The forgotten form of stratification: Sexual Orientation in large social survey research

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Little disclaimer

- Presentation will be discussing sexual orientation
  - Heterosexuality, Homosexuality, Bisexuality etc
- Gender identity – explicitly trans identity – will not be discussed
- Pretty natural tactic for to separate the ‘T from the LGB’
  - This work comes from a pragmatic perspective – though many of my arguments apply across the board to other minority groups
- For an excellent intro into gender identity stratification, ask Tristian

Social Stratification

- Typically dominated by discussions of social class, gender, and ethnicity (Big Three)

- Sexual Orientation is often left out of models of social stratification

Forgotten?

- Left out or forgotten entirely?

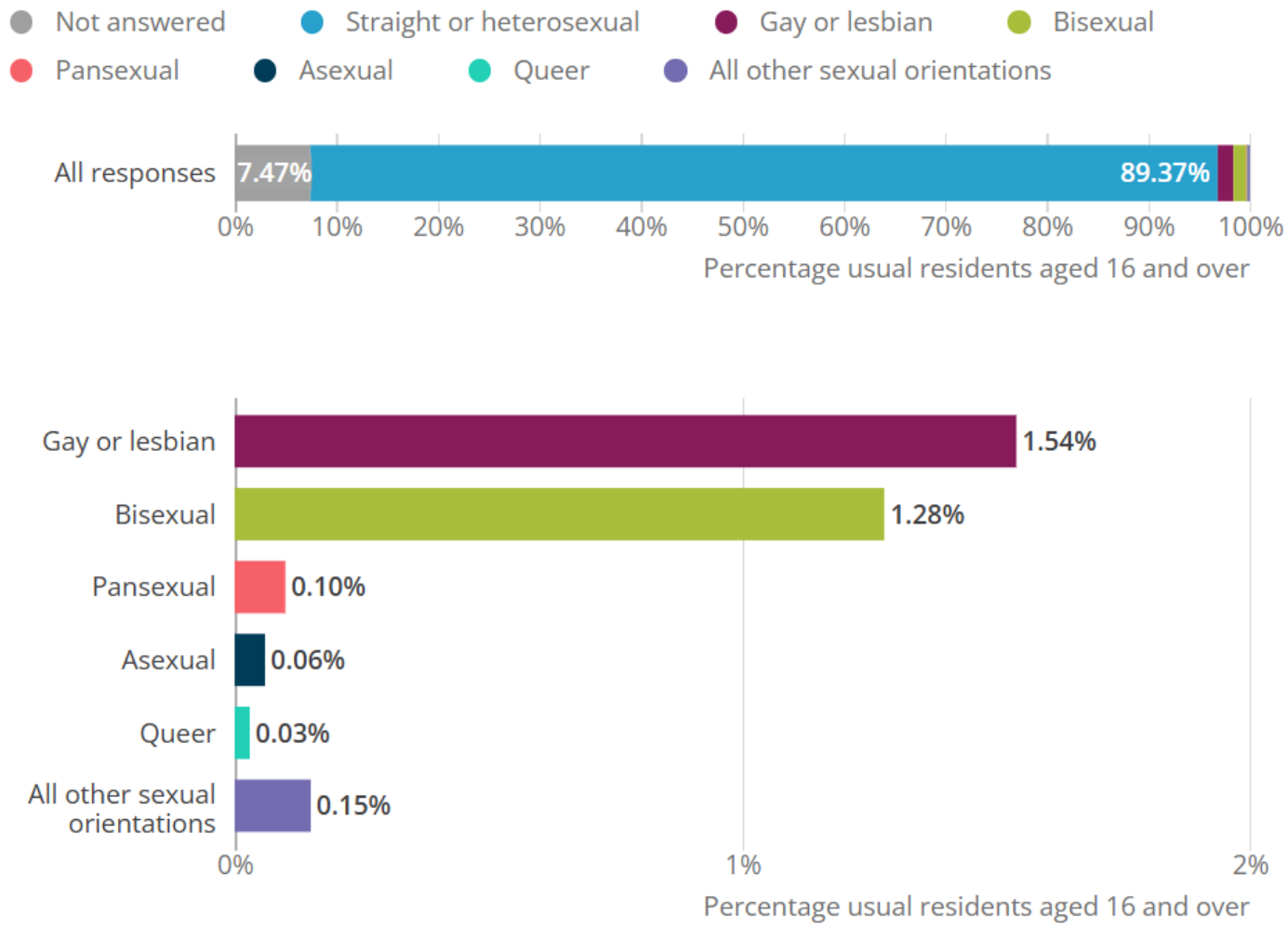
- There are a limited number of large social surveys in the UK that collect sexual orientation data
  - Even fewer that collect it well

Issues

- Data Collection strategies
  - Pretty hard to ask
  - Pretty obvious candidate for high levels of missingness
  - ‘Moral panic’ over asking young people

- Real world issues
  - The ‘Queer’ population is really quite small

Figure 1: Sexual orientation, 2021, England and Wales



Source: Office for National Statistics – Census 2021

Issues

- Real world issues
  - The ‘Queer’ population is small
- Very small sample size
- To my knowledge NO large social surveys in UK that collect sexual orientation construct appropriate weights for this population

Issues

- Bad Collection and Recording
  - Couple data
  - Adults only
  - Special License Locked
  - Only asking binary questions

Making the most out of what is left

- Enter the UKHLS
  - Contemporary large social survey in the UK
  - Has a robust question on sexual orientation that is collected from wave 3 and asked every other wave since then

  - Small, but nationally representative sub-populations
  - Unfortunately, no weights include sexual orientation – this was indicated on UKHLS forums at some point but seems to be forgotten
    - (Wouldn't that be a lovely postdoc…)

Sexuality Pay Gap

Working Paper

Sexuality Pay Gap

- Using UKHLS data to study the Sexuality Pay Gap
  - Very few papers on this topic worldwide
  - Almost exclusively US led
  - A few papers from the UK
  - Consensus is far from settled

- UKHLS also allows us to go beyond Pay gap analysis and look at growth curves
  - This has never been done for the study of sexual orientation pay gaps before

Meta-analysis (Klawitter, 2015)

- From the earliest paper on sexuality income gaps (Badgett XXXX) to 2015
- Consistently shows gay men earn less than straight men
- Lesbian women are sometimes more likely to outearn straight women
- Non-US studies report smaller earnings gaps
- Sexual orientation measured through self-identity rather than couple status or sexual behaviour reports smaller gaps
- Annual earnings rather than hourly reports larger earnings gap %
- Limiting to full-time workers increases earnings gap

Meta-analysis (Klawitter, 2015)

- Earnings penalty of 11% for gay men
- Earnings premium of 9% for lesbian women
- No information for bisexuals…

Working Data

- Sample consists of Waves 3-14 of UKHLS
- Sample includes those aged 16-66 AND those in some form of employment AND not in full time training or education
- Leaves us with a N=294,377 over 11 waves of data

Non-starter Analysis?

Sexuality	Frequency (%)
Heterosexual	42,258 (14.36%)
Homosexual	738 (0.25%)
Bisexual	676 (0.23%)
Don’t Know	29 (0.01%)
Inapplicable	75,041 (25.49%)
Missing	174,579 (59.30%)
Refused	1,056 (0.36%)

Across Waves

	UKHLS wave														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
N	27,340 (9.3%)	27,244 (9.3%)	24,783 (8.4%)	23,108 (7.8%)	22,284 (7.6%)	22,728 (7.7%)	21,670 (7.4%)	20,732 (7.0%)	19,197 (6.5%)	18,262 (6.2%)	17,100 (5.8%)	15,594 (5.3%)	15,196 (5.2%)	19,139 (6.5%)	294,377 (100.0%)
sexuality															
Heterosexual	0 (.%)	0 (.%)	21,546 (97.5%)	0 (.%)	1,034 (94.8%)	0 (.%)	998 (94.3%)	0 (.%)	17,414 (96.7%)	0 (.%)	719 (91.2%)	0 (.%)	547 (88.1%)	0 (.%)	42,258 (96.8%)
Homosexual	0 (.%)	0 (.%)	341 (1.5%)	0 (.%)	31 (2.8%)	0 (.%)	25 (2.4%)	0 (.%)	318 (1.8%)	0 (.%)	10 (1.3%)	0 (.%)	13 (2.1%)	0 (.%)	738 (1.7%)
Bisexual	0 (.%)	0 (.%)	215 (1.0%)	0 (.%)	26 (2.4%)	0 (.%)	35 (3.3%)	0 (.%)	280 (1.6%)	0 (.%)	59 (7.5%)	0 (.%)	61 (9.8%)	0 (.%)	676 (1.5%)

Non-starter Analysis?

- From base data sexuality is collected every other wave from wave 3
- Not a whole lot to work with
- Using Last Observation Carried Forward can fill in a lot of blanks here
- Last Observation Carried Backwards to get to wave 1-2 data is dangerous when dealing with sexual orientation data
  - We have no way of knowing when someone has ‘come out’

	Male	Female	Total
Sexuality	Frequency (%)	Frequency (%)	Frequency (%)
Heterosexual	82,312 (59.51%)	96,547 (61.87%)	178,859 (60.76%)
Homosexual	1,831 (1.32%)	1,395 (0.89%)	3,226 (1.10%)
Bisexual	865 (0.63%)	1,527 (0.98%)	2,392 (0.81%)
Missing	53,310 (38.54%)	56,580 (36.62%)	109,890 (37.33%)
Total	138,318 (100%)	156,049 (100%)	294,367 (100%)

	Male	Female	Total
Sexuality	Frequency (%)	Frequency (%)	Frequency (%)
Heterosexual	82,312 (96.83%)	96,547 (97.06%)	178,859 (96.95%)
Homosexual	1,831 (2.15%)	1,395 (1.40%)	3,226 (1.75%)
Bisexual	865 (1.02%)	1,527 (1.54%)	2,392 (1.30%)
Total	85,008 (100%)	99,469 (100%)	184,477 (100%)

- Getting close to 2021 census data
- Still large amounts of missingness
- Could derive orientation from couple data
  - Bad idea
  - Erasure of bisexuality often occurs

	UKHLS wave														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
N	27,340 (9.3%)	27,244 (9.3%)	24,783 (8.4%)	23,108 (7.8%)	22,284 (7.6%)	22,728 (7.7%)	21,670 (7.4%)	20,732 (7.0%)	19,197 (6.5%)	18,262 (6.2%)	17,100 (5.8%)	15,594 (5.3%)	15,196 (5.2%)	19,139 (6.5%)	294,377 (100.0%)
sexuality_new															
Heterosexual	0 (.%)	0 (.%)	21,546 (97.5%)	17,035 (97.7%)	16,325 (97.4%)	13,974 (97.5%)	13,697 (97.3%)	12,444 (97.3%)	17,802 (96.6%)	15,345 (96.6%)	14,345 (96.4%)	12,633 (96.4%)	12,239 (96.0%)	11,475 (96.0%)	178,860 (97.0%)
Homosexual	0 (.%)	0 (.%)	341 (1.5%)	265 (1.5%)	270 (1.6%)	231 (1.6%)	231 (1.6%)	211 (1.7%)	332 (1.8%)	298 (1.9%)	277 (1.9%)	259 (2.0%)	261 (2.0%)	250 (2.1%)	3,226 (1.7%)
Bisexual	0 (.%)	0 (.%)	215 (1.0%)	144 (0.8%)	160 (1.0%)	126 (0.9%)	152 (1.1%)	128 (1.0%)	294 (1.6%)	234 (1.5%)	256 (1.7%)	206 (1.6%)	250 (2.0%)	227 (1.9%)	2,392 (1.3%)

- Pretty healthy numbers from wave 3-14

- Remember the longitudinal context
  - Is sexual orientation fixed?
    - Common question that props its head every so often with supposedly ‘fixed’ variables such as ethnicity as well

- IFF orientation is not fixed it would be inappropriate to use LOCF to fill in item missingness across waves for individual pidp units

Switchers

Total Sexuality Switchers	MALE Frequency (%)	FEMALE Frequency (%)	TOTAL Frequency (%)
Bisexual -> Homosexual	3 (4.41%)	4 (3.57%)	7 (3.89%)
Bisexual -> Heterosexual	26 (38.24%)	31 (27.68%)	57 (31.67%)
Homosexual -> Bisexual	2 (2.94%)	5 (4.46%)	7 (3.89%)
Homosexual -> Heterosexual	3 (4.41%)	4 (3.57%)	7 (3.89%)
Heterosexual -> Bisexual	24 (35.29%)	58 (51.79%)	82 (45.56%)
Heterosexual -> Homosexual	10 (14.71%)	10 (8.93%)	20 (11.11%)
Total	68 (100%)	112 (100%)	180 (100%)

- Out of 184,477 cases of sexual orientation only 180 people across 11 waves of UKHLS data have ‘switched’ their sexual orientation
- Out of these 180 people 178 of them have only switched once
  - This is capturing people ‘coming out’
    - The lower mean age of switchers at 35.5 compared to sample average of 42 seems to corroborate this
  - There are a handful of sexual minority -> heterosexuality switchers however
    - These people appear to have ‘dipped their toes’
    - This is dominated by the bisexual -> heterosexual and vice versa categories, which are themselves dominated by women

- Out of these 180 people 2 of them switched twice
- Person A is recorded as heterosexual at wave 3-4, at wave 5 recorded as homosexual until wave 6 then from wave 8-14 heterosexual again
- Person B is recorded at waves 3-4 as bisexual then from wave 5-8 recorded as homosexual and then from waves 9-14 bisexual again
- Both individuals are women

Switchers

- Given the very low number of people that appear to switch sexual orientations over the life course it is fair in my view to consider sexuality as ‘fixed’

Occupational Sorting

- The occupations that individuals sort into has a knock on impact when assessing wages

- Beyond wages, occupational sorting is a clear indicator of societal and cultural expectations, norms, and influences on individual behaviours that are constituted via larger unit groups

- Brief look at largest occupational titles (=>2%) sorted into by sexuality, separated by sex
  - Using SOC 2000 codes

Men

Heterosexual Men		Homosexual Men		Bisexual Men	
1121 Production, works and maintenance managers	2.4	1136 Information and communication technology managers	2.04	2132 Software professionals	6.97
1132 Marketing and sales managers	2.6	1135 Personnel, training and industrial relations managers	2.27	2211 Medical practitioners	2.66
1239 Managers and proprietors in other services n.e.c.	2.08	2132 Software professionals	2.5	2319 Teaching professionals n.e.c.	2.53
2132 Software professionals	2.36	2314 Secondary education teaching professionals	2.45	5434 Chefs, cooks	2.28
7111 Sales and retail assistants	2.11	2315 Primary and nursery education teaching professionals	2.39	6115 Care assistants and home carers	3.8
9259 Elementary sales occupations n.e.c.	2	7111 Sales and retail assistants	4.02	7111 Sales and retail assistants	2.92
				8211 Heavy goods vehicle drivers	2.15
				8214 Taxi, cab drivers and chauffeurs	2.79
				9223 Kitchen and catering assistants	2.15
				9241 Security guards and related occupations	3.93

Women

Heterosexual Women		Homosexual Women		Bisexual Women	
2314 Secondary education teaching professionals	2.36	1152 Office managers	2.27	3211 Nurses	2.13
2315 Primary and nursery education teaching professionals	3.12	2315 Primary and nursery education teaching professionals	3.11	3539 Business and related associate professionals n.e.c.	2.99
3211 Nurses	4.69	3211 Nurses	4.93	4150 General office assistants/clerks	2.49
4122 Accounts and wages clerks, book-keepers, other financial clerks	3.11	3312 Police officers (sergeant and below)	2.43	6111 Nursing auxiliaries and assistants	2.28
4150 General office assistants/clerks	4.26	6111 Nursing auxiliaries and assistants	2.73	6115 Care assistants and home carers	4.48
6115 Care assistants and home carers	5.29	6115 Care assistants and home carers	3.64	7111 Sales and retail assistants	5.9
6124 Educational assistants	3.93	7111 Sales and retail assistants	2.96	7212 Customer care occupations	2.35
7111 Sales and retail assistants	4.66	7212 Customer care occupations	2.05	9223 Kitchen and catering assistants	3.63
9233 Cleaners, domestics	2.4			9233 Cleaners, domestics	2

Occupational Sorting

- Women from all sexual orientations and bi men appear to be more heavily concentrated in a few occupational titles compared to straight and gay men

- Bi men are concentrated in <4000 occupations. Possible driver of a wage gap?
  - 7% of bi men are software professionals…

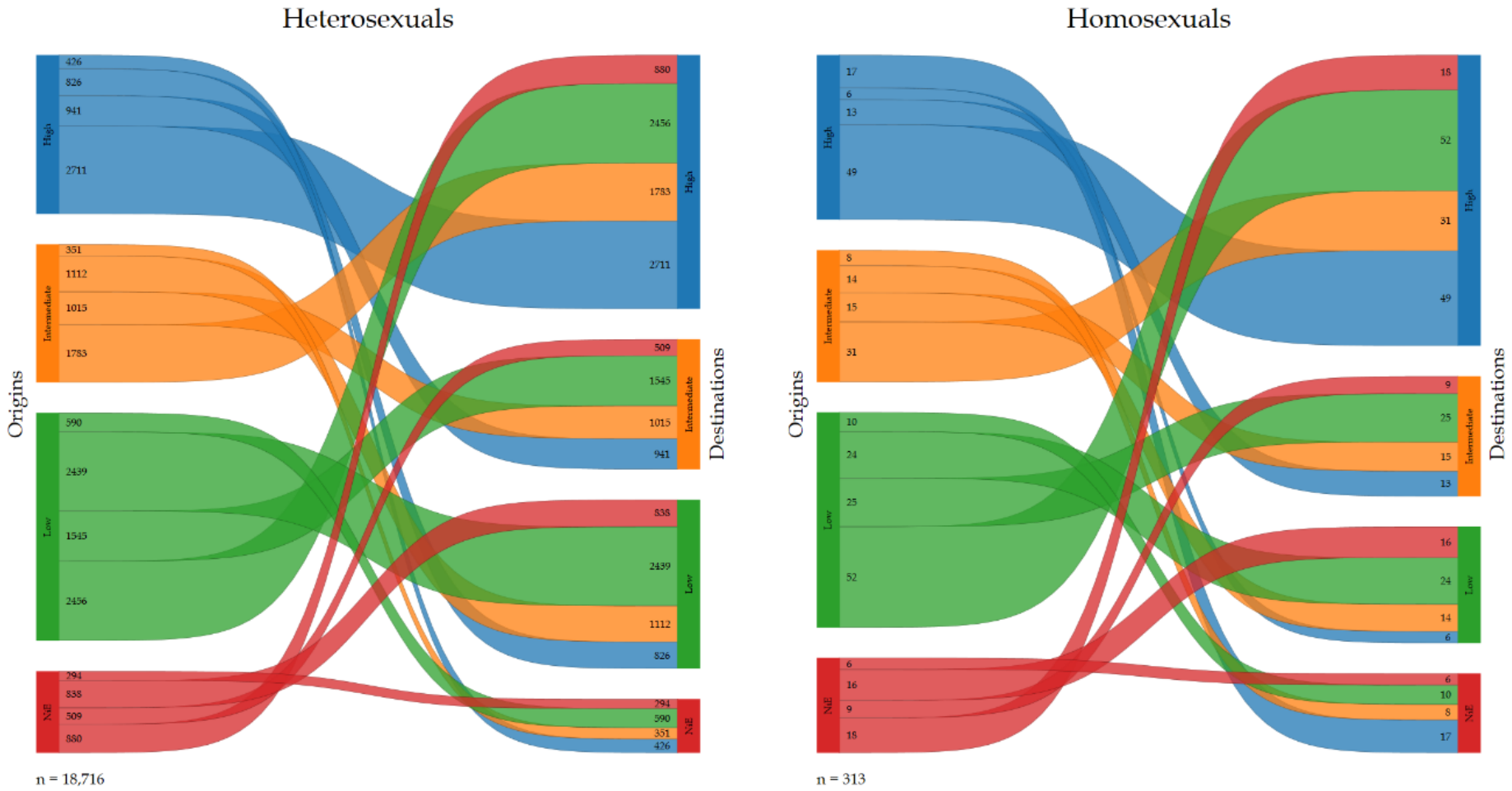
- Women across sexuality appear to focus on soft-skilled labour
  - Though gay and bi women appear to concentrate in authority-related occupations. Possible driver of a pay premium?

- Gay men concentrate in similarly soft-skilled labour positions (teachers)
  - Possible driver of a pay penalty?

Social Mobility

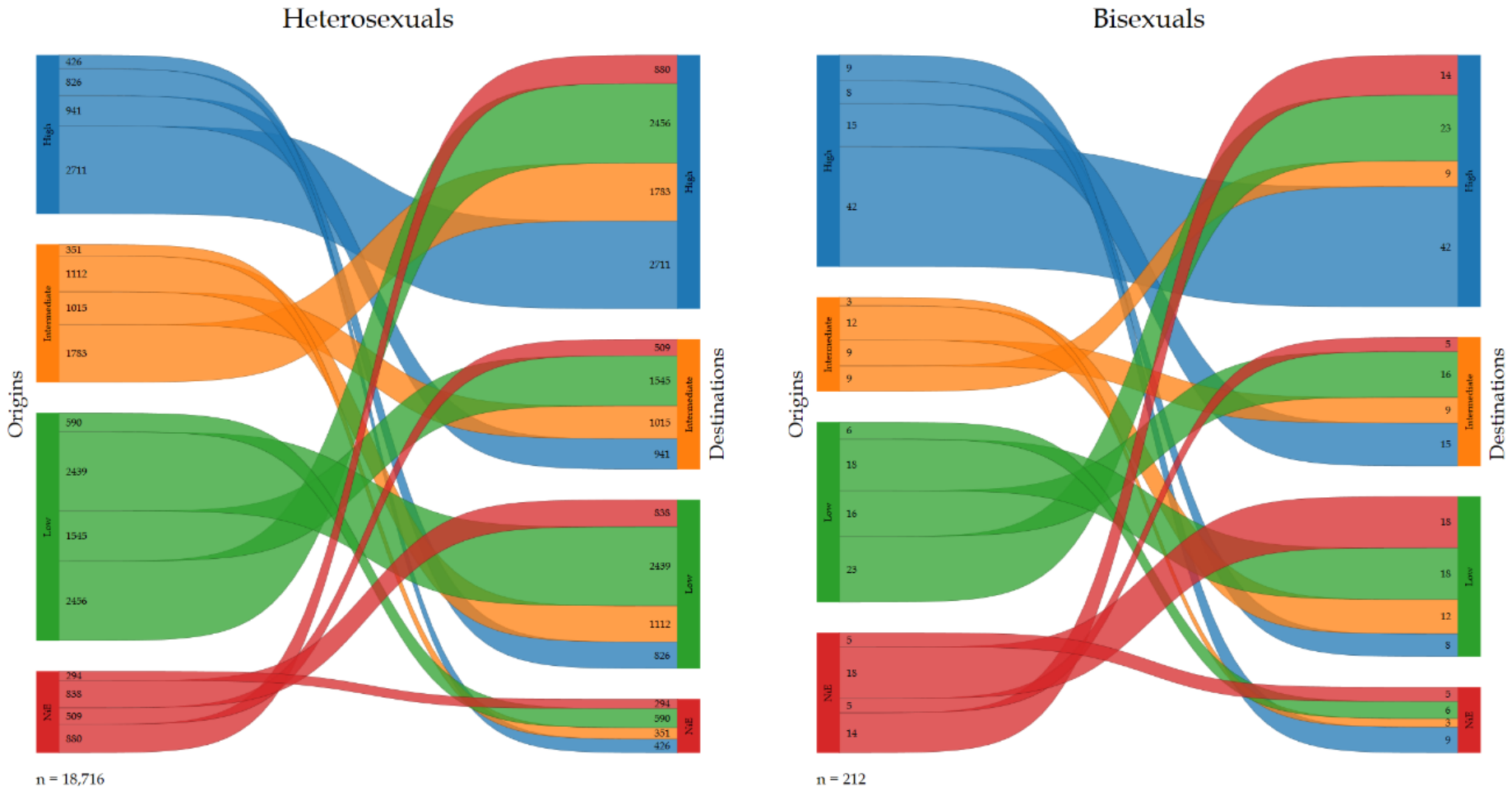
- Prior to modelling some introspection on the lives of sexual minorities is called for
- Social Mobility is a good starting point here
- How much do origins actually matter for current destinations

Social Mobility: Origin to Latest Destination



Data Source: UKHLS Waves 3-14

Social Mobility: Origin to Latest Destination



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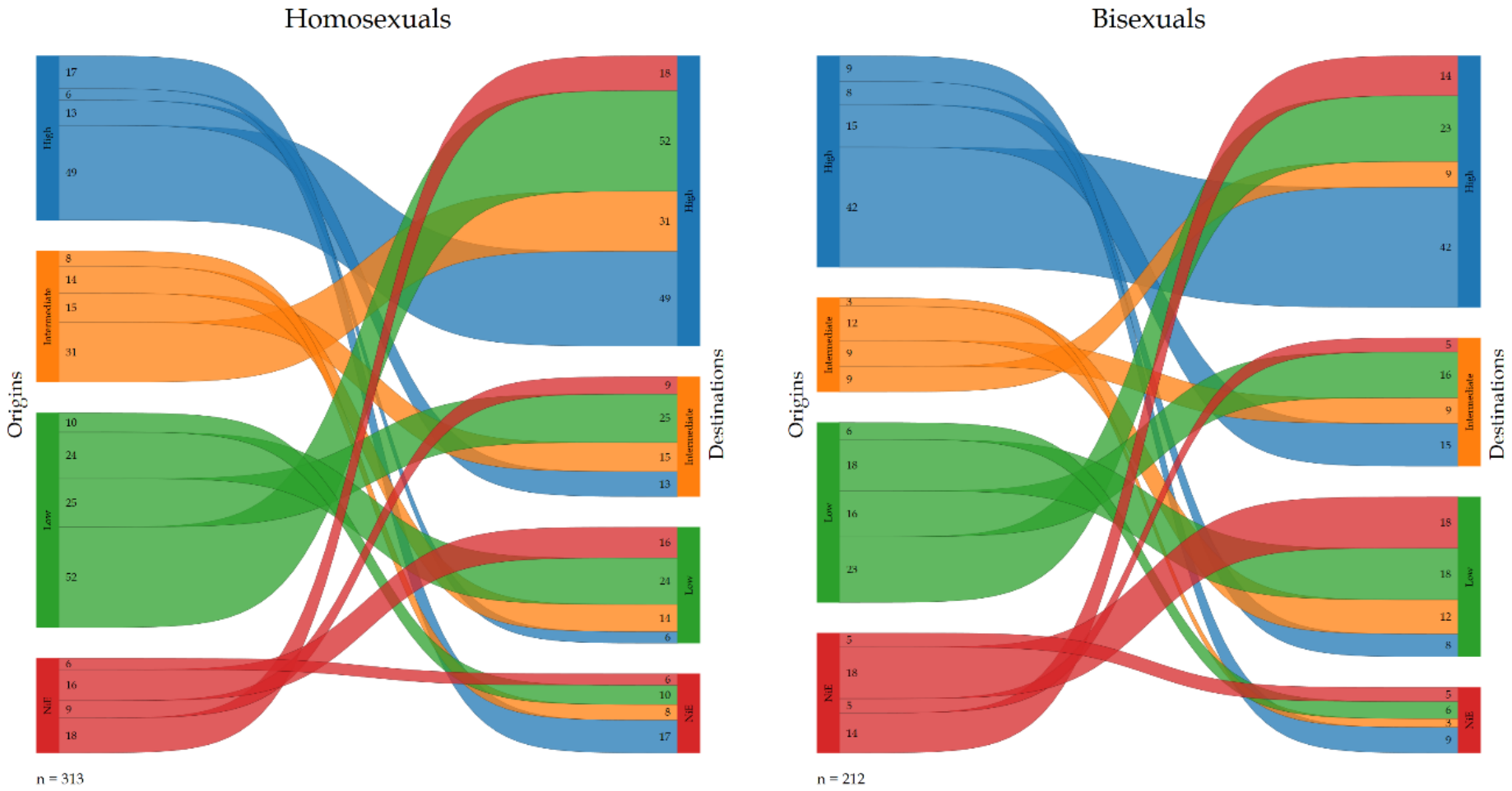
Social Mobility: Origin to Latest Destination



Data Source: UKHLS Waves 3-14

- Slightly larger proportions of gay and bi individuals ‘leapfrogging’ in terms of upward social mobility

- Is this an origins effect or an ‘in-spite of origins’ effect?

- Supportive households are presumably more likely to have a net positive origin effect on individuals

Modelling the sexuality pay gap

- Four components to this modelling strategy
- 1: Demographics
- 2: Human Capital
- 3: Geography
- 4: Time/Growth

Demographics

- Social Origins
- Sexuality
- Age
- Ethnicity
- Sex
- Housing Tenure
- Marital Status
- Parental Status
- Long Term Illness

Human Capital

- Education
- Work Hours
- Current NS-SEC
- Sector
- Industry
- Size of Firm

Geography

- Urban
- Region

Time/Growth

- Wave as a function of time
- Modelling through an appropriate panel set up via a unique individual pidp
- Measure change over time

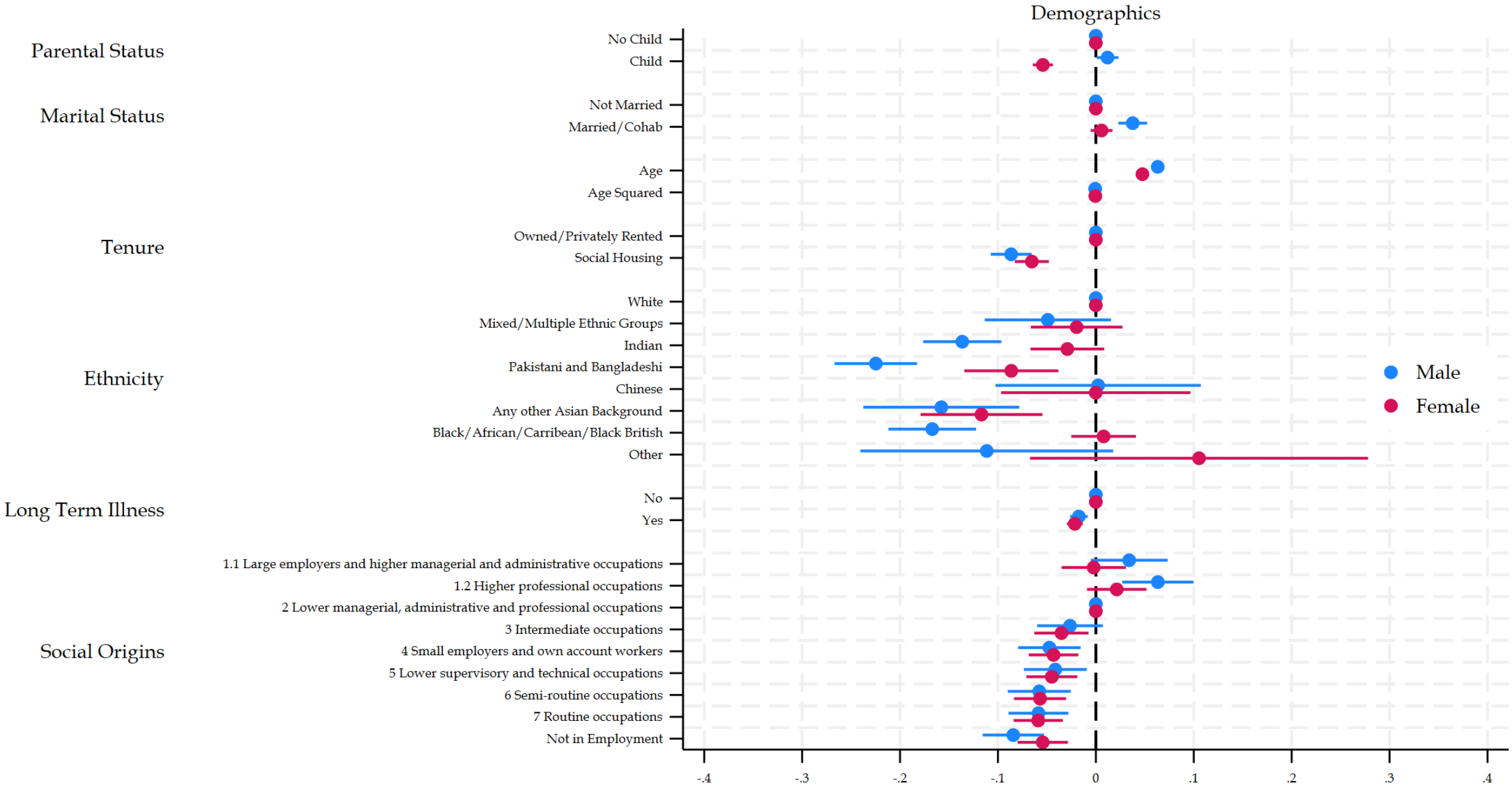
Descriptive Statistics

- Go to website notebook...

Regression Models

- Go to website notebook…

Coefficient Plot of Sexuality Pay Gap

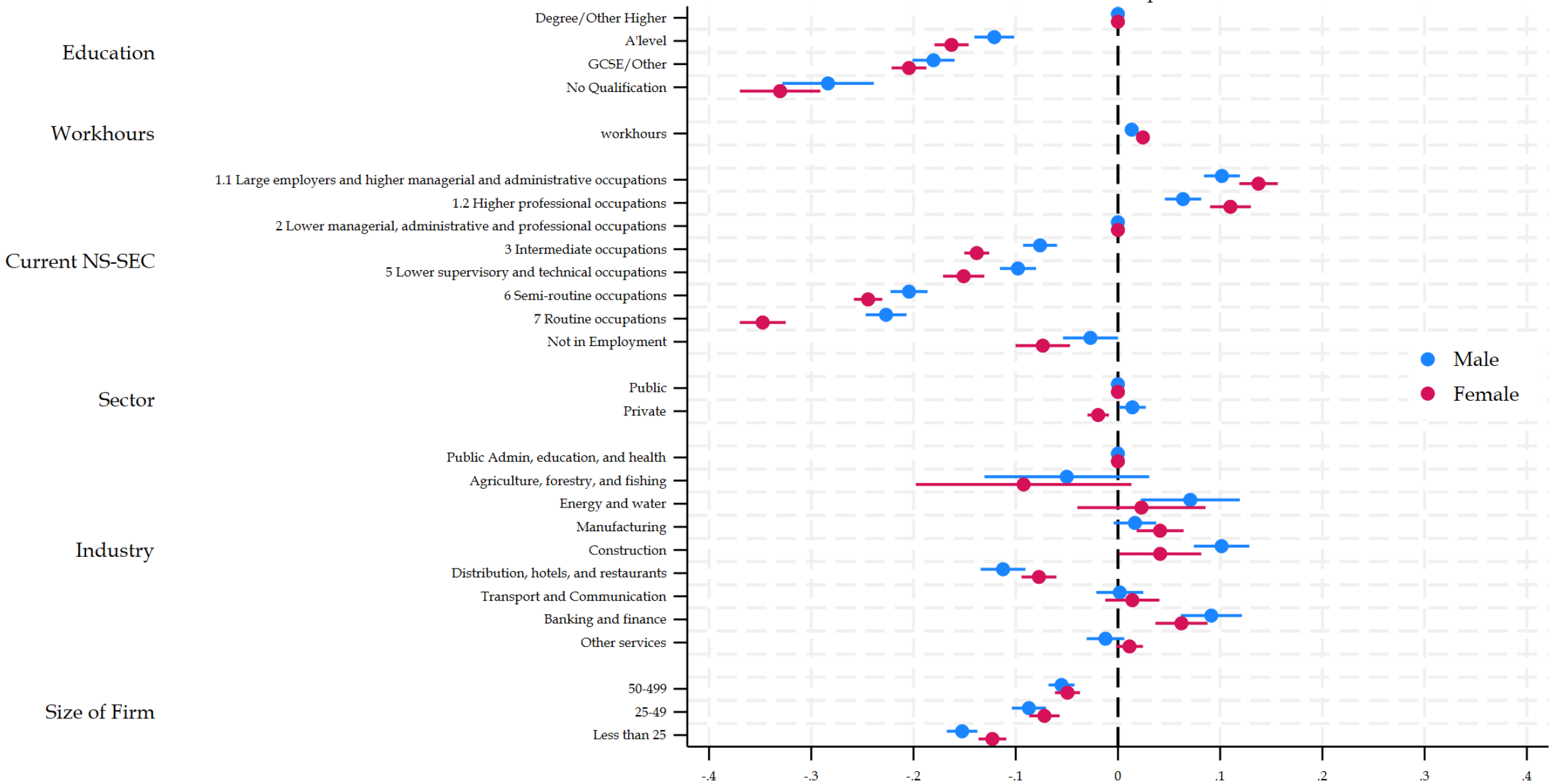


Data Source: UKHLS Waves 3-14

Male Model n=39,742 & Female Model n=48,917

Coefficient Plot of Sexuality Pay Gap

Human Capital



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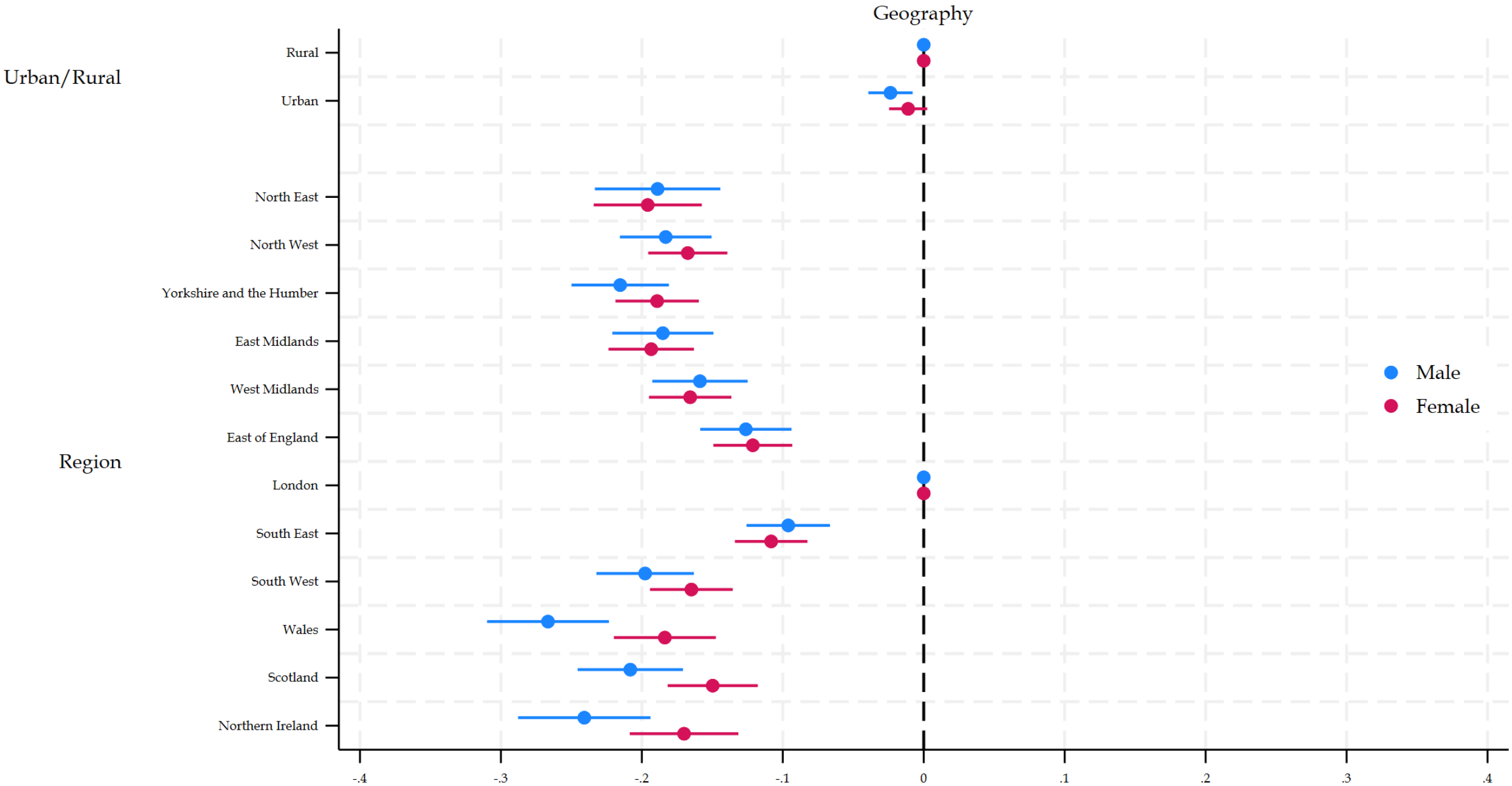

Data Source: UKHLS Waves 3-14

Male Model n=39,742 & Female Model n=48,917

Sexual Orientation

- Gay men earn 7% less than straight men annually and bi men 9% less controlling for all other variables

- Gay women earn 5% more than straight women annually

Sexual Orientation

- Converting this into real £s would also be beneficial but with continuous variables such as age and working hours in the model the constant is being dragged downwards

- Setting a new constant at occupational maturity = 35 and a fulltime working hours = 35 gives a new constant of 10.92 = £55,270 for straight men
- Gay men = £51,534
- Bi men = £50,513

- For straight women, a new constant of 10.73 = £45,706
- Gay women = £48,050

Growth Curves

Predicted log income growth curves by sexuality