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Sexual orientation and occupational rank

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Abstract

This paper presents a study of differences in occupational rank between gay and heterosexual males as well as between lesbian and heterosexual females. We estimate different specifications of an ordered probit model on register data from Sweden. Our data consist of married heterosexual men and women and homosexual men and women living in civil unions. We find that homosexual men have a lower probability of working in a profession demanding a longer university education or a management profession than heterosexual men. In contrast, we find that homosexual women are more likely than heterosexual women to work in such professions.

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1. Introduction

Research regarding sexual orientation and labour market success has focused mainly on earnings differentials between homosexuals and heterosexuals. The results from this research point essentially in the same direction: Homosexual males are at an earnings disadvantage compared to heterosexual males while homosexual females earn about the same, or sometimes more, than heterosexual females.[1]

Much less is known regarding sexual orientation and occupational rank. One exception is the work by Frank (2006) who, besides earnings, studied occupational rank among homosexual and heterosexual male university staff in Britain. One finding by Frank was that male homosexuals suffered from lower opportunities to hold senior ranks, such as being a senior lecturer or a professor, at British universities than heterosexual males. In the light of these results, Frank concludes that male homosexuals encounter the same obstacles as heterosexual females in their labour market career, often referred to as glass ceilings.

However, the work by Frank has some limitations. First, it makes use of a small sample of individuals from a survey conducted on academic ranks in Britain. Second, the study includes only males. Against this background, this paper aim to contribute to the work regarding sexual orientation and occupational rank by using a large sample of individuals collected from register data in Sweden. The fact that we are able to use register data is made possible because all homosexual individuals in Sweden were allowed to enter civil unions by the year 1995, and those who do so have the same legal rights and obligations as married heterosexuals. Therefore, there are important incentives for homosexual couples to engage in civil unions rather than just being a cohabiting couple, for example, judicial impressions on issues concerning bequest, possibility of joint adoption, and joint custody and care of children.[2] All individuals who enter civil unions are registered by Statistics Sweden. From the LISA database at Statistics Sweden, we have access to data on variables such as type of profession, yearly earnings, age, gender, educational attainment, region of residence and branch of business for *all* homosexual individuals who were living in civil unions and *all* married heterosexual individuals in Sweden by the year 2007.

Before we proceed we have to acknowledge some limitations with this study. We use data where we can identify all gay men and lesbian females living in civil unions and all married heterosexual males and females in Sweden. However, our readers should keep in mind that the study does not include single homosexuals and homosexuals who are living together with partners but not in civil unions. Unfortunately, it is not possible to calculate how large the fraction of homosexuals living in Sweden is. However, a demographic description of the population living in civil unions in Sweden is found in Andersson, Noack, Seierstad & Weedon-Fjekar (2006). In research regarding homosexuals there is always a trade off between the reliability of the sexual orientation measures and the representativeness of the findings. When the data are representative, the measure of sexual orientation is usually weak. On the

[1] For studies from the US, see Badgett (1995), Klawitter & Flatt (1998), Allegretto & Arthur (2001), Badgett (2001), Clain & Leppel (2001), Carpenter (2005) and Elmslie & Tebaldi (2007). For a study from Canada, see Carpenter (2008). Studies from European countries are Arabsheibani, Marin & Wadsworth (2004, 2005) for the UK, Plug & Berkhout (2004) for the Netherlands and Ahmed & Hammarstedt (2010) and Ahmed, Andersson and Hammarstedt (2011) for Sweden.

[2] Homosexual women living in civil unions also have the right to get inseminated or undergo in vitro fertilization at a Swedish medical service center.

other hand, when the measure of sexual orientation is reliable and robust, as in our case, the findings only apply to a part of the homosexual population.

We contribute to the research field in different ways. We arrive at conclusions well in line with those observed in research regarding earnings differentials between homosexuals and heterosexuals: Homosexual males have a lower probability of holding professions demanding a longer university education or management professions than heterosexual males. As regards females, we find the opposite results. Homosexual females have higher probabilities of holding professions demanding a longer university education or a management profession than heterosexual females. Thus, homosexual males faces the same obstacles on the labour market often documented for heterosexual females.

The remainder of the paper is organised as follows: A conceptual framework is presented in Section 2. Section 3 contains the data and some descriptive statistics. Section 4 presents the results while the conclusions are provided in Section 5.

2. Conceptual framework

We hypothesise that homosexual men and women may possess different occupational ranks than heterosexual men and women. We anticipate this for two reasons. The first reason is based on a demand-side story which has to do with the potential for labour market discrimination against homosexuals. In the framework of Becker's (1957) taste-based theory of discrimination, for example, employers may have taste for discrimination against homosexuals. The outcome of such bias would be that homosexuals are disadvantaged on the labour market in the sense that they are stopped in their advancement for reaching higher occupational rank. Previous research, however, indicates that this prediction is more plausible for homosexual men. Research in social psychology, for example, has shown that the public perceptions of homosexual men are much more hostile than attitudes against homosexual women (see, for example, Herek, 2000, 2002, and Kite and Whitley, 1996).

Stereotypes about homosexual women are that they are more like men and more focused on their careers than heterosexual women. In the framework of Phelps' (1972) statistical discrimination theory, therefore, homosexual women would be predicted do better in their advancement for higher occupational rank than their heterosexual counterparts. Hence, from our demand-side story of labour market discrimination, we predict that homosexual men compared to heterosexual men have lower probabilities and homosexual women compared to heterosexual women have higher probabilities of possessing senior occupational ranks.

A second reason to hypothesise that homosexual men and women may possess different occupational ranks than heterosexual men and women is based on a supply-side story which has to do with differences between homosexuals and heterosexuals in their specialisation in market-related and household-related work. This story stems from Becker's (1981) idea of specialisation within families. He argued that men specialise in market work and women in household work because of comparative advantages caused by biological differences. Obviously, these comparative advantages caused by biological differences between men and women do not exist between two homosexual individuals since they have the same sex. Hence, we may predict that heterosexual men are more probable to advance to senior occupational ranks than heterosexual women because of comparative advantage. However, this theory suggests that homosexual women will not specialise in household work at the same extent as heterosexual women and homosexual men will not specialise in market work

at the same extent as heterosexual men because there are no biological comparative advantages between homosexual spouses. Therefore, homosexual women are more likely than heterosexual women to possess higher occupational ranks and homosexual men are less likely than heterosexual men to possess higher occupations ranks.

Against this background, we therefore hypothesise that homosexual men are less likely than heterosexual men to hold more senior occupational ranks. In contrast, we hypothesise that homosexual women are more likely than heterosexual women to hold more senior occupational ranks. It is important to emphasize that we will not make a distinction between our demand- and supply-side stories. We only use these to motivate our main hypothesis that homosexual men are worse off and that homosexual women are better off than their heterosexual counterparts when it comes to occupational rank. Our data only allow us to determine whether they support this hypothesis or not. The question of whether the differences are caused by demand- or supply-side factors or both will remain and is beyond the scope of this paper.[3]

3. The data and descriptive statistics

We use data obtained from the LISA database at Statistics Sweden. We make use of all individuals in the age span 25 to 64 years of age who were either married or living in civil union and employed in Sweden by the year 2007 for whom the type of profession is known. Besides type of profession, we have information on yearly earnings, gender, age, educational attainment, number of children in the household, region of residence in Sweden, immigrant background, and branch of business for all these individuals. All individuals who were living in civil unions are defined as homosexuals while all married individuals are defined as heterosexuals. In total, our sample consists of 979,605 heterosexual and 1,844 homosexual individuals.

Our sample only includes individuals who are active on the labour market. Thus, individuals such as students, those who are unemployed or voluntarily out of the labour force are not included in the sample. The issue of selection might here be worth some attention. Previous research has shown that homosexuals have a lower propensity of being active on the labour market than heterosexuals among males while the opposite have been found for females.[4] Further, homosexual males have lower yearly earnings than heterosexual males while homosexual females have higher yearly earnings than heterosexual females.[5] One explanation for this might be that homosexual males and heterosexual females are over-represented in part-time employment compared to heterosexual males and homosexual females. If there is a difference between homo- and heterosexuals in the probability of being part-time employed, this might of course also lead to differences between the groups in the probability of reaching high ranked occupations and management positions.

The types of profession are classified into five categories.[6] The lowest category consists of professions demanding no or little education. The next two categories consist of professions

[3] There are only three field experiments that have directly provided evidence of discrimination against homosexuals in different markets: Ahmed and Hammarstedt (2009) documented discrimination against gays in the housing market in Sweden, Drydakis (2009) documented discrimination against gays in the labour market in Greece, and Weichselbaumer (2003) documented discrimination against lesbians in the labour market in Austria.
[4] Ahmed & Hammarstedt (2010), Ahmed, Andersson & Hammarstedt (2011).
[5] Ahmed & Hammarstedt (2010), Ahmed, Andersson & Hammarstedt (2011).
[6] We make use of classifications defined by Statistics Sweden, see Standard för svensk yrkesklassificering (SSYK 96).

demanding a high school degree and some university education, respectively. The fourth, and next highest, category consists of professions demanding a longer university education while the highest category consists of management professions.

Table 1 presents descriptive statistics of all homosexual and heterosexuals included in our sample. Homosexuals are, on average, younger and higher educated in terms of years of schooling than heterosexuals. Furthermore, homosexuals more often than heterosexuals reside in metropolitan areas (the municipalities of Stockholm, Gothenburg or Malmo). As regards branches of business, there are large differences between homosexual and heterosexual males. Homosexual males are underrepresented in the manufacturing and construction sector while they are overrepresented in the service and health care sector compared to heterosexual males. Table 1 also shows that there are relatively small differences between female homosexual and heterosexuals as regards branches of business. Homosexual females are somewhat overrepresented in the service sector compared to heterosexual females, while it is more common that heterosexual rather than homosexual females are active in the health care sector.

Table 1: Descriptive statistics for heterosexual and homosexuals (25–64 years of age) in the year 2007.[a)]

	Heterosexuals		Homosexuals	
	Males	Females	Males	Females
Age (years)	48.13	46.92	45.71	41.02
Schooling (years)	13.53	14.13	14.68	15.15
Metropolitan area (per cent)	13.62	12.38	50.2	36.05
Number of children in the household	1.16	1.09	0.03	0.55
Immigrant background (per cent)	12.90	12.76	18.21	10.78
Branch of business				
Agricultural (per cent)	0.78	0.19	0.12	0.50
Manufacturing (per cent)	32.18	8.59	7.40	8.76
Construction (per cent)	7.15	0.61	0.59	0.81
Service (per cent)	29.75	18.58	35.49	24.47
Health care (per cent)	7.98	36.56	30.43	28.90
Public administration (per cent)	21.85	34.86	24.09	35.95
Other (per cent)	0.31	0.61	1.88	0.61
Number of individuals	426,538	553,067	851	993

[a)] For a description of how the variables have been coded, see Table A1 in the Appendix.

Table 2 presents types of profession held by heterosexual and homosexual individuals in 2007. The tables reveal differences between homosexual and heterosexuals as well as between males and females. As regards males, no clear pattern emerges. While there are small differences between the share of homosexual and heterosexual males occupied in professions demanding no or little education, heterosexual males are overrepresented compared to homosexual males in professions demanding a high school degree or some university education. As regards professions demanding a longer university education, homosexual males are heavily overrepresented compared to heterosexual males while a higher proportion of heterosexual than homosexual males is occupied in management professions.

Turning to females, the pattern becomes much clearer. Heterosexual females are overrepresented in professions demanding no or little education and professions demanding a high school degree. In professions demanding some university education, the share of homosexual and heterosexual females is about the same while homosexual females are overrepresented compared to heterosexual females in the highest occupational ranks.

Table 2: Type of profession held by heterosexual and homosexual men and women in 2007, per cent.

	Heterosexuals		Homosexuals	
Profession	Males	Females	Males	Females
Profession demanding no or little education	3.60	5.08	4.11	2.62
Profession demanding a high school degree	37.73	41.71	31.84	29.71
Profession demanding some university education	21.35	22.98	13.40	21.65
Profession demanding a longer university education	27.03	26.42	43.13	41.19
Management profession	10.28	3.82	7.52	4.83
Number of individuals	426,538	553,067	851	993

4. Estimations of occupational rank by sexual orientation

In order to further elucidate the extent to which there are differences in occupational rank between homosexual and heterosexuals, we estimate an ordered probit model. This presumes that the occupational categories can be ranked suitably from lowest to highest and provides a prediction of the conditional probability that an individual ends up in a certain occupation (see McKelvey & Zavoina, 1975; Miller & Volker, 1985).

Our specification of the model has the five types of professions as its categorical outcomes. The first category is made up of professions demanding no or little education; the next consists of professions demanding a high school degree; the third comprises professions demanding some university education; the fourth is made up of professions demanding a longer university education and the fifth comprises management professions.

We estimate three different specifications of our ordered probit model for males and females separately. *Specification 1* controls, beside sexual orientation, for age and educational attainment (measured as years of schooling); *Specification 2* controls, besides the variables included in *Specification 1*, for region of residence, number of children in the household and immigrant background; and *Specification 3* controls for branch of business in addition to the variables included in the previous specification.

Table 3: Ordered probit estimations of occupational rank for male heterosexual and homosexual individuals, marginal effects (standard errors within parentheses).

	Type of profession				
	Profession demanding no or little education	Profession demanding a high school degree	Profession demanding some university education	Profession demanding a longer university education	Management profession
Specification 1					
Probability	0.0232	0.3798	0.2440	0.2735	0.0795
Homosexual	0.0008 (0.0021)	0.0047 (0.0122)	–0.0002 (0.0007)	–0.0032 (0.00082)	–0.0021 (0.0053)
Controls for age, age squared and schooling	**X**	**X**	**X**	**X**	**X**
Controls for metropolitan area, number of children, immigrant background					
Controls for business line					
Number of observations	427,389	427,389	427,389	427,389	427,389
Pseudo R^2	0.0663	0.0663	0.0663	0.0663	0.0663
Specification 2					
Probability	0.0213	0.3817	0.2469	0.2729	0.0772
Homosexual	0.0005 (0.0019)	0.0030 (0.0124)	–0.0002 (0.0007)	–0.0020 (0.0084)	–0.0013 (0.0053)
Controls for age, age squared and schooling	**X**	**X**	**X**	**X**	**X**
Controls for metropolitan area, number of children, immigrant background	**X**	**X**	**X**	**X**	**X**
Controls for business line					
Number of observations	427,389	427,389	427,389	427,389	427,389
Pseudo R^2	0.0749	0.0749	0.0749	0.0749	0.0749
Specification 3					
Probability	0.0195	0.3810	0.2552	0.2708	0.0735
Homosexual	0.0033 (0.0020)	0.0219* (0.0125)	–0.0017 (0.0013)	–0.0149* (0.0086)	–0.0086* (0.0047)
Controls for age, age squared, and schooling	**X**	**X**	**X**	**X**	**X**
Controls for metropolitan area, number of children, immigrant background	**X**	**X**	**X**	**X**	**X**
Controls for business line	**X**	**X**	**X**	**X**	**X**
Number of observations	427,389	427,389	427,389	427,389	427,389
Pseudo R^2	0.0853	0.0853	0.0853	0.0853	0.0853

Note: *** indicates significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level.

The marginal effect of being homosexual on the probability of having a type of profession is presented in Table 3 for males and Table 4 for females.[7] According to *Specification 1* and *Specification 2* in Table 3, there are no statistically significant differences in the probability of holding different types of professions between homosexual and heterosexual males. However,

[7] The complete estimation results are available from the authors upon request.

when we add controls for branches of business in *Specification 3,* such differences emerge – homosexual males have about 1.5 percent lower probability of holding a profession that demands a longer university education than do heterosexual males. Furthermore, homosexual males have almost 1 percentage point lower probability of being in a management profession than heterosexual males. Thus, the results indicate that homosexual males, for different reasons, have a lower probability than heterosexual males to be promoted to management professions and professions that demand longer university education.

Looking at the corresponding figures for females in Table 4, we find that when controlling only for age and educational attainment in *Specification 1,* homosexual females have a lower probability than heterosexual females of holding low ranked professions, i.e., professions demanding no or little education. However, it also is a fact that homosexual females have a higher probability of holding professions demanding a longer university education or management professions, according to *Specification 1*.

This pattern more or less remains as we control for factors such as region of residence, number of children, immigrant background, and branch of business in *Specification 2* and *Specification 3*. When these variables are controlled for, female homosexuals have about 1 percentage point lower probability than heterosexual females of holding professions demanding little or no education and about 7 percentage points lower probability of holding professions demanding a high school degree. Furthermore, homosexual females have about 6 percentage points higher probability than heterosexual females of holding professions demanding a longer university education than heterosexual females and about 1 percentage point higher probability of holding a managerial profession.

Table 4: Ordered probit estimations of occupational rank for female heterosexual and homosexual individuals, marginal effects (standard errors within parentheses).

	Type of profession				
	Profession demanding no or little education	Profession demanding a high school degree	Profession demanding some university education	Profession demanding a longer university education	Management profession
Specification 1					
Probability	0.0184	0.4379	0.3046	0.2254	0.0137
Homosexual	–0.0086*** (0.0347)	–0.0086*** (0.0009)	–0.0865*** (0.0121)	0.0128*** (0.0006)	0.0112*** (0.0020)
Controls for age, age squared and schooling	**X**	**X**	**X**	**X**	**X**
Controls for metropolitan area, number of children, immigrant background					
Controls for business line					
Number of observations	554,060	554,060	554,060	554,060	554,060
Pseudo R^2	0.1631	0.1631	0.1631	0.1631	0.1631
Specification 2					
Probability	0.0172	0.4398	0.3067	0.2233	0.0130
Homosexual	–0.0069*** (0.0010)	–0.0710*** (0.0123)	0.0121*** (0.0011)	0.0574*** (0.0104)	0.0084*** (0.0018)
Controls for age, age squared and schooling	**X**	**X**	**X**	**X**	**X**
Controls for metropolitan area, number of children, immigrant background	**X**	**X**	**X**	**X**	**X**
Controls for business line					
Number of observations	554,060	554,060	554,060	554,060	554,060
Pseudo R^2	0.1695	0.1695	0.1695	0.1695	0.1695
Specification 3					
Probability	0.0160	0.4374	0.3168	0.2183	0.0115
Homosexual	–0.0064*** (0.0009)	–0.0700*** (0.0123)	0.0127*** (0.0013)	0.0563*** (0.0104)	0.0073*** (0.0016)
Controls for age, age squared, and schooling	**X**	**X**	**X**	**X**	**X**
Controls for metropolitan area, number of children, immigrant background	**X**	**X**	**X**	**X**	**X**
Controls for business line	**X**	**X**	**X**	**X**	**X**
Number of observations	554,060	554,060	554,060	554,060	554,060
Pseudo R^2	0.1820	0.1820	0.1820	0.1820	0.1820

Note: *** indicates significance at the 1 percent level, ** at the 5 percent level, and * at the 10percent level.

5. Conclusions

In this paper, we have examined if differences exist between heterosexuals and homosexuals concerning occupational rank. Our results show that homosexual men are less likely than heterosexual men to hold an occupation that demands a longer university education or a management position. In contrast, homosexual women are more likely than heterosexual women to hold an occupation that demands a longer university education or a management position.

Our results are in line with a growing body of research that has examined earnings differences between homosexuals and heterosexuals. Previous research has consistently found that homosexual men earn significantly less than heterosexual men and that homosexual women earn more than heterosexual women.[8] It is also well known that heterosexual females are facing obstacles, often referred to as 'glass ceilings', on the labour market that hinders them from reaching top ranked and management positions.[9] Our results add to the previous literature since we have shown that homosexual males are facing similar obstacles as heterosexual females on the labour market.

Finally, this analysis departed from Becker's theories on discrimination and specialization. Our results are in line with what we hypothesised from these theories: homosexual men are not as successful as heterosexual men when it comes to advancement in occupational rank but homosexual women, on the other hand, do better than heterosexual women. This result can be explained by both supply-side factors and demand-side factors or both, as discussed in the theoretical part of the paper. When we examine differences in occupational rank between different groups, however, we are only able to study what occupations individuals engage in given a number of background factors and thereby estimating the probability of being in some type of occupation. Unfortunately, we are not able to study the entire process through which individuals reach their occupations – a process which is most likely affected by factors on both the demand and supply side of the labour market. Therefore, a question for future research is whether the results we observe are driven by discrimination, specialization within households or other factors.

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[8] For a study on educational attainment and the lesbian wage premium, see Daneshvary, Waddoups & Wimmer (2008).

[9] See Blau & Kahn (1996) and Albrecht, Björklund & Vroman (2003).

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Table A1: Variables included in the regression and how they are constructed

Variable	Description
Dependent variables	
Profession in 2007	1 if the individual has a profession demanding no or little education, 2 if the individual has a profession demanding a high school degree, 3 if the individual has a profession demanding some university education, 4 if the individual has a profession demanding a longer university education, 5 if the individual has a management profession.
Independent variables	
Homosexual	1 if the individual is living in a civil union, 0 otherwise.
Age	Continuous
Age squared / 100	Continuous
Schooling	Years of schooling, continuous.
Metropolitan area	1 if the individual lives in the region of Stockholm, Gothenburg or Malmö, 0 otherwise.
Number of children	Number of children living in the household, continuous.
Immigrant	1 if the individual is born abroad, 0 otherwise.
Construction	1 if the individual is active in the construction sector, 0 otherwise.
Manufacturing	1 if the individual is active in manufacturing, 0 otherwise.
Service	1 if the individual is active in the service sector, 0 otherwise.
Health care	1 if the individual is active in the health care sector, 0 otherwise.
Other business line	Reference