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# GAY GLASS CEILINGS *

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The UK Association of University Teachers conducted a 2000/2001 survey of staff in 6 British universities to determine the experience of lesbian, gay and bisexual (LGB) employees holding academic and non-academic appointments. We analyse the salaries and ranks held by LGB individuals, guided by a new model of the interaction of 'tastes for discrimination' and the decision to 'come out'. We find no evidence that LGB staff suffer disadvantage in salaries relative to heterosexuals. We do find evidence that gay/bisexual men suffer from glass ceilings comparable to those faced by heterosexual women.

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# 1. Introduction

*It was taboo to consider a bachelor, a homosexual, a foreigner, or a woman.*

- *Thomas Hoving, Making the Mummies Dance (page 28), on the Directorship of the Metropolitan Museum of Art*

A number of recent studies have sought to examine how lesbian, gay and bisexual (LGB) individuals fare in the labour market. Beginning with Badgett (1995), these studies have generally found clear earnings disadvantages for gay men. The results for lesbians are less clear, although papers by Black, Makar, Sanders and Taylor (2003) and Plug and Berkhout (2001) report that lesbians earn more than comparable heterosexual women. Studies in the literature use varied data sources, including the US General Social Survey [Badgett (1995), Black et al. (2003), and Blandford (2000)] and the US Census [Allegretto and Arthur (2001), Carpenter (2001), and Klawitter and Flatt (1998)]. Arabsheibani, Marin and Wadsworth (2002) use the UK Labour Force Survey, and find results consistent with the US literature. There are problems with most of the existing data sources involving under-representation and the identification of sexuality. The US census and the UK LFS only include reported cohabiting Lesbian and gay couples, and not single or non-cohabiting partnered LGB individuals. The US GSS, in contrast, provides detailed information on reported sexual behaviour, but not on whether individuals identify as LGB. As shown in Black et al. (2003), the researcher's definition of sexual orientation (corresponding to different patterns of sexual behaviour across same and opposite sex partners) has a major impact on the results. Self-reported sexual orientation avoids this problem, and is available in a new California sample used by Carpenter (2003). Carpenter finds that bisexual (but not gay) men and women suffer earnings losses, and argues that later waves of the GSS support this conclusion. Plug and Berkhout (2001) also have data with self-reported sexual

orientation, covering Dutch higher vocational and university students 20 months after graduation. Their study tends to confirm the common result in this literature that gay men may be paid less than heterosexual men, while Lesbians may be paid more than heterosexual women. While this new literature has provided considerable insight into earnings of LGB individuals, very little is known of how sexual orientation affects promotions and the possibility of glass ceilings.

In this study, we use a new data source that has a number of advantages. The UK Association of University Teachers conducted a survey in 2000/2001 to examine the status of LGB individuals in British universities. Individuals self-identify as Lesbian, gay, bisexual or heterosexual, thereby avoiding some of the under-representation and definitional problems emphasised by Black *et al.* (2003). The survey was conducted over the internet, which is believed to be better in obtaining honest answers to personal questions such as those involving sexuality, again lessening any under-reporting problems. The data contain unique information such as whether individuals are 'out'. An important factor in potential discrimination against LGB individuals – in contrast to gender and ethnicity discrimination – is that sexuality is not readily observable. Individuals may avoid discrimination by remaining 'in the closet' and disguising their sexuality. The data also include information on ranks held, allowing us to consider promotions and glass ceilings, as well as earnings.

Academic data has been used in a number of studies to examine discrimination by ethnicity and gender. Different academic datasets have been used to examine ranks held by women [for the US, Ginther and Hayes (1999) and Ginther and Kahn (2004), and, for the UK, Booth, Frank and Blackaby (2001) and Ward (2001)] and ethnic minorities [for the UK, Blackaby and Frank (2000)]. There are a number of advantages to using data from the academic job market to examine issues of discrimination with a view to drawing conclusions

that may be applicable beyond this particular market or to guide further research in other labour markets. Workers are relatively homogeneous and hold similar jobs. This avoids problems where apparent pay and promotions gaps actually arise from job segregation, rather than differential treatment within a given job. Academic job ranks are well-defined, so it is straightforward to examine the interaction of wages and promotions. Ginther and Hayes (1999) find, for example, that most of the gender wage difference among US academics is explained by differences in promotions rather than within-rank pay.

In this paper, we develop a new model of pay and promotions, taking account of the decision facing LGB individuals on whether or not to 'come out'. Firms have a 'taste for discrimination' such that they think that the affected group (whether women, ethnic minorities or LGB) has lower productivity, whether holding junior or senior posts. This has an impact upon both pay and promotions. We show, however, that the relative impact for LGB individuals – compared to a group such as women whose identity is immediately recognisable – is greater for promotions than for pay. We then examine the empirical evidence. There is no evidence that male LGB employees in British universities suffer pay gaps relative to comparable heterosexual males, and in fact some evidence that female LGB employees do better than comparable heterosexual females. However, this does not hold when we control for ranks – there is no within-rank pay gap between LGB and heterosexual women. This is supported by evidence that LGB women do better in promotions than heterosexual women. In contrast, there is evidence that LGB men do worse in promotions than heterosexual men, and definite evidence that 'glass ceilings' – under-representation in the top ranks – operate against LGB men.

Section 2 describes the data. Section 3 develops our new model of wages, promotions and 'coming out'. Section 4 presents empirical results on wages, ranks and glass ceilings.

Section 5 considers whether our empirical results are consistent with the theoretical model. Section 6 presents our conclusions.

## 2. The Data

The UK Association of University Teachers (AUT) conducted a survey entitled 'Fairness at Work' between December 2000 and February 2001. Six universities were selected to provide a balanced sample of British academics covering different regions and types of university. After receiving permission from the Vice Chancellor of the university, a letter was distributed to academic and non-academic university staff drawing their attention to the on-line survey. A total of 813 responses were received, made up of 51% women and 49% men. Academic ranks were held by 53% of the sample and administrative posts by 47%. LGB individuals make up 14% of the sample, with 110 individuals divided as follows: 49 gay men, 33 lesbians, 10 male bisexuals, and 18 female bisexuals.

The survey asked 38 questions covering a broad range of issues including: job characteristics such as title, grade, and salary; personal characteristics such as age, experience, partnership status, gender, sexuality and whether the individual is 'out'; workplace characteristics such as type of university and location; and perceptions about discrimination, harassment and 'comfortableness' of the workplace. Table 1 shows the mean values of the variables for heterosexual men and women, and for LGB men and women. Due to the relatively small numbers of bisexuals in the sample, we will not try to examine separate effects for gay men compared to bisexual men, or for lesbians compared to bisexual women. Instead, we combine bisexuals with gays and lesbians by gender.[1]

The response rate on this on-line survey was about 15%, compared to typical response

rates of 30% in postal surveys, and is a satisfactory response rate for an internet survey [see Groves, Eltinge, Little and Roderick (2002) for a discussion on response rates for various types of survey] . In fact, the bulk of the responses came from only 4 universities, suggesting that the survey was not well publicised in the other 2, and therefore the actual response rate is probably between 20-25%. McFadden and Winter (2001) discuss the use of internet surveys. One of the major advantages of internet surveys is that individuals are more likely to reveal personal information over the internet, which is perceived to be anonymous, than they are in an interview or postal survey. Previous research into LGB experiences has potentially suffered from under-representation of the studied group. Here LGB individuals make up about 14% of the sample. This is a considerably higher number than in the major samples used in the current literature, including the US General Social Survey [where Blandford (2000) notes that 3.2% of men and 2.6% of women can be viewed as homosexual/bisexual on the basis of behaviour] and the US Census [where, as reported by Carpenter (2001), 0.18% of the sample is same-sex households]. Indeed, LGB individuals may be over-sampled since the aim of the survey – examining LGB status in universities – was made clear in the cover letter.[2] A typical drawback to internet surveys, discussed by McFadden and Winter (2001), is that the sample may be overly weighted to the computer literate. This is not likely to be a major problem in universities, where all staff should be familiar with the web.

It is important to try to determine if our sample is representative. We can compare our data with two other UK academic datasets. The Royal Economic Society (RES) conducted a postal survey in 1999 of UK academic economists [with analysis in Blackaby and Frank (2000) and Booth, Frank and Blackaby (2001)]. Ward (2000) presents results

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[1] We experimented with dropping bisexuals from the sample, and the results are not noticeably affected.
[2] In contrast to gender and ethnicity, we have no independent way of measuring the number of LGB individuals in UK universities.

based upon a postal survey of academics in all disciplines in 5 Scottish universities. In Table 2, we compare the mean values of variables for the current AUT survey (for academic ranks only) with those in the RES and Scottish data, where available. Compared to the RES survey, the respondents here are generally younger and more concentrated in the junior rank of researcher, more likely to be female, and more likely to be LGB. These differences may reflect sampling procedures, notably the use of the internet, but they may instead be due to differences between economics as a discipline and other academic fields. While there is no direct age measure reported in Ward (2000), it is encouraging that the age pattern in the AUT data is similar to the one reported in Ward, based upon years of tenure and ranks held. Further, we can compare some of our results – notably those on gender – to those in these other UK academic studies. We find that women suffer a gender earnings gap of about 12% in this analysis, compared to similar figures of 10-11% in Booth et al. (2001) and 9% in Ward (2000). The modestly higher gender earnings gap may arise from the lack of direct productivity data in this survey, as discussed in Section 4.

Comparing average salaries in Table 1, we find that these are highest for heterosexual males, followed by LGB males, LGB females, and heterosexual females. Among academics, LGB males and females, and heterosexual females are all less represented in the rank of professor than are heterosexual males. The raw data therefore seem to show less favourable outcomes in both earnings and rank. However, the groups differ significantly in average personal and job characteristics. Comparing heterosexuals and homosexuals of the same gender, we find that LGB individuals are younger, more likely to be from an ethnic minority, less likely to hold the PhD, and have less experience working in higher education. LGB women have better undergraduate degrees than heterosexual women (more first-class and upper second degrees, the UK equivalent of *summa cum laude* and *magna cum laude*). LGB

individuals are less likely to have childcare responsibilities, to be married or to have partners.[3] LGB men are more likely to live in London. LGB males and females, and heterosexual females, are all more likely to hold non-academic posts than are heterosexual males. In Section 4, we will examine whether the apparent earnings differentials – and related differentials in ranks held – persist after controlling for these personal and job characteristics.

## 3. The Model

There is surprisingly little theoretical modelling in the literature about whether 'tastes for discrimination' become reflected in wage rates or in promotions. An exception is Booth, Francesconi and Frank (2003), which finds that a 'taste for discrimination' against women impacts only upon wage rates, and not promotions. However, that result depends upon firms being able to observe and respond to outside offers. Here we present a related model where firms have to decide on a wage and promotions contract without knowing individual reservation wages. We find that women are typically offered a contract with lower wages and lower promotion prospects than men. The problem facing a firm with a 'taste for discrimination' against LGB individuals is different since the firm cannot directly observe the sexual orientation of prospective workers. However, if it is costly for individuals to hide their sexuality, they can be induced to 'come out' even if this impacts negatively on their wage and promotion prospects. We find, however, that the optimal contract concentrates the less favourable treatment upon promotion prospects rather than wage levels.

Consider a firm in a local labour market where it is a monopsony purchaser facing an upward-sloping labour supply curve. The firm will hire N workers from the local labour pool

[3] The figures for marriage of LGB individuals need not be errors in the data: 3 lesbians and 8 bisexuals (4 male,

of $N_o$ workers of a particular group (men or women, for example, where we normalise each group to be the same size for notational convenience). Workers decide at the beginning of their career whether or not to take a job at the firm, or to accept an alternative opportunity which can best be viewed as home production. Individual differences in returns to home production lead to the upward-sloping labour supply curve. We assume that the distribution of returns to home production (and therefore the labour supply curve) is the same for each group (men, women, LGB men or women). Other than their individual return to home production, workers are identical (except in their gender or sexuality, as described below). Workers are assumed to be risk-neutral and do not discount over the two periods of their working life. Therefore, they choose whether or not to accept a job at the firm based on their career expected earnings less any cost of effort incurred compared to the value of home production (which is assumed to have effort level 0). Workers put in effort in the first period of the job at the firm – essentially an investment in human capital – and as a result have higher productivity in both periods. The cost of effort at the firm follows the convex increasing function C(E), C(0)=0. Writing $\overline{w}$ as career expected income at the firm, $F[\overline{w} - C(E)]$ is an increasing function showing the percentage of the given labour pool that chooses to work at the firm. The firm will induce effort by promoting workers who put in the requisite level of effort. There are constant returns to production and each worker produces $Q+E$ in each of the two periods.

We consider a contractual model where the firm can commit to current and future wage rates, and to its promotion rules. The firm offers a contract consisting of: a wage $w_j$ for unpromoted ('junior') workers; a wage $w_s$ for promoted ('senior') workers; the effort

4 female) reported being married; no gay men reported being married.

level $E_p$ which workers must put in to be eligible for promotion; and a promotion rate $0 \leq p \leq 1$ for the percentage of eligible workers who are randomly promoted. Since all workers are identical in effort costs, the promotion incentives will induce all to choose to put in the requisite effort, even though the firm will only promote the contractual number. The firm also chooses the number of workers to employ, N. In choosing the contract, the firm maximises profits:

$$[2(Q + E_p) - w_j - pw_s - (1-p)w_j]N \tag{1}$$

To induce workers to choose the effort level $E_p$ wages and promotion probabilities must meet:

$$pw_s + (1-p)w_j \geq w_j + C(E_p) \tag{1.i}$$

From the labour supply function, N must be consistent with:

$$F[w_j + pw_s + (1-p)w_j - C(E)]N_o \geq N \tag{1.ii}$$

The first order conditions for interior solutions to this problem are as follows, with the multipliers $l, m$ on (1.i) and (1.ii):

$$\partial./\partial N = [2(Q + E_p) - w_j - pw_s - (1-p)w_j] - m = 0 \tag{2.i}$$

$$\partial./\partial E_p = 2N - lC'(E_p) + mF'(.)C'(E_p)N_o = 0 \tag{2.ii}$$

$$\partial./\partial w_s = -pN + lp + mF'(.)pN_o = 0 \tag{2.iii}$$

$$\partial./\partial w_j = -(2-p)N - lp + mF'(.)(2-p)N_o = 0 \tag{2.iv}$$

$$\partial . / \partial p = -(w_s - w_j)N + l(w_s - w_j) + mF'(.)(w_s - w_j)N_o = 0 \qquad (2.v)$$

Adding (2.iii) and (2.iv), we have:

$$-N + mF'(.)N_o = 0$$

Substituting this into (2.iii) establishes that $l = 0$, and then substituting into (2.i) and (2.ii) and subtracting $C(E_p)$ from both sides:

$$2(Q + E_p) - C(E_p) = \{1 + N/[\overline{w} - C(E_p)]F'(.)N_o\}[\overline{w} - C(E_p)] = (1 + \frac{1}{e})[\overline{w} - C(E_p)] \quad (3)$$

The marginal product of labour over the two periods, less the cost of effort provided in the first period, equals the lifetime wage less the cost of effort multiplied by one plus the inverse of the elasticity of labour supply. This is the standard monopsony labour demand equation modified to take account of effort costs. Substituting for $l, m$ into (2.ii):

$$2 = C'(E_p) \qquad (4)$$

Effort is at the level where the marginal product of effort over the two periods – 2 – equals the marginal cost of effort. Importantly, even though the firm sets lower wages due to its monopsony power in the labour market, it still adopts a promotion process (in terms of the probability of promotion and the wage gain upon promotion) that induces the first-best level of effort. However, there is no unique way of achieving this aim and there are multiple optimal contracts (all with the same employment and effort levels). The firm can (at the same total wage cost) induce the optimal effort level with a low promotion probability but high wage differential between senior and junior jobs, or with a high promotion probability but low wage differential. To provide concrete results in seeing how discrimination impacts

upon wages and promotion probabilities, we will assume that – where wage discrimination occurs – it impacts equally upon the junior and senior wage. Any promotions impact therefore appears directly in the promotion rate across different groups.

It is straightforward to introduce a 'taste for discrimination' into this model. Suppose that women, for example, are presumed by the firm to be less productive than comparable men by the factor $\delta < 1$. Since gender is observable, the firm can – in the absence of effective legal prohibitions – offer women a different contract than that offered to men. This contract meets first-order conditions that take account of the 'taste for discrimination' entering into the productivity on the left hand side of each equation:

$$2d(Q + E_p) - C(E_p) = (1 + \frac{1}{e})[\overline{w} - C(E_p)] \qquad (3')$$

$$2d = C'(E_p) \qquad (4')$$

Comparing condition (4') to (4) shows that the optimal contract is designed to induce women to put in less effort than men by the 'taste for discrimination' factor $\delta$. This is achieved by a combination of a lower wage premium for senior female workers and/or a lower promotion probability. Under the assumption of (locally) constant elasticity of labour supply $\varepsilon$, differentiating condition (3') leads to (using the envelope theorem to eliminate terms in the other instruments):

$$2(Q + E_p)dd = (1 + \frac{1}{e})d[\overline{w} - C(E_p)] \qquad (5)$$

Lifetime income net of effort costs goes down as the taste for discrimination increases. As a result of this, participation of women in the workforce (since labour supply depends upon lifetime net income) is less than that of men. In summary, women gain lower lifetime

incomes than men, put in lower effort and gain less from the promotion process, and have a lower participation rate.

The important feature about the possibility of discrimination against LGB individuals is that the basis for discrimination – sexual orientation – is not directly observable. The LGB individual might remain 'in the closet' successfully and thereby avoid discrimination. On the other hand, it is costly to disguise one's sexuality, and we represent these costs as being X. The firm can, if it wishes, induce LGB individuals to 'come out' by offering a contract that, while less favourable than that offered to heterosexuals, is not so much worse as to keep LGB workers 'in the closet'. Suppose that the firm sorts its workers by offering a contract for LGB individuals, denoted by the subscripts g on the contract variables, that differs from the contract – without the g subscripts – intended for heterosexuals of the same gender. It is attractive for the LGB individual to 'come out' and accept this contract over remaining 'in the closet' and receiving the heterosexual contract if:

$$\begin{aligned}[w_{jg} + p_g w_{sg} + (1-p_g)w_{jg} - C(E_{pg})](N_g / N_0) \\ \geq [w_j + pw_s + (1-p)w_j - C(E_p) - X](N / N_0)\end{aligned} \tag{6}$$

Writing $\gamma$ as the 'taste for discrimination' factor applying to LGB as against heterosexuals, then the first-order conditions can be written [with the earlier multipliers $l, m$ and a new multiplier $\eta$ on condition (6)]:

$$\partial . / \partial N_g = [2g(Q + E_{pg}) - w_{jg} - p_g w_{sg} - (1-p_g)w_{jg}] - m + h[\overline{w}_g - C(E_{pg})] / N_0 = 0 \tag{7.i}$$

$$\partial . / \partial E_{pg} = 2gN_g - lC'(E_{pg}) - mF'(.)C'(E_{pg})N_o - hC'(E_{pg}) = 0 \tag{7.ii}$$

$$\partial . / \partial w_{sg} = -p_g N_g + lp_g + mF'(.)p_g N_o + hp_g(N_g / N_0) = 0 \tag{7.iii}$$

$$\partial./\partial w_j = -(2-p)N_g - \lambda p + \mu F'(.)(2-p)N_o - \eta p_g(N_g/N_0) = 0 \qquad (7.\text{iv})$$

$$\partial./\partial p_g = -(w_{sg} - w_j)N_g + \lambda(w_{sg} - w_j) + \mu F'(.)(w_{sg} - w_j)N_o + \eta w_{sg} = 0 \qquad (7.\text{v})$$

for interior solutions. With the same steps as in the solution to problem (2), we end up with the conditions:

$$2\gamma(Q + E_{pg}) - C(E_{pg}) = [1 - \eta + (1/e)][\overline{w}_g - C(E_{pg})] \qquad (3'')$$

$$2\gamma = C'(E_{pg}) \qquad (4'')$$

For comparison purposes, focus upon gay men and suppose the 'taste for discrimination' against gay men is the same as for heterosexual women, $\gamma=\delta$. The situation for Lesbians is more complicated since they may suffer the dual effect of being female and of being Lesbian. Then (4'') is the same as (4') and the optimal contract has a promotions process (probability of promotion and wage gain upon promotion) that induces gay men to choose exactly the same effort level as women. This is lower than that for heterosexual men by the taste for discrimination factor. In contrast, lifetime wages for gay men suffer less than those for women, even when the discrimination factor is exactly the same. Condition (3'') differs from (3') in that the shadow price of inducing 'coming out', $\eta$, plays a role. The left hand side of the two conditions is the same. The right hand side can be the same only if there is a higher lifetime wage net of effort cost for gay men than for women. The firm offers a more attractive contract – in terms of lifetime wages but not in the promotions process – to gay men than to women, even if the 'taste for discrimination' is the same, in order to induce

them to 'come out'.[4]

As noted earlier, there is not a unique optimal contract, since the firm can induce the desired level of effort by different combinations of wage gains upon promotion and probabilities of promotion. However, we can say more about wages and promotion probabilities in a special case where we assume that discrimination impacts equally on both the senior and junior wage. Provided the firm sets the wage gain upon promotion and probability of promotion to just meet the effort inducement condition (1.i) with equality, the following holds:

$$\overline{w} - C(E_p) = 2w_j + p\,(w_s - w_j) - C(E_p) = 2w_j \qquad (8)$$

in the optimal contracts offered to heterosexual men, women and LGB men, at the differing values of wages and effort level appropriate to each group. As discussed above, if the 'taste for discrimination' against heterosexual women and LGB men is the same, the optimal contracts induce the same effort from each. Then, comparing (3') to (3''), the left hand sides are the same, and – given the presence of the shadow price $h$ of inducing gay men to 'come out' – the right hand sides will be the same only if the junior wage for women falls by more than that for gay men. But then, under the assumption that discrimination impacts equally on the senior and junior wage, the same holds for the senior wage rates. The absolute wage gain on promotion (the difference between the senior and junior wage) is greater for LGB men than women, so the same effort is induced only if the promotion probability is lower. Gay men suffer less in wage discrimination than do heterosexual women, but they actually have a

[4] Note that the optimal contract always induces gay men to 'come out'. The reason is that the firm could offer a contract with the lower effort from (4'') rather than (4), with lifetime income lower by $C(E_p) - C(E_{pg})$ leaving workers unaffected but raising profits by $-\{g(E_p - E_{pg}) - [C(E_p) - C(E_{pg})]\}$ which is positive by the first-order condition (4'').

higher promotions gap (compared to heterosexual men) than do heterosexual women!

The intuition behind this result is relatively straightforward. Even if the 'taste for discrimination' is just as large against LGB men as for heterosexual women, the ability of LGB men to remain 'in the closet' and avoid discrimination limits the ability of the firm to put unfavourable terms into the contract. If the contract offered to LGB men is worse than the standard contract by more than the costs of remaining 'in the closet', LGB men will not 'come out'. However, it remains the case that, if LGB are induced to 'come out' by the contract not being too much worse than the standard one, a higher effort level for promotion must be fully compensated compared to a contract with a lower effort level for promotion. Since it costs the firm the full disutility cost to induce higher effort from LGB males, and – in the presence of a 'taste for discrimination' – it values their productivity less than that of heterosexual males, it will induce less effort by having a less favourable promotions process. Therefore, promotions will be impacted to the same extent as for heterosexual women – assuming the 'taste for discrimination' is the same – even though wage rates will only be affected to a lesser level.

Although we use the terminology of contracts, firms will of course not have explicitly less favourable contracts for LGB men and women, or for heterosexual women, compared to men. The term 'contracts' is used in the sense of well-established reputations for the wages and promotion prospects of out LGB men and women, and for heterosexual women, compared to the wages and promotion prospects of heterosexual men. Also, as earlier noted, the overall effect on LGB women depends on how the 'taste for discrimination' interacts between sexual orientation and gender, and is therefore a more complicated issue than that faced in comparing the treatment of LGB and heterosexual men.

## 4. Regression Results

The raw data presented in Table 1 show the highest earnings are for heterosexual males, followed by LGB males, LGB females and heterosexual females. Heterosexual males also have higher representation at the rank of professor than do the other groups. However, Table 1 also shows that the four groups have very different average personal and job characteristics, and it is important to control for these in determining the earnings and promotions effects.

British universities have pay scales with a number of different ranks and spinal points within the ranks. In the traditional pre-1992 universities, the academic ranks are Lecturer, Senior Lecturer, Reader (typically on the same pay scale as Senior Lecturer), and Professor. In addition, there are various ranks of researcher, although the researchers in our sample are almost exclusively (with 2 exceptions) concentrated in the grades that are paid less than or the same as Lecturers. In post-1992 universities, there is an additional rank of Principal Lecturer that lies between Senior Lecturer and Reader. Administrators are paid on scales that largely correspond to the academic ranks. Progression through the spinal points of a given rank tends to be fairly automatic. However, salaries of comparable individuals can vary within-rank due to the initial placement on a scale, the possibility of receiving accelerated increments, and the award of discretionary points at the top of the ranks. Salary for the rank of Professor (and equivalent administrative ranks) is determined by individual negotiation, subject to a minimum pay level. Salary scales for most ranks overlap, so (for example) a Senior Lecturer on discretionary points can be paid more than a Professor near the minimum professorial salary. Reader is a rank that, in pre-1992 universities, is generally paid on the same scale as Senior Lecturer, but denotes particular research excellence. However, in some universities (such as the University of London), the title can be conferred on an individual

holding any academic rank, and is therefore not related to salary. Promotions are not automatic between the major academic ranks, but follow a process that can be extremely competitive in some universities.

In Table 3, column 1 presents a standard OLS log earnings regression over all staff in the sample. We control for personal factors such as age and experience, which have the normal positive but decreasing effects. There is an explicit 'London weighting' in university pay scales, and this is reflected in the significant positive coefficient. A number of universities were created post-1992, typically from former polytechnics, and these 'new universities' are seen to pay less. Whether an individual obtained high grades in their undergraduate degree (first or upper second class results) is a potential measure of human capital and of ability. The coefficients are positive but insignificant. In contrast, holding a PhD does have a significant positive effect. Ethnicity does not have a significant effect. In terms of the main characteristics of interest, the coefficient for LGB male is near zero and insignificant, that for LGB female is positive but insignificant, while that for females in general is negative (-12.3%) and significant. In column 2, we add controls for fixed-term contracts and part-time work. Since women are more likely to hold these sorts of contracts, which pay less than permanent, full-time work, these controls cause the female coefficient to lessen in magnitude to -8.9%. The positive coefficient on LGB female is now significant at the 10% level. However, holding a temporary or part-time contract may itself reflect disadvantage in the labour market, so it is not clear whether the gender coefficient in column 1 or column 2 is a better measure of the overall gender and LGB female pay gap. The estimated gender pay gaps of 9-12% are comparable to the 9-11% gender gaps found for UK academic economists by Booth *et al.* (2001) and the 9% gender gap found for Scottish university academics by Ward (2000). That we have very similar gender pay gaps to those in

the literature arises despite the absence of direct productivity measures in the current data. We know from Booth *et al.* that women have a significantly lower publications score than men of comparable personal and job characteristics. In that study a gender pay coefficient of 11% without ability and productivity controls declines to 9.8% with those controls. This is a relatively small magnitude difference and provides a measure of the possible inaccuracy of our LGB salary effects due to unobserved productivity.

Although not reported in the table, adding a control for marriage increases the magnitude of the LGB female coefficient to 9.7% (t-stat 2.03) and that of females in general to -12.1% (t-stat 3.40), while that for LGB males is largely unchanged at -1.1% (t-stat 0.23). We report the regressions below without the marriage variable to assist in interpretation, with discussion in the text of the impact of adding 'marriage' where the difference is significant. Without a control for marriage, we are comparing LGB males or females to the average heterosexual male or female, rather than to single heterosexuals. In the current regression, there are observed positive returns to marriage of 5.7% (t-stat of 2.29). However, as noted in the discussion on the theoretical and empirical literature in Akerlof (1998), this might arise due to a sample selection effect – more 'able' individuals get married – or due to actual market productivity impacts of the organisation of home production. If the marriage premium is due to sample selection, then it is most appropriate for our purposes to compare LGB individuals to the average individual of the same gender, as in the tables presented. In any case, allowing for marriage does not have a substantive effect on our results, although it does – as in the current regression – tend to raise the magnitude and significance of the LGB female coefficient, which is now positive at the 5% significance level.

We now turn to two major issues that can be examined best by restricting our sample to the academic ranks (including researchers). These are the impact of academic field and

also whether any wage gaps are within-rank or due to differential promotion rates. In Table 3, column 3, we present the regression for this smaller sample that corresponds to the basic regression for the whole sample in column 1. The main difference, for this more homogeneous group, is that the positive coefficient for LGB female is now larger and significant at the 5% level. This continues to hold if we introduce controls for marriage and for part-time and temporary contracts.

Although this sample of academics is a relatively homogeneous group of individuals and jobs, there may still be job segregation with women or LGB individuals concentrated in lower-paying academic disciplines. Ward (2001) has controls for faculty in her study of Scottish university salaries, and finds that 'medicine' increases pay by over 20%, while 'science' and 'social science' have positive effects relative to the arts faculty. The high medicine premium is consistent with the existence of separate, higher clinical pay scales in UK universities. In the current dataset, we have job descriptions (for example, 'lecturer in economics') and have assigned academics to one of four subject groups: humanities, social sciences, sciences, and medicine. From the raw data in Table 1, there is an apparent higher representation of women than men in the lower-paid humanities and, interestingly, the higher-paid medicine. There is no apparent difference in subject representation for LGB men compared to heterosexual men, but there may be differences (higher representation in social science and science) for LGB women compared to heterosexual women. Column 4 in Table 3 adds controls for field relative to the baseline of humanities. We find a large 20% premium for medicine, and positive but insignificant premiums for social science and science. Possibly because the effects of female over-representation in humanities and medicine are of opposite signs, there is only a trivial effect on the female coefficient compared to column 3, with a similar result for LGB males. The LGB female positive coefficient declines in

magnitude and significance. This is primarily because of the high representation of LGB females in medicine.

Our theoretical model emphasises how tastes for discrimination can operate differentially across the wage rates in a given rank and in the promotion rates across ranks. Ginther and Hayes (1999) find for US universities that the gender pay gap is due to differential promotion opportunities, and not to within-rank pay differentials. Ward (2001) finds that the coefficient for 'male' goes from 8.6% (significant at 1%) to an insignificant 4.1% when ranks are included in her Scottish university data. Booth *et al.* (2001), in contrast, find that the coefficient for 'male' goes from 9.4% (significant at 1%) to a (still significant at 1%) value of 5.9% with controls for ranks in UK university data. In column 5 of Table 3, we control for rank (relative to the baseline of 'researcher') and also for temporary contracts and for part-time work. The gender coefficient is about 5.0% (t-stat 2.05, significant at 5%), consistent with the Booth *et al.* (2001) results on very different data. Turn now to the LGB male and female coefficients. Controlling for rank, the LGB male coefficient is now positive but still insignificant at about 6.6% (t-stat 1.49). The female coefficient is of a similar magnitude, 5.0%, but no longer at all significant (t-stat 0.95). This suggests that the apparent positive pay gain to LGB women, relative to heterosexual women, may primarily be due to better promotion prospects.

There is no evidence in any of our earnings results that LGB men or LGB women suffer in pay relative to heterosexuals of the same gender, and some evidence that LGB women actually do better than heterosexual women. However, our theoretical model suggests that discrimination against LGB individuals is more likely to show up in promotion prospects than in pay. We therefore consider the effect of LGB status on job rank. The different university pay scales (academic related, academic, other related, and research) are

largely comparable in covering similar salary ranges and it is possible to determine which academic and non-academic ranks are similar in pay (and presumably in status). Since a full set of ranks would be unwieldy to present, we combine ranks into four categories. In the tables, we label each category by the first rank shown: the top category, for example, covers professors, readers, principal lecturers, and AR6 administrators and is 14% of our sample. The next categories are: senior lecturers (pre-1992 universities), AR5 and RA4 researchers, 13% of the sample; lecturers and senior lecturers (post-1992 universities), 32% of the sample; followed by the remaining researchers and administrators, 41% of the sample. In Table 4, we present the marginal effects from an ordered probit estimation of these four categories. Women in general are significantly more likely than men to be in the lowest, researcher category (by 13.2%), and less likely to be in the other categories (by 3.5, 5.4, and 4.3%). There is no significant effect for LGB women, although the effects are positive for the higher categories, relative to women in general. For LGB men, they are more likely than heterosexual men to be researchers by 14.7% (significant at 10%), and significantly (at 5%) less likely to be senior lecturers (by 5.3%) and professors (by 3.5%). Interestingly, the marginal effects for LGB men are very similar in magnitude to those of women in general.

It is possible that the apparent disadvantages in rank suffered by LGB men are restricted to the administrative side of universities. The smaller sample of academics makes it hard to find significant results in the full ordered probit comparable to that presented in Table 4 – the coefficients on LGB males are insignificant, although of the same signs as the full sample. In the last column of Table 4, we therefore consider a simpler exercise where we distinguish between the top academic ranks (professor, reader and principal lecturer) and the other academic ranks. The probit estimation finds a very significant negative coefficient for LGB males. This may be due to a strong form of 'glass ceilings', where the major effects of

a ‘taste for discrimination’ only arise at the top ranks, rather than for promotions in general. Alternatively, the smaller sampler size may just be making it harder to isolate the effects we find across ranks in the full sample. In any case, this estimation confirms that the unfavourable promotion effects for LGB males seem to hold on the academic as well as non-academic sides of the university.

In summary, there is no evidence that male and female LGB individuals suffer a general salary disadvantage. There is some evidence that LGB females are paid more than females in general, but this effect is insignificant after controlling for rank, suggesting that it may be due to greater promotion possibilities, although – from the ranks equations – there is no significant effect for LGB female. There is evidence that LGB males suffer from lower promotion rates than heterosexual males throughout the university. On the academic side, this may take the form of ‘glass ceilings’ where promotion opportunities are limited for the very top ranks.

## 5. Understanding the Results and Conclusions

The results for LGB men are very consistent with our theoretical model, that – since individuals can disguise their sexual orientation – the pattern of discrimination will differ from that facing, for example, heterosexual women. In particular, our theoretical model shows that any ‘tastes for discrimination’ against LGB individuals will be focussed upon the promotions process rather than in-rank wage levels. We find evidence that LGB men are less likely to hold senior ranks than are comparable heterosexual men. There is no evidence, however, that average wages are less for LGB individuals, and indeed there is a suggestion that in-rank average wages are actually higher. This is however consistent with our theoretical model. If there are lower promotion opportunities for LGB men, the average LGB

male in a given rank may have longer in-rank service than the average heterosexual male, and therefore will have moved higher on the scale, even if he started from a lower point. UK salary scales for different ranks overlap and this may explain the absence of a significant total earnings effect. The average principal lecturer, reader and professor in the sample earns £7742 more than the average senior lecturer. However, the average male LGB senior lecturer earns £9453 more than the overall average senior lecturer. Particularly insofar as the unfavourable promotion opportunities occur at the top levels above senior lecturer, this is consistent with glass ceilings and yet no average earnings differential.

Why is there no significant earnings or promotions disadvantage for LGB females? The estimated coefficients suggest that there is if anything a positive earnings and/or promotions gap compared to heterosexual females. The first point is that any positive comparison is with heterosexual females, and not to heterosexual males. Where there is an apparent positive effect, it typically does no more than counterbalance the general gender gap. This does suggest that LGB females can avoid some of the disadvantages suffered by heterosexual females. There are numerous hypotheses as to why heterosexual females suffer an earnings gap including – in addition to 'tastes for discrimination' – the 'loyal servant hypothesis', women in general being less assertive in seeking higher pay, and women having lower geographical mobility than men for social reasons. It may be that LGB women do not suffer an earnings loss due to these factors that is typically suffered by heterosexual females. However, it is still unclear as to why – if there is a 'taste for discrimination' that applies generally to LGB individuals and not just to LGB men – LGB females would not suffer from this disadvantage. One possibility is that LGB females disguise their sexuality to a greater extent than comparable LGB males. We examine this in the final column of Table 5 which presents a probit estimation of whether or not individuals 'come out'. The question from the

survey is: 'Approximately how many staff in your immediate working environment do you think are aware of your sexual orientation?' Responses are invited from the choices: 'all, most, some, a few, none, don't know'. We take the responses 'all' or 'most' to signify being 'out' at the workplace. In the raw data, 59% of LGB males and 46% of LGB females are 'out', compared to 82% of heterosexual males and 85% of heterosexual females. Table 5 controls for the same variables as in the earlier equations, but with additional personal factors such as partnership (in addition to marriage, used in earlier regressions) and child-raising responsibilities. Partnership and child-raising responsibilities both increase the likelihood of being 'out', but age has a negative impact. The coefficients for both LGB genders are negative but, importantly, a chi-square test on whether LGB females are as likely to be 'out' as LGB males is rejected at the 5% significance level. This is consistent with the hypothesis that LGB females are less likely than LGB males to be 'out' and therefore less likely to suffer the possible 'taste for discrimination' against LGB individuals.

A further possibility is that the apparent disadvantage in ranks held by LGB males is due, not to discrimination, but to cohort effects. Senior posts are typically held by older individuals. If older individuals are less likely to be LGB, or to report being LGB, then we would observe the appearance of glass ceilings. Although we have controlled for age in our regressions, this may not pick up differential age effects for LGB males. Adding an interactive term – of LGB status and age – in the rank held regressions in Table 4 has no significant effect (z-statistic 0.03 or 0.06). However, the cohort effects might take the form of under-representation or under-reporting of LGB individuals in the age ranges where individuals might normally hope for promotion to senior ranks. We therefore estimate the ranks equation from Table 4, but only over those individuals age 40 or above, and report the results in Table 5. Interestingly, we find significant but opposite effects for LGB men and

women. LGB men are more likely (than heterosexual men) to hold the rank of researcher (or equivalent administrative rank) and less likely to hold the rank of professor (or equivalent administrative rank). For LGB women, the opposite pattern is the case. From the increased significance of the rank effects, we conclude that they are not due to under-representation of LGB individuals in the over-40 group. However, there may still be cohort effects where the behaviour and treatment of the over-40 groups leads to lower ranks for LGB men and higher ranks for LGB women in this age bracket, but with no implication that future cohorts will have the same experience.

An important point that applies generally in the labour market is that earnings or rank may not be an ideal measure of discrimination. This may hold particularly in universities, since an individual who is turned down for a job at a top-ranked department may take a higher-paid post in a less desirable university. For this reason, it is interesting to examine perceptions of discrimination. For female LGB workers in the survey, 29% report discrimination of any sort, 14% discrimination taking the form of not receiving an offer or being promoted when one is the best candidate, and none attribute this to homophobia; 57% attribute this to gender discrimination. For male LGB workers, 23% report discrimination of any sort, 11% discrimination taking the form of not receiving an offer or being promoted, and 67% attribute this to homophobia. For women in general, 27% report discrimination, 16% discrimination taking the form of not receiving an offer or being promoted, and 60% attribute this to gender discrimination. The levels of perceived discrimination, and how often it takes the form of not receiving an offer or being promoted, are remarkably similar across the three groups. What is particularly interesting, however, is the lack of perceived discrimination on the basis of sexual orientation amongst LGB females. This is consistent with our results on pay and promotions.

The examination of the labour market effects of sexual orientation is a new literature. The main advantage of the current dataset is that it allows us to examine promotions as well as pay. Our new theoretical model emphases that a 'taste for discrimination' against LGB individuals – since they can disguise their sexual orientation – will predominantly take the form of lowered promotion opportunities. Our empirical results are largely consistent with this, in that there is no evidence that either LGB males or females suffer in pay. With the new dataset and its information on rank, we can clarify some of the contradictory results on LGB females in the literature, and in particular on whether they are paid more than heterosexual women. We find some evidence that, without controlling for rank, LGB females are paid more than heterosexual women. However, there is no significant within-rank pay differential. This suggests that LGB women do better in promotions than do heterosexual women, and this is supported by our results on the over-40 sample. We find evidence (in both the full and the over-40 samples) that LGB males do worse than heterosexual males in terms of rank, and – among academic ranks – there seem to be glass ceilings at the highest ranks.

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Table 1. Means (Standard Deviations) of Variables

| Variable | Hetero-sexual Men | LGB Men | Hetero-sexual Women | LGB Women | Definition |
|---|---|---|---|---|---|
| Academic Rank | .61 | .49 | .48 | .47 | holding any of the academic ranks with the conditional (on holding academic rank) means following |
| Researcher | .22 | .23 | .37 | .35 | any research grade below RA4 |
| Lecturer | .37 | .47 | .46 | .39 | lecturers in all universities plus senior lecturers in post-1992 universities - equivalent to Assistant Professor |
| Senior Lecturer | .14 | .20 | .08 | .13 | equivalent to Associate Professor |
| Principal Lecturer | .04 | 0 | .01 | 0 | rank existing only in post-1992 universities and equivalent to Associate Professor |
| Reader | .06 | .07 | .03 | .04 | equivalent to Associate/Full Professor |
| Professor | .17 | .03 | .04 | .09 | Full Professor |
| Academic Field | .90 | 1.00 | .96 | .74 | Information available on academic fields below conditional on holding academic rank |
| Humanities | .16 | .17 | .22 | .28 | |
| Social Science | .18 | .17 | .19 | .11 | |
| Science | .41 | .40 | .25 | .17 | |
| Medicine | .25 | .27 | .34 | .44 | |
| Administrative Rank | .39 | .51 | .52 | .53 | holding a post in universities other than one of the academic ranks above |
| Senior ALC | .11 | .14 | .14 | 0 | conditional mean (given administrative rank) of holding a senior post |
| Age | 2.76 (1.09) | 2.46 (.92) | 2.24 (.97) | 2.04 (.73) | measured in groups: under 30 (1); 30-39 (2); 40-49 (3); 50-59 (4); over 60 (5) |
| White | .95 | .93 | .97 | .90 | Ethnicity given as white |
| London | .24 | .30 | .19 | .20 | university located in London |

| | | | | | |
|---|---|---|---|---|---|
| new university | .18 | .20 | .19 | .25 | post-1992 university |
| First | .26 | .26 | .19 | .27 | first-class undergraduate degree (top result) |
| Upper second | .34 | .31 | .38 | .43 | upper second degree (second highest result) |
| PhD | .56 | .33 | .39 | .35 | |
| Experience | 12.77 (10.43) | 10.33 (8.68) | 8.01 (7.50) | 5.37 (5.14) | years (measured as continuous variable) working in higher education sector |
| Child | .37 | .13 | .30 | .22 | has child care responsibilities |
| Partner | .84 | .61 | .82 | .69 | has partner |
| Married | .72 | .11 | .57 | .21 | is married to partner |
| Discrimination | .17 | .23 | .26 | .29 | reports discrimination |
| Harassment | .17 | .29 | .30 | .36 | reports harassment |
| Out | .52 | .20 | .59 | .12 | staff in immediate workplace aware of sexual orientation |
| Salary | £32,147 (14,806) | £29,325 (10,379) | £24,136 (9,353) | £24,697 (9,917) | |
| | | | | | |
| Sample Size | 319 | 61 | 355 | 49 | |
| | | | | | |
| | | | | | |

Table 2. Comparison of Data with Other Surveys

| | AUT data | | RES data | | Scottish data | |
|---|---|---|---|---|---|---|
| | Men | women | Men | women | men | women |
| under 30 | .12 | .22 | .06 | .05 | | |
| 30-39 | .32 | .44 | .26 | .43 | | |
| 40-49 | .27 | .22 | .30 | .30 | | |
| 50-59 | .24 | .11 | .33 | .17 | | |
| over 59 | .05 | .01 | .05 | .05 | | |
| experience | 13.45 | 7.85 | 17.20 | 13.52 | | |
| London | .21 | .23 | .22 | .27 | | |
| new | .16 | .11 | .28 | .33 | 0 | 0 |
| white | .96 | .96 | .91 | .83 | | |
| first | .35 | .32 | .30 | .22 | | |
| two-one | .33 | .40 | .40 | .37 | | |
| PhD | .68 | .64 | .77 | .80 | | |
| researcher | .21 | .35 | .05 | .08 | .14 | .49 |
| lecturer | .31 | .38 | .43 | .67 | .38 | .29 |
| senior lect. | .33 | .21 | .24 | .13 | .26 | .20 |
| professor | .16 | .05 | .28 | .12 | .22 | .02 |
| married | .70 | .53 | .77 | .62 | .48 | .33 |
| tenure | 10.22 | 5.69 | 19.61 | 14.10 | 12.41 | 5.31 |
| heterosexual | .88 | .88 | .98 | .93 | | |
| male/female | .52 | .48 | .83 | .17 | .70 | .30 |

Notes: Senior lecturer includes senior lecturer in a traditional university, principal lecturer in a new university, and reader in both. The RES (Royal Economic Society) data is that used in Blackaby and Frank (2000) and Booth, Frank and Blackaby (2002) and arises from a postal survey of UK academic economists conducted in 1999 with 516 responses. The Scottish data is that used in Ward (2000) based upon a postal survey of academics in 5 traditional Scottish universities, conducted in 1995/6, with 900 responses.

| | OLS Log Earnings (all staff) | OLS Log Earnings (all staff) | OLS Log Earnings (academic ranks) | OLS Log Earnings (academic ranks) | OLS Log Earnings (academic ranks) |
|---|---|---|---|---|---|
| | Coefficient (t-stat) | coefficient (t-stat) | coefficient (t-stat) | coefficient (t-stat) | coefficient (t-stat) |
| constant | 9.5183 (104.57) | 9.3616 (97.01) | 9.4570 (69.65) | 9.3357 (69.19) | 9.3688 (84.49) |
| male LGB | - 0.0123 (0.25) | - 0.01833 (0.40) | - 0.0068 (0.11) | - 0.0117 (0.19) | 0.0660 (1.49) |
| female LGB | 0.0729 (1.41) | 0.0799 (1.68) | 0.1607 * (2.12) | 0.1335 (1.80) | 0.0500 (0.95) |
| female | - 0.1237 ** (4.56) | - 0.0886 (3.53) | - 0.1250 ** (3.61) | - 0.1245 ** (3.66) | - 0.0499 * (2.05) |
| age | 0.1991 ** (3.06) | 0.2045 (3.42) | 0.2350 ** (2.71) | 0.2372 ** (2.81) | 0.1831 ** (3.02) |
| age squared | - 0.1961 (1.57) | - 0.0197 (1.73) | - 0.0252 (1.50) | - 0.0219 (1.32) | - 0.0220 (1.86) |
| experience | 0.0273 ** (5.34) | 0.0209 (4.34) | 0.0231 ** (3.40) | 0.0230 ** (3.46) | 0.0057 (1.18) |
| experience squared | - 0.0004 ** (2.85) | - 0.0003 (2.57) | - 0.0003 (1.65) | - 0.0004 (1.93) | - 0.0001 (1.17) |
| London | 0.0729 ** (2.38) | 0.0569 (2.03) | 0.0164 (0.43) | 0.0232 (0.62) | - 0.0085 (0.32) |
| New university | - 0.2006 ** (6.13) | - 0.2130 (7.04) | - 0.0972 (1.92) | - 0.0316 (0.62) | 0.0527 (1.15) |
| white | - 0.0135 (0.23) | - 0.0149 (0.28) | 0.1280 (1.33) | 0.0980 (1.04) | 0.1005 (1.49) |
| first | 0.0263 (0.77) | 0.0002 (0.08) | - 0.0009 (0.02) | 0.0229 (0.57) | - 0.0446 (1.56) |
| upper second | 0.0077 (0.27) | 0.0092 (0.35) | - 0.0322 (0.79) | - 0.0119 (0.30) | - 0.0370 (1.29) |
| PhD | 0.1244 ** (4.41) | 0.1211 (4.64) | 0.0569 (1.33) | 0.0675 (1.81) | 0.0127 (0.48) |
| social science | | | | 0.0604 (1.20) | 0.0319 (0.90) |
| science | | | | 0.0827 (1.80) | 0.0912 * (2.81) |
| medicine | | | | 0.2129 ** (4.59) | 0.2214 ** (6.51) |
| full-time | | 0.3255 (8.99) | | | 0.3012 ** (7.59) |
| temporary | | - 0.1431 (5.38) | | | - 0.1531 ** (4.56) |
| lecturer | | | | | 0.0604 * (1.97) |
| senior lecturer | | | | | 0.3064 ** (6.51) |
| principal lecturer | | | | | 0.2139 ** (2.85) |
| reader | | | | | 0.2531 ** (4.08) |
| professor | | | | | 0.5929 ** (10.79) |
| | | | | | |
| sample size | 716 | 716 | 357 | 357 | 357 |
| R squared | .43 | .52 | .41 | .45 | .73 |

Note: ** significant at 1% level * significant at 5% level

Table 3. Regression Results on Income and Rank

Table 4. Probit Results on Glass Ceilings (marginal coefficients)

| | Ordered Probit Ranks Marginal Effects (all staff) | | | | Probit Ranks Marginal Effects (academic ranks) |
|---|---|---|---|---|---|
| | Researcher | Lecturer | Senior Lecturer | Professor | Professor |
| | coefficient (z-stat) | coefficient (z-stat) | coefficient (z-stat) | coefficient (z-stat) | coefficient (z-stat) |
| probability | 0.36 | 0.45 | 0.13 | 0.06 | 0.06 |
| male LGB | 0.1470 (1.89) | - 0.0583 (1.47) | - 0.0533 * (2.09) | - 0.0353 * (2.42) | - 0.0601 ** (2.70) |
| female LGB | - 0.0617 (0.74) | 0.0124 (1.13) | 0.0264 (0.70) | 0.0228 (0.64) | 0.0549 (0.57) |
| female | 0.1318 ** (3.07) | - 0.0354 ** (2.48) | - 0.0536 ** (2.93) | - 0.0427 ** (2.86) | - 0.0502 (1.73) |
| age | - 0.1596 (1.40) | 0.0434 (1.32) | 0.0651 (1.39) | 0.0510 (1.39) | 0.0983 (1.10) |
| age squared | 0.0076 (0.37) | - 0.0020 (0.36) | - 0.003 (0.37) | - 0.0024 (0.37) | - 0.006 (0.41) |
| experience | - 0.0138 (1.63) | 0.0037 (1.54) | 0. 0056 (1.60) | 0.0044 (1.61) | 0.0093 (1.61) |
| experience squared | 0.0001 (0.60) | - 0.0000 (0.60) | - 0.0000 (0.60) | - 0.0000 (0.60) | - 0.0002 (1.25) |
| London | - 0.1364 ** (3.21) | 0.0234 ** (2.73) | 0. 592 ** (2.87) | 0.0536 * (2.54) | 0.0751 (1.62) |
| new university | - 0.1500 ** (2.84) | 0.0144 (1.32) | 0.0677 ** (2.58) | 0.0678 * (2.01) | 0.006 (0.16) |
| white | 0.0704 (0.81) | - 0.0131 (1.44) | - 0.0304 (0.76) | - 0.0268 (0.68) | - 0.0863 (0.65) |
| first | - 0.1277 ** (2.60) | 0.0248 ** (2.67) | 0.0547 * (2.40) | 0.0481 * (2.15) | 0.0201 (0.56) |
| upper second | - 0.0138 (0.29) | 0.0036 (0.29) | 0.0056 (0.29) | 0.0044 (0.29) | 0.0105 (0.29) |
| PhD | - 0.2936 ** (6.86) | 0.0823 ** (4.01) | 0.1159 ** (5.82) | 0.0953 ** (5.31) | 0.0719 * (2.46) |
| full-time | 0.0459 (0.68) | - 0.0103 (0.85) | - 0.0194 (0.66) | - 0.0162 (0.62) | 0.0400 (1.14) |
| temporary | 0.2697 (0.04) | - 0.0845 ** (3.79) | - 0.1043 ** (5.23) | - 0.0809 ** (4.95) | - 0.0828 * (2.23) |
| social science | | | | | 0.0791 (1.27) |
| science | | | | | 0.0309 (0.75) |
| medicine | | | | | 0.0468 (0.91) |
| sample size | 530 | | | | 368 |
| R squared | .23 (pseudo) | | | | .35 (pseudo) |

Notes: ** significant at 1% level * significant at 5% level

| | Ordered Probit Ranks Marginal Effects (all staff over 40) | | | | Probit 'Out' Marginal Effects |
|---|---|---|---|---|---|
| | Researcher | Lecturer | Senior Lecturer | Professor | |
| | coefficient (z-stat) | coefficient (z-stat) | coefficient (z-stat) | coefficient (z-stat) | coefficient (z-stat) |
| probability | 0.18 | 0.37 | 0.25 | 0.20 | 0.82 |
| male LGB | 0.1885 * (1.96) | 0.03318 (1.81) | - 0.0866 (1.93) | - 0.1350 ** (2.92) | - 0.1265 (1.88) |
| female LGB | - 0.1492 ** (3.81) | - 0.1843 (2.01) | 0.0109 (0.27) | 0.3226 * (2.01) | - 0.3367 ** (4.07) |
| female | 0.1312 ** (2.72) | - 0.0568 ** (2.73) | - 0.0577 * (2.45) | - 0.1303 ** (3.01) | 0.0415 (1.17) |
| age | 0.5969 (1.39) | 0.3147 (1.32) | - 0.2595 (1.34) | - 0.6531 (1.38) | - 0.1842 * (2.17) |
| age squared | - 0.0895 (1.53) | - 0.0473 (1.45) | 0.0389 (1.47) | - 0.0024 (0.37) | 0.0285 (1.75) |
| experience | - 0.0119 (1.52) | - 0.0063 (1.46) | 0. 0051 (1.45) | 0.0130 (1.53) | 0.0064 (0.97) |
| experience squared | 0.0001 (0.78) | 0.0001 (0.77) | - 0.0000 (0.77) | - 0.0001 (0.78) | - 0.0001 (0.89) |
| London | - 0.1537 ** (4.42) | - 1.1287 ** (3.01) | 0.0469 ** (3.05) | 0.2354 * (3.44) | 0.0201 (0.56) |
| new university | - 0.0731 (1.62) | - 0.0520 (1.25) | 0.0278 (1.85) | 0.0793 * (1.35) | 0.0113 (0.27) |
| white | 0.0420 (0.63) | 0.0274 (0.52) | - 0.0169 (0.70) | - 0.0525 (0.55) | 0.0985 (1.24) |
| first | - 0.0745 (1.62) | - 0.0477 (1.34) | 0.0300 (1.68) | 0.0923 (1.45) | 0.0439 (1.10) |
| upper second | - 0.0119 (0.26) | - 0.0065 (0.25) | 0.0051 (0.26) | 0.0133 (0.25) | 0.0177 (0.51) |
| PhD | - 0.2162 ** (4.38) | - 0.0943 ** (3.53) | 0.0904 ** (3.59) | 0.2201 ** (4.69) | 0.0154 (0.40) |
| full-time | 0.0046 (0.06) | - 0.0025 (0.06) | - 0.0020 (0.06) | - 0.0051 (3.17) | 0.0206 (0.42) |
| temporary | 0.1623 * (2.48) | 0.0481 (2.88) | - 0.0738 * (2.30) | - 0.1366 ** (3.17) | - 0.0516 (1.39) |
| marriage | | | | | 0.0700 (1.78) |
| partnership | | | | | 0.1292 ** (2.69) |
| child-raising | | | | | 0.0724 * (2.03) |
| | | | | | |
| sample size | 249 | | | | 720 |
| R squared | .18 (pseudo) | | | | .11 (pseudo) |

Notes: ** significant at 1% level * significant at 5% level

Table 5. Probit Results on Ranks (over 40) and 'Coming Out' (marginal coefficients)