563; additional n for don't know or could not specify: 289)
0	No Idea	<i>Holding off on forming views before have more info/experience</i>	<i>Lack of engagement with topic</i>	16.4%	20.0%
1	Certain/Committed	<i>Achieved Identity</i>	<i>Early foreclosure</i>	65.9%	64.2%
2	Backup Plan	<i>Focused exploration</i>	<i>Too narrow at this age?</i>	14.3%	13.3%
3+	Career commitment flexibility	<i>High exploration</i>	<i>Too diffuse, lack of focus on educ pathways</i>	3.4%	2.6%

\*Refers to jobs explicitly mentioned; students may have additional, lightly held ideas not mentioned

# Career Concentration & Actual Jobs: Men

## What are the top 10 jobs by 4-digit SOC?

### At age 13/14? (SOC-2000)

Motor mechanics, auto engineers	6.4%
Sports players	4.3%
Solicitors and lawyers, judges and coroners	4.1%
Computer engineers, installation and maint.	4.0%
Medical practitioners	4.0%
NCOs and other ranks	3.6%
Police officers (sergeant and below)	3.5%
Sports coaches, instructors and officials	3.2%
Plumbers, heating and ventilating engineers	3.1%
Graphic designers	2.8%
<b>Total (men)</b>	<b>39.0%</b>

### At age 25? (FT workers; SOC-2010)

Sales and retail assistants	2.7%
Programmers; software dev professionals	2.0%
Finance and investment analysts and advisers	1.8%
Secondary education teaching professionals	1.7%
Customer service occupations n.e.c.	1.7%
Managers and directors in retail and wholesale	1.6%
Sales accounts; business development managers	1.6%
Book-keepers, payroll managers, wages clerks	1.5%
Electricians and electrical fitters	1.5%
Elementary storage occupations	1.5%
<b>Total (men)</b>	<b>17.6%</b>

\* full sample available at each wave (not primary analytical sample)

# Career Concentration & Actual Jobs: Women

## What are the top 10 jobs by 4-digit SOC?

### At age 13/14? (SOC-2000)

Solicitors and lawyers, judges and coroners	7.0%
Medical practitioners	6.8%
Primary and nursery education teaching	6.1%
Beauticians and related occupations	5.6%
Product, clothing and related designers	5.2%
Actors, entertainers	3.8%
Hairdressers, barbers	3.7%
Nurses	3.5%
Educational assistants	3.1%
Veterinarians	2.5%
<b>Total (women)</b>	<b>47.4%</b>

### At age 25? (FT workers; SOC-2010)

Primary and nursery education teaching	4.6%
Nurses	3.6%
Secondary education teaching professionals	3.1%
Care workers and home carers	3.0%
Other administrative occupations n.e.c.	2.6%
Nursery nurses and assistants	2.6%
Sales and retail assistants	2.1%
Marketing associate professionals	2.0%
Sales accounts; business development managers	1.9%
Teaching assistants	1.7%
<b>Total (women)</b>	<b>27.2%</b>

\* full sample available at each wave (not primary analytical sample)



## Summary

Aspect	Men	Women
Career concentration age 13/14	Medium/High (39%)	Very High (47%)
Common career aspirations age 13/14	Highly gendered	Highly gendered Slightly more professional ambitions in top 10
Career concentration and early career outcomes	No significant associations	Wage penalty (7%)  But higher life satisfaction
What if you broadly achieve your common aspiration (90%+ don't)	No significant impact <i>(directionally higher wages and lower satisfaction)</i>	Reverses relationships – no longer significant <i>(no wage gain; satisfaction directionally lower)</i>
Flexible career exploration / back-up plans?	More job ideas is associated with higher wages  (n.a. for satisfaction)	2 job ideas links to highest wage on average and largely reverses wage penalty of concentration <i>(1 or 3 also better than none; but appears to turn adverse for the very few with 4+ ideas)</i>  (n.a. for satisfaction)

## Interpretation so far

- Both men and women have a mixture of high/low income aspirations, with young women typically having slightly more professional aspirations – both are out of sync with projected demand
- Early adolescence features narrow, often gender stereotypical common job aspirations for men and women, with greater concentration into the top ten jobs by women than men (consistent with other research)
- This career concentration is associated with lower wages for women (with no average benefits for men)
- 90%+ women and men do not end up in the broad sector by age 25 that they had aspired to at age 13/14
  - Those that do tend to do better in terms of earnings (some high aspirations in the mix)
  - But lower in terms of life satisfaction (perhaps the job did not turn out as they had hoped)  
→ sufficient to reverse the positive life satisfaction associated with career concentration for women (“group identity” might be a confounding factor explaining this puzzle)
- Having back-up job ideas is associated with higher wages for both men and women
  - Men benefit in particular from being able to proactively list multiple jobs they are interested in
  - Perhaps because many young male aspirations are particularly out of sync with the job market
- ***But: Blunt survey questions & early research – much of this would need testing with other/new datasets***

# Implications for career guidance practice

- ***Much that is in sync with good practice***
  - Encourage awareness and exploration of diverse careers, esp. in early adolescence
  - Career programmes to begin in earnest in early secondary school (if not before)
  - Challenging gender stereotypes
- ***With perhaps some extra emphases / angles***
  - Record and track the different job aspirations young people are considering (encouraging to list multiple options), use these to inform conversations / programme design
  - In conversations: Where aspirations are gender-stereotypical or in areas where aspirations far outweigh demand (“over-supplied”, e.g. regionally), probe more closely and encourage back-ups & an open mind
  - In programme design: Provide additional insight into the reality of gender-stereotypical and over-supplied jobs, since some young people may be considering these uncritically  
(e.g. pay/progression information, the difficulty of entry/early years, job shadowing, more small-group career conversations with volunteers from different stages of the career)

*Early work in progress findings – Ideas welcome!*

**What interpretations / context might be missing here?**

**What aspects of the methodology feel weak or additional analyses would you like in a full paper?**

**What related questions might we ask of the data?**

Contacts for any ideas/questions/suggestions afterwards:

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# Appendix

**Additional method details, model output +  
references**

# Key points about the dataset and analytical approach

## Dataset overview

- Next Steps (formerly known as Longitudinal Study of Young People in England (LSYPE<sub>1</sub>))
- A sample of over 15,000 students enrolled in secondary schools in England in 2004 (born in 1989/90)
- Annual follow-ups till 2010 and adult survey in 2015 at age 25 (n=7707)

## Analytical approach overview

- Men and women (sex coded by interviewer at age 13/14) analysed separately throughout
- Regressions with controls used to uncover correlations
  - Use Wave 8 weights (age 25; most recent wave analysed) to adjust for survey attrition since wave 1
  - Account for clustering via Wave 1 primary sampling units (schools) and strata (scaled SE where one PSU per strata)
  - Ordinal logit for 5-point life satisfaction; log-linear OLS for wage outcomes
  - Controls for socioeconomic background, risky behaviour, HE plans, academic self-conception / locus of control, academic achievement, demographics, location, & family structure aged 25 (see next slide)
- Missingness in control variables mitigated via 40 imputations created via chained equations (Stata v17.0)\*
- Robustness checks included different control variable mixes on the pre-imputation sample, resulting in different sample sizes (due to missingness) – headline patterns remain consistent
- Analytic sample includes those with information from 2004 and 2015 (3974 women and 3184 men) – see details on sample definition and exclusions on the next slide

\* MI uses wave 8 weights and W1 sampling stratum along with all variables in the planned primary analyses as well as additional variables potentially relevant to early career thinking (such as education/professional ambitions misalignment indicator at age 13/14 and high-level SOC code aspirations)

# Sample definition and control variables for primary model

## Primary analytical sample reqs.

- In both W1 and W8 datasets.  
(n 4153 women; n 3321 men; 95 excluded as no sex specified by interviewer)
- Responded to core W1 question about job aspirations. (Yes responses accepted provided at least one aspiration was then stated; No responses accepted; Don't Know responses excluded).  
(n 4022 women; n 3214 men)
- Data on basic descriptive questions: ethnicity, region/activity/highest qualification at age 25. Such absences indicate large missingness across all questions so little statistical insight and limit imputation success.  
(n 3974 women; n 3184 men)
- For each individual regression, original data required for the outcome variable, predictor variable of interest, and subsample variable (if applic.); all other control variables are imputed

\* Missingness shown for women (higher average missingness than men) for model with largest target sample size given DV and IV of interest: life satisfaction at age 25 vs. the number of job aspirations at age 13/14 (% is relative to full possible n of 3861)

	Missingness*
<b>Socioeconomic background</b>	
Main parent's NS-SEC class	3.4%
Secondary parent's NS-SEC class (missing or not applicable rate)	33.5%
Whether main parent or partner currently receive any benefits for low income (wave 1; 1=y; else 0)	1.1%
<b>Teenage risky behaviours</b>	
W1 Risky Behaviours (Higher = more risky behaviours)	10.6%
W3 Risky Behaviours	15.2%
<b>Location</b>	
Region lived in at age 25	0.0%
Urban / rural indicator	6.6%
2004 Index of Multiple Deprivation	10.1%
2004 IDACI (Income Deprivation Affecting Children Index)	10.1%
<b>Plans for HE</b>	
Likelihood of applying to university age 13/14 (self-reported)	3.6%
<b>Teenage academic self-conception / locus of control</b>	
How good or bad at Maths at age 13/14 (self-reported)	0.1%
How good or bad at English at age 13/14 (self-reported)	0.1%
How good or bad at Science at age 13/14 (self-reported)	0.1%
How good or bad at ICT at age 13/14 (self-reported)	1.1%
W2 Internal Locus of Control (1=High;0=Low)	8.6%
<b>Academic achievement by age 25</b>	
Highest NVQ level from an academic qualification to 2015	
Has a university degree at age 25 (y=1; else=0)	0.0%
Has a university from a Russell Group university at age 25 (y=1; else=0)	0.0%
<b>Demographics</b>	
Language (1=Speaks English as first/main/only language; 0=English as additional language)	0.0%
Ethnicity (1=White; 0=Any other ethnicity)	0.0%
<b>Family structure aged 25</b>	
Whether has ever been married at age 25 (y=1;else=0)	0.0%
Whether has a child of 5 years old or under at age 25 (y=1;else=0)	0.3%
Whether partner is employed at age 25 (y=1;else=0)	0.0%

## Understanding the outcome variables at age 25

**Subjective measure: "How dissatisfied/satisfied are you about the way your life has turned out so far?"**

5 Very satisfied; 4 Fairly Satisfied; 3 Neither satisfied nor dissatisfied; 2 Fairly Dissatisfied; 1 Very Dissatisfied

Activity Age 25	Women:		Men:	
	% in activity	Mean satisfaction	% in activity	Mean satisfaction
Full-time employed	62%	2.96	70%	2.91
Self-employed or PT employed	17%	2.85	15%	2.76
Unemployed	5%	2.36	6%	2.03
In education	5%	2.83	5%	2.66
Home/family	8%	2.97	0%	2.23
Other	3%	2.31	4%	2.14

**Objective measure: Wage data for those in full-time work**

	N	Mean (st. dev)	N lost for FT workers due to no wage data available
Women	2816	£407 (£394)	197 (+ 88 self-employed)
Men	2241	£485 (£487)	165 (+255 self-employed)



# Primary Results - Men

## Wage aged 25 (FT workers)

## Life satisfaction

*Bold = statistically significant at 15% level or better*

	Impact	P-value	N	Impact	P-value	N
Common Career Aspiration Age 13/14	-0.9%	0.78	1649	-0.04	0.71	2465
- If broadly achieved (by 3-digit SOC)	+7.0%	0.48	129	-0.26	0.61	197
- If "decided" at age 13/14 (1 job stated)	-2.0%	0.60	1318	-0.04	0.72	1963
- If "flexible" at age 13/14 (2 jobs stated)	+4.2%	0.58	285	+0.13	0.63	430
Number of job ideas <i>(quadratic fit not sig.; both terms +ve on wage)</i>	<b>+3.7%</b>	<b>0.11</b>	<b>2059</b>	+0.04	0.62	3079

# Primary Results - Women

## Wage aged 25 (FT workers)

## Life satisfaction

*Bold = statistically significant at 15% level or better*

	Impact	P-value	N	Impact	P-value	N
Common Career Aspiration Age 13/14	<b>-7.4%</b>	<b>0.01</b>	<b>1884</b>	<b>+0.20</b>	<b>0.02</b>	<b>3231</b>
- If broadly achieved (by 3-digit SOC)	-0.4%	0.95	182	-0.10	0.82	244
- If "decided" at age 13/14 (1 job stated)	<b>-4.9%</b>	<b>0.06</b>	<b>1481</b>	<b>+0.20</b>	<b>0.04</b>	<b>2532</b>
- If "flexible" at age 13/14 (2 jobs stated)	-3.2%	0.62	330	+0.30	0.29	565
Number of job ideas*	<b>13.7%</b>	<b>0.05</b>	<b>2271</b>	-0.04	0.60	3861
Number of job ideas squared* (incl. if sig.)	<b>-3.5%</b>	<b>0.05</b>	<b>2271</b>	n.a.		

*\* Model estimates 2 job ideas as associated with highest earnings*

*\* 1 or 3 are both positive relative to no ideas, but 4+ estimated to turn adverse*

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