Formal On-the-Job Training:

A Gender-Typed Experience and Wage-Related Advantage?

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Formal on-the-job training (FOJT) can have a positive impact on wages and on promotion opportunities. According to theory and earlier research, a two-step model of gender inequality in FOJT is predicted. First, women are less likely than men to take part in FOJT and, second, once women do get the more remunerative training – such as general training and training that increases promotion opportunities – they are not rewarded for their new skills to the same extent as men are. Pooled cross-sectional data from the Swedish Survey of Living Conditions in the mid-1990s were used. Logistic and OLS regression models were estimated to address the hypotheses. Results show that women are significantly less likely than men to take part in FOJT. Among those who do receive training, women are more likely to take part in industry-specific training, whereas men are more likely to participate in general training and training that increases promotion opportunities. The two latter forms of training significantly raise a man's annual earnings but not a woman's. Hence, the predicted model is supported and it is argued that this gender inequality is partly due to employers' discriminatory practices.

Introduction

On-the-job training has been shown to have a positive impact on wages (Corcoran and Duncan, 1979; Duncan and Hoffman, 1979; Gronau, 1988; Olsen and Sexton, 1996) as well as on promotion routes (Wholey, 1990). Dependent on type of training – whether general or firm-specific – it may also increase opportunities of finding new and better jobs with other employers. Several (mostly American, economic) studies have shown significant differences in on-the-job training between women and men. In many cases, women receive less training than men (e.g. Altonji and Spletzer, 1991; Green, 1991; Lynch, 1992; Barron et al., 1993). As training is an important device to increase promotion opportunities and wages, lack of training may be one factor lowering women's possibilities in these areas.

According to theory and earlier research, a two-step model of gender inequality is predicted: first, women are less likely than men to take part in training and, second, once women do get the more remunerative training (primarily in the form of general training and training that increases promotion opportunities), they are not rewarded for their new skills to the same extent as men are. Sweden is the country in focus, and because formal on-the-job training (FOJT) in Sweden normally takes place during ordinary work hours and is administered and paid for by employers (NUTEK, 2000), any gender difference in training or rewards for training are more likely due to employers' discriminatory practices than to differences between women and men in terms of their willingness to take part in training (see also Appendix 1). Also, given that employers distribute training, if gender differences are found in Sweden – where the probability

of a woman leaving the employer entirely upon childbirth is low – the likelihood is high that gender differences will be greater in other countries, where investments in women are considered to entail more risk.

The article begins with a discussion of Becker's (1975) theories of on-the-job training and Lazear and Rosen's (1990) theories on male and female wage differentials in job ladders. A short discussion on the effect of on-the-job training on earnings concludes the background. Next, data and variables are described and, finally, the empirical results are presented and discussed.

Different Types of Training and the Returns on Training

No Training Versus Training, and Specific Versus General Training

The decision to provide an employee with formal training is guided by economic concerns. There are direct training costs (teachers, materials, equipment, etc.), and indirect costs for production foregone (Becker, 1975). Future output is in focus – to provide an employee with training, the employer must expect future benefits to exceed current costs. As a consequence, employers are more likely to invest in employees they expect will stay with the company and, therefore, according to theory, women may be at greater risk of not receiving training than are men.

FOJT can be of a general or a specific character. Specific training increases productivity more in firms providing the training than in other firms and, according to Becker (1975), employers should be more willing to bear – or rather share – the cost for this kind of training than that for general training. The latter training tends to increase wage costs, as the employer must compete with other employers in order to keep the trained employee. Still, as Becker concluded, most training is not completely firm-specific or completely general. In the empirical part of this paper, firm-specific, general and industry-specific training are discerned, where the latter is one type of training that falls somewhere between firm-specific and general training. The ability to distinguish between different types of on-the-job training is important, not least as regards estimating the effect of training on earnings.

Gender, Training and Promotions

With respect to women's and men's training probabilities, a theory that seems to complement Becker's theory as outlined above is that of Lazear and Rosen (1990). This theory sets out to explain why more able women are passed over in the promotion process in favour of less able men. The essence of the theory is that in order to provide an employee with training that – when completed – increases productivity and potential profit for the company, the employer must consider the probability that the employee will find non-market rewards to be higher than market rewards in the period following training. According to this theory, in order to receive training, women must prove to be more able than most men, as the risk of a woman leaving the company is almost always higher. This assumption, however, is not met in the case of Sweden. Whereas most women do leave their job temporarily – in Sweden often for about a year – upon childbirth (Jonsson and Mills, 2001), Lazear and Rosen's theory does not take into account the risk of trained employees leaving the company for another employer, a risk that is higher for men than for women. In 2000, Swedish men had, on average, 21 (median 10) years of company tenure, whereas women had 23 (median 11) years of tenure (own calculations from the Swedish Level of Living Survey, 2000) (see also Royalty, 1996; Winter-Ebmer and Zweimüller, 1997). Consequently, if a gender difference in training exists in Sweden, it should not be due to informed employers providing training to the most long-term loyal employees, ceteris paribus. Instead, prejudice with regard to male and female worker characteristics, together with preferences for one sex over the other (taste discrimination) may play a role, especially concerning training for promotions (see e.g. Blau and Ferber, 1992 for a discussion). Two other processes that not only involve employers, but also the participation of co-workers are social closure processes (i.e. men attempting to monopolize privileged positions in the workplace) (see e.g. Reskin, 1988) and gendered labour and organizational processes (see e.g. Acker, 1990).[1] In a study by Tomaskovic-Devey and Skaggs (2002), these are suggested as two potential processes through which differences in training and access to supervisory authority positions can emerge. The explanatory value of social closure processes should, however, be greater with respect to informal as opposed to formal training (i.e. when male workers can deny a female co-worker training).

Several studies have found that men have better promotion opportunities than do women with similar qualifications (e.g. Kalleberg and Reskin, 1995; Winter-Ebmer and Zweimüller, 1997; Granqvist and Persson, 1999). Hultin (2001) found that Swedish women in intermediate hierarchical positions face the strongest barriers to promotion, whereas these barriers are small at low and high hierarchical levels. Booth et al. (2003) found that

British women are as likely as men to be promoted, although women get stuck at the bottom of the wage scale for the new grade. They referred to this as a sticky-floors model and stressed the importance of considering wage level after promotion when trying to estimate the effect of increased gender equality in promotions. A recent comparative study showed an accelerating gender wage gap in Sweden throughout the wage distribution (Albrecht et al., 2003). The gender difference is largest at very high earnings levels, which the authors interpreted as a glass-ceiling effect. The results from this study, together with those of Lazear and Rosen (1990), Hultin (2001) and Booth et al. (2003), suggest a two-step model of gender inequality: first, women are less likely to take part in training – particularly training that increases promotion opportunities – than are men. Second, once women do receive training, they run the risk of not being rewarded for their new credentials to the same extent as men are.

The Effect of On-the-Job Training on Wages

In trying to predict wages, factors such as education, labour market experience, tenure with the employer, gender and job position are used. One factor often left out is on-the-job training. Instead, tenure is supposed to capture part of the differences in firm-specific training, while labour market experience is supposed to indicate the prevalence of general training (see e.g. Altonji and Shakotko, 1987; Abraham and Farber, 1987; Williams, 1991). If women and men with comparable background characteristics receive different types and amounts of training, tenure and/or experience will not adequately reflect the joint influence of job experience and FOJT.

Several studies have found average training required in the job[2] to have a significant positive effect on wages (see e.g. Duncan and Hoffman, 1979; Brown, 1989; Olsen and Sexton, 1996). Corcoran and Duncan (1979) showed that differences in training explain 11 per cent of the wage gap between white men and women. Applying a similar approach to Swedish data, Regnér (1997) found considerable gender differences in the rewards of this training, such that the effect on wages for women is about half that for men. Thus far, two articles have studied wage effects in terms of the returns to specific and general training required in the job. Regnér (2002) found a larger wage effect for general training than for specific training, whereas Barth (1997) found a somewhat larger effect for specific than for general training. In the latter study, however, the difference between the two was not statistically significant.

In the above, as in most studies of the effect of on-the-job training on wages, on-the-job training is estimated indirectly by the average amount of training required for the job. A majority of this training most likely reflects introductory and informal training, leaving the more structured formal and individually specific training hidden in the total amount of training. In the present paper, I take the analysis one step further. Here, the focus is on FOJT, defined as employer-provided training that lasted for at least one week and took place during the past 3 years. Hence training may have taken place as introductory training, but it is not restricted to this kind of training. Also, the information on training here refers to the respondents themselves – not to the average new employee.

Research Questions

To sum up, the purpose of this study is to try to answer the following questions:

1. Are there any gender differences in the odds of taking part in FOJT?
2. Are there any gender differences in the odds of taking part in different types of FOJT?
3. Can the gender earnings gap be explained by differences in FOJT?
4. Are there any gender differences in the returns on different types of FOJT?

A two-step gender inequality model is predicted, where women, first, are less likely than men to take part in training and, second, are not rewarded for training to the same extent as men are.

Data and Variables

Data stem from the Swedish Survey of Living Conditions, which was conducted as face-to-face interviews with a random sample from the population in the age range 16–84 years (Vogel et al., 1988). The analyses comprise pooled cross-sectional data from the years 1994–1998, and the selected sample consists of Swedish employees in the age range 18–65 years. Self-employed, farmers and employees in agriculture, hunting, forestry and fishing are excluded, as are individuals working less than 10 hours per week. The total sample (excluding those employed less than 3 years with their current employer, see below) consists of 10,721 respondents, 5,127 men and 5,594 women. On-the-job training is defined as training arranged or financed by the employer. Respondents were asked whether they, during the past 3 years, had received any on-the-job training that lasted at least

one week at full-time. The current employer or an earlier employer could have arranged the training.[3] By asking for information about training that lasted for a minimum of one week, the question was more likely to capture formal than informal on-the-job training.

To those who answered the question on training in the affirmative, several accompanying questions were asked: (1) How many times during the past 3 years have you taken part in such training? (2) How long does your total amount of full-time training sum up to during these 3 years? After that, the respondents were asked to describe their latest experience of on-the-job training: (3) Can this training be used with other employers? (4) Can this training be used within all companies in the industry? (5) Can this training be used in many industries? (6) Can this training be of use for advancement at the workplace? The questions asked made it possible to distinguish between general training (Q5), firm-specific training (Q3) and industry-specific training (Q4) together with training that increases promotion opportunities (Q6). Examples of the latter training are, in the clearest case, trainee programs and management training. Firm-specific training may be, for instance, training on company-specific administrative computer programs or on routines used when performing designated tasks. Examples of industry-specific training are training on machines or tools used generally in manufacturing of certain goods and computer programs used by all companies/workplaces providing a particular service. General training may consist of general computer knowledge, financial training and, in some cases, also management training. The data used here is based on the respondents' own evaluations of the type of training received. It is difficult to assess the reliability of the responses, but the fact that they concern training already completed is an advantage.

In Table 1, descriptive statistics on questions regarding training are reported for women and men. In Tables 2 and 4, logistic regressions are used to analyse the odds of taking part in any training (Table 2), and for those who did, of taking part in training that increases promotion opportunities (Table 4). In Table 3, a multinomial logistic regression is used in order to estimate the odds of taking part in firm-specific or industry-specific training compared to general training. Finally, in Tables 5, 6, and 7, OLS regressions are used to estimate the returns on training.

Previous research has shown that education (e.g. Duncan and Hoffman, 1979; Altonji and Spletzer, 1991; Jacobs et al., 1996; Veum, 1996), labour market experience and firm tenure (e.g. Brown, 1989; Loewenstein and Spletzer, 1997), industry (e.g. Green, 1991; Knoke and Ishio, 1998; Frazis et al., 2000), socio-economic status (e.g. Knoke and Ishio, 1998), work hours (e.g. Field and Goldsmith, 1991; Jacobs et al., 1996), civil status and the presence of children (e.g. Green 1991; Knoke and Ishio 1998) are correlated with the occurrence of on-the-job training. These variables are included in the analyses and are defined as follows.

Industry is derived from the Swedish register on Yearly Employment Statistics (ÅRSYS) and categorized according to the Swedish Standard Industrial Classification of 1969 (SE-SIC69) for the years 1994–1996, and the Swedish Standard Industrial Classification of 1992 (SE-SIC92) for the years 1997–1998.[4]

Socio-economic status is categorized as follows: (1) *unskilled* employees (reference category), (2) *skilled* employees, (3) *lower* grade *non-manual* employees, (4) *intermediate non-manual* employees and finally, (5) *professionals* and other higher non-manual employees and higher-level executives.

The 1979 Swedish Standard Classification of Education (SSCE79 or SUN79) is transformed into an indicator of *years of education*. The variable is transformed into a continuous factor with number of years in education for each educational level, and it ranges from 0 (no education) to 19 (postgraduate studies). In the analysis on earnings, an interaction term for sex and higher education (university studies of 3 years or more) is also included, as the returns on this level of education are known to be higher for men than for women.

Firm tenure is measured by the number of years an employee has been employed with his/her current employer.

Labour market experience is a proxy variable. For women the value of experience is computed as [respondents age – (6 + estimated number of years in education according to SSCE79) – number of children 0–18 years of age]. For men the corresponding variable is computed as [respondents age – (6 + estimated number of years in education according to SSCE79) – 1 year in military service]. *Labour market experience squared* is also included, as the positive marginal effect of experience on training is assumed to decrease.

Part-time workers are defined as those who state that they normally work 10–34 hours per week.

Cohabiting or married is a dummy variable indicating the present civil status. C*hildren less than 7 years of age* is also a dummy and indicates the presence of one or more children in that age span.

The following four dummy variables are included in the earnings analysis in an attempt to control for selection into training and higher wages. (i) Having an *instrumental approach to work* (i.e. respondents find their job to be '… as other jobs. You do what you are supposed

to do and the only thing that matters is the compensation'), (ii) having *great prospects of learning new things on the job*, (iii) suffering from a *prolonged illness*, and (iv) suffering from an *illness that reduces working capacity*.

The dependent variable *annual earnings* is derived from the income tax return form and comprises wage income and wage-dependent social benefits. This income is assumed to approximate yearly wage from main occupation.[5] In this paper, I have excluded individuals with earnings below 80,000 SEK – about 8,700 EUR – in order to avoid excluding too many women working part-time in low wage jobs, while trying to exclude those who did not work the full year. Excluding these individuals (2.7 per cent of the sample) increases the explained variance by 10 per cent in the earnings regression. When used in the analysis, annual earnings is divided by 100 and transformed into logarithmic values.

Finally, a control for *survey year* is included in all analyses, as the sample merges respondents from survey waves 1994–1998.

It is worth noting that all independent variables were measured at the time of the interview, whereas the measures of FOJT concern training that occurred *sometime* during the past 3 years. Thus, it is uncertain whether the background characteristics were the same when training took place. In an attempt to resolve this problem, I only include employees who had been employed with their current employer for at least 3 years in the analysis on the odds of taking part in any on-the-job training (Table 2) and in the analyses on the effect of training on earnings (Tables 5 and 6).[6] In Appendix 2, descriptive statistics for those who worked with their current employer for at least 3 years are compared to all others. Apart from the reduced sample being slightly older and somewhat more job-stable, differences between the two are negligible. Finally, if training took place quite recently, the probability is very low that it will affect earnings already. As a consequence, any earnings differences between trained women and men are likely to be underestimated (due to the heterogeneity of the categories), and the estimates may therefore be regarded as conservative.

Results

Results on Determinants of Training Allocation

The descriptive statistics in Table 1 show that significantly more men than women had taken part in on-the-job training that lasted at least one week and took place during the past 3 years: 30 per cent compared to 24 per cent. Among

Table 1 Formal on-the-job training and different types of training. Descriptive statistics for men and women. Percentages and means

	Men (ref.)	Women	All
Has gone through on-the-job training for at least a week during the past 3 years.	29.6%	23.5%**	26.4% $n = 10{,}721$
Number of times on-the-job training during the past 3 years (for those with any training)	Mean: 2.92 SD: 3.39	Mean: 2.31** SD: 2.77	Mean: 2.64 $n = 3510$
Total number of months in on-the-job training during the past 3 years (for those with any training)	Mean: 1.09 SD: 2.40	Mean: 1.42** SD: 3.11	Mean: 1.24 $n = 3526$
Firm-specific training On-the-job training not of use with other employer (for those with any training)	5.6%	4.7%	5.2% $n = 3389$
Industry-specific training On-the-job training usable with all firms in the industry (for those with any training)	33.0%	42.4%**	37.1% $n = 3389$
General training On-the-job training usable in many industries (for those with any training)	56.3%	48.6%**	52.9% $n = 3389$
On-the-job training as a *help towards promotion* at the workplace (for those with any training)	51.9%	48.2%	50.3% $n = 3359$

*Significant at 5 per cent level; **significant at 1 per cent level.

Note: *Firm-specific training, industry-specific training and general training will not sum to 100, as some employees take part in training that is transferable to other employers although not to the entire industry. This applies to the remaining 5 per cent of employees [100 − (52.9 + 37.1 + 5.2) = 4.8].*

those who took part in training, men received training on more occasions than women did, but women reported longer training (in months) during these 3 years than men. However, a majority (61 per cent) of all who received training reported that it lasted less than one month (not shown).

Table 2 shows results on determinants of the log odds of having participated in training for at least one week during the past 3 years. Men are significantly more likely to receive FOJT than women, controlling for industry (Model I).[7] The higher educated an individual is and the more tenure and experience he/she has, the more likely this person is to have taken part in FOJT (although the positive effect of experience decreases with years in employment; Model II). Part-time work considerably lowers an individual's odds of taking part in training over and above the other factors, and the reduction in the coefficient for women from Models I to II indicates that women's overrepresentation in part-time work accounts for part of the gender effect.

FOJT becomes more likely the higher up in the socio-economic hierarchy one gets (Model III).[8] Controlling for socio-economic status does not affect the gender difference in training, although it eliminates the positive effect of years in education. In Model IV, family status variables are included. Women with at least one child younger than 7 years of age have significantly lower chances of receiving training than do men with or without children. To some extent, this lower probability for women to take part in on-the-job training during the past 3 years may be due to the fact that some of them were on parental leave during part of this period. When individuals with children younger than 3 years of age are excluded (not shown), the negative estimate for women with children (now including only 4–6-year-olds) is no longer significant. Even in this model, the lower log odds for women to take part in on-the-job training remains at –0.22 (cf. Table 2, Model IV). Consequently, when controls for industry, education, firm tenure, experience, work hours, socio-economic status

Table 2 Log odds ratios of receiving on-the-job training that lasted for at least one week during the past three years for a number of determinants, controlling for survey year. Logistic regression n = 10.707

	Model I	Model II	Model III	Model IV
Women[a]	−0.47***	−0.29***	−0.28***	−0.22***
	(0.05)	(0.05)	(0.06)	(0.06)
Manufacturing	0.00	0.00	0.00	0.00
Construction	−0.62***	−0.53***	−0.56***	−0.56***
Trade	−0.52***	−0.49***	−0.51***	−0.51***
Transport	0.06	0.04	0.11	0.11
Finance	0.28***	0.16†	0.01	0.01
Public administration	0.80***	0.62***	0.49***	0.50***
Education	0.28***	−0.08	−0.14	−0.14
Health/care	0.26***	0.17*	0.19*	0.19*
Other services	−0.12***	−0.16	−0.28*	−0.27*
Education in years		0.08***	0.00	−0.002
Firm tenure		0.01***	0.01*	0.01*
Lbm experience		0.03**	0.02*	0.02
Lbm experience squared		−0.001***	−0.001***	−0.001***
Work part-time		−0.30***	−0.23***	−0.22***
Unskilled employees			0.00	0.00
Skilled employees			0.21**	0.21**
Lower non-manual			0.39***	0.39***
Interm. non-manual			0.83***	0.83***
Professionals			0.94***	0.94***
Cohab. or married				0.10†
Children <7 years				0.04
Child <7 × women				−0.27*
Constant	−1.02***	−2.24***	−1.54***	−1.52***
−2 Log likelihood	12080.616	11860.010	11723.254	11713.390

Respondents with less than 3 years of company tenure are excluded.
*†Significant at 10 per cent level; *significant at 5 per cent level; **significant at 1 per cent level; ***significant at 0.1 per cent level.*
[a]Standard errors in parenthesis.

and the presence of small children are included in the model, there still remains an unexplained 0.20 lower odds for women to take part in FOJT compared to men.

Differences in Type of Training: Firm- and Industry-Specific Training Versus General Training

The descriptive statistics in Table 1 show that 95 per cent of all training participants received training that was transferable to employers other than the one providing the training. Hence, only 5 per cent took part in completely firm-specific training, while 37 per cent took part in training that was transferable to other employers in the same industry. General training is the most common form in Sweden – more than 50 per cent of all employees stated that the training they received was transferable to employers in several different industries.[9] Still, differences exist between women and men. Men more often take part in general training, whereas women more often take part in industry-specific training. Also, men reported somewhat more often that training could increase promotion opportunities.

In Table 3, a multinomial logistic regression model is estimated for the log odds of receiving firm- and industry-specific training versus general training (the reference category). Mainly due to the small number of individuals taking part in completely firm-specific training, few significant results are found here (see Models Ia and IIa). Part-time work clearly raises the odds that a person will take part in industry-specific – and to some extent also firm-specific – training rather than general training. Controlling for part-time work and years of education, women are more likely than men to take part in industry-specific training (Table 3, Model Ib). When industry is controlled for, however, this difference disappears. Individuals employed in health and medical care are most likely to take part in industry-specific training. This is a large and

Table 3 Log odds ratios of receiving firm- or industry-specific training versus general training (reference category) for employees who had some training during the past 3 years, controlling for survey year. Multinomial logistic regression. $n = 3228$

	Firm–specific training		Industry–specific training	
	Model Ia	**Model IIa**	**Model Ib**	**Model IIb**
Woman[a]	0.12	0.19	0.29***	0.05
	(0.17)	(0.19)	(0.08)	(0.09)
Manufacturing		0.00		0.00
Construction		−1.54		0.57*
Trade		0.52†		0.44**
Transport		0.99***		0.75***
Finance		−0.22		0.56***
Public administration		0.42		0.80***
Education		−0.11		0.84***
Health/care		0.42		1.25***
Other services		−0.56		−0.16
Education in years	−0.02	−0.02	−0.02	−0.05***
Part-time	0.42†	0.41†	0.47***	0.34**
Constant	−2.08***	−2.23***	−0.35†	−0.39†

*†Significant at 10 per cent level; *significant at 5 per cent level; **significant at 1 per cent level; ***significant at 0.1 per cent level.*
[a]Standard errors in parenthesis.
Change in −2 Log likelihood (from model with intercept only):
Model I: 65.248 with 14 df
Model II: 204.267 with 30 df

Type of training	***n***
General training	1792
Industry-specific training	1259
Firm-specific training	177
Total *n*	3228

highly female-dominated industry (more than 80 per cent are women) that alone accounts for a considerable part of the gender difference in industry-specific training. Those most likely to take part in general training are individuals employed in manufacturing, and men dominate this industry. Consequently, the gender-segregated Swedish labour market is crucial with regard to explaining differences between men and women in type of FOJT.

Training that Increases Promotion Opportunities

Table 4 shows the log odds of receiving training that may increase opportunities for promotion. Here, socio-economic status is the factor in focus. As was seen in Table 1, somewhat fewer women than men reported that the training received can increase promotion opportunities. This difference remains, although it is only significant at the 10 per cent level, when socio-economic group is included in the model (Model I).[10] Women are less likely than men to take part in training that increases promotion opportunities in three out of five socio-economic categories, where the category at the bottom and that at the top are the exceptions (Interaction Model I). This result is in agreement with Hultin (2001), who found that women at the lowest and the highest hierarchical levels, respectively, face promotion opportunities on a par with men. At intermediate levels, however, women are significantly less likely than men to be promoted. Training for the new job often precedes actual advancement, and if women do not get such training to the same extent as men do, they will be less likely to experience promotions. The gender difference in training that can increase promotion opportunities in intermediate levels prevails, after part-time work and industry are controlled for, although unskilled workers now emerge as the one category in which women are more likely to get training than men are (Interaction Models II and III, the coefficient for *woman*). This could partly be because many of these women are employed in part-time, entry-level jobs that are associated with higher training intensity (cf. Veum, 1996). Employees in education, health or medical care and other social or personal services are least likely to take part in training that increases promotion

Table 4 Log odds ratios of receiving training that may increase opportunities for promotion, for employees who had some training during the past 3 years, controlling for survey year. Logistic regression. $n = 3356$

	Model I	Interaction Model I	Interaction Model II	Interaction Model III
Women[a]	−0.14†	0.24	0.39*	0.59***
	(0.07)	(0.17)	(0.17)	(0.18)
Unskilled employees	0.00	0.00	0.00	0.00
Skilled employees	0.01	0.30†	0.28†	0.26
Lower non-man	0.35**	0.64***	0.62***	0.74***
Intermed. non-man	0.06	0.30*	0.28†	0.35*
Professionals	0.27*	0.41**	0.38*	0.51***
Unskilled × wom		0.00	0.00	0.00
Skilled × wom		−0.63*	−0.66**	−0.54*
Lower non-man × wom		−0.55*	−0.61*	−0.77**
Intermed. non-man × wom		−0.48*	−0.56**	−0.53*
Professional × wom		−0.25	−0.34	−0.35
Work part-time			−0.38***	−0.30**
Manufacturing				0.00
Construction				−0.14
Trade				−0.31*
Transports				−0.25†
Financial businesses				0.14
Public administration				−0.32*
Education				−0.84***
Health/care				−0.52***
Other services				−0.67***
Constant	0.04	−0.15	−0.11	−0.01
−2 Log likelihood	4622.218	4612.964	4599.016	4536.085

†*Significant at 10 per cent level; *significant at 5 per cent level; **significant at 1 per cent level; ***significant at 0.1 per cent level.*
[a]*Standard errors in parenthesis.*

opportunities, ceteris paribus. These industries together employ more than 50 per cent of all women in the Swedish labour market, while only about 15 per cent of all men work in these industries.

The Effect of On-the-Job Training on Annual Earnings

From the earlier analyses we know that women are less likely than men to take part in FOJT. Two questions then arise. The first is whether women's lower probability of taking part in training can account for part of the gender difference in earnings. The second is whether any difference in rewards for training can be found among those women and men who take part in training. In Table 5, the logarithm of annual earnings is regressed on gender (among other factors). In the first model (Model I), no controls for on-the-job training are used. Women have 10 per cent lower earnings than men do when industry, human capital, socio-economic status and family status factors are controlled for.[11] In Model II, FOJT is included. Those who took part in training have 4 per cent

Table 5 The logarithm of annual earnings for a number of determinants controlling for survey year. OLS regression. $n = 10{,}425$

	Model I[a]	Model II[a]	Model III	(S.E)
Men FOJT	–	–	0.00	
Women FOJT	–	–	−0.11***	(0.01)
Men no FOJT	–	–	−0.06***	(0.01)
Women no FOJT	–	–	−0.15***	(0.01)
Women	−0.10***	−0.10***	–	
Formal on-the-job training	–	0.04***	–	
Year			Yes	
Manufacturing			0.00	
Construction			−0.05***	
Trade			−0.07***	
Transports			0.00	
Finance			−0.01	
Public administration			−0.15***	
Education			−0.26***	
Health/care			−0.13***	
Other services			−0.15***	
Education in years			0.02***	
Higher education			0.09***	
Higher education × woman			−0.05***	
Firm tenure			0.002***	
Experience			0.01***	
Experience squared			−0.0002***	
Work hours			0.02***	
Unskilled employees			0.00	
Skilled employees			0.05***	
Lower non-manual			0.08***	
Intermediate non-manual			0.18***	
Professionals			0.37***	
Cohab. or married			0.06***	
Cohab./marr. × women			−0.10***	
Child <7 years			−0.01	
Child <7 × women			−0.06***	
Constant	6.66***	6.66***	6.70***	
R^2	0.621	0.624	0.624	

Respondents with less than 3 years of company tenure are excluded.

**Significant at 5 per cent level; **significant at 1 per cent level; ***significant at 0.1 per cent level.*

[a]*When all control variables are included (see Model III).*

higher annual earnings than do those who did not take part in any training. However, including FOJT in the model does not affect the gender earnings gap (the estimate for women goes from –0.0979 to –0.0955). Still, explained variance improves significantly, even if the change is small; R^2 goes from 0.621 to 0.624. The estimates for control variables are only marginally different from those in Model III (not shown).

Table 5, Model III, includes the interaction terms of gender and FOJT. The reference category is men who took part in FOJT for at least one week during the past 3 years. Women with training have 11 per cent lower annual earnings than men with training, ceteris paribus. Still, training does seem to pay off; women with training have significantly higher earnings than do women with no training. The same applies to men. Yet, it appears as if men benefit somewhat more from training than women do; men with no training have 6 per cent lower earnings than men with training, whereas women with training have 4 per cent higher earnings than women with no training (the differences are significant).

By and large, the effects of control variables on earnings are as expected. Family status variables confirm earlier results; cohabiting or being married significantly improves a man's annual earnings, whereas the presence of a partner significantly reduces earnings for women. Women with pre-school children have 6 per cent lower annual earnings than do individuals with no small children, and these lower earnings remain after control for, among other things, work hours.

In Model I, Table 6, some factors that can influence selection into on-the-job training are controlled for. Although the direction of causality is not clear here, the purpose is first and foremost to rule out potential confounding earnings differences between women and men. Having an instrumental approach to work, suffering from a prolonged illness or reduced working capacity are correlated with lower annual earnings, whereas learning new things on the job is positively related to earnings. Including these factors in the analysis, however, does not affect the gender earnings gap.

In Table 6, Model II, different types of training are included. The omitted reference category contains individuals who took part in firm-specific training or training that is transferable to other employers, but not the entire industry (or beyond). Although the short-term effect of training on earnings is negative both for those who took part in general training and industry-specific training, compared to the reference category, the estimate is significant only for industry-specific training. In Table 7, Model I, different types of training – firm-specific training, training

Table 6 The logarithm of annual earnings controlling for survey year for a number of determinants (see note). OLS regression. $n = 10{,}384$

	Model I	(S.E)	Model II	(S.E)
Men FOJT	0.00		0.00	
Women FOJT	–0.11***	(0.01)	–0.09***	(0.02)
Men no FOJT	–0.05***	(0.01)	–0.06***	(0.02)
Women no FOJT	–0.14***	(0.01)	–0.15***	(0.02)
Instrumental approach to work	–0.03***		–0.03***	
Learn new things in job	0.03***		0.03***	
Durable illness	–0.02***		–0.02***	
Reduced working capacity	–0.12***		–0.12***	
Industry-specific training			–0.04*	
General training			–0.02	
Training that increases prom. opp.			0.04***	
Training increase prom. opp. × women			–0.04*	
Constant	6.73***		6.74***	
Control variables[a]	Yes		Yes	
R^2	0.632		0.633	

Respondents with less than 3 years of company tenure are excluded.

**Significant at 5 per cent level; **significant at 1 per cent level; ***significant at 0.1 per cent level.*

[a]*The control variables are the same as in Table 5, Model I–III (including interactions): survey year, industry, educational level, firm tenure, experience, working hours, socio-economic status, cohabiting/married and children <7 years of age.*

Table 7 The logarithm of annual earnings controlling for survey year for a number of determinants (see footnote). OLS regression. $n = 13{,}587$

	Model I	(S.E)	Model II	(S.E)
No training	0.00		0.00	
Firm-specific training	0.07***	(0.02)	0.08***	(0.02)
Training transferrable to a few employers	0.08***	(0.02)	0.10***	(0.02)
Industry-specific training	0.04***	(0.01)	0.05***	(0.01)
General training	0.07***	(0.01)	0.08***	(0.01)
Interactions with woman				
Firm-specific training			−0.04	(0.04)
Training transferrable to a few employers			−0.05	(0.03)
Industry-specific training			−0.02	(0.01)
General training			−0.03*	(0.01)
Woman	−0.09***		−0.08***	
Constant	6.65***		6.65***	
Control variables[a]	Yes		Yes	
R^2	0.595		0.595	

**Significant at 5 per cent level; **significant at 1 per cent level; ***significant at 0.1 per cent level.*

[a]The control variables are the same as in Table 6, Model I, with the exception of the interaction between gender and on-the-job training (but including other interactions with gender): survey year, industry, educational level, firm tenure, experience, working hours, socio-economic status, cohabiting/married, children <7 years of age, instrumental approach to work, learn new things in job, durable illness and reduced working capacity.

transferable to employers other than the one providing the training (although not the entire industry), industry-specific training and general training – are compared to not getting any training at all. Those who changed employer within the past 3 years are also included here, as an analysis excluding them would bias the estimate for general training downwards.[12] In this model, the more specific training and general training increase earnings by 7–8 per cent, whereas industry-specific training only increases earnings by 4 per cent. It is not at all clear why industry-specific training is significantly less rewarded than is other training. One potential explanation could be that industry-specific training is more often of a compulsory character and necessary for the employee in order to keep up with progress made in the field. This is, perhaps, particularly often the case in health and medical care, where industry-specific training is most common.[13] It is worth noting that the short-term effect of formal specific and general on-the-job training on earnings appears to be about the same and not, as predicted by theory, higher for general than for specific training. This can be compared to Barth (1997), who found no significant difference in wage effects between specific and general introductory training. In his study, however, the long-term results indicate that firm-specific training is associated with a less steep wage-tenure profile.

An interaction model between type of training and gender (Table 7, Model II) indicates that men are rewarded for general training to a greater extent than women; the estimate for men in this model reaches 0.08, whereas for women it is a negative 0.03. The negative estimate for women remains when only those who worked at least 3 years with the current employer are studied, whereas the estimate for men decreases by 0.02 (not shown). Hence the gender difference in earnings can only be explained to a minor extent by the fact that more men than women changed employer during the past 3 years.

Returning to Table 6, Model II, training that increases promotion opportunities results in increased earnings during the 3-year period studied here, but only for men. To see whether the estimates are robust, an analysis excluding those with children less than 3 years of age was run (not shown). The estimates were the same in that model as in model II, Table 6. The higher earnings may indicate actual advancement as training has occurred some time during the past 3 years and this could, in that case, indicate that men more often than women get promoted after training. The two-step gender inequality model thus receives support; not only are women less likely than men to take part in training, once they do, they are not rewarded for training to the same extent as men are. In Table 8, the previously established research questions are repeated and addressed.

Table 8

Research question	Result
1. Are there any gender differences in the odds of taking part in FOJT?	Yes, women are less likely than men to take part in FOJT.
2. Are there any gender differences in the odds of taking part in different types of FOJT?	Yes and no; there are no differences in the odds of taking part in firm-specific and industry-specific training versus general training, controlling for industry. There are, however, differences in the odds of taking part in training that increases promotion opportunities where women on intermediate socio-economic levels are less likely than men to take part in training.
3. Can the gender earnings gap be explained by differences in FOJT?	No.
4. Are there any gender differences in the returns on different types of FOJT?	Yes, men are rewarded for general training and training that increases promotion opportunities to a greater extent than women are.

Concluding Discussion

Although sociological research on promotions, wages and job careers abound, few studies have focused on FOJT as one potential mechanism through which gender differences in the labour market may emerge and/or be maintained. This could partly be due to difficulties in finding suitable indicators of training, and this study shares some of these problems (such as the maximum 3-year period since training took place). The strength of the present study is that it allows analyses of gender differences in FOJT and the returns on FOJT, and also that the data permit the distinction between different types of FOJT. Few earlier studies have been able to decompose training, and the returns on training, in this way.

The conclusion from theories of gender differences in on-the-job training (Becker, 1975), training for promotions (Lazear and Rosen, 1990) and current research on promotions (Booth et al., 2003) is that women face obstacles at two levels: first, they will be less likely than men to take part in training – particularly training that increases promotion opportunities – and second, they will not be rewarded for training to the same extent as men are. In the empirical analysis, the two-step gender inequality model receives support. Women are less likely than men to take part in training, and – given that they do receive training – women are also less likely to take part in training that increases promotion opportunities and earnings. Although women at the lowest and the highest hierarchical levels, respectively, are as likely as men to take part in training that increases promotion opportunities, women on intermediate levels have significantly lower odds of taking part in such training. This supports the assumption of a bottleneck in promotions for women (cf. Hultin, 2001). Also, among women and men who do get training that increases promotion opportunities, only men benefit financially from training in the period directly following it. The fact that women do not may either indicate that they more seldom than men get promoted after training or that they – in accordance with the sticky-floors model (Booth et al., 2003) – get stuck at comparatively low wage levels even after a promotion.

When firm-specific training is compared to industry-specific training and general training, the segregation of women and men into different industries in the Swedish labour market explains why women are more likely than men to take part in industry-specific training, and less likely to take part in general training. When the rewards of training are estimated, industry-specific training raises earnings less than the more specific training and general training. Also, an interaction effect between gender and type of training was found, where men get significantly higher earnings than do women after having taken part in general training. According to the analysis here, this cannot be explained by men changing employers – and thereby raising their wages – more often than women do.

Any gender difference in self-selection into training is likely to occur mainly when women with children are compared to others. As the differences found here remain after control for industry, human capital, experience, company tenure, work hours, socio-economic status and family-related factors (such as living with a partner and with a child under the age of 7), the gender differences in training and in the rewards of this training are

likely to be explained mainly by employers' actions. Deeper and more detailed knowledge of what employer characteristics determine these discriminatory practices cannot be provided here, but remains a challenge for future research.

Notes

1. According to this theory, organizations, their routines, jobs, the value of work etc. are gendered and this gendered structure is taken for granted as part of the fabric of the organization.
2. The question normally is 'On a job like yours, how long would it take the average new person to become fully trained and qualified?'
3. Literally, the question was: 'Have you, during the past 3 years, taken part in any on-the-job training with your current or earlier employer that, counted full-time, lasted at least one week? With on-the-job training we mean training that is arranged or financed by the employer.' In the analyses of the odds of taking part in any training (Table 2) and of the rewards of training (Tables 5 and 6), only those employees who had had their current employer for 3 years or more are included.
4. Categories are made as follows (with industry headings in italics); mining and quarrying, *manufacturing*, electricity-, gas- and water supply (SIC C+D+E, reference category). *Construction* (SIC F). Wholesale and retail *trade*, repairs, hotels and restaurants (SIC G+H). *Transports*, storage and communications (SIC I). *Financial businesses*, property- and rental activities plus company services (SIC J+K). *Public administration and defense* (SIC L). *Education* (SIC M). *Health* and medical *care*, social services and veterinarians (SIC N). Finally, *other* community social or personal *service* activities (SIC O). As earlier mentioned, farmers and individuals employed in agriculture, hunting, forestry and fishing (SIC A+B) are excluded.
5. Although annual earnings is not the optimal factor here (that would be hourly earnings), a study by Antelius and Björklund (2000) showed that if the lowest annual earnings are excluded from the sample, the estimates from an analysis where annual earnings is regressed on educational level are close to those obtained from one in which hourly earnings is the dependent factor.
6. In the analyses on different kinds of training (Tables 3 and 4), all employees are included – also those who had been with their current employer for less than 3 years – in order not to reduce the already small sample (for different kinds of training among those with any training) further.
7. Because women and men often occupy different jobs in the same industry, an interaction model between gender and industry was estimated in order to see whether the log odds ratio of taking part in on-the-job training differs for women and men within the same industry (not shown). From this model it is clear that women are significantly less likely than men to receive training if they work in trade or public administration and defense. Still, the change in –2 times the log likelihood is small and not significant when the interaction model is compared to Model I, Table 2.
8. In a model that fits an interaction between gender and socio-economic group (not shown), there is a tendency for women to get less on-the-job training in all categories apart from among skilled workers.
9. A fourth remaining category is comprised of those who took part in training that was transferable to employers other than the one providing the training, although not to the entire industry. This category has been excluded here.
10. Educational level has no effect on the probability of receiving training that can advance promotion opportunities (not shown).
11. When no family status factors are included, the gender earnings gap is 18 per cent. This can be compared to le Grand et al. (2001), who found a gender wage gap of about 16 per cent in the year 2000, controlling for years in education and labour market experience. For references from earlier years, see SOU (1997: 136).
12. As some employees might have left the employer who provided the training in order to get a higher return on their general on-the-job training elsewhere.
13. Also, when training in certain occupations in the health care industry is long – and the employer's investment in the employee is high – the employee must sometimes sign a contract, assuring that he/she will not leave the employer during a certain period after training. From this follows that the trained employee has difficulties negotiating a higher wage when the employer stands no risk of losing the employee.

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References

Abraham, K. and Farber, H. (1987). Job Duration, Seniority, and Earnings, *American Economic Review*, **77**, 278–297.

Acker, J. (1990). Hierarchies, Jobs, Bodies: A Theory of Gendered Organizations, *Gender and Society*, **4**, 139–158.

Albrecht, J., Björklund, A. and Vroman, S. (2003). Is there a Glass Ceiling in Sweden? *Journal of Labor Economics*, **21**, 145–177.

Altonji, J. G. and Shakotko, R. (1987). Do Wages Rise with Job Seniority? *Review of Economic Studies*, **54**, 437–459.

Altonji, J. G. and Spletzer, J. R. (1991). Worker characteristics, job characteristics, and the receipt of on-the-job training, *Industrial and Labor Relations Review*, **45**, 58–79.

Antelius, J. and Björklund, A. (2000). How Reliable are Register Data for Studies of the Return on Schooling? An examination of Swedish data, *Scandinavian Journal of Educational Research*, **44**, 341–355.

Barron, J. M., Black, D. A. and Loewenstein, M. A. (1993). Gender Differences in Training, Capital and Wages, *Journal of Human Resources*. **28**, 343–364.

Barth, E. (1997). Firm-Specific Seniority and Wages, *Journal of Labor Economics*, **15**, 495–506.

Becker, G. S. (1975). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*, Second edition. New York: National Bureau of Economic Research.

Blau, F. D. and Ferber, M. A. (1992). *The Economics of Women, Men and Work*, Second edition. New Jersey: Prentice Hall.

Booth, A. L., Francesconi, M. and Frank, J. (2003). A Sticky Floors Model of Promotion, Pay and Gender, *European Economic Review*, **47**, 295–322.

Brown, J. N. (1989). Why Do Wages Increase with Tenure? On-the-Job Training and Lify-Cycle Wage Growth Observed within Firms, *American Economic Review*, **79**, 971–991.

Corcoran, M. and Duncan, G. J. (1979). Work History, Labor Force Attachment, and Earnings Differences Between the Races and Sexes, *Journal of Human Resources*, **14**, 3–20.

Duncan, G. J. and Hoffman, S. (1979). On-the-Job Training and Earnings Differences by Race and Sex, *The Review of Economics and Statistics*, **61**, 594–603.

Field, A. J. and Goldsmith, A. H. (1991). The impact of gender and working life cycle position on the likelihood and accumulation of formal on-the-job training, *Population Research and Policy Review*, **10**, 47–66.

Frazis, H., Gittleman, M. and Joyce, M. (2000). Correlates of Training: An Analysis Using both Employer and Employee Characteristics, *Industrial and Labor Relations Review*, **53**, 443–462.

le Grand, C., Szulkin, R. and Tåhlin, M. (2001). Lönestrukturens förändring i Sverige [The change in the Swedish wage structure]. In Fritzell, J., Gähler, M. and Lundberg, O. (Eds), *Välfärd och arbete i arbetslöshetens årtionde*. SOU 2001:53. Stockholm: Fritzes.

Granqvist, L. and Persson, H. (1999). Career Mobility and Gender. In Persson, H., *Essays on Labour Demand and Career Mobility*. Stockholm: Swedish Institute for Social Research.

Green, F. (1991). Sex Discrimination in Job-Related Training, *British Journal of Industrial Relations*, **29**, 295–304.

Gronau, R. (1988). Sex-related Wage Differentials and Women's Interrupted Labor Careers—the Chicken or the Egg, *Journal of Labor Economics*, **6**, 277–301.

Hultin, M. (2001). *Consider her Adversity. Four essays on gender inequality in the labor market*. Swedish Institute for Social Research. Stockholm: Akademitryck.

Jacobs, J. A., Lukens, M. and Useem, M. (1996). Organizational, Job, and Individual Determinants of Workplace Training: Evidence from the National Organizations Survey, *Social Science Quarterly*, **77**, 159–176.

Jonsson, J. O. and Mills, C. (2001). Giving birth without giving up: return to employment and return to work amongst women. In Jonsson, J. O. and Mills, C. (Eds), *Cradle to Grave. Life-course change in modern Sweden*. Durham, UK: Sociologypress.

Kalleberg, A. L. and Reskin, B. F. (1995). Gender Differences in Promotion in the United States and Norway, *Research in Social Stratification and Mobility*, **14**, 237–264.

Knoke, D. and Ishio, Y. (1998). The Gender Gap in Company Job Training, *Work and Occupations*, 25, 141–167.

Lazear, E. P. and Rosen, S. (1990). Male-Female Wage Differentials in Job Ladders, *Journal of Labor Economics*, **8**, 106–123.

Loewenstein, M. A. and Spletzer, J. R. (1997). Delayed formal on-the-job training, *Industrial and Labor Relations Review*, **51**, 82–99.

Lynch, L. M. (1992). Private-Sector Training and the Earnings of Young Workers, *American Economic Review*, **82**, 299–312.

NUTEK (2000). *Kompetens—en bristvara? Företagens syn på kompetensförsörjning*. Info 032–2000. [Translated: Competence—a commodity in short supply? Companies view on competence provision] Stockholm: NUTEK.

Olsen, R. N. and Sexton, E. A. (1996). Gender Differences in the Returns to and the Acquisition of On-the-Job Training, *Industrial Relations*, **35**, 59–77.

Regnér, H. (1997). *Training at the Job and Training for a New Job: Two Swedish Studies*. Swedish Institute for Social Research. Stockholm: Akademitryck.

Regnér, H. (2002). The effects of on-the-job training on wages in Sweden. *International Journal of Manpower*, **23**, 326–344.

Reskin, B. (1988). Bringing the Men Back In: Sex Differentiation and the Devaluation of Women's Work, *Gender and Society*, **2**, 51–81.

Royalty, A. B. (1996). The effects of job turnover on the training of men and women, *Industrial and Labor Relations Review*, **49**, 506–521.

SOU (1997). *Kvinnor och mäns löner—varför så olika?* [Women and men's wages—why so different?]. In Persson, I. and Wadensjö, E. (Eds) Stockholm, Fritzes.

Tomaskovic-Devey, D. and Skaggs, S. (2002). Sex Segregation, Labor Process Organization, and Gender Earnings Inequality, *American Journal of Sociology*, **108**, 102–128.

Veum, J. R. (1996). Gender and Race Differences in Company Training, *Industrial Relations*, **35**, 32–44.

Vogel, J., Andersson, L. G., Davidsson, U. and Häll, L. (1988). *Inequality in Sweden: Trends and Current Situation*. Report no 58 in the Series Living Conditions. Stockholm: Statistics Sweden.

Wholey, D. R. (1990). The effects of formal and informal training on tenure and mobility in manufacturing firms, *The Sociological Quarterly*, **31**, 37–57.

Williams, N. (1991). Re-examining the Wage, Tenure and Experience Relationship, *Review of Economics and Statistics*, **73**, 512–517.

Winter-Ebmer, R. and Zweimüller, J. (1997). Unequal Assignment and Unequal Promotion in Job Ladders, *Journal of Labor Economics*, **15**, 43–71.

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Appendix 1

Are Women Less Willing to Take Part in Training Than Men?

Although we cannot be certain that gender differences in on-the-job training in Sweden are due to employers' discriminatory practices, the evidence indicates that employers' decisions are more important for the differential allocation of men and women to training programs than are employees' own choices and aspirations. Five per cent of the employers in a Swedish study by NUTEK (2000) admitted that gender had been an issue when they decided whom to provide with training; still no employers stated that they had found any gender differences with regard to employees taking the initiative to training. Furthermore, because no less than 95 per cent of all on-the-job training in Sweden appears to take place during ordinary work hours (ibid.), women with children should normally not be prevented from taking part in training due to family responsibilities. If women do turn down training because of this, it should mainly concern those with small children, and controlling for children and part-time work, the probability is small that women – more often than men – would turn down offers of training.

Appendix 2

Table A1 Descriptive statistics comparing those employed more than 3 years with current employer to all others for FOJT and background characteristics

	Including those employed <3 years with current employer. Percentages[a] *n* 14,261		**Excluding those employed <3 years with current employer. Percentages[a] *n* 10,707**	
	Men	**Women**	**Men**	**Women**
Has taken part in FOJT for at least 1 week during the past 3 years	27.8	21.7	29.7	23.5
Manufacturing	34.3	11.4	37.1	12.0
Construction	9.5	0.9	8.4	0.9
Trade	13.3	12.8	11.6	11.0
Transport	8.9	4.7	9.1	4.6
Finance	11.7	10.3	10.8	9.4
Public administration	6.1	6.2	6.9	6.8
Education	6.5	14.5	6.6	14.8
Health/care	5.7	34.9	5.6	36.7
Other services	4.1	4.3	4.1	3.9
Total	**100**	**100**	**100**	**100**
Unskilled empl.	23.1	30.6	22.2	29.9
Skilled empl.	24.3	12.4	23.9	13.1
Ass. non-manual	11.7	20.5	11.2	20.6
Intermed. non-man.	21.2	24.9	22.3	25.5
Professional	19.7	11.6	20.4	10.9
Total	**100**	**100**	**100**	**100**
Work part-time	7.5	37.3	7.0	38.2
Work hours (mean)	40	35	40	35
Cohabiting	71.2	74.3	75.8	77.2
Children <7 years	22.0	21.1	21.5	21.0
Educ. years (mean)	12	12	12	12
Tenure (mean)	11	10	14	13
Lbm exp. (mean)	22	23	25	25
Annual earnings (mean)	242,500	168,400	255,400	172,800

[a]*When nothing else is given*