What do we know about the earnings of sexual minorities?

Erik Plug
Amsterdam School of Economics, University of Amsterdam

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What do we know about the earnings of sexual minorities?

- When asked this question, let's say 30 years ago, we would not be able to answer it.
- Over the last 30 years, the legal position of sexual minorities has changed.
- Over the last 30 years, lesbians and gays became more visible in surveys and registers.
- When asked this question today, we can provide a more informed (but still *fragmented*) answer:
  - we know more about the earnings of gay men and lesbian women in the developed world;
  - we know little about the earnings of other sexual minorities;
  - we know nothing about the economic lives of sexual minorities in the developing world.

What do we know about the earnings of sexual minorities?

- In what follows, I will address two questions.
- **How do the earnings of homosexual and heterosexual workers compare?**
  - I will briefly go over two recent meta-studies that summarize the empirical literature.
- **Which factors explain the sexual orientation differences in earnings?**
  - I will go over the standard explanations (differences in skills, treatments and preferences).

How do the earnings of homosexual and heterosexual workers compare?

- There is a growing literature documenting the earnings of lesbian and gay workers.
- There are several data-driven limitations:
  - sexual orientation measure: same-sex partner, self-identified, and same-sex sexual behavior;
  - earnings measure: mostly monthly earnings (which captures differences in labor supply);
  - sample size: often small (share sexual minorities is only 3 percent (OECD 2019)).
- There are two recent meta-studies on the topic:
  - Marieka Klawitter (2015) conducts a meta-analysis using 34 published studies.
  - Marie-Anne Valfort (2017) provides a review of 38 published studies.

Overview earnings differentials: gay penalties and lesbian premia

meta-study	number	measure	men	women
Klawitter 2015:	34	self-identified/same-sex partner	-0.11	+0.09
	19	self-identified	-0.09	+0.11
	15	same-sex partner	-0.13	+0.07
outside US	11	self-identified/same-sex partner	-0.07	+0.09
Valvort 2017:	38	self-identified/same-sex partner	-0.10	+0.07
	18	same-sex partner	-0.08	+0.07
	20	self-identified	-0.12	+0.07
hourly earnings	14	self-identified/same-sex partner	-0.07	+0.02
larger samples	7	self-identified/same-sex partner	-0.14	+0.10
singles	2	self-identified	-0.05	+0.00
Carpenter 2008, Sabia et al 2017:				
Australia	2	self-identified	-0.06	-0.25/+0.10

What can explain the sexual orientation differences in earnings?

- The three standard labor reasons for earnings differentials.
  - **Differences in skills**;

    Can we think of certain skills that make straight men more productive than gay men, and lesbian women more productive than straight women?

    I will consider education and specialization (or lack thereof).
  - **Differences in treatment (discrimination)**;

    Does the labor market discriminates against gay workers? Is discrimination stronger for straight women than for lesbian workers?
  - **Differences in tastes**;

    Previously under-explored factor. I will borrow from recent laboratory studies on taste-based factors and consider willingness to compete.

Which skills can explain the sexual orientation differences in earnings?

- Are there sexual orientation differences in **education**?
  - Are lesbian women better educated than heterosexual women? Are heterosexual men better educated than gay men?
- Partial explanation at most.
  - Lesbian women are better educated than straight women. But also gay men are better educated than straight men.
  - Studies that focus only on higher educated men and women also find (albeit smaller) gay penalties and lesbian premia.

Earnings of college graduates in the Netherlands

	men		women	
	monthly earnings	**hourly earnings**	**monthly earnings**	**hourly earnings**
	(1)	(2)	(3)	(4)
	all workers			
gay/lesbian worker	-0.052***	-0.014	0.025	0.028*
	0.016	*0.015*	*0.018*	*0.016*
number of observations	4,869		6,117	
number of minority observations	241		198	
	full-time workers			
gay/lesbian worker	-0.039**	-0.028*	0.044**	0.041**
	0.015	*0.015*	*0.018*	*0.018*
number of observations	4,557		4,667	
number of minority observations	208		140	

Data source: Dutch College Graduate Survey 1999-2000.

Source: Plug and Berkhout (2004).

Which skills can explain the sexual orientation differences in earnings?

- Are there sexual-orientation differences in **education**?

  - Are heterosexual men better educated than gay men? Are lesbian women better educated than heterosexual women?

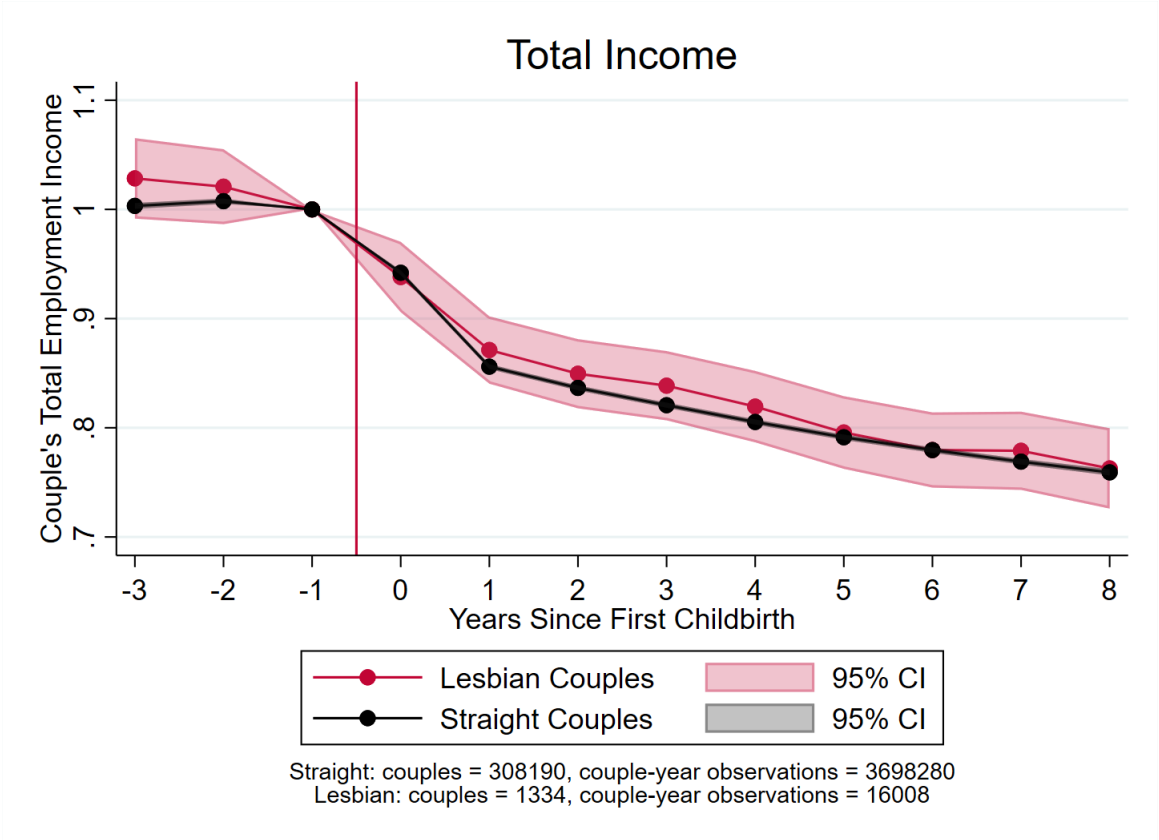
- Partial explanation at most.

  - Lesbian women are better educated than straight women. But also gay men are better educated than straight men (see almost all the studies listed in Klawitter (2015) and Valvort (2017))

  - Studies that focus only on higher educated men and women also find (albeit smaller) gay penalties and lesbian premia.

Which skills can explain the sexual orientation differences in earnings?

- Are there sexual-orientation differences in **family specialization**?
  - Do homosexual couples specialize less than heterosexual couples? Yes they do!
  - Gay men work fewer hours than straight men. Lesbian women work more hours than straight women (Tebaldi and Elmslie, 2006; Black et al., 2007; Prickett et al., 2015).
- I will explore two first-order reasons for specialization: **children** and **earnings potential**.
- Having children adversely impact the earnings of straight women (Lundborg, Plug and Rasmussen 2017; Angelov, Johannsen and Lindahl 2016; Kleven, Landais and Søgaard 2019).
  - Homosexual couples have far fewer children. Do lesbian couples respond differently to the arrival of children?
- Men have, on average, higher earnings than women (when they meet) (Altonji and Blank 1999; Stevenson and Wolfers 2007; Azmat and Petrongolo 2014).
- Homosexual partners have more similar earnings. Do homosexual couples benefit less from each others comparative wage advantage?



Data source: Dutch administrative registers.
Source: Ilčiukas, Plug and Van der Klaauw (work in progress)

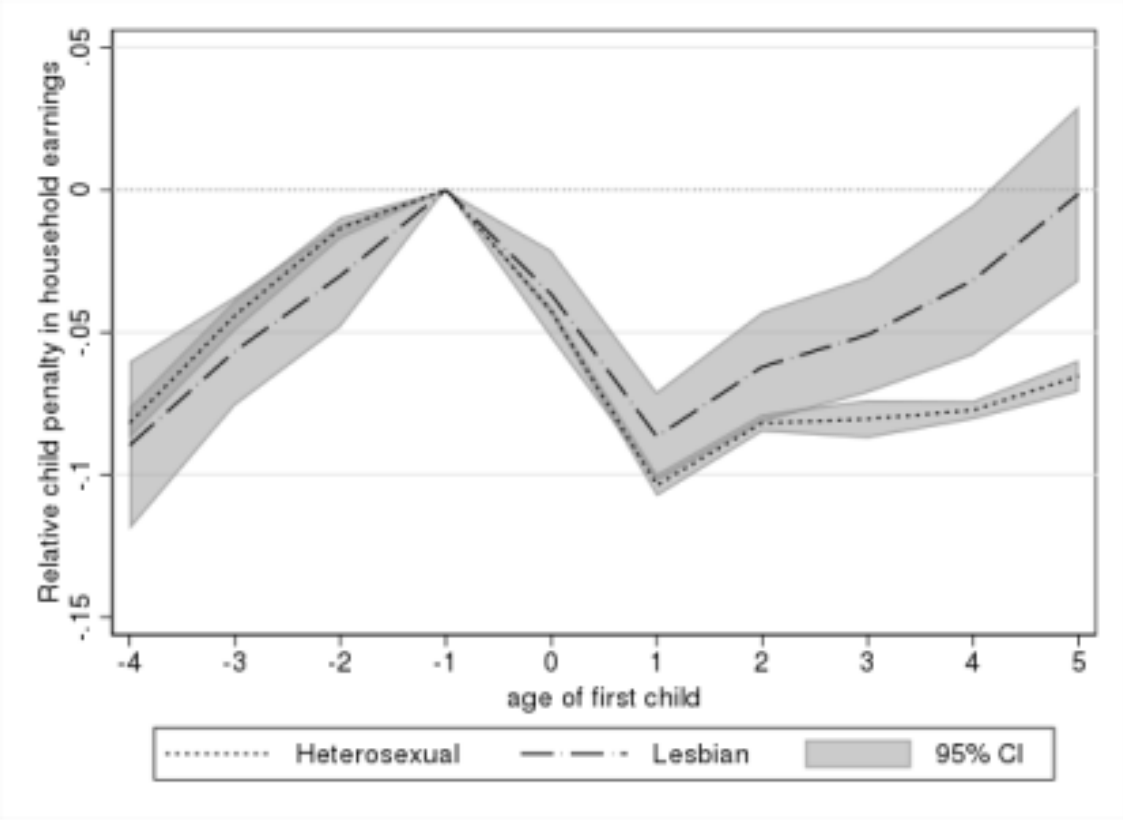


Figure 2: Child penalty, total household income

Data source: Norwegian administrative registers.
Source: Andresen and Nix (2019)

Which skills can explain the sexual orientation differences in earnings?

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Comparative advantages in couples

Regressing market/household work time on being the highest earner

	market work		household work	
	all couples (1)	two earner couples (2)	all couples (3)	two earner couples (4)
	heterosexual couples			
being the highest earner (1/0)	2.15***	0.63***	-1.30***	-0.52***
	0.05	*0.06*	*0.03*	*0.04*
mean (hours per day)	3.88	5.52	4.45	3.67
N observations	69,898	36,085	69,898	36,085
	homosexual couples			
being the highest earner (1/0)	1.62**	0.58	-1.05***	-0.72*
	0.65	*0.76*	*0.30*	*0.38*
mean (hours per day)	5.22	6.10	3.28	3.10
N observations	417	267	417	267

Data source: American Time Use Survey (ATUS) 2003-2017.

Source: Hofmarcher and Plug (work in progress).

Which skills can explain the sexual orientation differences in earnings?

- Are there sexual-orientation differences in **family specialization**?
  - Do homosexual couples specialize less than heterosexual couples? Yes they do!
  - From a comparative advantage perspective, homosexual and heterosexual individuals respond (almost) similar to children and earnings advantages.
- We observe gay penalties and lesbian premium (in part) because of sampling design.
- If samples select one adult per household:
  - the male sample undersamples gay men that specialize in market work;
  - the female sample oversamples lesbian women that specialize in market work.

Can discrimination explain the earnings of gay and lesbian workers?

- Do gay and lesbian individuals face a discriminating labor market?
- Gay penalties are consistent with a discrimination story. Lesbian premia are not, unless discrimination is stronger against heterosexual women.
- Main limitation is that these gay penalties and lesbian premia represent a blend of discriminatory factors and omitted variables.
- Correspondence test studies can partly bypass this limitation.
  - Note that employers can only discriminate if they know the job seekers' sexual orientation.

Overview correspondence tests

Average callback ratios: homosexual versus heterosexual resumes

study	country	signal	men	women
Weichselbaumer 2003	Austria	E		1.4
Drydakis 2009 2011	Greece	E		2.2
Ahmed et al 2013	Sweden	E/S	1.1	1.2
Beart 2014	Belgium	S		0.9
Drydakis 2014	Cyprus	E	3.7	4.5
Weichselbaumer 2015	Germany	E/S		0.9-1.4
Patachine et al 2015	Italy	E	1.5	1.0
Drydakis 2016	UK	E	1.1	1.1
Adam 1981	Canada	E	1.6	2.0
Tilcik 2011	US	E	1.6	
Bailey et al 2013	US	E	0.9	1.0
Acquisti, Fong 2020	US	F	1.0	

Signal: engagement in LGTB organization (E); same-sex partner (S); facebook (F)

Can discrimination explain the earnings of gay and lesbian workers?

- There is evidence that gay men and lesbian women are discriminated against.
- **Advantages of correspondence studies:**
- experimental evidence;
- tackles flaws typical to audit studies and regression studies.
- **Disadvantages of correspondence studies:**
- callback is a crude outcome;
- if not solicited in applications, why report orientation in resumes (Bertrand and Duflo 2017);
- underlying talents need not be equally distributed (Heckman and Spiegelman 1993);
- it cannot distinguish between information-based and taste-based discrimination.

Can discrimination explain the earnings of gay and lesbian workers?

- Plug, Webbink and Martin (2014)
- We came across a 1992 sex survey that is part of the Australian Twin Registry (ATR).
- The survey contains information on sexual prejudice, sexual orientation and occupations.
- About 9,000 twins were asked:
  - to agree or disagree on (what we interpret as) 10 homophobic statements;
  - whether they consider themselves as heterosexual, bisexual, gay or lesbian;
  - whether they consider their twin as heterosexual, bisexual, gay or lesbian;
  - what their regular/lifetime occupation is/was.

Can discrimination explain the earnings of gay and lesbian workers?

- We have used the survey setup to imitate a correspondence test design.
- Instead of fake resumes, we look at identical twins with different sexual orientation;
  - twins help us to eliminate/reduce the influence of omitted variables.
- Instead of uncommon resume signals, disclosure is more likely to occur at the workplace;
  - we use the co-twin report as the relevant minority signal.
- Instead of callbacks, we look at occupational choice;
  - we distinguish prejudiced from unprejudiced occupations.

Statements used to measure prejudice in Australian Twin Registry (ATR)

Statements	Agree	Not Agree
Homosexuality is merely a different kind of sexuality and is not immoral		0.398
Homosexual men should be allowed to work in the following professions:		
Schoolteachers		0.362
Court Judges		0.259
Ministers		0.355
Medical Doctors		0.338
Government Officials		0.218
Homosexuals are dangerous as teachers or youth leaders, because they try to get sexually involved with children	0.254	
Homosexuality is obscene and vulgar	0.368	
Homosexuality is a social corruption and can cause the downfall of civilization	0.235	
Homosexuals should be allowed to dance with each other in public places		0.406

Data source: Australian Twin Registry, Sex Survey 1992

Source: Plug, Webbink and Martin (2014)

Prejudiced occupations

	% Prejudice
Entire sample:	0.761
Least prejudiced occupations:	
Miscellaneous professionals (librarians)	0.457
Artists	0.461
Health diagnostic and practitioners	0.514
Registered nurses	0.588
School teachers	0.599
Most Prejudiced occupations:	
Metal fitting/machining tradespersons	0.921
Police	0.930
Trades assistant and factory hands	0.930
Vehicle tradespersons	0.967
Building tradespersons (bricklayers)	0.985

Data source: Australian Twin Registry, Sex Survey 1992

Source: Plug, Webbink and Martin (2014)

Estimating the relationship between occupational prejudice and sexual orientation

All identical twins:	**LS (1)**	**LS (2)**	**FE (3)**	**FE (4)**
worker is gay or lesbian	–0.04**		–0.07***	
	0.02		*0.02*	
worker is gay or lesbian		–0.07**		–0.08**
(other twin agrees)		*0.03*		*0.03*
worker is gay or lesbian		–0.02		–0.06**
(other twin disagrees)		*0.02*		*0.03*
Inclusion of schooling and personality trait controls:				
worker is gay or lesbian	–0.03		–0.05***	
	0.02		*0.02*	
worker is gay or lesbian		–0.05		–0.07**
(other twin agrees)		*0.04*		*0.03*
worker is gay or lesbian		–0.01		–0.04*
(other twin disagrees)		*0.02*		*0.03*
Number of observations	1,144		1,144	
Number of minority observations	36		36	

Mean and Standard Deviation of Share Prejudiced Workers (ATR): 0.694 *0.116*

Source: Plug, Webbink and Martin (2014)

Replication regressions

	ATR		ASHR		
	MZ	**MZ/DZ**	**all**	**men**	**women**
worker is gay/lesbian/bisexual	–0.039**	–0.034***	–0.029***		
	0.019	*0.014*	*0.004*		
worker is gay/lesbian				–0.054***	–0.024***
				0.006	*0.009*
worker is bisexual				–0.010	0.005
				0.011	*0.007*
Number of observations	1,142	2,124	18,855	9,965	8,903
Number of minority observations	36	74	548	337	202

Mean and Standard Deviation of Share Prejudiced Workers (ASHR): 0.287 *0.093*

Data sources: Australian Twin Registry 1992; Australian Survey of Health and Relationships 2002.

Can discrimination explain the earnings of gay and lesbian workers?

- There is clear evidence of discrimination against homosexual men and women.
  - Partial explanation for earnings differences.
  - It cannot explain lesbian premia.
  - It can explain gay penalties, but only if there are not enough nondiscriminating firms to employ all gay workers.

What kind of preferences can explain the earnings of gay and lesbian workers?

- One likely candidate is **taste for competition**:
- Gender differences in competitiveness are well documented (Niederle and Vesterlund, 2011).
- Gender differences in competitiveness predict gender differences in career choices and earnings:
  - choice of academic career (Buser, Niederle and Oosterbeek 2014, Zhang 2012);
  - future salary expectations (Reuben, Wiswall and Zafar 2013);
  - investment decisions of entrepreneurs (Oppedal et al 2015).

What kind of preferences can explain the earnings of gay and lesbian workers?

- Buser, Geijtenbeek, Plug (2018)
- We measure competitiveness among gays and lesbians and test whether:
  - gays are less willing to compete than other men;
  - lesbians are more willing to compete than other women;
  - measured competitiveness correlates with monthly earnings.

Can taste for competitiveness explain the earnings of gay and lesbian workers?

- We run an incentivised experiment on the **Dutch LISS online panel**:
  - representative sample of the Dutch population;
  - sample is sufficiently large to include enough homosexuals;
  - records information on sexual orientation.
- We sample all identified homosexual men and women plus a random sample of heterosexual men and women.

Sample characteristics

	LISS panel	LISS sample	LISS participants all	LISS participants <65
	(1)	(2)	(3)	(4)
heterosexual men	4,146	157	124	80
gay men	166	80	69	48
heterosexual women	4,795	172	134	112
lesbian women	165	85	61	47
total	9,272	494	388	296

Source: Buser, Geijtenbeek and Plug (2018)

Can taste for competitiveness explain the earnings of gay and lesbian workers?

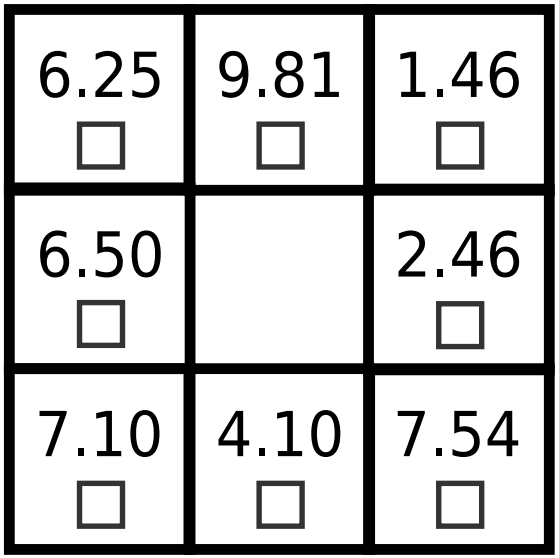
- We run an **incentivised experiment** on the Dutch LISS panel. The experiment loosely follows the design of Niederle and Vesterlund (2007).

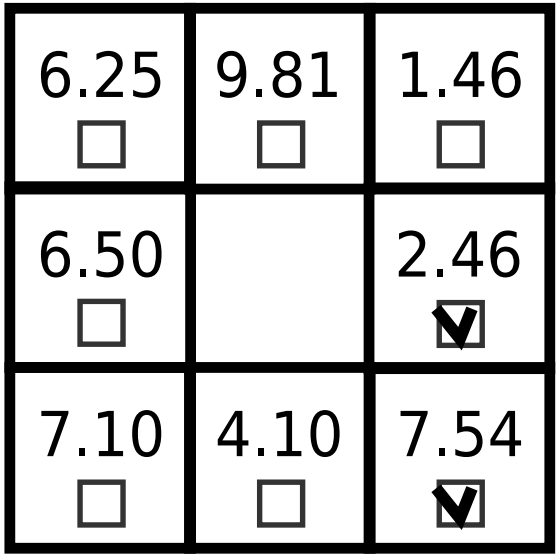
- Respondents (can) play a **real-effort task** under different pay schemes:
  - **piece-rate:** 40ct per correct task;
  - **competition:** 100ct per correct task if overall score higher than random opponent.

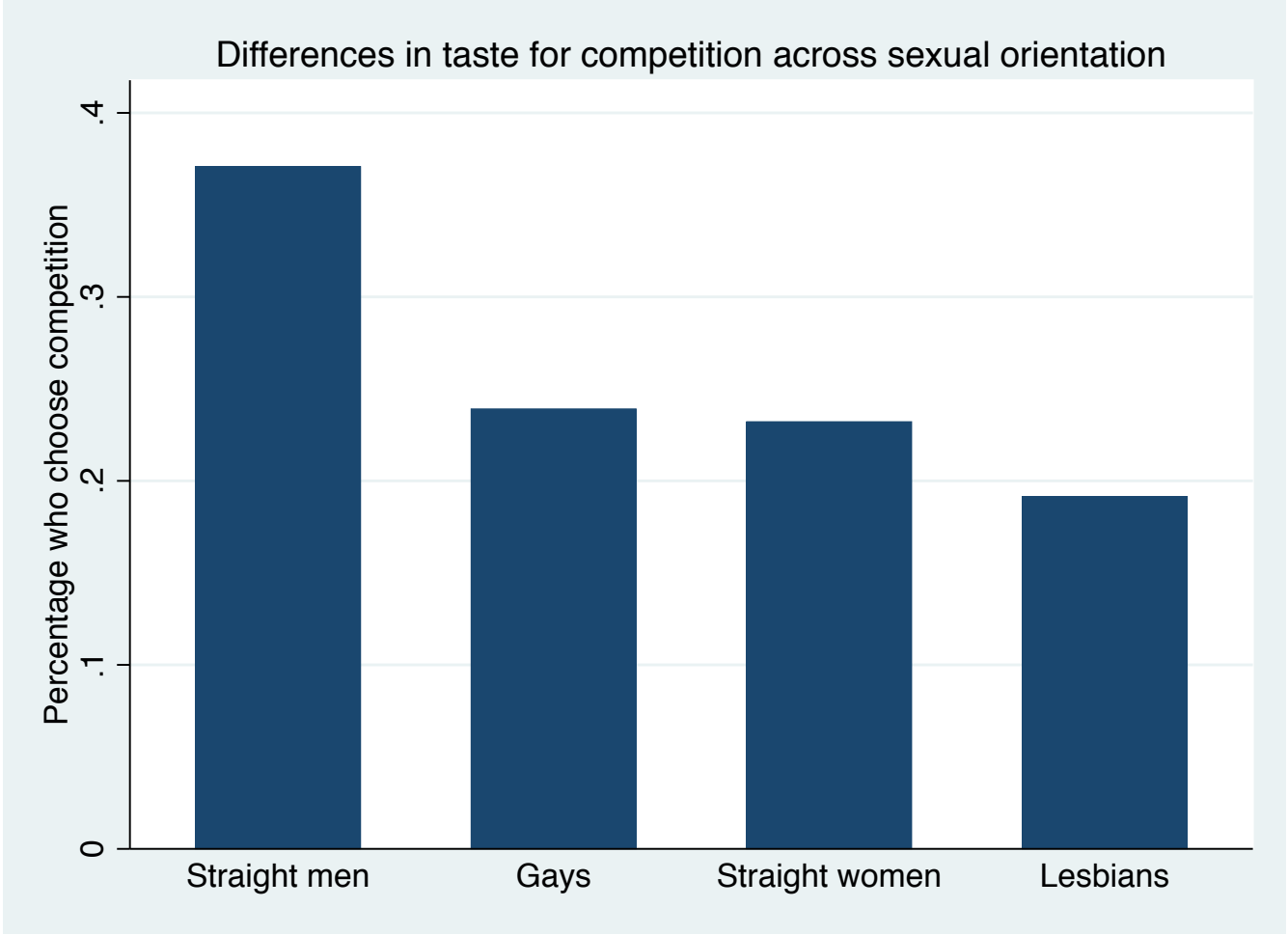
- Respondents must play the real-effort task twice: once under a piece-rate scheme, and once under a self-selected pay scheme.

- The choice of payment scheme serves as our measure of **competitiveness**. We also ask additional questions on self-confidence and risk aversion.

The real effort task (solving as many matrices in 3 minutes)






Differences in taste for competition across sexual orientation
Percentage who choose competition
0
.1
.2
.3
.4
Straight men
Gays
Straight women
Lesbians

Competitiveness by gender and sexual orientation

males and females in their working years (65 or younger)				
gay men	-0.14**	*0.07*	-0.14**	*0.07*
lesbian women	-0.13*	*0.08*	-0.08	*0.07*
heterosexual women	-0.12**	*0.06*	-0.07	*0.06*
controls				
task performance	✓		✓	
risk and confidence			✓	
observations	294		294	

Average competitiveness for straight men: 0.371

Source: Buser, Geijtenbeek and Plug (2018)

Log monthly earnings, competitiveness and sexual orientation

men and women in their working years (65 or younger)								
gay men	-0.06	*0.05*	-0.07	*0.09*	-0.04	*0.09*	-0.02	*0.09*
lesbian women	-0.37***	*0.06*	-0.45***	*0.11*	-0.43***	*0.12*	-0.41***	*0.12*
heterosexual women	-0.57***	*0.02*	-0.67***	*0.10*	-0.65***	*0.10*	-0.64***	*0.10*
competitiveness					0.17*	*0.09*	0.19*	*0.10*
controls								
age	✓		✓		✓		✓	
task performance			✓		✓		✓	
risk and confidence							✓	
observations	6,122		267		267		267	

Source: Buser, Gijtenbeek and Plug (2018)

Can taste for competitiveness explain the earnings of gay and lesbian workers?

- Do gay men shy away from competition? Do lesbian women compete too much?
- We offer again a partial explanation.
- We find supportive evidence that gay men are less competitiveness than straight, but we do not see that lesbian women are more likely to compete than straight women.

What do we know (so far) about the earnings of sexual minorities?

- I have posed two questions about the earnings of gay men and lesbian women.
- **How do the earnings of homosexual and heterosexual workers compare?**
  - Gay men earn less than straight men. Lesbian women (almost always) earn more than straight women.
- **What factors explain the gay penalty and lesbian premium?**
  - Partial explanations are more the rule than the exception. Perhaps the gay penalty and lesbian premium represent a blend of these partial explanations (based on human capital, discrimination, competitiveness).
  - The most coherent explanation so far relates to differences in specialization.